IMPORTANT NOTICE

THIS OFFERING IS AVAILABLE ONLY TO INVESTORS WHO ARE EITHER (1) QIBs (AS DEFINED BELOW) UNDER RULE 144A, OR (2) NON-U.S. PERSONS OUTSIDE THE UNITED STATES

IF YOU DO NOT AGREE TO THE TERMS AND CONDITIONS CONTAINED IN THIS NOTICE YOU SHOULD NOT READ THE ATTACHED PRELIMINARY OFFERING CIRCULAR AND SHOULD DELETE THIS ELECTRONIC TRANSMISSION

IMPORTANT: You must read the following before continuing. The following applies to the attached preliminary offering circular (the "Preliminary Offering Circular"), and you are therefore advised to read this carefully before reading, accessing or making any other use of the Preliminary Offering Circular. In accessing the Preliminary Offering Circular, you agree to be bound by the following terms and conditions, including any modifications to them any time you receive any information from us as a result of such access. **You acknowledge that this electronic transmission and the delivery of the attached Preliminary Offering Circular is confidential and intended for you only and you agree you will not forward this electronic transmission or the attached Preliminary Offering Circular to any other person.**

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF SECURITIES FOR SALE IN ANY JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE SECURITIES HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "U.S. SECURITIES ACT"), OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR OTHER JURISDICTION AND THE SECURITIES MAY NOT BE OFFERED OR SOLD WITHIN THE UNITED STATES OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, U.S. PERSONS (AS DEFINED IN REGULATION S UNDER THE U.S. SECURITIES ACT), EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT AND APPLICABLE STATE OR LOCAL SECURITIES LAWS.

THE ATTACHED PRELIMINARY OFFERING CIRCULAR MAY NOT BE FORWARDED OR DISTRIBUTED TO ANY OTHER PERSON AND MAY NOT BE REPRODUCED IN ANY MANNER WHATSOEVER. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THIS DOCUMENT IN WHOLE OR IN PART IS UNAUTHORIZED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE U.S. SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS. IF YOU HAVE GAINED ACCESS TO THIS TRANSMISSION CONTRARY TO ANY OF THE FOREGOING RESTRICTIONS, YOU ARE NOT AUTHORIZED AND WILL NOT BE ABLE TO PURCHASE ANY OF THE SECURITIES DESCRIBED THEREIN.

Confirmation of your Representation: In order to be eligible to view the Preliminary Offering Circular or make an investment decision with respect to the securities, investors must be either (1) qualified institutional buyers ("QIBs") (within the meaning of Rule 144A under the U.S. Securities Act) or (2) non-U.S. persons (within the meaning of Regulation S under the U.S. Securities Act) outside the United States. By accessing the Preliminary Offering Circular, you shall be deemed to have represented to us that (1) you and any customers you represent are either (a) QIBs, or (b) non-U.S. persons and (2) you consent to delivery of such Preliminary Offering Circular by electronic transmission.

The Preliminary Offering Circular is being distributed only to and is directed only at persons in the United Kingdom who are (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the "Order"; or (ii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (e) of the Order, all such persons together being referred to as "Relevant Persons." The securities are available only to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire the securities will be engaged in only with, in the United Kingdom, Relevant Persons. Any person who is in the United Kingdom and not a Relevant Person should not act or rely on the attached Preliminary Offering Circular or any of its contents.

The securities which are the subject of the offering contemplated by the Preliminary Offering Circular may not be offered, sold or otherwise made available and will not be offered, sold or otherwise made available to any retail investor in the European Economic Area. For the purposes of this provision, the expression "retail investor" means a person who is one (or more) of the following: a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU, as amended ("MiFID II"), or a customer within the meaning of Directive 2002/92/EC, as amended, where that customer would not qualify as a professional client as defined in point

(10) of Article 4(1) of MiFID II. Consequently no key information document required by Regulation (EU) No 1286/2014, as amended (the "PRIIPs Regulation") for offering or selling the securities or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the securities or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

You are reminded that the Preliminary Offering Circular has been delivered to you on the basis that you are a person into whose possession the Preliminary Offering Circular may be lawfully delivered in accordance with the laws of the jurisdiction in which you are located and you may not, nor are you authorized to, deliver or disclose the contents of the Preliminary Offering Circular to any other person.

The materials relating to the offering do not constitute, and may not be used in connection with, an offer or solicitation in any place where offers or solicitations are not permitted by law. If a jurisdiction requires that the offering be made by a licensed broker or dealer and the initial purchasers or any affiliate of the initial purchasers is a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by the initial purchasers or such affiliate on behalf of the issuer in such jurisdiction.

The Preliminary Offering Circular has been sent to you in an electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of electronic transmission and consequently, none of the issuer, the initial purchasers nor any of their affiliates accepts any liability or responsibility whatsoever in respect of any difference between the Preliminary Offering Circular distributed to you in electronic format and the hard copy version available to you on request.

You are responsible for protecting against viruses and other destructive items. Your use of this communication is at your own risk and it is your responsibility to take precautions to ensure that it is free from viruses and other items of a destructive nature.

Takeda Pharmaceutical Company Limited

€● ●% Senior Notes due 2020
€● Senior Floating Rate Notes due 2020
€● ●% Senior Notes due 2022
€● Senior Floating Rate Notes due 2022
€● ●% Senior Notes due 2026
€● ●% Senior Notes due 2030

Takeda Pharmaceutical Company Limited proposes to issue €● aggregate principal amount of its senior notes due 2020 (the "2020 notes"), €● aggregate principal amount of its senior floating rate notes due 2020 (the "2020 floating rate notes"), €● aggregate principal amount of its senior notes due 2022 (the "2022 notes"), €● aggregate principal amount of its senior floating rate notes due 2022 (the "2022 floating rate notes" and collectively with the 2020 floating rate notes, the "floating rate notes"), €● aggregate principal amount of its senior notes due 2026 (the "2026 notes") and €● aggregate principal amount of its senior notes due 2030 (the "2030 notes" and, collectively with the 2020 notes, the 2022 notes and the 2026 notes, the "fixed rate notes," and the fixed rate notes collectively with the floating rate notes, the "Notes"). The 2020 floating rate notes will bear interest at an annual rate equal to three-month EURIBOR plus ●%, which will be reset quarterly. The 2022 floating rate notes will bear interest at an annual rate equal to three-month EURIBOR plus ●%, which will be reset quarterly. The 2020 notes will bear interest at an annual rate of ●%, the 2022 notes will bear interest at an annual rate of ●%, the 2026 notes will bear interest at an annual rate of ●% and the 2030 notes will bear interest at an annual rate of ●%. The floating rate notes will bear interest accruing from ●, 2018, payable quarterly in arrears on ●, ●, ● and ● of each year, with the first interest payment to be made on ●, 2019. The fixed rate notes will bear interest accruing from ●, 2018, payable annually in arrears on ● of each year, with the first interest payment to be made on ●, 2019.

The Notes will be our direct, unsecured and unsubordinated general obligations and will have the same rank in liquidation as all of our other unsecured and unsubordinated debt. We may redeem some or all of the 2020 notes, the 2022 notes, the 2026 notes or the 2030 notes at any time prior to ●, 2020 (in the case of the 2020 notes), ●, 2022 (in the case of the 2022 notes), ●, 2026 (in the case of the 2026 notes) or ●, 2030 (in the case of the 2030 notes), at the applicable make-whole prices determined in the manner described herein. We may also redeem some or all of the 2022 notes, the 2026 notes and the 2030 notes at any time on or after ●, 2022 (in the case of the 2022 notes), ●, 2026 (in the case of the 2026 notes) or ●, 2030 (in the case of the 2030 notes), at a price equal to 100% of the respective principal amounts called for redemption plus accrued interest to the redemption date. In addition, we may, at our option, redeem a series of the Notes in whole, but not in part, upon the occurrence of certain changes in Japanese tax law. See "Description of the Notes—Redemption."

The Notes will be issued only in registered form in minimum denominations of €100,000 and integral multiples of €1,000 in excess thereof.

We intend to use the net proceeds of the sale of the Notes to fund a portion of the cash consideration to be paid in connection with the Shire Acquisition (as defined herein). The offering is not conditioned upon the consummation of the Shire Acquisition; however, if (i) the Shire Acquisition has not been consummated on or prior to the Long Stop Date (as defined herein) or (ii) we otherwise publicly announce that the Shire Acquisition will not be consummated, then we will be required to redeem all outstanding Notes on the special mandatory redemption date (as defined herein) at a special mandatory redemption price equal to 101% of the aggregate principal amount of the Notes plus accrued and unpaid interest, if any, to, but excluding, the special mandatory redemption date. See "Description of the Notes—Redemption—Special Mandatory Redemption."

Depending on market conditions, we may offer dollar-denominated senior notes in a future offering (the "Potential Future Notes"). No such Potential Future Notes are being offered hereby.

Approval in-principle has been received for the listing and quotation of the Notes on the Singapore Exchange Securities Trading Limited, or the Singapore Exchange. The Singapore Exchange takes no responsibility for the correctness of any of the statements made, opinions expressed or reports contained herein. Approval in-principle for the listing and quotation of any Notes on the Singapore Exchange is not to be taken as an indication of the merits of us or the Notes.

See "Risk Factors" beginning on page 11 to read about certain matters prospective investors should consider before making an investment in the Notes.

Offering Price . . . . . **For the 2020 notes: ●% and accrued interest, if any**
For the 2020 floating rate notes: ●% and accrued interest, if any
For the 2022 notes: ●% and accrued interest, if any
For the 2022 floating rate notes: ●% and accrued interest, if any
For the 2026 notes: ●% and accrued interest, if any
For the 2030 notes: ●% and accrued interest, if any

Interest on the Notes will accrue from ●, 2018

The Notes have not been registered under the U.S. Securities Act of 1933, as amended, or the Securities Act. The Notes may not be offered or sold within the United States or to U.S. persons, except to qualified institutional buyers in reliance on the exemption from registration provided by Rule 144A under the Securities Act and to certain persons in offshore transactions in reliance on Regulation S under the Securities Act.

It is expected that delivery of the Notes will be made in book-entry form only through Euroclear Bank SA/NV, or Euroclear, and Clearstream Banking S.A., or Clearstream, on or about ●, 2018.

Joint Lead Managers and Bookrunners

J.P. Morgan **SMBC Nikko** **Morgan Stanley**

Joint Bookrunners

Barclays **BNP PARIBAS** **HSBC**

The date of this offering circular is ●, 2018.

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No person has been authorized in connection with the offering to give any information or to make any representations not contained in this offering circular. If given or made, any such information or representations must not be relied upon as having been authorized by us, any initial purchaser or any person affiliated with the initial purchasers. No action has been, or will be, taken to permit a public offering of the Notes in any jurisdiction where action would be required for that purpose. Accordingly, the Notes offered hereby may not be offered or sold, directly or indirectly, and this offering circular may not be distributed, in any jurisdiction, except in accordance with the legal requirements applicable in such jurisdiction. Neither delivery of this offering circular nor any sale made hereunder shall under any circumstances imply that the information herein is correct as of any date subsequent to the date hereof.

IN MAKING AN INVESTMENT DECISION, PROSPECTIVE INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF US AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED. THE NOTES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION OR ANY OTHER SECURITIES COMMISSION OR OTHER REGULATORY AUTHORITY, NOR HAVE THE FOREGOING AUTHORITIES APPROVED THIS OFFERING CIRCULAR OR CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS OFFERING CIRCULAR. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE UNDER THE LAWS OF THE UNITED STATES.

We are furnishing this offering circular solely for the purpose of enabling prospective investors to consider the purchase of Notes in connection with an offering not registered under the Securities Act. The information contained in this offering circular has been provided by us and other sources identified in this offering circular. Any reproduction or distribution of this offering circular, in whole or in part, and any disclosure of its contents or use of any information contained in it for any purpose other than considering an investment in the Notes offered hereby is prohibited. Each offeree of the Notes, by accepting delivery of this offering circular, agrees to the foregoing.

No representation or warranty is made by the initial purchasers or any of their agents, affiliates or advisors as to the accuracy or completeness of the information contained in this offering circular and nothing contained in this offering circular is, or shall be relied upon as, a promise or representation by the initial purchasers or their agents, affiliates or advisors.

The Notes have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the FIEA, and are subject to the Act on Special Measures Concerning Taxation of Japan (Act No. 26 of 1957, as amended), or the Act on Special Taxation Measures. The Notes may not be offered or sold in Japan or to, or for the benefit of, any person resident in Japan, or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, a person resident in Japan for Japanese securities law purposes (including any corporation or other entity organized under the laws of Japan) except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEA and any other applicable laws, regulations and governmental guidelines of Japan. In addition, the Notes are not, as part of the initial distribution by the initial purchasers at any time, to be directly or indirectly offered or sold to, or for the benefit of, any person other than a Gross Recipient or to others for re-offering or resale, directly or indirectly, to, or for the benefit of, any person other than a Gross Recipient, except as specifically permitted under the Act on Special Taxation Measures. A Gross Recipient for this purpose is (i) a beneficial owner that is, for Japanese tax purposes, neither an individual resident of Japan or a Japanese corporation, nor an individual non-resident of Japan or a non-Japanese corporation that in either case is a person having a special relationship with the issuer of the Notes as described in Article 6, Paragraph (4) of the Act on Special Taxation Measures, or a specially-related person of the issuer, (ii) a Japanese financial institution or a Japanese financial instruments business operator, designated in Article 3-2-2, Paragraph (28) of the Cabinet Order (Cabinet Order No. 43 of 1957, as amended), or the Cabinet Order, relating to the Act on Special Taxation Measures that will hold the Notes for its own proprietary account or (iii) any other excluded category of persons, corporations or other entities under the Act on Special Taxation Measures. **BY SUBSCRIBING FOR THE NOTES, AN INVESTOR WILL BE DEEMED TO HAVE REPRESENTED THAT IT IS A GROSS RECIPIENT.**

The Notes have not been and will not be registered under the Securities Act or with any securities authority of any state of the United States, and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and in compliance with any applicable state securities laws. The Notes have not been and will not be offered

or sold within the United States or to, or for the account or benefit of, U.S. persons until 40 days after the later of the commencement of the sale of the Notes and the date of the original issuance of the Notes, except if the Notes are being offered:

- in the United States only to qualified institutional buyers, or QIBs, in reliance on the exemption from the registration requirements of the Securities Act provided by Rule 144A; and
- outside the United States in offshore transactions to non-U.S. persons as defined in, and in accordance with, Regulation S.

You are hereby notified that sellers of the Notes may be relying on the exemption from the registration provisions of Section 5 of the Securities Act provided by Rule 144A.

Interest payments on the Notes generally will be subject to Japanese withholding tax unless it is established that the Notes are held by or for the account of a beneficial owner that is (i) for Japanese tax purposes, neither an individual resident of Japan or a Japanese corporation, nor an individual non-resident of Japan or a non-Japanese corporation that in either case is a specially-related person of the issuer, or (ii) a Japanese financial institution or a Japanese financial instruments business operator designated in Article 3-2-2, Paragraph (28) of the Cabinet Order which complies with the requirement for tax exemption under Article 6, Paragraph (9) of the Act on Special Taxation Measures or (iii) a public corporation, a financial institution or a financial instruments business operator, etc. described in Article 3-3, Paragraph (6) of the Act on Special Taxation Measures which has received such payments through a payment handling agent in Japan as described in Paragraph (1) of said article and complies with the requirement for tax exemption under that paragraph.

Interest payments on the Notes to an individual resident of Japan, to a Japanese corporation not described in the preceding paragraph, or to an individual non-resident of Japan or a non-Japanese corporation that in either case is a specially-related person of the issuer will be subject to Japanese income tax at the time of such interest payments.

Notice Concerning the European Economic Area

PROHIBITION OF SALES TO EEA RETAIL INVESTORS—The Notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area, or the EEA. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU, as amended, or MiFID II; or (ii) a customer within the meaning of Directive 2002/92/EC, as amended, or the Insurance Mediation Directive, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. Consequently no key information document required by Regulation (EU) No 1286/2014, as amended, or the PRIIPs Regulation, for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

MiFID II product governance/Professional investors and ECPs only target market—With respect to initial purchasers which are MiFID manufacturers, solely for the purposes of each such manufacturer's product approval process, the target market assessment in respect of the Notes has led to the conclusion that: (i) the target market for the Notes is eligible counterparties and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Notes to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Notes (a "distributor") should take into consideration the manufacturers' target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Notes (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

Notice Concerning the United Kingdom

There are restrictions on the offer and sale of the Notes in the United Kingdom. All applicable provisions of the Financial Services and Markets Act 2000, or the FSMA, with respect to anything done by any person in relation to the Notes in, from or otherwise involving, the United Kingdom must be complied with. See "Plan of Distribution."

This offering circular is for distribution in the United Kingdom only to persons who (i) have professional experience in matters relating to investments falling within Article 19(5) of the FSMA (Financial

Promotion) Order 2005, as amended, or the Financial Promotion Order, (ii) are persons falling within Article 49(2)(a) to (e) "high net worth companies, unincorporated associations, etc." of the Financial Promotion Order, or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) in connection with the issue or sale of any Notes may otherwise lawfully be communicated or caused to be communicated (all of these persons together being referred to as "relevant persons" for purposes of this Notice Concerning the United Kingdom). This offering circular is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this offering circular relates is available only to relevant persons and will be engaged in only with relevant persons.

Each initial purchaser has represented and agreed that:

- it has only communicated or caused to be communicated, and will only communicate or cause to be communicated, any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of any Notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Notice to Investors in Hong Kong

The Notes may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), and no advertisement, invitation or document relating to the Notes may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Notice to Investors in Singapore

This offering circular has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this offering circular and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Notes may not be circulated or distributed, nor may the Notes be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined in the Securities and Futures Act, Chapter 289 of Singapore (the "SFA")) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

the securities or securities-based derivatives contracts (each as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law; or

(4) as specified in Section 276(7) of the SFA.

Any reference to the SFA is a reference to the Securities and Futures Act, Chapter 289 of Singapore and a reference to any term as defined in the SFA or any provision in the SFA is a reference to that term as modified or amended from time to time including by such of its subsidiary legislation as may be applicable at the relevant time.

Section 309B(1) Notification—the Issuer has determined, and hereby notifies all persons (including relevant persons (as defined in Section 309A(1) of the SFA)) that the Notes are prescribed capital markets products (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

FORWARD-LOOKING STATEMENTS

This offering circular contains forward-looking statements. These statements appear in a number of places in this offering circular and include statements regarding the intent, belief, or current and future expectations of our management with respect to our business, financial condition and results of operations. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "would," "expect," "intend," "project," "plan," "aim," "seek," "target," "anticipate," "believe," "estimate," "predict," "potential" or the negative of these terms or other similar terminology. These statements are not guarantees of future performance and are subject to various risks and uncertainties. Actual results, performance or achievements, or those of our industry, may differ materially from any future results, performance or achievements expressed or implied by these forward-looking statements. In addition, these forward-looking statements are necessarily dependent upon assumptions, estimates and data that may be incorrect or imprecise and involve known and unknown risks and uncertainties. These forward-looking statements involve statements regarding:

- the proposed acquisition of all of the issued and to-be-issued share capital of Shire plc by us (the "Shire Acquisition"), our ability to complete it or our ability to achieve its expected benefits;
- our goals and strategies;
- our ability to develop and bring to market new products;
- expected changes in our revenue, costs, expenditures, operating income or other components of our results;
- expected changes in the pharmaceutical industry or in government policies and regulations relating to it;
- developments regarding or the outcome of any litigation or other legal, administrative, regulatory or governmental proceedings;
- information regarding competition within our industry; or
- the effect of economic, political, legislative or other developments on our business or results of operations.

Forward-looking statements regarding operating income and operating results are particularly subject to a variety of assumptions, some or all of which may not be realized. Accordingly, the forward-looking statements included in this offering circular should not be interpreted as predictions or representations of future events or circumstances.

Potential risks and uncertainties include those identified and discussed in "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda," "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire," "Business of Takeda," "Business of Shire" and elsewhere in this offering circular. Given these risks and uncertainties, prospective investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date of this offering circular. We disclaim any obligation to update or announce publicly any revision to any of the forward-looking statements contained in this offering circular.

ENFORCEMENT OF CIVIL LIABILITIES

We are a Japanese joint stock corporation incorporated under the laws of Japan. The majority of our directors reside in Japan and a substantial portion of our assets and the assets of such persons are located outside of the United States. As a result, it may not be possible for holders or beneficial owners of the Notes to effect service of process within the United States or elsewhere outside Japan upon us or our directors or to enforce against us or our directors judgments obtained in U.S. courts or elsewhere, whether or not predicated upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States or any state thereof. Nishimura & Asahi, our Japanese counsel, has advised us that, in original actions or in actions for enforcement of judgments of U.S. federal or state courts brought before Japanese courts, there is in general doubt as to the enforceability of liabilities based solely on U.S. federal and state securities laws.

PRESENTATION OF FINANCIAL AND OTHER INFORMATION

In this offering circular, terms such as "we," the "Company," "our," "us" or "Takeda" refer to Takeda Pharmaceutical Company Limited and its consolidated subsidiaries, as the context requires. "Shire" refers to Shire plc and its consolidated subsidiaries, as the context requires.

On May 8, 2018, we announced the Shire Acquisition. See "Business of Takeda—Shire Acquisition." We and Shire operate as independent companies and will continue to do so until after the closing of the Shire Acquisition. For information on the business of Shire, see "Business of Shire." For information on the operating results and financial condition of Shire, see "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire."

Unless otherwise specified or required by the context: references to "days" are to calendar days; references to "years" are calendar years and to "fiscal years" are to our fiscal years ending March 31; references to "U.S. dollars," "dollars" and "$" are to United States dollars, references to "euros" and "€" are to Euros, references to "£" and "pounds sterling" are to Pounds Sterling and references to "yen" and "¥" are to Japanese yen. This offering circular contains certain amounts translated into Japanese yen solely for your convenience. However, these translations should not be construed as representations that the yen amounts have been, could have been or could be converted into dollars at that or any other rate.

In this offering circular, unless otherwise indicated, where information is presented in thousands, millions, billions or trillions of yen or thousands or millions of dollars, amounts of less than one thousand, one million, one billion or one trillion, as the case may be, have been rounded. Amounts presented as percentages have been rounded to the nearest tenth of a percent or one hundredth of a percent. Accordingly, the total of each column of figures may not be equal to the total of the individual items.

Except as otherwise indicated, all of the respective financial information with respect to us and with respect to Shire presented in this offering circular is presented on a consolidated basis.

In this offering circular, we include our audited consolidated financial statements as of March 31, 2017 and 2018 and for the fiscal years ended March 31, 2016, 2017 and 2018. We also include our unaudited condensed interim consolidated financial statements as of September 30, 2018 and for the six months ended September 30, 2017 and 2018, which are prepared in accordance with International Accounting Standards ("IAS") 34 and the rules of the Tokyo Stock Exchange.

We separately include in this offering circular the audited consolidated financial statements of Shire as of December 31, 2016 and 2017 and for the years ended December 31, 2015, 2016 and 2017 and the unaudited consolidated financial statements of Shire as of September 30, 2018 and for the three and nine months ended September 30, 2017 and 2018. We also present an unaudited pro forma condensed combined balance sheet and statement of income as of and for the fiscal year ended March 31, 2018. Our consolidated financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IFRS"). The term IFRS also includes IAS and the related interpretations of the committees (Standard Interpretations Committee and International Financial Reporting Interpretations Committee). The consolidated financial statements of Shire are prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). Therefore, our results of operations are not directly comparable with those of Shire.

Effective from the fiscal year ending March 31, 2019, sales of certain products in Japan are disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. Sales of individual products for the fiscal year ended March 31, 2018 and for the six months ended September 30, 2017 have been revised retroactively on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of figures from the prior fiscal periods. Figures for the fiscal years ended March 31, 2016 and 2017 have not been reclassified retroactively. Except where otherwise stated, sales figures in this offering circular are shown after restatement.

AVAILABLE INFORMATION

We have agreed that so long as any of the Notes are "restricted securities" within the meaning of Rule 144(a)(3) under the Securities Act, we will, at any time we are not subject to Section 13 or 15(d) of the U.S. Securities Exchange Act of 1934, as amended, (the "Exchange Act"), nor exempt from the reporting requirements under the Exchange Act pursuant to Rule 12g3-2(b) under the Exchange Act, provide to each holder of restricted securities and to each prospective purchaser (as designated by the holder) of restricted securities, upon request of the holder or prospective purchaser, the information required to be provided by Rule 144A(d)(4)(i) under the Securities Act.

MARKET DATA

Market data used in this offering circular has been obtained from independent industry sources and publications as well as from research reports prepared for other purposes. We have not independently verified the data obtained from these sources, and we cannot assure of the accuracy or completeness of the data. Forward-looking information obtained from these sources is subject to the same qualifications and the additional uncertainties regarding the other forward-looking statements in this offering circular.

GLOSSARY

The following technical terms used in this offering circular have the meanings indicated below:

Term	Description
Anaplastic lymphoma kinase (ALK)	An enzyme with chromosomal rearrangements that are key drivers in a subset of NSCLC patients.
Antibody-drug conjugate (ADC)	An important pharmaceutical class of drugs designed as a targeted therapy for the treatment of cancer.
Ataxia	An inability to coordinate voluntary muscular movements that is symptomatic of some disorders of the central nervous system.
Chronic myeloid leukemia	A form of leukemia affecting predominantly blood-forming cells (called myeloid cells) in the bone marrow and leading to the accumulation of these leukemia cells in the blood.
Crohn's disease	An inflammatory bowel disease (IBD) that causes inflammation of the digestive tract lining, which can lead to abdominal pain, severe diarrhea, fatigue, weight loss and malnutrition.
Endometriosis	The presence and growth of functioning endometrial tissue in places other than the uterus that often results in severe pain and infertility.
Epidermal growth factor receptor (EGFR)	The protein found on the surface of some cells to which epidermal growth factor binds, causing the cells to divide. It is found at abnormally high levels on the surface of many types of cancer cells, so these cells may divide excessively in the presence of epidermal growth factors. Also called ErbB1 and HER1.
Epilepsy	Any of various disorders marked by abnormal electrical discharges in the brain and typically manifested by sudden brief episodes of altered or diminished consciousness, involuntary movements, or convulsions.
Gastroenterology (GI)	The branch of medicine concerned with the structure, functions, diseases, and pathology of the stomach and intestines.
Gastroesophageal reflux disease (GERD)	A more serious form of gastroesophageal reflux (GER). GER occurs when the lower esophageal sphincter opens spontaneously, for varying periods of time, or does not close properly, causing stomach contents to rise up into the esophagus.
Generic drug	A pharmaceutical product, usually intended to be interchangeable with an innovator product, which is manufactured without a license from the innovator company and marketed after the expiry date or invalidation of the patent or other exclusive rights.

Term	Description
Good Clinical Practice (GCP)	A set of standards for the design, conduct, performance, monitoring, auditing, recording, analysis and reporting of clinical trials that provides assurance that the data and reported results are credible and accurate, and that the rights, integrity and confidentiality of trial subjects are protected.
Good Laboratory Practice (GLP)	A set of rules and criteria that provides a framework within which laboratory studies are planned, performed, monitored, recorded, reported and archived.
Hodgkin's lymphoma (HL)	Hodgkin's disease is a type of lymphoma. Lymphoma is cancer of lymph tissue found in the lymph nodes, spleen, liver, and bone marrow.
Human monoclonal antibody	An antibody, which is used to identify, quantify, isolate or remove the target molecule in complex biological mixtures or in tissues and injected into patients for the treatment of a wide range of diseases including infections, cancer, cardiovascular diseases and autoimmune diseases.
Hypertension	1: Abnormally high arterial blood pressure that is usually indicated by an adult systolic blood pressure of 140 mm Hg or greater or a diastolic blood pressure of 90 mm Hg or greater that is chiefly of unknown cause but may be attributable to a preexisting condition (such as a renal or endocrine disorder), that typically results in a thickening and inelasticity of arterial walls and hypertrophy of the left heart ventricle and that is a risk factor for various pathological conditions or events (such as heart attack, heart failure, stroke, end-stage renal disease or retinal hemorrhage). 2: A systemic condition resulting from hypertension that is either symptomless or is accompanied especially by dizziness, palpitations, fainting, or headache.
Indication	A symptom or particular circumstance that justifies a specific medical treatment or procedure.
Lead compound	A chemical compound that has pharmacological or biological activity and whose chemical structure is used as a starting point for chemical modifications in order to improve potency, selectivity, or pharmacokinetic parameters.
LH-RH agonist	A compound that is similar to luteinizing hormone-releasing hormone (LH-RH) in structure and can act like LH-RH.
Major depressive disorder (MDD)	A medical illness that causes a persistent feeling of sadness and loss of interest. MDD can cause physical symptoms as well.

Term	Description
Multiple myeloma (MM)	A type of cancer affecting plasma cells, a type of white blood cell that produces antibodies and is located in the bone marrow, that is characterized by the presence of numerous myelomas in various bones of the body.
Neuroscience	The study of the central nervous system (i.e., the brain and the spinal cord) and the therapeutic area relating to disorders thereof.
Non-small cell lung cancer (NSCLC)	A group of lung cancers excluding small cell lung cancer that affect various types of lung cells and together constitute the most common types of lung cancer. The most common types of NSCLC are adenocarcinoma, squamous cell carcinoma and large cell carcinoma.
Oncology	The branch of medicine dealing with the physical, chemical, and biological properties of tumors and cancers, including study of their development, diagnosis, treatment and prevention.
Parkinson's disease	A chronic progressive neurological disease chiefly affecting people in later life that is linked to decreased dopamine production in the substantia nigra. Parkinson's disease is of unknown cause, and is marked especially by tremor of resting muscles, rigidity, slowness of movement, impaired balance, and shuffling gait. Also referred to as paralysis agitans, parkinsonian syndrome, parkinsonism or Parkinson's syndrome.
Philadelphia chromosome positive acute lymphoblastic leukemia	A form of leukemia affecting immature white blood cells called lymphocytes in the bone marrow and characterized by the presence of the Philadelphia chromosome, which refers to a specific genetic abnormality in the leukemia cells.
Prescription drug	A drug that is regulated by legislation to require a medical prescription from a doctor, dentist or other healthcare professional before it can be obtained.
Proteasome	A protein degradation "machine" within the cell that can digest a variety of proteins into short polypeptides and amino acids.
Proteasome inhibitor	A drug that blocks the action of proteasomes, which are cellular complexes that break down proteins such as the p53 protein. Proteasome inhibitors are being studied in the treatment of cancer, especially MM.
Proton pump	An enzyme that functions in the final stages of acid secretion in gastric parietal cells.
Proton pump inhibitor	A drug whose main action is to reduce the production of acid by the stomach and works to help symptoms of GERD.

Term	Description
Quasi-drugs	A category of products found in the Act on Securing Quality, Efficacy and Safety of Pharmaceuticals, Medical Devices, Regenerative and Cellular Therapy Products, Gene Therapy Products, and Cosmetics of Japan (Act No. 145 of 1960, as amended), or the Pharmaceutical Act. Quasi-drugs are products that have a mild effect on the human body, used to treat conditions such as the following: nausea, halitosis (bad breath), body odor, heat rash, skin inflammation, hair loss and unwanted hair growth. Quasi-drugs also include certain health drinks that contain vitamins and/or calcium and digestive or gastric remedies.
Relapsed mantle cell lymphoma	A late form of non-HL, which is a cancer of the white blood cells.
Schizophrenia	Schizophrenia is a severe, lifelong brain disorder. Persons suffering from schizophrenia may hear voices, experience hallucinations or believe that others are reading or controlling their minds.
Substance patent	The patent covering a drug's active ingredient.
Systemic anaplastic large cell lymphoma (sALCL)	Anaplastic large cell lymphoma (ALCL) is a distinct form of non-Hodgkin lymphoma. Systemic ALCL is more common than the cutaneous form and most frequently occurs in the first three decades of life. Clinically, systemic ALCL is characterized by advanced disease at presentation (75% of pediatric ALCL) with a high incidence of nodal involvement (>90%), frequent association with B symptoms (75%), and frequent extra-nodal involvement including skin (25%), lung (10%), bone (17%) and liver (8%).
Ulcerative colitis	A form of inflammatory bowel disease (IBD). Ulcerative colitis is a form of colitis, a disease of the intestine, specifically the large intestine or colon, which causes ulcers, or open sores, in the colon. The main symptom of active disease is usually constant diarrhea mixed with blood, of gradual onset. Ulcerative colitis has similarities to Crohn's disease, another form of IBD.

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SUMMARY

You should read this summary together with the more detailed information, including "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda," "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire," "Description of the Notes" and the respective financial statements and related notes of Takeda and of Shire appearing elsewhere in this offering circular.

Takeda Pharmaceutical Company Limited

Overview

We are a global, research and development-driven pharmaceutical company with a presence in more than 70 countries. We bring highly-innovative, life-changing medicines to patients across the globe, with prescription drugs marketed directly or through our partners in approximately 100 countries worldwide. Our global workforce of more than 27,000 employees is committed to bringing better health and a brighter future to patients. We develop and market pharmaceutical products to treat a broad range of medical conditions including GI diseases, cancer, neurological and psychiatric diseases and other medical conditions, including diabetes and hypertension, as well as vaccines. We are also committed to our corporate social responsibility program, which is dedicated to global health, and our access to medicine strategy, which aims to increase access to innovative and potentially life-saving medicines for patients with some of the highest unmet medical needs across the world.

We have a focused, agile and innovative research and development organization whose goal is to impact patients' lives by translating science into transformative medicines. We focus on highly innovative medicine, with 41 clinical stage assets with active development programs as of October 31, 2018, more than one-third of which have orphan drug designation. We focus our research and development efforts on our three key therapeutic areas: GI, oncology and neuroscience, plus vaccines. We have successfully built a distinct research and development strategy based on therapeutic area focus, a robust research engine and a comprehensive, differentiated partnership model of collaborations with academia, biotech firms and startups. Our research and development program aims to leverage a combination of internal and external expertise to deliver a sustainable pipeline, and we currently have approximately 180 active partnerships, helping us actively pursue additional innovation.

We are focusing on three key priorities in the mid-term: growing our portfolio, strengthening our pipeline and boosting our profitability. Pursuing portfolio growth involves a focus on our expected key growth drivers, namely the three key therapeutic areas of GI, oncology and neuroscience, as well as emerging markets. This also includes further strengthening our specialty capabilities, while at the same time working to optimize our portfolio through targeted acquisitions and selected disposals of non-core assets.

Shire Acquisition

Overview

On May 8, 2018, the boards of Takeda and Shire reached agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire, which we refer to as the "Shire Acquisition." See "Business of Takeda—Shire Acquisition."

Takeda Following the Shire Acquisition

A global, values-based, R&D-driven biopharmaceutical player headquartered in Japan

We believe that there is a compelling strategic and financial rationale for undertaking the Shire Acquisition, and that the Shire Acquisition will allow us to create a global, values-based, research and development-driven biopharmaceutical company incorporated and headquartered in Japan, with an attractive geographic footprint and the scale to drive future development. Takeda had the highest global sales of prescription drugs among Japanese pharmaceutical companies in the fiscal year ended March 31, 2017, while Shire is a rare-diseases focused leader committed to differentiated and high patient-impact medicines. Takeda generated consolidated revenue for the fiscal year ended March 31, 2018 of ¥1,770.5 billion, while Shire

generated revenue of $15,160.6 million in the year ended December 31, 2017 (or ¥1,703.5 billion, based on an exchange rate of $1.00 to ¥112.359). Excluding sales of non-prescription drug products, a combination of our total sales in the fiscal year ended March 31, 2018 and Shire's total sales in the fiscal year ended December 31, 2017 of ¥3,214.0 billion would have placed us within the top ten pharmaceutical companies by prescription drug revenue worldwide in 2017 according to EvaluatePharma. On a pro forma basis, revenue of the combined company would have been ¥3,474.0 billion for the fiscal year ended March 31, 2018. We expect further revenue growth as a combined company from our respective growth driver products, including *NINLARO*, *ALUNBRIG*, *ADCETRIS, ENTYVIO*, *TAKECAB* and *TRINTELLIX* from Takeda's portfolio and *VYVANSE*, *TAKHZYRO* and various immunoglobulin products from Shire's portfolio.

This expanded revenue base will allow the combined company to produce significant ongoing earnings streams. Takeda produced ¥186.7 billion ($1,661.7 billion, based on an exchange rate of $1.00 to ¥112.359) of net profit for the year in the fiscal year ended March 31, 2018, while Shire produced $4,271.5 million (¥479.9 billion, based on an exchange rate of $1.00 to ¥112.359) of net income in the fiscal year ended December 31, 2017. On a non-IFRS and non-U.S. GAAP basis, Takeda's Adjusted EBITDA in the fiscal year ended March 31, 2018 was ¥377.7 billion ($3.4 billion, based on an exchange rate of $1.00 to ¥112.359), while Shire's Non-GAAP EBITDA for the fiscal year ended December 31, 2017 was $6,492.4 million (¥729.5 billion, based on an exchange rate of $1.00 to ¥112.359). Although our Adjusted EBITDA and the Non-GAAP EBITDA of Shire are defined differently and based on different accounting standards, and therefore are not directly comparable (for reconciliations to the most directly comparable IFRS and U.S. GAAP measures, see "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Certain Non-IFRS Performance Measures" and "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire—Non-GAAP EBITDA," respectively), we believe they are helpful in assessing our and Shire's respective historical performance. In addition to our respective historical Adjusted EBITDA (for Takeda) and Non-GAAP EBITDA (for Shire), we have also identified cost synergies of ¥157 billion (based on the identified cost synergies of $1.4 billion annually we expect to achieve by the end of the third fiscal year after the completion of the Shire Acquisition, and at an exchange rate of $1.00 to ¥112.359), and aim to achieve additional revenue growth from our growth-driver and other products, and to pursue additional cost savings through our ongoing cost control initiatives.

We believe that research and development will be a key driver of this growth. Takeda's research and development expense totaled ¥325.4 billion in the fiscal year ended March 31, 2018 (or $2.9 billion, based on an exchange rate of $1.00 to ¥112.359), while Shire's totaled $1,763.3 million (or ¥198.1 billion, based on an exchange rate of $1.00 to ¥112.359) for the fiscal year ended December 31, 2017. Following the integration of Shire's business into ours, including our rationalization initiatives, we expect the combined group to have total research and development expenditures of approximately 1.5 times that of Takeda in the fiscal year ended March 31, 2018.

Robust presence in core therapeutic areas

Takeda and Shire focus on complementary therapeutic areas. After combining our strengths in GI, oncology and neuroscience with Shire's leading positions in rare diseases and plasma-derived therapies, we expect approximately 75% of sales of the combined company to be concentrated in five main therapeutic areas, namely GI, oncology, neuroscience, rare diseases and plasma-derived therapies. Following the completion of the Shire Acquisition, we will redefine our core therapeutic areas from "3+1" to "4 (GI, Oncology, Neuroscience and rare diseases) + 2 (vaccines and plasma derived therapies)."

Attractive geographic footprint aligned with market opportunity

The geographic footprint of the combined company following the completion of the Shire Acquisition will allow us to take advantage of expected growth opportunities in the pharmaceutical industry. According to IQVIA, the global pharmaceutical market totaled $1,157 million in 2017 (or ¥130.0 billion, based on an exchange rate of $1.00 to ¥112.359), with the United States accounting for 40%, Japan accounting for 7%, Europe accounting for 21%, China accounting for 11% and the rest of the world accounting for 21%. IQVIA expects that the pharmaceutical market is expected to grow from 2017 to 2022 at a compound annual growth rate of 5.2% in the United States, 5.1% in China, 3.1% in Europe and 4.5% overall worldwide with a compound annual rate of decline of 0.8% in Japan during the same period.

On a combined historical pro forma basis, the combined group would have generated approximately 49% of sales in the United States, 18% in Japan and 33% in the rest of the world in the fiscal year ended March 31, 2018, and we expect that the United States, the largest and the fastest growing market, in particular will account for approximately half of our combined revenue in the future, giving us an attractive geographic presence to take advantage of the market opportunities worldwide.

Recently launched and filed innovative drugs drive cash generation and growth

The combined company will benefit from a strong product portfolio, with recently launched products in particular driving growth. Takeda's products *NINLARO*, *ALUNBRIG*, *ADCETRIS*, *ENTYVIO*, *TAKECAB* and *TRINTELLIX*, and Shire's products *VYVANSE*, *TAKHZYRO* and its various immunoglobulin products, accounted for a total of ¥886.7 billion of combined revenue in the fiscal year ended March 31, 2018 (for our products) and December 31, 2017 (for Shire products) (in the case of Shire, based on an exchange rate of $1.00 to ¥112.359), and for total revenue growth of 25.4% compared to the previous fiscal year. Most of the aforementioned products were launched in key regions within the last five years (in the case of *ADCETRIS*, in the early 2010s), and we expect the continued performance of these recently-launched products to drive growth at the combined company in the future.

The following table shows the key indications, first launch dates in each region and product sales data of our key products for the fiscal years ended March 31, 2017 and 2018, as well as those of Shire's key products for the fiscal years ended December 31, 2016 and 2017.

				First launch in key region			Product sales		
Entity	**Therapeutic Area**	**Product**	**Key indications**	**US**	**JPN**	**EU**	**2016[1]**	**2017[1]**	**YoY**
							(billions of yen or millions of dollars, except percentages)		
Takeda	Oncology	*NINLARO*	Multiple Myeloma	2015	2017	2016	¥ 29.4 / $262	¥ 46.4 / $413	58.1%
		ALUNBRIG	Non-small cell lung cancer	2017	—	Not yet launched	—	¥ 2.8 / $25	N/A
		ADCETRIS	Hodgkin's lymphoma	—[2]	2014	2012	¥ 30.1 / $268	¥ 38.5 / $343	27.8%
	GI	*ENTYVIO*	Ulcerative colitis, Crohn's disease	2014	Not yet launched	2014	¥143.2 / $1,274	¥201.4 / $1,792	40.6%
		TAKECAB	Acid-related diseases	—	2015	—	¥ 34.1 / $303	¥ 55.1[3] / $490	61.7%
	Neuroscience	*TRINTELLIX*	Major depressive disorder	2014	Not yet launched	—	¥ 31.9 / $284	¥ 48.4 / $431	51.6%
		VYVANSE	ADHD	2007	—	2013	¥226.3 / $2,014	¥242.8 / $2,161	7.3%
Shire	HAE	*TAKHZYRO*	Hereditary angioedema	2018	—	2018	N/A	N/A	N/A
	Plasma derived therapies	Immunoglobulin[4]	—	—	—	—	¥212.3 / $1,890[5]	¥251.3 / $2,237	18.4%
						Total	**¥707.3 / $6,295**	**¥886.7 / $7,892**	**25.4%**

Notes:

(1) "2016" refers to the fiscal year ended March 31, 2017 for Takeda, and the fiscal year ended December 31, 2016 for Shire, respectively. "2017" refers to the fiscal year ended March 31, 2018 for Takeda, and the fiscal year ended December 31, 2017 for Shire, respectively.

(2) *ADCETRIS* was launched in the United States in 2011. Seattle Genetics Inc. has commercialization rights to *ADCETRIS* in the United States.

(3) Effective from the fiscal year ending March 31, 2019, sales of certain products in Japan are disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. Sales of individual products for the fiscal year ended March 31, 2018 and for the six months ended September 30, 2017 have been revised retroactively on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of figures from the prior fiscal periods. Figures for the fiscal years ended March 31, 2016 and 2017 have not been reclassified retroactively.
Sales of *TAKECAB* in the chart above are prior to this restatement. After restatement, sales of *TAKECAB* were ¥48.5 billion in the fiscal year ended March 31, 2018 (or $430 million, based on an exchange rate of $1.00 = ¥112.359).

(4) Includes various immunoglobulin products including Gammagard Liquid.

(5) 2016 immunoglobulin therapies revenue includes sales before and after Shire's acquisition of Baxalta in 2016.

Strengthened pipeline and expanded R&D capacity leveraging Boston and Shonan R&D hub

As a result of our efforts to strengthen our pipeline, the total number of our New Molecular Entity ("NME") clinical stage-ups in the fiscal year ended March 31, 2018 increased to 17 from 5 in the fiscal year ended March 31, 2017. Moreover, there were seven additional NME clinical stage-ups from April 1, 2018 to October 31, 2018. We will remain committed to developing highly-innovative new medicines following the completion of the Shire Acquisition, and the combined company will benefit from a robust, modality-diverse pipeline, combining Takeda's strength in research and early stage development and small molecule capabilities with Shire's expertise in rare diseases and its modality-diverse mid- and late-stage pipeline enriched with large molecule programs, innovative gene therapy and recombinant protein technologies. In parallel, we intend to continue our strategy of building reciprocally advantageous external partnerships out of our research and development hub in the Boston area.

Significant margin expansion opportunities through continuing cost-saving initiatives and further cost savings from integration

Following the completion of the Shire Acquisition and the subsequent integration of Shire's business into ours, we expect to be able to achieve significant, recurring pre-tax synergies of at least $1.4 billion annually by the end of the third fiscal year after the completion of the Shire Acquisition. We expect approximately 53% of these savings to come from efficiencies in our sales, marketing and administrative functions, including sales and marketing efficiencies, the consolidation of overlapping office locations, the elimination of duplicate IT systems and of duplicated costs across central support functions. Another approximately 43% is expected from research and development synergies, including rationalizing ongoing research and early stage pipeline programs and reducing overlapping resources. The remainder is expected from our manufacturing and supply functions, particularly the in-sourcing of oral solid dose manufacturing by utilizing excess capacity, efficiencies in operational procurement spending and reduced overhead expenses. We believe there are other potential synergy opportunities, particularly the pursuit of additional revenue growth by leveraging attractive geographic footprint and enhancing our position in our key therapeutic areas. We believe that the realization of these synergies will require non-recurring costs of approximately $2.4 billion in the first three fiscal years following the completion of the Shire Acquisition.

We also intend to continue applying our ongoing "Global Opex Initiative," our organization-wide cost savings effort, to the combined company. The Global Opex Initiative consists of three work streams: "Pay Less" (procurement savings), "Buy Less" (consumption savings) and "Work Better" (organizational optimization). Under "Pay Less", we have put into place price management initiatives across our procurement structure. Under "Buy Less", we have rolled out new policies and guidelines, and believe this has led to significant consumption behavior changes in major cost areas. We have also completed a zero-based budgeting process across our organization. Finally, under "Work Better", we have identified opportunities for organizational optimization and we have initiated a number of functional transformations. In 2017, for example, we formed "Takeda Business Services", a single function consisting of our human resources, finance and procurement functions to realize greater standardization and efficiency. As a result of these initiatives, Adjusted EBITDA margin (calculated as the ratio of Adjusted EBITDA to revenue), improved from 17.5% for the fiscal year ended March 31, 2017 to 21.3% for the fiscal year ended March 31, 2018. Similarly, Adjusted EBITDA margin improved from 24.5% for the six months ended September 30, 2017 to 27.4% for the six months ended September 30, 2018. By applying these initiatives to the combined company, we plan to target additional cost savings and create leaner and more efficient operations.

Diligent financial management policy with a focus on maintaining an investment-grade credit rating and well-established dividend policy

By staying focused on a diligent financial management policy, we intend to maintain our investment grade rating and our well-established dividend policy. We have identified three main pathways to generate and unlock capital: targeting sustainable profit growth, pursuing initiatives to reduce working capital, including extension of supplier terms, initiatives to lower our days inventory outstanding (the average number of days it takes to turn our inventory into sales) and improved focus on our days sales outstanding (the average number of days it takes to collect a payment after a sale has been made), and disposal of assets. Our financial and capital allocation policies will focus on four main priorities: internal investment in research and development and product launches, our commitment to maintain our investment grade credit rating, a dividend for the fiscal year ending March 31, 2019 that is consistent with the previous fiscal year and disciplined acquisitions and business development activity. In particular, we believe that the substantial cash flow generation expected to result from the Shire Acquisition will enable us to maintain our well-established dividend policy, and de-lever following completion. We intend to maintain our investment grade credit rating, with a target net debt to Adjusted EBITDA ratio of 2.0x or less within three to five years following completion of the Shire Acquisition, and are considering disposals of non-core assets to increase the pace of deleveraging.

The address of our registered head office is 1-1, Doshomachi 4-Chome, Chuo-ku, Osaka, 540-8645, Japan, and the address of our global head office is 1-1, Nihonbashi-Honcho 2-Chome, Chuo-ku, Tokyo, 103-8668, Japan; telephone number: 81-3-3278-2306. Our corporate website is www.Takeda.com; the information on our website does not constitute a part of this offering circular.

The Offering

Issuer:	Takeda Pharmaceutical Company Limited
Securities Offered:	€● aggregate principal amount of senior notes due 2020; €● aggregate principal amount of senior floating rate notes due 2020; €● aggregate principal amount of senior notes due 2022; €● aggregate principal amount of senior floating rate notes due 2022; €● aggregate principal amount of senior notes due 2026; and €● aggregate principal amount of senior notes due 2030
Offering Price:	For the 2020 notes: ●% and accrued interest, if any For the 2020 floating rate notes: ●% and accrued interest, if any For the 2022 notes: ●% and accrued interest, if any For the 2022 floating rate notes: ●% and accrued interest, if any For the 2026 notes: ●% and accrued interest, if any For the 2030 notes: ●% and accrued interest, if any
Maturity Date:	The 2020 notes will mature on ●, 2020. The 2020 floating rate notes will mature on ●, 2020. The 2022 notes will mature on ●, 2022. The 2022 floating rate notes will mature on ●, 2022. The 2026 notes will mature on ●, 2026. The 2030 notes will mature on ●, 2030.
Status of the Notes/Ranking:	Each series of the Notes will be our direct, unsecured and unsubordinated general obligations and will have the same rank in liquidation as all of our other unsecured and unsubordinated debt.
Minimum Denomination:	Each series of the Notes will be issued only in registered form in minimum denominations of €100,000 and integral multiples of €1,000 in excess thereof.
Payments of Principal and Interest on the Fixed Rate Notes:	The 2020 notes will bear interest at an annual rate of ●%, the 2022 notes will bear interest at an annual rate of ●%, the 2026 notes will bear interest at an annual rate of ●% and the 2030 notes will bear interest at an annual rate of ●%. The fixed rate notes will bear interest accruing from ●, 2018, payable annually in arrears on ● of each year, with the first interest payment to be made on ●, 2019. Interest on the Notes will accrue from the date of original issuance or, if interest has already been paid, from the date it was most recently paid. We will compute interest on the basis of a 360-day year consisting of twelve 30-day months rounding the resultant figure to the nearest sub-unit, half of any such sub-unit being rounded upwards. Principal will be repaid at a price of 100% of the principal amount of the Notes on the maturity date. If any date for payment of principal or interest (or additional amounts, if any) falls on a day that is not a business day, then payment of principal or interest (or additional amounts, if any) need not be made on such date but may be made on the next succeeding business day. Any payment made on such next succeeding business day shall have the same force

and effect as if made on the due date, and no interest shall accrue with respect to such payment for the period after such date. See "Description of the Notes—Principal and Maturity" and "Description of the Notes—Interest—Fixed Rate Notes."

Payments of Principal and Interest on the Floating Rate Notes: . . . . . The 2020 floating rate notes will bear interest at an annual rate equal to three-month EURIBOR plus ●%, which will be reset quarterly. The 2022 floating rate notes will bear interest at an annual rate equal to three-month EURIBOR plus ●%, which will be reset quarterly.

The floating rate notes will bear interest accruing from ●, 2018, payable quarterly in arrears on ●, ●, ● and ● of each year, with the first interest payment to be made on ●, 2019. Interest on the Notes will accrue from the date of original issuance or, if interest has already been paid, from the date it was most recently paid. We will compute interest on the basis of the actual number of days in the relevant Floating Rate Interest Period (as defined herein) divided by 360. Principal will be repaid at a price of 100% of the principal amount of the Notes on the maturity date. The Floating Interest Rate (as defined herein) for each Floating Rate Interest Period will be set on ●, ●, ● and ● of each year, and will be set for the initial Floating Rate Interest Period on ●, 2018 until the principal on the floating rate notes is paid or made available for payment. If any Floating Rate Interest Reset Date (as defined herein) (other than the initial Floating Rate Interest Reset Date occurring on ●, 2018) and Floating Rate Interest Payment Date (as defined herein) would otherwise be a day that is not a EURIBOR business day (as defined herein), such Floating Rate Interest Reset Date and Floating Rate Interest Payment Date shall be the next succeeding EURIBOR business day, unless the next succeeding EURIBOR business day is in the next succeeding calendar month, in which case such Floating Rate Interest Reset Date and Floating Rate Interest Payment Date shall be the immediately preceding EURIBOR business day. See "Description of the Notes—Principal and Maturity" and "Description of the Notes—Interest—Floating Rate Notes."

Issuance in Euros: . . . . . Initial holders of the Notes will be required to pay for the Notes in euros, and principal, premium, if any, and interest payments and additional amounts, if any, in respect of the Notes will be payable in euros.

If, on or after the date of this offering circular, the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or the euro is no longer used by the then member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions within the international banking community, then all payments in respect of the Notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted to U.S. dollars on the basis of the most recently available market exchange rate for euros, as determined by us in our sole discretion. Any payment in respect of the Notes so made in U.S. dollars will not constitute an event of default under the fiscal agency agreement or the Notes. Neither the fiscal agent nor the paying agent will be responsible for obtaining exchange rates, effecting conversions or otherwise handling redenominations.

Optional Redemption: . . . . . We have the option to redeem the 2020 notes, the 2022 notes, the 2026 notes and the 2030 notes, in whole or in part, at any time prior to ●, 2020 with respect to the 2020 notes, ●, 2022 (the "2022 par call date") with respect to the 2022 notes, ●, 2026 (the "2026 par call date") with respect to the 2026 notes, and ●, 2030 (the "2030 par call date") with respect to the 2030 notes, in each case upon giving not less than 30 nor more than 60 days' notice of redemption to the fiscal agent and the holders.

The redemption price for the Notes to be redeemed will be equal to the greater of:

(i) 100% of the principal amount of the Notes being redeemed; or

(ii) the sum of the present values of the principal and the remaining scheduled payments of interest on the Notes being redeemed (exclusive of interest accrued to the date of redemption) that would be due if such Notes were redeemed on the par call date, discounted to the date of redemption on an annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Comparable Government Bond Rate (as defined in "Description of the Notes—Redemption—Optional Redemption") plus ● basis points in the case of the 2020 notes, ● basis points in the case of the 2022 notes, ● basis points in the case of the 2026 notes and ● basis points in the case of the 2030 notes;

plus, in each case, accrued and unpaid interest on the principal amount of the Notes being redeemed to, but excluding, the date of redemption.

We also have the option to redeem the 2022 notes, the 2026 notes and the 2030 notes, in whole or in part, at any time on or after the 2022 par call date with respect to the 2022 notes, the 2026 par call date with respect to the 2026 notes and the 2030 par call date with respect to the 2030 notes, in each case upon giving not less than 30 days nor more than 60 days' notice of redemption to the fiscal agent and the holders, at a redemption price equal to 100% of the principal amount of the Notes to be redeemed plus accrued and unpaid interest on the principal amount of the Notes being redeemed up to, but excluding, the date of redemption. See "Description of the Notes—Redemption—Optional Redemption."

Special Mandatory Redemption: . . . . . If (i) the Shire Acquisition has not been consummated on or prior to the Long Stop Date (as defined below) or (ii) we otherwise publicly announce that the Shire Acquisition will not be consummated, then we will be required to redeem all outstanding Notes on the special mandatory redemption date at a special mandatory redemption price equal to 101% of the aggregate principal amount of the Notes plus accrued and unpaid interest, if any, to, but excluding, the special mandatory redemption date. See "Description of the Notes—Redemption—Special Mandatory Redemption."

The "special mandatory redemption date" means the 20th day (or if such day is not a business day, the first business day thereafter) after the earliest to occur of (1) the Long Stop Date, if the Shire Acquisition has not been consummated on or prior to the Long Stop Date or (2) the date of public announcement by the Company that the Shire Acquisition will not be consummated.

The "Long Stop Date" means May 8, 2019, or such later date as may be agreed upon in accordance with the Co-Operation Agreement,

	dated May 8, 2018, between Takeda Pharmaceutical Company Limited and Shire plc; provided, however, that any such later date shall not extend beyond May 8, 2020.
Optional Tax Redemption:	Any series of the Notes may be redeemed at any time, at our option and sole discretion, in whole, but not in part, and upon giving not less than 30 nor more than 60 days' notice of redemption to the fiscal agent and the holders (which notice shall be irrevocable), at the principal amount of the Notes together with interest accrued to the date fixed for redemption and any additional amounts thereon, if we have been or will be obliged to pay any additional amounts with respect to such Notes as a result of (a) any change in, or amendment to, the laws or regulations of Japan or any political subdivision or any authority thereof or therein having power to tax, or any change in application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the date of the issuance of the Notes or (b) after the completion of any Succession Event (as defined in "Description of the Notes—Merger, Consolidation, Sale or Disposition"), any change in, or amendment to, the laws or regulations of the jurisdiction of the succeeding entity or any political subdivision or any authority thereof or therein having power to tax, or any change in application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the date of such Succession Event, and in either case such obligation cannot be avoided through the taking of reasonable measures available to us or the succeeding entity, as the case may be. See "Description of the Notes—Redemption—Optional Tax Redemption."
Additional Amounts:	All payments of principal and interest in respect of the Notes shall be made without withholding or deduction for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Japan, or any authority thereof or therein having power to tax, unless such withholding or deduction is required by law or by the authority. In such event, we shall pay, subject to certain exceptions, such additional amounts as will result in the receipt by the holders of such amounts as would have been received by them had no such withholding or deduction been required, subject to certain exceptions. See "Description of the Notes—Taxation and Additional Amounts."
Use of Proceeds:	We intend to use the net proceeds of the sale of the Notes to fund a portion of the cash consideration to be paid in connection with the Shire Acquisition.
Global Notes:	Each series of the Notes will be initially represented by one or more global certificates in fully registered form without interest coupons (the "Global Notes"). The Global Notes will be deposited upon issuance with, and registered in the name of a nominee of, a common depositary of Euroclear and Clearstream for the accounts of their respective account holders. Beneficial interests in the Global Notes will be shown on, and transfers thereof will be effected only through, records maintained by the depositaries and their participants. The sole holder of the Notes represented by a Global Note will at all times be Euroclear, Clearstream or a nominee thereof (or a successor of Euroclear, Clearstream or a nominee thereof), and voting and other consensual rights of holders of the Notes will be exercisable by beneficial holders

of the Notes only indirectly through the rules and procedures of the depositaries from time to time in effect. Beneficial interests in a Global Note may not be exchanged for definitive notes except in the limited circumstances described under "Description of the Notes—Book Entry, Delivery and Form—Global Clearance and Settlement—Exchange of Global Notes for Definitive Notes."

The security numbers for the Notes are:

2020 notes:

For the Notes sold under Regulation S:

ISIN: ●
Common Code: ●

For the Notes sold under Rule 144A:

ISIN: ●
Common Code: ●

2020 floating rate notes:

For the Notes sold under Regulation S:

ISIN: ●
Common Code: ●

For the Notes sold under Rule 144A:

ISIN: ●
Common Code: ●

2022 notes:

For the Notes sold under Regulation S:

ISIN: ●
Common Code: ●

For the Notes sold under Rule 144A:

ISIN: ●
Common Code: ●

2022 floating rate notes:

For the Notes sold under Regulation S:

ISIN: ●
Common Code: ●

For the Notes sold under Rule 144A:

ISIN: ●
Common Code: ●

2026 notes:

For the Notes sold under Regulation S:

ISIN: ●
Common Code: ●

For the Notes sold under Rule 144A:

ISIN: ●
Common Code: ●

	2030 notes:
	For the Notes sold under Regulation S:
	ISIN: ●
	Common Code: ●
	For the Notes sold under Rule 144A:
	ISIN: ●
	Common Code: ●
Governing Law:	The fiscal agency agreement and the Notes will be governed by and construed in accordance with the laws of the State of New York.
Rating:	It is expected that the Notes will be rated ● by Moody's and ● by S&P Global Ratings. A security rating is not a recommendation to buy, sell or hold securities and may be subject to suspension, reduction or withdrawal at any time by the assigning rating agency.
Listing and Trading:	Approval in-principle has been received for the listing of the Notes on the Singapore Exchange. The Singapore Exchange takes no responsibility for the correctness of any of the statements made, opinions expressed or reports contained herein. Approval in-principle for the listing and quotation of any Notes on the Singapore Exchange is not to be taken as an indication of the merits of us or the Notes. The Notes will be traded on the Singapore Exchange in a minimum board lot size of €100,000 with a minimum of 2 lots to be traded in a single transaction for so long as any of the Notes are listed on the Singapore Exchange. So long as the Notes are listed on the Singapore Exchange and the rules of the Singapore Exchange so require, we will appoint and maintain a paying agent in Singapore, where the Notes may be presented or surrendered for payment or redemption in the event that the global notes are exchanged for definitive notes. In addition, in the event that the global notes are exchanged for definitive notes, an announcement of such exchange will be made by or on behalf of us through the Singapore Exchange and such announcement will include all material information with respect to the delivery of definitive notes, including details of the paying agent in Singapore.
Fiscal Agent, Paying and Transfer Agent and Notes Registrar:	MUFG Bank, Ltd.
Potential Future Notes:	Depending on market conditions, we may offer additional dollar-denominated senior notes in a future offering (the "Potential Future Notes"). No such Potential Future Notes are being offered hereby. We expect that the aggregate total amount of the Notes and the Potential Future Notes will be approximately $14.05 billion.

RISK FACTORS

Any investment in the Notes involves risk. Prospective investors should carefully consider, in light of their own financial circumstances and investment objectives, the following risks before making an investment decision with respect to the Notes. If any of the following risks actually occurs, it could have a material adverse effect on our business, financial condition, results of operations and future prospects, and the market value of the Notes may be adversely affected.

The risks discussed below are those that we believe are material, but these risks and uncertainties may not be the only risks that we face. Additional risks that are not known to us at this time, or that are currently believed to be not material, could also have a material adverse effect on our business, financial condition, results of operations, future prospects and the value of the Notes.

Risks Relating to the Shire Acquisition

We may not be able to complete the Shire Acquisition on the expected schedule, or at all.

The Shire Acquisition will be effected pursuant to a Scheme of Arrangement (the "Scheme") under Article 125 of the Jersey Companies Law. The effectiveness of the Shire Acquisition is subject to, among others:

- the approval of the Scheme by a majority in number representing at least 75% of the voting rights of Shire shareholders present and voting (and entitled to vote) at a meeting convened by the Royal Court of Jersey and the approval of certain resolutions at a general meeting of Shire shareholders;
- the sanction of the Royal Court of Jersey; and
- the approval of certain resolutions by at least two-thirds of shares of our common stock voted at an extraordinary general meeting of our shareholders (the quorum for which meeting is one-third of the then-outstanding voting rights), which meeting we expect to convene in order to seek the approval of the issuance of new shares of our common stock to shareholders of Shire as consideration for the Shire Acquisition.

The completion of the Shire Acquisition is also subject to, among others, the following further conditions:

- the receipt of antitrust clearances in the European Union (the "EU") and other relevant jurisdictions;
- the Scheme becoming effective prior to May 8, 2019;
- the approval by the Tokyo Stock Exchange and other local Japanese stock exchanges for the listing of the new Takeda shares to be issued as consideration for the Shire Acquisition; and
- the approval by the New York Stock Exchange (the "NYSE") of our ADRs for listing, subject to official notice of issuance.

The fulfillment of these conditions is outside of our direct control, and there can be no assurance that they will be fulfilled on the schedule that we expect or at all. Furthermore, the waiver or amendment of any of the conditions to the acquisition is subject to the approval of the U.K. Panel on Takeovers and Mergers. Moreover, neither we nor Shire are required to wait until all other conditions have been fulfilled or waived prior to convening our respective shareholder meetings in order to approve the acquisition, and it is possible that, even following approvals by either or both of our respective shareholders, the acquisition will be terminated due to the inability to satisfy one or more of the other conditions.

On October 27, 2018, we announced that we were in discussions with the European Commission, the EU antitrust regulator, in relation to the future potential overlap in the area of IBD between our marketed product *ENTYVIO* and Shire's pipeline compound SHP647, which is currently in Phase III clinical trials, and that we had proposed an antitrust remedy of a potential divestment of SHP647 and certain associated rights. The completion of the Shire Acquisition and timing thereof remains subject to the receipt of antitrust clearance in the EU and the other conditions noted above.

The consideration payable by us for the Shire Acquisition is not subject to adjustment due to changes in the relative prices of our and Shire's common shares.

Under the terms of the Shire Acquisition, each Shire shareholder is entitled to receive $30.33 in cash and either 0.839 New Takeda shares or 1.678 Takeda ADSs for each share of Shire. The amount of consideration

to which each Shire shareholder is entitled is not subject to adjustment based on fluctuations in the market price for our common stock relative to the market price for Shire's ordinary shares. If the price of the shares of our common stock increases relative to Shire's, the aggregate value of the consideration payable by us may be more than expected. If the price of the shares of our common stock decreases relative to Shire's, Shire's shareholders may not find the consideration sufficiently attractive, and may decline to approve the Shire Acquisition. The amount of consideration to be paid by us is also not subject to adjustments for fluctuations in foreign exchange rates.

We will be required to commit substantial time and resources to successfully complete the Shire Acquisition.

The process of and preparations for the closing of the Shire Acquisition will require a significant commitment of time and resources, including the involvement of senior members of our management team and key employees from across our corporate structure and various business units worldwide and the retainer of a number of financial, accounting, legal and other advisors. We have incurred and expect to continue to incur substantial transaction costs, such as fees paid to legal, financial, accounting and other advisors and other fees paid in connection with the acquisition, in the current fiscal year and in future fiscal years. In the six months ended September 30, 2018, we recorded ¥7.9 billion of acquisition-related costs, such as advisory fees, as a component of selling, general and administrative expenses, ¥3.2 billion of restructuring expense in other expenses and ¥8.8 billion of finance expense relating to the arrangement of commitments to finance the Shire Acquisition, and we expect to incur further costs in future periods. We expect that the costs related to the Shire Acquisition to be incurred in the fiscal year ending March 31, 2019 will be between ¥40.0 billion and ¥60.0 billion. This estimate does not include integration costs, interest on indebtedness and other financial expenses, as the amount of those expenses is dependent on the timing of the completion of the Shire Acquisition. The preparations required to achieve the closing may divert management's attention from other strategic opportunities and from the day-to-day operation of our business.

We may be required to pay Shire a significant "break fee" in certain circumstances. No "break fee" will be payable by Shire.

We and Shire have signed a Co-operation Agreement (the "Co-operation Agreement") governing certain matters leading to the closing of the Shire Acquisition. In certain circumstances, we have agreed to pay Shire a "break fee." The break fee would be calculated as a percentage of the value of the cash and Takeda shares to be delivered per share of Shire (a total of £48.17 per share) multiplied by the total issued and to-be-issued shares of Shire (937,925,528 shares), each as of May 8, 2018, the date of our agreement to acquire Shire, and payable in U.S. dollars (calculated at an exchange rate of £1 to $1.3546), rounded down to the nearest dollar, which amount represents the overall value of Shire implied by our offer for Shire as of May 8, 2018, or approximately $61.2 billion (the "break fee base amount"). The circumstances where we have agreed to pay a break fee, and the amount of such fee, are:

- if our board of directors withdraws, adversely modifies, adversely qualifies, fails to provide or fails to reaffirm (when requested to do so) its recommendation that our shareholders vote in favor of the necessary resolutions to approve, implement and effect the Shire Acquisition and the issue of the new shares of our common stock expected to be presented at an extraordinary general meeting of our shareholders (the "Takeda Resolutions"), and either we or Shire serves notice to terminate the Co-operation Agreement, 2% of the break fee base amount, or approximately $1.22 billion;
- the Takeda Resolutions are not passed at the extraordinary general meeting of our shareholders, and either we or Shire serves notice to terminate the Co-operation Agreement, 1% of the break fee base amount, or approximately $0.612 billion; or
- on or prior to May 8, 2019, if our offer to acquire Shire lapses or is withdrawn as a result of our invoking of, where permitted to do so by the U.K. Panel on Takeovers and Mergers, or failure to waive a regulatory condition (including the receipt of any relevant antitrust clearance) to the closing of the acquisition, or if the European Commission initiates a "Phase 2" review under the EU Merger Regulation (or a similar event occurs in a member state of the EU), 1.5% of the break fee base amount, or approximately $0.918 billion (subject to certain exceptions).

The Co-operation Agreement does not provide for the payment of a break fee by Shire to us.

We may fail to realize the anticipated benefits of the Shire Acquisition.

The ultimate success of the Shire Acquisition depends on our ability to realize the anticipated growth opportunities and synergies leading to cost savings we expect from combining the businesses. Even following the

completion of the Shire Acquisition, it will be necessary for us to continue to devote significant time and resources to the reorganization of our personnel structure, enhancement of cost-efficiency and the strengthening of management and operational functions in order to realize the anticipated synergies from the integration of Takeda's and Shire's businesses. We expect to incur non-recurring cash costs totaling approximately $2.4 billion in connection with the integration of Shire in the first three fiscal years following the completion of the Shire Acquisition. The expected synergies and the projected cash costs necessary to achieve them may be affected by changes in the overall economic, political and regulatory environment, including applicable tax regimes and fluctuations in foreign exchange rates, and the realization of the other risks relating to our business described herein. Furthermore, the integration process may divert management's attention from other strategic opportunities and the day-to-day operation of our business. If we are not able to successfully manage the integration process and create a unified business culture, the anticipated benefits of the acquisition and subsequent integration may not be realized fully or at all or may take longer or prove more costly to realize than expected.

We may face significant challenges in integrating the organizations, business cultures, procedures and operations of Takeda and Shire, including:

- integrating personnel, operations and systems, while maintaining focus on selling and promoting existing and newly acquired or produced products;
- coordinating and integrating geographically dispersed organizations;
- changes or conflicts in corporate culture;
- the need to manage, train and integrate Shire's personnel, who may have limited experience with the respective companies' business lines and products, and to retain existing employees, particularly high-skilled or other key employees and senior members of the management team;
- maintaining and growing Shire's customer base;
- incremental tax exposure based on the differences in our corporate structure and Shire's;
- maintaining business relationships with suppliers, third-party alliance partners and other key counterparties; and
- inefficiencies associated with the integration and management of the operations of the two companies.

Furthermore, in connection with the Shire Acquisition, we expect to record significant amounts of goodwill and intangible assets. If we are unable to achieve the anticipated benefits of this acquisition, we could be required to recognize significant impairment losses related to such goodwill and intangible assets, potentially up to their full value. Additionally, because we intend to issue a significant number of additional shares of our common stock as part of the consideration for the Shire Acquisition, a failure to achieve the anticipated benefits of the Shire Acquisition could negatively affect our earnings per share.

We have substantial debt, and expect to incur significant additional debt in connection with the Shire Acquisition, which may limit our ability to execute our business strategy, refinance existing debt or incur new debt, and if we are unable to meet our goals for deleveraging after the Shire Acquisition, we could be at a greater risk of a downgrade of our credit ratings.

Our consolidated bonds and loans were ¥985.7 billion as of March 31, 2018. In connection with the Shire Acquisition, on May 8, 2018, we entered into a dollar-denominated 364-Day Bridge Credit Agreement (the "Bridge Credit Agreement"), with aggregate commitments of $30.85 billion, to finance a portion of the funds required for the Shire Acquisition. Subsequently, on June 8, 2018, we entered into a Term Loan Credit Agreement (the "Term Loan Credit Agreement") with an aggregate commitment of $7.5 billion, and reduced commitments under the Bridge Credit Agreement by the same amount. On October 26, 2018, we entered into a Senior Short Term Loan Facility Agreement (the "SSTL"), with aggregate commitments of ¥500.0 billion, and reduced the commitments under the Bridge Credit Agreement by $4.5 billion. We expect to draw down on the commitments to the Term Loan Credit Agreement, the SSTL and the Bridge Credit Agreement (as may be further reduced by reference to the Notes and any Potential Future Notes and subject to any additional refinancing) at the time of the closing of the Shire Acquisition. Furthermore, following the completion of the Shire Acquisition, we may refinance all or a portion of the amounts borrowed under the SSTL pursuant to a Subordinated Syndicated Loan Agreement (the "Subordinated Loan Agreement") entered into on October 26, 2018, with aggregate commitments of ¥500.0 billion, subject to our ability to obtain alternative financing.

Moreover, subject to any potential refinancing or repurchases completed prior to closing (if any), following the Shire Acquisition, Shire's consolidated borrowings and capital leases, which totaled $19.5 billion as of December 31, 2017, would be included in our consolidated balance sheet. This significant amount of aggregate debt and the substantial amount of cash required for payments of interest and principal could adversely affect our liquidity. Furthermore, we are required to comply with certain covenants within various financing arrangements and violations of such covenants may require the acceleration and immediate repayment of the indebtedness, which may in turn have a material adverse effect on our financial condition.

We may desire to or be required from time to time to incur additional borrowings, including refinancing any of the Bridge Credit Agreement, the Term Loan Credit Agreement, the SSTL or any other indebtedness to be incurred in connection with the Shire Acquisition and settlement of Shire's existing indebtedness. In particular, any amounts borrowed under the Bridge Credit Agreement will mature at the latest 364 days following the date of funding (in the case of Tranche 4 thereto, which is currently the subject of an aggregate of $3.5 billion of lending commitments, 90 days following such date), requiring us to repay, whether by cash on hand or from other sources, such as dispositions, or to refinance such borrowings soon after they are incurred. We may also be unsuccessful in pursuing a refinancing alternative to the SSTL other than the Subordinated Loan Agreement. Our ability to arrange a re-financing will depend on our financial position and performance, prevailing market conditions and other factors beyond our control.

We aim to decrease our leverage following the Shire Acquisition, with a target ratio of net debt to Adjusted EBITDA of 2.0x or less within three to five years following completion of the Shire Acquisition, and are considering selected disposals of non-core assets to increase the pace of deleveraging. However, we may not be able to meet these goals if we are unable to sufficiently decrease our overall indebtedness, or if we are unable to achieve sufficient increases in earnings to offset our increased levels of debt. We may also not be successful in selecting non-core assets for disposal, and disposals may affect our business, financial condition or results of operations adversely, leading to larger-than-expected decreases in earnings. We may also not be able to dispose of such assets successfully in a manner that allows us to meet our goals or at all.

If we are unable to decrease our leverage, we may be subject to additional ratings actions by third-party ratings agencies. For example, in May 2018, Moody's (Japan) K.K. lowered our credit rating to A2 from A1, reflecting its expectations for our overall levels of leverage in the future, even in the absence of the Shire Acquisition. In addition, in May 2018, S&P Global Ratings announced that it was reviewing our credit ratings with a view to a potential downgrade due to our decision to acquire Shire. Any future downgrades may negatively influence the terms for the refinancing of our existing debt or new borrowings on terms that we would consider to be commercially reasonable.

The unaudited pro forma condensed combined financial data presented herein is not necessarily representative of our actual or future financial performance.

The unaudited pro forma condensed combined balance sheet and statement of income as of and for the fiscal year ended March 31, 2018 included in this offering circular have been prepared for illustrative purposes only, and show the effect of:

- the Shire Acquisition;
- the financing obtained by us to fund the cash portion of the acquisition consideration; and
- the issuance of shares of our common stock to shareholders of Shire, including shares represented by American depositary shares ("ADSs").

The unaudited pro forma condensed combined balance sheet gives effect to these transactions as if they had occurred on March 31, 2018, while the unaudited pro forma condensed combined statement of income gives effect to these transactions as if they had occurred on April 1, 2017.

The unaudited pro forma condensed combined financial information has been derived from the audited historical financial statements of Takeda and Shire, and certain adjustments and assumptions have been made regarding the combined company after giving effect to the Shire Acquisition. The amount of consideration to be recorded on our financial statements will vary based on the exchange rate at the date of the closing of the Shire Acquisition and the value of our and Shire's respective shares. The terms and conditions of the financing that will be used to fund the Shire Acquisition, including the amount of debt we actually incur, have not been finally determined and are subject to change. The unaudited pro forma condensed combined financial information gives effect to borrowings under the Bridge Credit Agreement (as reduced to date), the Term Loan Credit Agreement, the SSTL and an assumed amount of senior notes reflecting the expected total amount of Notes combined with the Potential Future Notes and does not give effect to any potential refinancing of the SSTL pursuant to the

Subordinated Loan Agreement following the completion of the Shire Acquisition or any other potential future financing transactions. The unaudited pro forma condensed combined financial information does not include, among other things, adjustments relating to costs expected to be incurred in relation to restructuring or integration activities, estimated synergies, the effect of any further refinancing of commitments under the Bridge Credit Agreement, Term Loan Credit Agreement or existing indebtedness of either of Takeda or Shire or other potential items that are currently not factually supportable and, in the case of the unaudited pro forma condensed combined statement of income, expected to have a continued impact on our results following the completion of the Shire Acquisition. Certain assets and liabilities of Shire have been measured at fair value based on preliminary estimates using assumptions that we believe are reasonable, utilizing information currently available. The process for estimating the fair value of acquired assets and assumed liabilities requires the use of judgment in determining the appropriate assumptions and estimates. These estimates may be revised and may include additional assets acquired or liabilities assumed as additional information becomes available and as additional analyses are performed. Differences between preliminary estimates in the unaudited pro forma condensed combined financial information and the final acquisition accounting may occur and could be material.

In addition, the assumptions used in preparing the unaudited pro forma condensed combined financial information may not prove to be accurate. Such assumptions can be adversely affected by known or unknown facts, risks and uncertainties, many of which are beyond our or Shire's control. Other factors may also affect the combined company's financial condition or results of operations following the closing of the Shire Acquisition. In addition, following the closing of the Shire Acquisition, the financial position and results of operations of Shire, which are reported under U.S. GAAP, will be converted to IFRS for inclusion in our consolidated financial position and results of operations, which are reported under IFRS. The unaudited pro forma condensed combined financial information presents the effect of such conversion based on the information available to us as of the date hereof. We expect further information to become available to us after the completion of the Shire Acquisition, and the adjustments actually made to convert Shire's financial information to IFRS may vary in material ways from the assumptions made in the unaudited pro forma condensed combined financial information contained in this offering circular.

We will be subject to additional risks arising from the acquired businesses of Shire and from the legal, regulatory and tax regimes that Shire operates under.

Following the completion of the Shire Acquisition, we will assume the risks related to Shire's businesses, which differ from, or will amplify, certain risks we currently face. For example, markets outside Japan, particularly the United States, represent a larger portion of Shire's business than ours, and we therefore expect our overall exposure to these markets to increase following the completion of the Shire Acquisition. As with our products, Shire's products are subject to competition from generic or other competing products, and the successful introduction of such competitors or the invalidation of patent protections over Shire's products could materially and adversely affect the products acquired. Additionally, Shire operates in certain businesses that we currently do not, including rare diseases and plasma-derived therapies. These businesses will present new or unfamiliar challenges to us. Shire's plasma-derived therapies in particular present significant challenges relating to the sourcing, production and transportation of plasma, all of which are complex and subject to extensive regulation, in addition to being capital intensive. If we are unable to manage this new business effectively, we may lose market share or customer confidence, be required to pursue additional manufacturing capability or sourcing (or, in the case of an oversupply, lower prices charged, record impairment charges on facilities or inventory or close certain facilities) or take other actions which could materially and adversely affect the plasma derived therapies business.

Furthermore, we will be subject to additional legal, regulatory and tax regimes that Shire operates under, many of which are complex and could subject us to additional risks or liabilities. For example, Shire is subject to evolving and complex tax laws in various jurisdictions and routinely obtains advice on tax matters, including the tax treatment of the break fee it received in connection with the terminated offer to acquire Shire made by AbbVie, Inc. in 2014, which has not been agreed with the tax authorities. In addition, in connection with its 2016 acquisition of Baxalta, Shire has agreed to indemnify Baxter International Inc., its affiliates and each of their respective officers, directors and employees against certain tax-related losses if the merger of Baxalta and Shire causes the prior spin-off of Baxalta by Baxter and related transactions to fail to qualify as tax-free. Although Shire received an opinion of tax counsel that the merger will not cause such prior transactions to fail to qualify as tax-free, such opinion is not binding on the tax authorities and the potential tax indemnification obligations are not limited in amount.

If we are unable to effectively manage these additional risks, our business, results of operations or financial conditions following the completion of the Shire Acquisition could be materially and adversely affected.

Risks Relating to Our Business

Research and development of pharmaceutical products are expensive and subject to significant uncertainties, and we may be unsuccessful in bringing commercially successful products to market or recouping development costs.

Our ability to continue to grow our business depends significantly on the success of our research and development activities in identifying, developing and successfully commercializing new products in a timely and cost-effective manner. To accomplish this, we commit substantial efforts, funds and other resources to research and development, both through our in-house resources and through collaborations with third parties. However, research and development programs for new products by pharmaceutical companies are expensive and involve intensive preclinical evaluation and clinical trials in connection with a highly complex and lengthy regulatory approval process. See "—If we fail to comply with government regulations, regulatory approvals and reimbursement requirements, our business could be adversely affected." The research and development process for a new pharmaceutical product also requires us to attract and retain sufficient numbers of highly-skilled employees and can take up to 10 years to 15 years or longer from discovery to commercial launch. Moreover, even if we successfully develop and bring to market new products, there is only a limited available patent life in which to recoup these development costs.

During each stage of the approval process and post-approval life cycle of our products, there is a substantial risk that we will encounter serious obstacles including the following:

- unfavorable results from preclinical testing of a new compound;
- difficulty in enrolling patients in clinical trials, or delays or clinical trial holds at clinical trial sites;
- delays in completing formulation and other testing and work necessary to support an application for regulatory approval;
- adverse reactions to the product candidate or indications of other safety concerns;
- insufficient clinical trial data to support the safety or efficacy of the product candidate;
- difficulty or delays in obtaining all necessary regulatory approvals in each jurisdiction where we propose to market such products;
- failure to bring a product to market prior to a competitor, or to develop a product sufficiently differentiated from a competing product to achieve significant market share;
- difficulty in obtaining reimbursement at satisfactory rates for our approved products from governments and insurers;
- difficulty in obtaining regulatory approval for additional indications;
- failure to enter into or implement successful alliances for the development and/or commercialization of products;
- inability to manufacture sufficient quantities of a product candidate for development or commercialization activities in a timely or cost-efficient manner;
- even after we obtain regulatory approval for and commercialize a product, such product and its manufacturer are subject to continual regulatory review, and any discovery of previously unknown problems with the product or the manufacturer may result in imposition of restrictions or recalls, including withdrawal of the product from the market; and
- the degree of market acceptance of any approved product candidate by the medical community, including physicians, healthcare professionals and patients, will depend on a number of factors, including relative convenience and ease of administration, the prevalence and severity of any adverse reactions, availability of alternative treatments, pricing and our sales and marketing strategy.

In addition, to the extent that new regulations raise the costs of obtaining and maintaining product authorizations, or limit the economic value of a new product to its originator, our profitability and growth prospects could be diminished. Development of new and innovative products can also require the use of emerging platforms and technologies for which regulations either do not yet exist or are under development or modification. This may lead to greater uncertainty and risk in establishing the necessary data for approvals to conduct clinical trials and/or receiving marketing approvals.

As a result of the foregoing or other factors, we may decide to abandon the development of potential pipeline products in which we have invested significant resources, even where the product is in the lat

e stages of development. Moreover, there can also be no assurance that we will be successful in bringing new products to market, marketing them, achieving sufficient acceptance thereof and recouping our investments in their development. For example, our pipeline compounds may not receive regulatory approval, become commercially successful or achieve satisfactory rates of reimbursement. Additionally, products approved for use and successfully marketed in one market may be unable to obtain regulatory approval, become commercially successful or achieve satisfactory rates of reimbursement in other markets. As a result, we may be unable to earn returns on investments that we originally anticipated or at all, or may be forced to revise our research and development strategy, and our business, financial condition and results of operations could be materially and adversely affected.

If we fail to comply with government regulations, regulatory approvals and reimbursement requirements, our business could be adversely affected.

Obtaining marketing approval for pharmaceutical products is a lengthy, complex and highly regulated process that requires intensive preclinical and clinical data, and the approval process can vary significantly depending on the regulatory authority. Relevant health authorities may, at the time of the filing of the application for a marketing authorization, or later during their review, impose requirements that can evolve over time, including requiring additional clinical trials, and such authorities may delay or refuse to grant approval. Even where we have obtained marketing approval for a product in one or more major markets, we may need to invest significant time and resources in applying for approval in other markets, and there is no assurance that we will be able to obtain such approval. In recent years, health authorities have become increasingly focused on product safety and on the risk/benefit profile of pharmaceutical products, which could lead to more burdensome and costly approval processes and negatively affect our ability to obtain regulatory approval for products under development. For example, the U.S. Food and Drug Administration (the "FDA"), the European Medicines Agency (the "EMA"), and the Pharmaceuticals and Medical Devices Agency (the "PMDA"), have been implementing strict requirements for approval, particularly in terms of the volume of data needed to demonstrate a product's efficacy and safety.

Even after regulatory approval is obtained, marketed products are subject to various post-approval requirements, including continual review, risk evaluations, comparative effectiveness studies and, in some cases, requirements to conduct post-approval clinical trials to gather additional safety and other data. Regulatory authorities in many countries have worked to enhance post-approval monitoring in recent years, which has increased post-approval regulatory burdens. Post-regulatory approval reviews and data analyses can lead to the issuance of recommendations by government agencies, health professional and patients or other specialized organizations regarding the use of products; for example, a recommendation to limit the patient population of a drug's indication, the imposition of marketing restrictions, including changes in product labeling, or the suspension or withdrawal of the product. Any such action can result in reductions in sales volume and/or new or increased concerns about the adverse reactions or efficacy of a product. These substantial regulatory requirements have, over time, increased the costs associated with maintaining regulatory approvals and achieving reimbursement for our products.

If the regulatory approval process or post-approval, reimbursement or other requirements become significantly more burdensome in any of our major markets, we could become subject to increased costs and may be unable to obtain or maintain approval to market our products. Any such adverse changes could materially and adversely affect our business, results of operations or financial condition.

The expiration or loss of patent or regulatory data protection over our products or patent infringement by generic manufacturers could lead to significant competition from generic versions of the relevant product and lead to declines in market share and price levels of our products.

Our pharmaceutical products are generally protected for a defined period by various patents (including those covering drug substance, drug product, approved indications, methods of administration, methods of manufacturing, formulations and dosages) and/or regulatory exclusivity, which are intended to provide us with exclusive rights to market the products for the life of the patent or duration of the regulatory data protection period. The loss of market exclusivity for pharmaceutical products opens such products to competition from generic substitutes that are typically priced significantly lower than the original products, which typically adversely affects the market share and prices of the original products.

Generic substitutes have high market shares in a number of key markets, including the United States, Europe and many emerging countries, and the adverse effects of the launch of generic products are particularly

significant in such markets. The introduction of generic versions of a pharmaceutical product typically leads to a swift and substantial decline in the sales of the original product. Our active life cycle management efforts cannot fully mitigate the impact of competition from generics. In the United States and the EU, for example, political pressure to reduce spending on prescription drugs has led to legislation and other measures that encourage the use of generic products. In Japan, the government is implementing various measures to control drug costs, including by encouraging medical practitioners to use and prescribe generic drugs, and in June 2017 announced its intention to raise generic drug penetration with respect to products for which market exclusivity has expired to 80% by volume by September 2020. Legislation has also been passed in the United States and Europe encouraging the use of biosimilar products. Similar to generics, biosimilars aim to provide less expensive versions of innovative biologic products. New legislation has provided abbreviated pathways for the approval and marketing of biosimilar products, which may affect the profitability and commercial viability of our biologic products.

Certain of our products have begun to, or are expected over the next several years to, face declining sales due to the loss of market exclusivity. For example, following the expiration of patent protection over bortezomib, the active ingredient in *VELCADE*, one of our largest selling products in the United States, a competing bortezomib-containing product has been introduced. This has led to a decrease in sales of *VELCADE*, and further entry of competing products could result in substantial additional declines. Such decreases may accelerate following the scheduled expiration of patent protection over the formulation of *VELCADE* in 2022, or earlier if a competitor is able to develop a way to formulate *VELCADE* in a manner that does not infringe the relevant patent or succeed in getting the formulation patent invalidated. In addition, as patent protection has expired for *PANTOPRAZOLE* in many major markets including the United States and the EU, sales of *PANTOPRAZOLE* have continued to decline in those markets.

We may also be subject to competition from generic drug manufacturers prior to the expiration of patents if a manufacturer successfully challenges the validity of our patents, or if the manufacturer believes that the benefits of launching the generic drug "at risk" (prior to the expiration of our patent) outweigh the costs of defending infringement litigation. If such a competitor launches a generic product "at risk" before the initiation or completion of court proceedings, a court may decline to grant us a preliminary injunction to halt further "at risk" sales and remove the infringing product from the market. While we may be entitled to obtain damages subsequently, the amount we may ultimately be awarded and able to collect may be insufficient to compensate for the loss of sales and other harm caused to us. Furthermore, if we lose patent protection as a result of an adverse court decision or a settlement, in certain jurisdictions, we may face the risk that government and private third party payers and purchasers of pharmaceutical products may claim damages alleging they have over-reimbursed or overpaid for a drug.

If our patent and other intellectual property rights are infringed by generic drug manufacturers or other third parties, we may not be able to take full advantage of the potential or existing demand for our products. The protection that we are able to obtain for our prescription drugs varies from product to product and country to country and may not always be sufficient because of local variations in issued patents, or differences in national law or legal systems, including inconsistency in the enforcement or application of law and limitations on the availability of meaningful legal remedies. In particular, patent protection in emerging markets is often less certain than in developed markets. Certain countries may also engage in compulsory licensing of pharmaceutical intellectual property to other manufacturers as a result of local political pressure. Furthermore, the attention of our management and other personnel could be diverted from their normal business activities if we decide to litigate against such infringement. The realization of any such risks could adversely and materially affect our business, financial condition and results of operations.

We are subject to the risk of intellectual property infringement claims directed to us by third parties.

We are also subject to the risk of infringement claims directed at us by third parties. Although we monitor our operations to prevent infringement on the intellectual property rights of third parties, if we are found to have infringed the intellectual property rights of others or if we agree to settle infringement claims, we may be required to recall the relevant products, terminate manufacturing and sales of such products, pay significant damages or pay significant royalties.

We evaluate any such infringement claims to assess the likelihood of unfavorable outcomes and to estimate, if possible, the amount of potential losses. Based on these assessments and estimates, and in keeping with applicable accounting and disclosure standards, we establish reserves and/or disclose the relevant litigation claims or decide not to establish reserves or disclose. These assessments and estimates are based on the information available to our management at such time and involve a significant amount of management

judgment. Actual outcomes or losses may differ materially from those envisioned by our current assessments and estimates. Although the parties to such patent and intellectual property disputes in the pharmaceutical industry have often settled through licensing or similar arrangements, the costs associated with these arrangements may be substantial and could include the payment of ongoing royalties. Furthermore, the necessary licenses may not be available on acceptable terms or at all. Therefore, if we are unable to successfully defend against infringement claims by third parties, our financial results could be materially and adversely affected.

We face risks from the pursuit of acquisitions, and the anticipated benefits and synergies resulting from acquisitions may not be realized.

We regularly pursue acquisitions for a number of reasons, including strengthening our pipeline, complementing existing lines of business, adding research and development capabilities or pursuing other synergies. The pursuit of these acquisitions requires the commitment of significant management and capital resources in various stages, from the exploration of potential acquisition targets to the negotiation and execution of an acquisition to the integration of an acquired business into our own. The required commitment of time and resources may divert the attention of management or capital or other resources away from our day-to-day business. Moreover, we may not be able to recoup the investment of capital or other resources through the successful integration of acquired businesses, including the realization of any expected cost or other synergies. Specifically, we may encounter the following difficulties:

- We may face significant challenges in combining the infrastructure, management and information systems of acquired companies with ours, including integrating research and development, manufacturing, distribution, marketing and promotion activities and information technology systems.
- There may be difficulties in conforming standards, controls, procedures and accounting and other policies, as well as business cultures and compensation structures.
- We may not be able to retain key personnel at acquired companies, or our own employees may be motivated to leave due to acquisitions.
- We may not be successful in identifying and eliminating redundancies and achieving other cost savings as expected.
- We may not be able to successfully realize benefits from acquired products, including pipeline products under development.

Integrating the operations of multiple new businesses with that of our own is a complex process that requires significant management attention and resources. The integration process may disrupt our existing and other newly acquired businesses and, if implemented ineffectively, could have an adverse impact not only on our ability to realize the benefits of a given acquisition but also on the results of our existing operations. Integration-related risks may be heightened in cases where acquired businesses' operations, employees or customers are located outside our major markets and we incur higher costs than anticipated due to regulatory changes, environmental factors or foreign exchange fluctuations. We continue to pursue strategic business acquisitions globally as a key part of our continuous growth strategy. If we are not able to achieve the anticipated benefits of any future acquisitions in full or in a timely manner, we could be required to recognize impairment losses, we may not be able to recoup our investment, and our business, financial position and results of operations could be materially and adversely affected. Particularly, we may be unable to achieve the expected revenues pursuant to licensing, co-promotion or co-development agreements or collaborations. We may also assume unexpected contingent or other liabilities, or be required to mark up the fair value of liabilities (or mark down the fair value of assets) acquired upon the close of an acquisition.

Our operating results and financial condition may fluctuate due to a number of factors and may not be comparable across periods.

Our operating results and financial condition may fluctuate from quarter to quarter and year to year for a number of reasons, including acquisitions, divestitures, major product launches, patent expiration or expiration of regulatory data protection for key products and other reasons. In particular, as part of our efforts to refocus our business portfolio, we have recently entered into a number of significant transactions that are expected to affect our results of operations, including:

- the Shire Acquisition, if closed successfully;
- the acquisition of TiGenix NV in July 2018;

- the divestment of Wako Pure Chemical Industries, Ltd. ("Wako Pure Chemical"), one of our consolidated subsidiaries, to FUJIFILM Corporation in April 2017;
- the acquisition of ARIAD Pharmaceuticals, Inc. ("ARIAD") in February 2017;
- the sale of our respiratory business to AstraZeneca plc ("AstraZeneca") in April 2016; and
- the transfer of certain long-listed products, consisting of products for which patent protection and regulatory data protection have expired, to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture we formed with Teva Pharmaceutical Industries Ltd., in April 2016, and the subsequent sale of seven additional long-listed products in May 2017.

We intend to continue to pursue both acquisitions of new businesses and dispositions of existing businesses in the future. As a result, period-to-period comparisons of our results of operations may not always be directly comparable, and these comparisons should not be relied upon as an indication of future performance. Our operating results and financial condition are also subject to fluctuations from the risks described throughout this section.

We have significant global operations, which expose us to additional risks.

Our global operations, which encompass more than 70 countries in diverse regions across the world, are subject to a number of risks, including the following:

- difficulties in monitoring and coordinating research and development, marketing, supply-chain and other operations in a large number of jurisdictions;
- risks related to various laws, regulations and policies, including those implemented following changes in political leadership and trade, capital and exchange controls;
- changes with respect to taxation, including impositions or increases of withholding and other taxes on remittances and other payments by our overseas subsidiaries;
- varying standards and practices in the legal, regulatory and business cultures in which we operate, including potential inability to enforce contracts or intellectual property rights;
- trade restrictions and changes in tariffs;
- complex sanctions regimes in various countries such as Japan, the United States, the EU and other jurisdictions, violations of which could lead to fines or other penalties;
- risks related to political instability and uncertain business environments;
- changes in the political or economic relationship between Japan and the other countries and regions in which we operate;
- acts of terrorism, war, epidemics and other sources of social disruption; and
- difficulties associated with managing local personnel and preventing misconduct by local third-party alliance partners.

Any one or more of these or other factors could increase our costs, reduce our revenues, or disrupt our operations, with possible material adverse effects on our business, financial condition and results of operations. Even prior to the announcement of the Shire Acquisition, further expansion overseas has been one of our key strategies, and, in the fiscal year ended March 31, 2018, regions outside of Japan accounted for 67.2% of our consolidated revenue, with the United States in particular contributing 33.8% of consolidated revenue. We expect that markets outside Japan, particularly the United States and also Europe, Canada and emerging markets, will continue to be increasingly important to our business and results of operations, increasing the likelihood that any of these risks is realized.

We may not be able to realize the expected benefits of our investments in emerging markets.

We have been taking steps to grow our business in emerging markets, which we define to include Russia/Commonwealth of Independent States ("CIS"), Latin America, Asia (excluding Japan) and Other (including the Middle East, Oceania and Africa). Our revenue from emerging markets was ¥278.1 billion (or 15.7% of our total revenue) for the fiscal year ended March 31, 2018, and we intend to pursue further growth in such emerging markets.

However, there is no guarantee that our efforts to expand sales in emerging markets will succeed. Some countries may be especially vulnerable to periods of global financial instability or may have very limited resources to spend on healthcare. In order to successfully implement our emerging markets strategy, we must

attract and retain qualified personnel, despite the possibility that some emerging markets may have a relatively limited number of persons with the required skills and training. We may also be required to increase our reliance on third-party agents within less-developed markets, which may put us at increased risk of liability. In addition, many emerging markets have currencies that fluctuate substantially, and if such currencies are devalued and we cannot offset the devaluations, our financial performance in such countries may be adversely affected. Further, many emerging markets have relatively weak intellectual property protection and inadequate protection against crime, including counterfeiting, corruption and fraud. Operations in certain emerging countries, where corruption may be more prevalent than in more developed countries and where internal compliance practices may not be well established, may also pose challenges from a legal and regulatory compliance perspective.

For reasons including but not limited to the above, sales within emerging markets carry significant risks, and the realization of such risks could have a material adverse effect on our business, financial condition and results of operations.

We depend on our "growth driver" products to support out future growth, and any events that adversely affect the markets for these products may adversely affect our business, financial condition and results of operations.

Our future growth depends largely on our "growth drivers," which we define as products in our core therapeutic areas of gastroenterology ("GI"), oncology and neuroscience, as well as emerging markets. As a result of our focus on these therapeutic areas and markets, any event that adversely affects products aimed at these therapeutic areas or markets could have a material and adverse effect on our business, financial condition and results of operations. These events could include discovery of previously unknown adverse reactions, loss of intellectual property protection, increased costs associated with manufacturing, supply chain issues or product shortages, regulatory proceedings, changes in labeling, publicity affecting doctor or patient confidence in the product, material product liability litigation and introduction of new, more effective treatments.

Our results of operations and financial condition may be adversely affected by foreign currency exchange rate fluctuations.

We manufacture and sell products to customers in numerous countries, and we have entered and will enter into acquisition, licensing, borrowings or other financial transactions that give rise to translation and transaction risks related to foreign currency exposure. Fluctuations in currency exchange rates in the markets where we are active could negatively affect our results of operations, financial position and cash flows. For the fiscal year ended March 31, 2018, 67.2% of our sales were in markets outside Japan, and we expect this proportion to be even higher for subsequent fiscal periods, due to anticipated increases in overseas sales of growth driver products and the contribution of Shire's results to our results of operations, particularly in the U.S. market. Our consolidated financial statements are presented in Japanese yen, and by translating the foreign currency financial statements of our foreign subsidiaries into yen, the amounts of our revenue, operating profit, assets and equity, on a consolidated basis, are affected by prevailing rates of exchange. For example, an increase in the value of Japanese yen relative to the other currencies that we operate in, particularly the U.S. dollar and the euro, during the fiscal year ended March 31, 2017 was a significant downward factor that contributed to a decrease in consolidated revenue, presented in Japanese yen, from the fiscal year ended March 31, 2016. In the fiscal year ended March 31, 2018, this trend reversed, but increases in the strength of the yen in future years may similarly negatively affect our results of operations.

We utilize certain hedging measures with respect to some of our foreign currency transactions. However, such hedging measures do not cover all of our exposures and, even to the extent they do, they may only delay, or may otherwise be unable to completely eliminate, the impact of fluctuations in foreign currency exchange rates.

We may not be able to adequately expand our product portfolio through third-party alliance arrangements.

We expect that we will continue to rely on third parties for key aspects of our business, including the discovery and development of new products, in-licensing products and the marketing and distribution of approved products. A major part of our research and development strategy is to enhance collaborations with third parties in the biotechnology industry, academia and the public sector, and we believe that the overall strength of our research and development program and product pipeline depends on our ability to identify and initiate partnerships, acquisitions, in-licensing arrangements and other collaborations with third parties. For example, a number of our key products, including *ADCETRIS*, *TRINTELLIX* and *AMITIZA*, are in-licensed products developed through alliances with third parties. However, there can be no assurance that any of our third-party

alliances will lead to the successful development and marketing of new products. Moreover, reliance on third-party alliances subjects us to a number of risks, including:

- We may be unable to identify suitable opportunities at a reasonable cost and on terms that are acceptable to us due to active and intense competition among pharmaceutical groups for alliance opportunities or other factors.
- Entering into in-licensing or partnership agreements may require the payment of significant "milestones" well before the relevant products are placed in the market, without any assurance that such investments will ultimately become profitable in the long term.
- When we research and market our products through collaboration arrangements, the performance of certain key tasks or functions are the responsibility of our collaboration partners, who may not perform effectively or otherwise meet our expectations.
- Decisions may be under the control of or subject to the approval of our collaboration partners, and we may have differing views or be unable to agree upon an appropriate course of action. Any conflicts or difficulties that we may have with our partners during the course of these agreements or at the time of their renewal or renegotiation or any disruption in the relationships with our partners may affect the development, launch and/or marketing of certain of our products or product candidates.

In addition, a licensor may attempt to terminate its license agreement with us or elect not to renew it to pursue other marketing opportunities. Our licensors could also merge with or be acquired by another company, or experience financial or other setbacks unrelated to our licensing arrangements. Any of these events may force us to abandon a development project and adversely affect our ability to adequately expand or maintain our product portfolio.

Our reliance on third parties for the performance of key business functions, particularly research and development and product commercialization, heightens the risks faced by our business.

We rely on suppliers, vendors and partners, including alliances with other pharmaceutical companies, for key aspects of our business, including research and development, manufacture and commercialization of products, support for information technology systems and certain human resource functions. We do not control these partners, but we depend on them in ways that may be significant to us. If these parties fail to meet our expectations or fulfill their obligations to us, we may fail to receive the expected benefits. In addition, if any of these third parties fails to comply with applicable laws and regulations in the course of its performance of services for us, there is a risk that we may be held responsible for such violations as well. This risk is particularly serious in emerging markets, where corruption is often prevalent and where many of the third parties on which we rely do not have internal compliance resources comparable to our own. Any such failures by third parties, in emerging markets or elsewhere, could adversely affect our business, reputation, financial condition or results of operations.

We are involved in litigation relating to our operations on an ongoing basis, and such litigation could result in financial losses or harm our business.

We are involved in various litigation relating to our operations on an ongoing basis, including claims related to product liability and intellectual property as well as to antitrust, sales and marketing and other regulatory regimes. Given the inherent unpredictability of litigation, it is possible that an adverse outcome in one or more pending or future litigation matters could have a material adverse effect on our operating results or cash flows. For a description of certain ongoing litigation, see "Business of Takeda—Legal Proceedings."

Economic and financial conditions may have a material adverse effect on our business, financial condition and results of operations.

Growth of the global pharmaceutical market has become increasingly tied to global economic growth. In this context, a substantial and lasting slowdown of the global economy or major national economies could negatively affect growth in the global pharmaceutical market and, as a result, adversely affect our business. In particular, weak economic conditions can have a particularly adverse impact on pharmaceutical demand in markets having significant co-pays or lacking a developed third-party payer system, as individual patients may delay or decrease out-of-pocket healthcare expenditures. Negative economic developments could also reduce the sources of funding for national social security systems, leading to heightened pressure on drug prices, increased substitution of generic drugs, and the exclusion of certain products from formularies.

Following the global financial crisis in 2008, economic growth continues to be stagnant in major developed countries while the pace of growth in many emerging economies has declined. The referendum vote in the U.K. to leave the EU, known as "Brexit," the transition to a new presidential administration in 2017 and mid-term elections in 2018 in the United States and continued instability in the Middle East and North Korea have increased political and economic uncertainty. To the extent that economic or financial conditions weaken in any of our major operating markets, demand for our products or product pricing could be negatively affected. In addition, to the extent that economic and financial conditions negatively affect the global business environment, we could experience a disruption or delay in the performance of third parties on which we rely for parts of our business, including collaboration partners and suppliers. Such disruptions or delays could have a material and adverse effect on our business, financial condition and results of operations.

Government policies and other pressures to reduce medical costs could have an adverse effect on sales of our pharmaceutical products.

We are subject to governmental regulations mandating price controls in various countries in which we operate. The growth of overall healthcare costs as a percentage of gross domestic product in many countries means that governments and payers are under intense pressure to control spending even more tightly. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Factors Affecting Our Results of Operations—Revenue—Pricing and government regulation" and "Regulation."

In the United States, the largest market for our products, there has been increasing pricing pressure from managed care groups and institutional and governmental purchasers. In particular, as managed care groups have grown in size due to market consolidation, pharmaceutical companies have faced increased pressure in pricing and usage negotiations, and there is fierce competition among pharmaceutical companies to have their products included in the care providers' formularies. Moreover, as a result of the Patient Protection and Affordable Care Act (the "ACA") enacted in 2010, as amended by the Health Care and Education Reconciliation Act (together, the "U.S. Healthcare Legislation"), we have experienced heightened pricing pressure on, and limitations on access to, our branded pharmaceutical products sold in the United States. In addition, there has been increasing attention paid to the level of pricing of pharmaceutical products, including from the Trump administration and other politicians, which could lead to political pressure or legislative, regulatory or other measures being introduced to lower prices. The future of the U.S. Healthcare Legislation, as well as the potential impact of any new legislation, is uncertain, but we expect the health care industry in the United States will continue to be subject to increasing regulation as well as political and legal action.

In Japan, manufacturers of pharmaceutical products must have new products listed on the National Health Insurance (the "NHI"), price list published by the Ministry of Health, Labour and Welfare of Japan (the "MHLW"). The NHI price list provides rates for calculating the price of pharmaceutical products used in medical services provided under various public medical care insurance systems. Prices on the NHI price list have been subject to revision generally once every two years on the basis of the actual prices at which the pharmaceutical products are purchased by medical institutions in Japan after discounts and rebates from listed price. The average price of products listed on the NHI price list has decreased as a result of each of the revisions in 2014, 2016 and 2018. The Japanese government is currently undertaking healthcare reform initiatives with a goal of sustaining the universal coverage of the NHI program, and is addressing the efficient use of drugs, including promotion of generic use with a target of 80% penetration by volume by September 2020 with respect to products for which market exclusivity has expired. As part of these initiatives, the NHI price list is expected to be revised annually beginning in the fiscal year ending March 31, 2022, which could lead to more frequent downward price revisions.

In Europe, as in the United States, drug prices have been subject to downward pressure due to measures implemented in each country to control drug costs, and prices continue to come under pressure due to parallel imports, generic competition, increasing use of health technology assessment based upon cost-effectiveness and other factors. We are also facing similar pricing pressures in various emerging countries.

We expect these efforts to control costs to continue as healthcare payers around the globe, in particular government-controlled health authorities, insurance companies and managed care organizations ("MCOs"), increasingly pursue initiatives to reduce the overall cost of healthcare, restrict access to higher-priced new medicines, increase the use of generics and impose overall price revisions. Such further implementation of these policies could have a material adverse effect on our business, financial condition and results of operations.

We may have difficulty in maintaining the competitiveness of our products.

The pharmaceutical industry is highly competitive, and in order to maintain the competitiveness of our product portfolio, we are required to maintain ongoing, extensive research for technological innovations, including new compounds, to develop and commercialize existing pipeline products, to expand our product portfolio through acquisitions and in-licensing, and to market our products effectively, including by communicating the efficacy, safety and value of our products to healthcare professionals. However, healthcare professionals and consumers may choose competitors' products over ours nonetheless, if they perceive these products to be safer, more reliable, more effective, easier to administer or less expensive. The success of any product depends on our ability to effectively communicate with and educate the healthcare professionals and patients and convince them of the advantage of our products over those of our competitors. We often carry out costly clinical trials even after our products have been launched to produce data to be utilized for these purposes, but such trials do not always produce the desired outcomes. Furthermore, many of our competitors have greater financial and other resources to conduct such trials in more detail and with larger patient populations, which may ultimately enable them to promote their products more effectively than we do.

In Japan, reduced approval times for drugs already marketed outside Japan have led to increased competition through the introduction of such drugs into the Japanese market by foreign competitors. In addition, new competing products or the development of superior medical technologies and other treatment options could make our products or technologies lose their competitiveness or become obsolete. As discussed above, our products are also subject to competition from inexpensive generic versions of our products, as well as generic versions of our competitors' products, upon the expiration or loss of related patent protection and regulatory data protection, which may result in loss of market share. If we are unable to maintain the competitiveness of our products, our business, financial position and results of operations could be materially and adversely affected.

Our products may have unanticipated adverse effects or possible adverse effects, which may restrict use of the product or give rise to product liability claims.

As a pharmaceutical company, we are subject to significant risks related to product liability. Unanticipated adverse reactions or unfavorable publicity from complaints concerning any of our products, or those of our competitors, could have an adverse effect on our ability to obtain or maintain regulatory approvals or successfully market our products, and may even result in recalls, withdrawal of regulatory approval or adverse labeling of the product.

While our products are subject to comprehensive clinical trials and rigorous statistical analysis during the development process prior to approval, there are inherent limitations with regard to the design of such trials, including the limited number of patients enrolled in such trials, the limited time used to measure the efficacy of the product and the limited ability to perform long-term monitoring. In the event that such unanticipated adverse reactions are discovered, we may be required to add descriptions of the adverse reactions as "precautions" to the packaging of our products, recall and terminate sales of products or conduct costly post-launch clinical trials. Furthermore, concerns relating to potential adverse reactions could arise among consumers or medical professionals, and such concerns, whether justified or not, could have an adverse effect on sales of our products and our reputation. We could also be subject to product liability litigation by patients who have suffered or claim to have suffered such adverse reactions resulting in harm to their health. For example, numerous claims for damages were brought against us in which plaintiffs alleged to have developed bladder cancer or other injuries as a result of taking products containing Type 2 diabetes treatment *pioglitazone*, marketed as *ACTOS* in the United States. We reached a settlement to resolve the vast majority of *ACTOS* product liability lawsuits pending against us in the United States, resulting in a charge of ¥274.1 billion in the fiscal year ended March 31, 2015. See "Business of Takeda—Legal Proceedings" for a description of these proceedings. We may also be subject to claims regarding manufacturing defects and labeling problems.

Although we maintain product liability insurance at coverage levels that we believe are appropriate, we could be subject to product liability that significantly exceeds such levels. Product liability coverage is also increasingly difficult and costly to obtain, and may not be available in the future on acceptable terms. Therefore, in the future, it is possible that we may need to rely increasingly on self-insurance for the management of product liability risk. In cases where we self-insure, the legal costs that we would bear for handling such claims and potential indemnifications to be paid to claimants could materially and adversely affect our financial condition. In addition, the negative publicity from product liability claims, whether or not justified, may damage our reputation and may negatively impact the number of prescriptions of the product in question or our other products. As a result, our business, financial condition and results of operations could be materially and adversely affected.

The manufacture of our products is technically complex and highly regulated, and supply interruptions, product recalls or other production problems caused by unforeseen events may reduce sales, adversely affect our operating results and financial condition and delay the launch of new products.

The manufacture of our products is technically complex and highly regulated, and as a result we may experience difficulties or delays including but not limited to the following:

- seizure or recalls of products or shut-downs of manufacturing plants;
- problems with business continuity, including as a result of a natural or man-made disaster, at one of our facilities or at a critical supplier or vendor;
- failure by us or by any of our vendors or suppliers to comply with Current Good Manufacturing Practices and other applicable regulations and quality assurance guidelines, which could lead to manufacturing shutdowns, product shortages and delays in product manufacturing;
- problems with manufacturing, quality assurance/quality control or supply, or governmental approval delays, due to our consolidation and rationalization of manufacturing facilities and the sale or closure of certain sites;
- failure of a sole source or single source supplier to provide us with necessary raw materials, supplies or finished goods for an extended period of time, which could impact continuous supply;
- failure of a third-party manufacturer to supply us with semi-finished or finished products on time;
- construction or regulatory approval delays related to new facilities or the expansion of existing facilities;
- additional costs related to deficiencies identified by regulatory agencies in connection with inspections of our facilities, and enforcement, remedial or punitive actions by regulatory authorities if we fail to remedy any deficiencies; and
- other manufacturing or distribution problems including limits to manufacturing capacity due to regulatory requirements, changes in the types of products produced, physical limitations or other business interruptions that could impact continuous supply.

Any of the above may reduce sales, delay the launch of new products, and adversely affect our business, financial condition and results of operations.

In July 2018, we acquired Tigenix NV, which develops novel stem cell therapies for serious medical conditions. The development and manufacture of stem cell products and other biologics, including products we expect to add to our portfolio following the completion of the Shire Acquisition, present heightened or additional risks. The manufacture of biologics, including stem cell products, is highly complex and is characterized by inherent risks and challenges, such as raw material inconsistencies, logistical and sourcing challenges, significant quality control and assurance requirements, manufacturing complexity (including heightened regulatory requirements) and significant manual processing. Unlike products that rely on chemicals for efficacy, such as most pharmaceuticals, biologics are difficult to characterize due to the inherent variability of biological input materials. As a result, assays of the finished product may not be sufficient to ensure that the product will perform in the intended manner. Problems with the manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims or insufficient inventory, which could be costly to us or result in reputational damage.

The illegal distribution and sale by third parties of counterfeit versions of our products or products stolen from us could have an adverse effect on our reputation and business.

Third parties may illegally distribute and sell counterfeit versions of our products, which do not meet the rigorous manufacturing and testing standards to which our products are subject. A patient who receives a counterfeit drug may be at risk for a number of dangerous health consequences. Reports of adverse reactions to counterfeit drugs or increased levels of counterfeiting could materially affect patient confidence in our products, which could have a material adverse effect on our reputation and financial results. In addition, thefts at warehouses, at plants, or in transit of inventory that is not properly stored or that is sold through unauthorized channels could adversely affect patient safety, our reputation and our results of operations.

We are increasingly dependent on information technology systems and our systems and infrastructure face the risk of theft, exposure, tampering or other intrusions.

Certain important processes relating to the research and development, production and sales of our products depend heavily on our information systems, including cloud-based computing, or those of third party providers to whom we outsource certain business functions, including the storage and transfer of critical, confidential, sensitive or personal information regarding our patients, clinical trials, vendors, customers, employees and others. The size and complexity of these computer systems make them potentially vulnerable to service interruptions, malicious intrusions and random attacks. Cyber-attacks are increasing in frequency, sophistication and intensity. Such attacks are made by groups and individuals with a wide range of motives (including, but not limited to, industrial espionage) and expertise, including organized criminal groups, "hacktivists," nation-states and others. Cyber-attacks could include the deployment of harmful malware, denial of service attacks, worms, social engineering and other means to affect service reliability and threaten data confidentiality, integrity and availability. The development and maintenance of systems to safeguard against such attacks is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly more sophisticated. Despite our efforts, the possibility of a future data compromise cannot be eliminated entirely, and risks associated with intrusion, exposure, tampering, and theft remain.

If our data systems are compromised, our business operations may be impaired, we may lose profitable opportunities or the value of those opportunities may be diminished, and we may lose revenue because of unlicensed use of our intellectual property. If personal information of our customers or employees is misappropriated, our reputation with our customers and employees may be injured resulting in loss of business and/or morale, and we may incur costs to remediate possible injury to our customers and employees or be required to pay fines or take other action with respect to judicial or regulatory actions arising out of such incidents. Data privacy or security breaches by employees and others with permitted access to our systems, including in some cases third-party service providers to which we may outsource certain business functions, may also pose a risk that sensitive data, including intellectual property or personal information, will be exposed to unauthorized persons or to the public.

Changes in data privacy and protection laws and regulations, particularly in Europe, or any failure to comply with such laws and regulations, could adversely affect our business and financial results.

We are subject to laws and regulations globally regarding privacy, data protection, and data security, including those related to the collection, storage, handling, use, disclosure, transfer, and security of personal data. Significant uncertainty exists as privacy and data protection laws may be interpreted and applied differently from country to country and may create inconsistent or conflicting requirements. For example, the EU's General Data Protection Regulation (the "GDPR"), which imposes additional obligations on companies regarding the handling of personal data and provides certain individual privacy rights to persons whose data is stored, became effective on May 25, 2018. Furthermore, legislators and regulators in the United States are proposing new and more robust cybersecurity rules in light of the recent broad-based cyberattacks at a number of companies. Compliance with existing, proposed and recently enacted laws (including implementation of the privacy and process enhancements called for under GDPR) and regulations can be costly; any failure to comply with these regulatory standards could subject us to legal and reputational risks. Misuse of or failure to secure personal information could also result in violation of data privacy laws and regulations, proceedings against us by governmental entities or others or damage to our reputation and credibility and could also have a negative impact on revenues and profits.

Social media platforms and new technologies present risks and challenges for our reputation and business.

Consumers, the media, pharmaceutical companies and other parties increasingly use social media and other new technologies to communicate about pharmaceutical products and the diseases they are intended to treat. For pharmaceutical companies, the use of these technologies requires specific attention, monitoring programs and moderation of comments. For example, negative or inaccurate posts or comments about us or our products on any social media networking platforms could damage our reputation and business. Social media could also be used to bring negative attention to us or to the pharmaceutical industry as a whole, which could in turn cause reputational harm to us and negatively impact our business. The nature of evidence-based health care, however, may prevent us from rapidly and adequately defending our interests against such comments. In addition, our employees and partners may use social media and mobile technologies inappropriately, which may expose us to liability, or which could lead to breaches of data security, loss of trade secrets or other intellectual property or public disclosure of sensitive information, including information about our employees, clinical trials or customers.

Our dependence on third parties for the inputs for our products subjects us to various risks, and changes in the costs of materials may adversely affect our profitability.

Although we develop and manufacture the active ingredients used in some of our products at our own facilities, we are dependent on third-party suppliers for a substantial portion of the raw materials and compounds used in the products we produce. The price and availability of the raw materials for our products, including chemical compounds and biologics, are subject to the effects of weather, natural disasters, market forces, the economic environment, fuel costs and foreign exchange rates. If our cost for such materials increases, we may not be able to make corresponding increases in the prices of our products due to market conditions or our relationships with our customers, and as a result, our profitability could be materially and adversely affected. Sources of some materials may be limited to a single supplier, and if such supplier faces any difficulty in supplying the materials, we may not be able to find an alternative supplier in a timely manner or at all. If materials become unavailable or if quality problems related to the materials arise, we may be forced to halt production and sales of products that use them. In the event that any of our third-party suppliers is delayed in its delivery of such raw materials or compounds, is unable to deliver the full quantity ordered by us at the appropriate level of quality, or is unable to deliver any raw materials or compounds at all, our ability to sell our products in the quantities demanded by the market may be impaired, which could damage our reputation and relationships with customers. In such a case, our business and results of operations could be adversely affected.

Sales to wholesalers are concentrated, which exposes us to credit risks and pricing pressures.

A significant portion of our global sales are made to a relatively small number of wholesale distributors, retail chains and other purchasing groups. In the fiscal year ended March 31, 2018, our largest wholesale distributor accounted for 12.4% of our total revenue. If one of our significant wholesale distributors encounters financial or other difficulties, such distributor may decrease the amount of business that it does with us, and we may be unable to collect the amounts that the distributor owes us on a timely basis or at all. Furthermore, the concentration of wholesale distributors has been increasing through mergers and acquisitions. In addition to increased credit risks, this has resulted in such distributors gaining additional purchasing leverage, which may increase pricing pressure on our products. Such credit concentration risks and pricing pressure could adversely affect our business, financial condition and results of operations.

We may incur substantial costs due to our environmental compliance efforts or claims relating to our use, manufacture, handling, storage or disposal of hazardous materials.

Our research and development and manufacturing processes use hazardous materials, including chemicals and radioactive and biological materials, and produce hazardous waste. National and local laws and regulations in many of the jurisdictions in which we operate impose substantial potential liability for the improper use, manufacture, handling, storage and disposal of hazardous materials as well as for land contamination, and, in some cases, this liability may continue over long periods of time. Despite our compliance efforts, we cannot completely eliminate the risk of accidental contamination and any resultant injury from these materials. For example, real properties that we owned or used in the past or that we own or use now or in the future may contain undetected contamination resulting from our manufacturing operations at those sites or the activities of prior owners or occupants. While we have not experienced any material expenses or liability in connection with hazardous materials, we may suffer from expenses, claims or liability in the future which may fall outside of or exceed our insurance coverage. Furthermore, changes to current environmental laws and regulations may impose further compliance requirements on us that may impair our research, development and production efforts as well as our other business activities.

We may suffer large losses in the event of a natural or other disaster, such as an earthquake, terrorist attack or other catastrophic event, in any of the markets in which we operate.

Japan and other regions in the world in which we operate are subject to the risk of earthquakes and other natural disasters, including volcanic eruptions, tidal waves, typhoons, floods and hurricanes. For example, the Great East Japan Earthquake and subsequent tsunami that occurred in March 2011 caused unprecedented property and other damage, although we did not incur any significant damage to our facilities. In addition, other events outside our control, such as war, civil or political unrest, deliberate acts of sabotage, or industrial accidents such as fire and explosion, whether due to human or equipment error, could damage, cause operational interruptions, or otherwise adversely affect certain of our manufacturing or other facilities as well as potentially cause injury or death to our personnel. In the event of a major natural disaster or other uncontrollable event or accident, our facilities, particularly our production plants, may experience catastrophic loss, operations at such

facilities may be halted, shipments of products may be suspended or delayed and large losses and expenses to repair or replace facilities may be incurred. Such negative consequences could cause product shortages, significant losses of sales or require significant unexpected expenditures, and materially adversely affect our business, financial condition and results of operations.

We regularly conduct inspections of all of our facilities for maintenance purposes and to prevent potential damage from disaster, and we have global group insurance to cover property damage and business interruption for certain potential losses at our production facilities, although we do not maintain earthquake insurance in Japan. These insurance policies may not be adequate to cover all possible losses and expenses. In addition, our business may also be adversely affected if our suppliers or business partners were to experience a catastrophic loss due to natural disasters, accidents or other uncontrollable events.

We may have to recognize additional charges on our statements of income due to impairment of goodwill and other intangible assets.

We carry significant amounts of goodwill and intangible assets on our balance sheet as a result of past acquisitions. If completed as expected, we also expect to record significant additional goodwill and intangible assets in connection with the Shire Acquisition. As of March 31, 2018, we had goodwill of ¥1,029.2 billion and intangible assets of ¥1,014.3 billion. Goodwill and intangible assets recorded in relation to acquisitions are recognized on our balance sheet on the acquisition date. Under IFRS, we are required to examine such assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Critical Accounting Policies—Impairment of Goodwill and Intangible Assets." The recognition of such impairment charges may adversely affect our business, financial condition and results of operations.

We may not be able to attract and retain key management and other personnel.

In order to produce, develop, support and market our products, we depend on the expertise and leadership of our senior management team and other key members of our organization. The loss of key members of our organization, including senior members of our scientific and management teams, high-quality researchers and development specialists, could delay or prevent the achievement of major business objectives. The market for such talents has become increasingly competitive, including in specific geographic regions and in specialized fields such as clinical development and biosciences, and we are required to invest heavily in the recruitment, training and retention of qualified individuals, including salary and other compensation to reward performance and incentivize employees. Despite our efforts to retain them, key employees could terminate their employment with us for any reason or for no reason, and there can be no assurance that we will be able to attract or retain key employees and successfully manage them. Our inability to attract, integrate and retain highly skilled personnel, particularly those in leadership positions, may weaken our succession plans and may materially adversely affect our ability to implement our strategy and meet our strategic objectives, which could ultimately adversely affect our business and results of operations.

If we fail to maintain effective internal control over financial reporting, the accuracy and timeliness of our financial reporting may be adversely affected, which could cause investors to lose confidence in our reported financial information and may lead to a decline in the trading price of our securities.

Our common stock is currently listed only on the Tokyo Stock Exchange and other local Japanese stock exchanges, and we have established internal control over financial reporting pursuant to the requirements applicable to companies listed only in Japan. As part of our preparations for the Shire Acquisition, we intend to register our common stock and ADSs under the Exchange Act, and we will become subject to, among other things, the requirements under the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"). The standards for internal control over financial reporting under the Sarbanes-Oxley Act are significantly more extensive than those applicable to companies listed only in Japan. For example, we will be required, pursuant to Section 404 of the Sarbanes-Oxley Act ("Section 404"), to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting, as well as a statement that our independent registered public accounting firm has issued an opinion on our internal control over financial reporting. Pursuant to the instructions to Form 20-F, we expect to include this report in our second annual report filed with the Securities and Exchange Commission (the "SEC"), which we currently expect will be filed by no later than July 31, 2020. We are still in the costly and challenging process of compiling the system and processing documentation necessary to perform the evaluation needed to comply with Section 404.

Neither our management nor independent registered public accounting firm has ever performed a comprehensive evaluation of our internal control over financial reporting in accordance with the provisions of the Sarbanes-Oxley Act because no such evaluation has been required, and we cannot be certain that material weaknesses in our internal control over financial reporting will not develop or be identified. Any failure to achieve and maintain adequate internal control over financial reporting or to implement required, new or improved controls, or difficulties encountered in their implementation could cause material weaknesses or other deficiencies in our internal control over financial reporting in the future. If we are unable to successfully remediate any material weaknesses or other deficiencies in our internal control over financial reporting, the accuracy and timing of our financial reporting may be adversely affected and investors may lose confidence in our financial reporting, and the price of our securities may decline as a result. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the NYSE.

Risks Relating to the Notes

The closing of this offering is not conditioned on completion of the Shire Acquisition.

The closing of this offering is not conditioned on, and will occur significantly in advance of, the planned completion of the Shire Acquisition. If the Shire Acquisition is not completed, our ability to make payments of interest, principal or additional amounts, if any, on the Notes or to redeem them pursuant to a special mandatory redemption may be materially and adversely affected.

The Notes are unsecured obligations.

The Notes are unsecured obligations and repayment of the Notes may be compromised if:

- we enter into bankruptcy, liquidation, rehabilitation or other winding-up proceedings;
- we default in payment of our secured indebtedness or other unsecured indebtedness; or
- any of our indebtedness is accelerated.

If any of these events occurs, then our assets may be insufficient to pay amounts due on the Notes.

The Notes will be structurally subordinated to the liabilities of our subsidiaries, including Shire and its subsidiaries following the completion of the Shire Acquisition.

The Notes will be our direct, unsecured and unsubordinated liabilities. The Notes will be structurally subordinated to the liabilities of subsidiaries, which, following the completion of the Shire Acquisition, will include the indebtedness of Shire and its subsidiaries. Holders of the Notes will only be entitled to assert a claim as a creditor of Takeda Pharmaceutical Company Limited that is to be paid out of Takeda Pharmaceutical Company Limited's assets. Moreover, to the extent that Takeda Pharmaceutical Company Limited now or in the future provides guarantees over the liabilities of our current or future subsidiaries, such claims may rank pari passu with the Notes, depending on the terms of such guarantees.

The fiscal agency agreement and the Notes contain only very limited restrictions on our ability to pledge, dispose or securitize our assets, pay dividends, incur indebtedness or issue or repurchase securities and provide holders with limited protection in the event of a change in control.

The fiscal agency agreement and the Notes do not contain any financial covenants and contain only very limited restrictions on our ability to pledge assets to secure other indebtedness, to securitize our loan assets, or sell or otherwise dispose of substantially all of our assets, our ability to pay dividends on our shares of common stock, our ability to incur unsecured indebtedness or our ability to issue new securities or repurchase our outstanding securities. These or other actions by us could adversely affect our ability to pay amounts due on the Notes. In addition, the fiscal agency agreement and the Notes do not contain any covenants or other provisions that afford more than limited protection to holders of the Notes in the event of a change in control. As discussed in a separate risk factor above, the pharmaceutical industry is one of the most active industries for mergers and acquisitions and global industrial reorganizations, and there can be no assurance that we will not be subject to a transaction that results in such a change of control.

If we do not consummate the Shire Acquisition on or prior to the Long Stop Date or if we otherwise publicly announce that the Shire Acquisition will not be consummated, then we will be required to redeem all of the outstanding Notes offered hereby.

If the Shire Acquisition has not been consummated on or prior to the Long Stop Date or if we otherwise publicly announce that the Shire Acquisition will not be consummated, then we will be required to redeem all outstanding Notes on the special mandatory redemption date at a special mandatory redemption price equal to 101% of the aggregate principal amount of the notes plus accrued and unpaid interest, if any, to, but excluding, the special mandatory redemption date. See "Description of the Notes—Redemption—Special Mandatory Redemption." If we redeem the Notes pursuant to the special mandatory redemption, you may not obtain the return that you expected on your investment in the Notes. Whether or not the special mandatory redemption is ultimately triggered, it may adversely affect trading prices for the Notes prior to the special mandatory redemption date. In the event of a special mandatory redemption, we may not have sufficient funds to redeem any or all of the Notes, which would constitute an event of default under the fiscal agency agreement and could result in defaults under our other debt agreements and have material adverse consequences for us and the holders of the Notes.

You will have no rights under the special mandatory redemption provisions if the Shire Acquisition closes, nor will you have any right to require us to repurchase your notes if, between the closing of this offering and the consummation of the Shire Acquisition, we experience any changes (including any material adverse changes) in our business or financial condition, or if the terms of the Co-Operation agreement change, including in material respects.

We may redeem certain series of the Notes prior to maturity.

We may redeem certain series of the Notes, in whole but not in part, at our option prior to the final maturity date, subject to the conditions described under "Description of the Notes—Redemption—Optional Redemption." In the case of such discretionary optional redemptions, if made after the par call date for the relevant series of Notes, we will not be required to pay any premium or other make-whole payments on the Notes being redeemed. Moreover, upon the occurrence of certain adverse tax events, we will be permitted to redeem the Notes at par. See "Description of the Notes—Redemption—Optional Tax Redemption." If the Notes were redeemed prior to the final maturity date, holders may not be able to reinvest the money received upon such redemption at the same rate of return as the Notes.

The ratings of the Notes could be lowered.

The Notes are expected to be rated ● by S&P Global Ratings and ● by Moody's. In addition, other rating agencies may assign credit ratings to the Notes without solicitation from or provision of information by us. Such ratings are limited in scope, and do not address all material risks relating to an investment in the Notes, but reflect only the view of each rating agency at the time the rating is issued. There is no assurance that such credit ratings will remain in effect for any given period of time or that such ratings will not be lowered, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant. A downgrade or potential downgrade in our credit ratings or the assignment of new ratings that are lower than existing ratings could reduce the population of potential investors in the Notes and adversely affect the price and liquidity of the Notes. A rating is based upon information furnished by us or obtained by the rating agency from its own sources and is subject to revision, suspension or withdrawal by the rating agency at any time. See "—Risks Relating to the Shire Acquisition—We have substantial debt, and expect to incur significant additional debt in connection with the Shire Acquisition, which may limit our ability to execute our business strategy, refinance existing debt or incur new debt, and if we are unable to meet our goals for deleveraging after the Shire Acquisition, we could be at a greater risk of a downgrade of our credit ratings."

The market for the Notes may have limited liquidity.

Although approval in-principle has been received for the listing and quotation of the Notes on the Singapore Exchange, there can be no assurance that any liquid markets for the Notes will ever develop or be maintained. Furthermore, there can be no assurance as to the liquidity of any markets that may develop for the Notes or the prices at which you will be able to sell your Notes, if at all.

Future trading prices of the Notes will depend on many factors, including:

- prevailing interest rates;

- our financial condition and results of operations;
- the then-current ratings assigned to the Notes;
- the market for similar securities; and
- general economic conditions.

Any trading markets that develop would be affected by many factors independent of and in addition to the foregoing, including the outstanding amount of the Notes and the level, direction and volatility of market interest rates generally.

The amount of interest payable on the floating rate notes is set only once per interest period based on the 3-month EURIBOR (as defined herein) rate on the applicable EURIBOR Interest Determination Date (as defined herein), which rate may fluctuate substantially.

In the past, the level of the 3-month EURIBOR rate has experienced significant fluctuations. You should note that historical levels, fluctuations and trends of the 3-month EURIBOR rate are not necessarily indicative of future levels. Any historical upward or downward trend in the 3-month EURIBOR rate is not an indication that the 3-month EURIBOR rate is more or less likely to increase or decrease at any time, and you should not take the historical levels of the 3-month EURIBOR rate as an indication of its future performance. You should further note that although the actual 3-month EURIBOR rate on an interest payment date (as defined herein) or at other times during an interest period may be higher than the 3-month EURIBOR rate on the applicable EURIBOR Interest Determination Date, you will not benefit from the 3-month EURIBOR rate at any time other than on the EURIBOR Interest Determination Date for such period. As a result, changes in the 3-month EURIBOR rate may not result in a comparable change in the market value of the Notes.

EU regulation and reform of "benchmarks," including EURIBOR, is ongoing and could have a material adverse effect on the value of and return on the Notes.

EURIBOR and other interest rate, equity, commodity, foreign exchange rate and other types of indices which are deemed to be "benchmarks" are the subject of ongoing international regulatory reform in the EU. These reforms may cause such "benchmarks" to perform differently than in the past or to disappear entirely or may have other consequences which cannot be predicted. Any such consequence could have a material adverse effect on any notes linked to such a "benchmark," including the Notes. Key regulatory proposals for reform of "benchmarks" in the EU include IOSCO's Principles for Financial Benchmarks (July 2013) and the EU's Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014 (the "Benchmarks Regulation"). The Benchmarks Regulation could have a material impact on a "benchmark" rate (and in turn any notes linked to it), if, among other things, (i) subject to applicable transitional provisions, the benchmark administrator is based in the EU and does not obtain authorization or registration (or such authorization or registration is withdrawn), or, if non-EU-based, has not satisfied certain "equivalence" conditions in its local jurisdiction, or (ii) the methodology or other terms of the "benchmark" are changed in order to comply with the terms of the Benchmarks Regulation, which could have the effect of reducing or increasing the rate or level of the benchmark or affecting the volatility of the published rate or level. Any of the foregoing changes, any other changes to EURIBOR as a result of international regulatory reform or other initiatives or any further uncertainty surrounding the implementation of such changes could have a material adverse effect on the value of and return on the Notes.

We may be allowed to make payments on the Notes in U.S. dollars rather than in euros.

The Notes will be issued and denominated in euros, and the initial holders of the Notes will be required to pay for the Notes in euros. If, on or after the date of this offering circular, the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control, or the euro is no longer used by the then member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions within the international banking community, then all payments in respect of the Notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted to U.S. dollars on the basis of the most recently available market exchange rate for euros, as determined by us in our sole discretion. Any payment in respect of the Notes so made in U.S. dollars will not constitute an event of default under the fiscal agency agreement or the Notes. Neither the fiscal agent nor the paying agent will be responsible for obtaining exchange rates, effecting conversions or otherwise handling redenominations.

USE OF PROCEEDS

We expect that the aggregate net proceeds from the offering of the Notes, after deducting the initial purchasers' fees, will be approximately €● million.

We intend to use the net proceeds of the sale of the Notes to fund a portion of the cash consideration to be paid in connection with the Shire Acquisition.

CAPITALIZATION AND INDEBTEDNESS

The following table sets forth our consolidated capitalization and indebtedness as of September 30, 2018 and as adjusted to give effect to the offering of the Notes and an illustrative amount of Potential Future Notes. This table does not set forth our expected capitalization on a pro forma basis following the completion of the Shire Acquisition, including any drawdowns under the Term Loan Agreement, the SSTL or the Bridge Credit Agreement or any other potential financing transactions. Our pro forma balance sheet information as of March 31, 2018, which gives effect to the Shire Acquisition (including illustrative financing costs), is included elsewhere in this offering circular.

The data set forth in the following table and notes thereto should be read together with "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda" and our unaudited condensed interim consolidated financial statements and notes thereto included elsewhere in this offering circular.

	As of September 30, 2018	
	Actual	As adjusted[1][2]
	(billions of yen)	
Debt:		
Current portion of bonds	¥ 60.0	¥ 60.0
Bonds (excluding current portion of bonds)	116.4	116.4
Short-term loans	0.9	0.9
Current portion of long-term loans	60.0	60.0
Long-term loans (excluding current portion of long-term loans)	763.2	763.2
Potential Future Notes[3]	—	●
Notes offered hereby[3]	—	●
Total bonds and loans	¥1,000.5	¥ ●
Equity:		
Share capital	¥ 77.9	¥ 77.9
Authorized—3,500,000,000 shares Issued—794,701,895 shares		
Share premium	81.8	81.8
Treasury shares	(57.2)	(57.2)
Retained earnings	1,648.1	1,648.1
Other components of equity	417.7	417.7
Other comprehensive income related to assets held for sale	—	—
Equity attributable to owners of the Company	2,168.4	2,168.4
Non-controlling interests	3.8	3.8
Total equity	¥2,172.2	¥ 2,172.2
Total capitalization and indebtedness	¥3,172.7	¥ ●

Notes:

(1) Translation of these U.S. dollar amounts into yen has been made at the rates of $1.00 = ¥●, the actual dollar-yen exchange rates prevailing as of September 30, 2018.

(2) Translation of these euro amounts into yen has been made at the rates of €1.00 = ¥●, the actual euro-yen exchange rates prevailing as of September 30, 2018.

(3) We expect the total aggregate principal amount of the Notes and the Potential Future Notes will be approximately ¥14.05 billion.

There has been no material change in our consolidated capitalization and indebtedness since September 30, 2018.

SELECTED FINANCIAL DATA AND OTHER DATA

Selected Financial and Other Data of Takeda

The table below sets forth certain of our selected consolidated financial data as of and for the periods indicated. The selected consolidated financial data set forth below as of and for the fiscal years ended March 31, 2016, 2017 and 2018 have been derived from, and should be read in conjunction with, our audited consolidated financial statements and the notes thereto contained elsewhere in this offering circular. The selected financial data as of and for the fiscal years ended March 31, 2014 and 2015 have been derived from our audited consolidated financial statements as of and for the fiscal years ended March 31, 2014 and 2015, which are not included in this offering circular. The selected financial data as of September 30, 2018 and for the six months ended September 30, 2017 and 2018 have been derived from our unaudited condensed interim consolidated financial statements as of September 30, 2018 and for the six months ended September 30, 2017 and 2018 included elsewhere in this offering circular. The selected statement of financial position data as of September 30, 2017 have been derived from our unaudited condensed interim consolidated financial statements as of September 30, 2017 and for the six months ended September 30, 2016 and 2017, which are not included elsewhere in this offering circular.

The information below should also be read in conjunction with, and is qualified in its entirety by reference to, "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda." Our consolidated financial statements are prepared and presented in accordance with IFRS, which differ in certain significant respects from accounting principles generally accepted in other countries, including Japan and the United States.

	As of and for the fiscal year ended March 31,					As of and for the six months ended September 30,	
	2014	2015	2016	2017	2018	2017	2018
	(billions of yen, except for per share data and number of shareholders and employees)						
Selected Statements of Operations:							
Revenue	¥ 1,691.7	¥ 1,777.8	¥ 1,807.4	¥ 1,732.1	¥ 1,770.5	¥ 881.4	¥ 880.6
Operating profit (loss)	139.3	(129.3)	130.8	155.9	241.8	234.3	172.0
Profit (loss) before tax	158.9	(145.4)	120.5	143.3	217.2	233.0	160.8
Net profit (loss) attributable to owners of the Company	106.7	(145.8)	80.2	114.9	186.9	172.8	126.7
Per share amounts							
Basic earnings (loss)	¥ 135.10	¥(185.37)	¥ 102.26	¥ 147.15	¥ 239.35	¥ 221.43	¥ 161.76
Diluted earnings (loss)	134.95	(185.37)	101.71	146.26	237.56	219.98	160.93
Cash dividends	180.00	180.00	180.00	180.00	180.00	90.00	90.00
Cash dividends in U.S. dollars[1]	$ 1.75	$ 1.50	$ 1.60	$ 1.62	$ 1.69	$ 0.80	$ 0.79
Selected Statement of Financial Position:							
Non-current assets	¥ 2,976.6	¥ 2,776.1	¥ 2,450.3	¥ 3,086.4	¥ 3,027.7	¥3,154.0	¥3,166.9
Current assets	1,592.5	1,520.1	1,373.8	1,260.4	1,078.8	1,222.0	1,107.9
Total assets	4,569.1	4,296.2	3,824.1	4,346.8	4,106.5	4,376.0	4,274.8
Non-current liabilities	1,225.8	1,073.2	955.7	1,031.5	1,351.5	1,431.5	1,258.5
Current liabilities	802.8	1,016.8	857.2	1,366.3	737.5	838.8	844.2
Total equity	2,540.6	2,206.2	2,011.2	1,949.0	2,017.4	2,105.7	2,172.2
Other Data:							
Number of shareholders	298,890	260,349	257,042	278,765	247,488	n.a.	n.a.
Number of employees	31,225	31,328	31,168	29,900	27,230	n.a.	n.a.
EBITDA[2]	n.a.	n.a.	305.8	320.2	406.1	329.7	242.2
Adjusted EBITDA[2]	n.a.	n.a.	351.6	303.4	377.7	213.8	241.0

Notes:

(1) Calculated using the Japanese yen—U.S. dollar exchange rate as of March 31 or September 30 (or the last business day of such month) of each year, based on the noon buying rate in New York City for cable transfers in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York.

(2) EBITDA and Adjusted EBITDA are not measures prescribed by, or presented under, IFRS. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Certain Non-IFRS Performance Measures."

Selected Financial and Other Data of Shire

The table below sets forth certain selected consolidated financial data of Shire as of and for the periods indicated. The selected consolidated financial data set forth below as of December 31, 2016 and 2017 and for the fiscal years ended December 31, 2015, 2016 and 2017 have been derived from, and should be read in conjunction with, Shire's audited consolidated financial statements and the notes thereto included elsewhere in this offering circular. The selected financial data as of December 31, 2015 has been derived from Shire's audited consolidated financial statements as of and for the period ended December 31, 2015, which are not included in this offering circular. The selected financial data as of and for the fiscal years ended December 31, 2013 and 2014 have been derived from Shire's audited consolidated financial statements as of and for the fiscal years ended December 31, 2013 and 2014, which are not included in this offering circular, except for the re-presentation of Amortization of acquired intangible assets as a separate line item reclassified from Selling, general, and administrative expenses.

The selected financial data as of September 30, 2018 and for the nine months ended September 30, 2017 and 2018 have been derived from the unaudited consolidated financial statements of Shire as of September 30, 2018 and for the nine months ended September 30, 2017 and 2018 included elsewhere in this offering circular. The selected financial data as of September 30, 2017 have been derived from the unaudited consolidated financial statements of Shire as of September 30, 2017 and for the nine months ended September 30, 2017 and September 30, 2016, which are not included in this offering circular.

The information below should also be read in conjunction with, and is qualified in its entirety by reference to, "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire." Shire's consolidated financial statements are prepared and presented in accordance with U.S. GAAP, which differ in certain significant respects from IFRS, under which our consolidated financial statements are prepared.

	As of and for the fiscal year ended December 31,					As of and for the nine months ended September 30,	
	2013	2014	2015	2016	2017	2017	2018
	(millions of dollars)						
Consolidated Statements of Operations:							
Revenues:							
Product sales	$4,757.5	$ 5,830.4	$ 6,099.9	$10,885.8	$ 14,448.9	$ 10,537.9	$ 11,198.5
Royalties and other revenues	176.8	191.7	316.8	510.8	711.7	477.8	358.4
Total revenues	4,934.3	6,022.1	6,416.7	11,396.6	15,160.6	11,015.7	11,556.9
Costs and expenses:							
Cost of sales	670.8	979.3	969.0	3,816.5	4,700.8	3,437.3	3,398.3
Research and development	933.4	1,067.5	1,564.0	1,439.8	1,763.3	1,324.5	1,240.0
Selling, general and administrative[1]	1,499.3	1,782.0	1,842.5	3,015.2	3,530.9	2,647.7	2,549.3
Amortization of acquired intangible assets[1]	152.0	243.8	498.7	1,173.4	1,768.4	1,280.5	1,375.3
Integration and acquisition costs	(134.1)	158.8	39.8	883.9	894.5	696.7	512.0
Goodwill impairment charge	7.1	—	—	—	—	—	—
Reorganization costs	88.2	180.9	97.9	121.4	47.9	24.5	268.9
Gain on sale of Oncology and product rights	(15.9)	(88.2)	(14.7)	(16.5)	(0.4)	(0.4)	(267.2)
Total operating expenses	3,200.8	4,324.1	4,997.2	10,433.7	12,705.4	9,410.8	9,076.6
Operating income from continuing operations	1,733.5	1,698.0	1,419.5	962.9	2,455.2	1,604.9	2,480.3
Interest income	2.1	24.7	4.2	18.4	9.7	5.7	4.8
Interest expense	(38.1)	(30.8)	(41.6)	(469.6)	(578.9)	(425.4)	(378.1)
Other (expense) / income, net	(3.9)	8.9	3.7	(25.6)	7.4	6.8	(43.9)
Receipt of break fee	—	1,635.4	—	—	—	—	—
Total other expense, net	(39.9)	1,638.2	(33.7)	(476.8)	(561.8)	(412.9)	(417.2)
Income from continuing operations before income taxes and equity in earnings / (losses) of equity method investees	1,693.6	3,336.2	1,385.8	486.1	1,893.4	1,192.0	2,063.1
Income taxes	(277.9)	(56.1)	(46.1)	126.1	2,357.6	(44.6)	(371.0)
Equity in earnings / (losses) of equity method investees, net of taxes	3.9	2.7	(2.2)	(8.7)	2.5	0.1	11.2
Income from continuing operations, net of taxes	1,419.6	3,282.8	1,337.5	603.5	4,253.5	1,147.5	1,703.3
(Loss) / gain from discontinued operations, net of taxes	(754.5)	122.7	(34.1)	(276.1)	18.0	18.6	—
Net income	$ 665.1	$ 3,405.5	$ 1,303.4	$ 327.4	$ 4,271.5	$ 1,166.1	$ 1,703.3
Selected Consolidated Balance Sheet Data:							
Total current assets	$4,288.3	$ 5,183.1	$ 2,255.5	$ 7,539.5	$ 7,608.4	$ 7,291.5	$ 7,799.3
Total assets	8,323.0	13,632.1	16,609.8	67,035.4	67,756.9	67,476.5	63,765.9
Total current liabilities	1,807.9	3,021.9	3,706.1	7,743.3	7,882.0	7,461.1	8,511.6
Long term obligations[3]	588.5	736.7	868.7	22,021.4	18,950.3	19,679.1	13,392.9
Total liabilities	2,957.0	4,969.2	6,780.7	38,087.4	31,580.5	34,821.9	26,475.7
Total equity	5,366.0	8,662.9	9,829.1	28,948.0	36,176.4	32,654.6	37,290.2
Other Data:							
Non-GAAP EBITDA[2]	1,987.3	2,756.5	2,924.1	4,710.1	6,492.4	4,806.7	4,866.3

Notes:

(1) Selling, general, and administrative expenses for the fiscal years ended December 31, 2013 and 2014 have been re-presented herein to reclassify Amortization of acquired intangible assets as a separate line item.

(2) Non-GAAP EBITDA is not a measure prescribed by, or presented under, U.S. GAAP. For a description of this non-GAAP measure and reconciliation to the closest GAAP measure, see "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire—Non-GAAP EBITDA."

(3) Long term obligations consists of long term borrowings and capital leases and other non-current liabilities. Long term deferred tax liabilities are not included in the long term obligations balance.

Selected Unaudited Pro Forma Condensed Combined Financial Data

The table below sets forth selected unaudited pro forma condensed combined statement of income and statement of financial position data as of and for the fiscal year ended March 31, 2018, which give effect to the Shire Acquisition, the financing obtained by us to fund the cash portion of the acquisition consideration, reflecting assumed financing costs and the issuance of shares by us to shareholders of Shire (based on the outstanding shares of Shire as of March 31, 2018 and the estimated number of vested share settled awards to be treated as shares in the Shire Acquisition). The unaudited pro forma condensed combined statement of financial position information gives effect to these transactions as if they occurred on March 31, 2018 and the unaudited pro forma condensed combined statements of income give effect to these transactions as if they occurred as of April 1, 2017. The unaudited pro forma condensed combined financial information has been prepared by management and is not necessarily indicative of what the combined company's financial position or results of operations actually would have been had the Shire Acquisition been completed as of the dates indicated. In addition, the unaudited pro forma condensed combined financial statements do not purport to project the future financial position or results of operations of the combined entity.

We have made certain adjustments to the information contained in our and Shire's audited consolidated financial statements in preparing the unaudited pro forma condensed combined statement of income and statement of balance sheet information. This information should be read together with and is qualified entirely by reference to the unaudited pro forma condensed combined financial data and the notes thereto included elsewhere in this offering memorandum.

	Pro forma as of and for the fiscal year ended March 31, 2018
	(billions of yen)
Condensed Combined Statement of Income Data	
Revenue	¥ 3,474.0
Cost of sales	(1,0264.4)
Selling, general and administrative expense	(1,002.2)
Research and development expense	(509.7)
Amortization and impairment losses on intangible assets associated with products	(652.3)
Other operating income (expense), net	(54.7)
Operating profit	208.7
Finance income (expense), net	(156.8)
Share of profit (loss) of investments accounted for using the equity method	(31.9)
Profit before tax	20.1
Income tax (expense) / benefit	356.1
Net profit for the year, before discontinued operations	376.1
Gain/(loss) from discontinued operations	2.0
Net profit for the year	¥ 378.2

	Pro forma as of and for the fiscal year ended March 31, 2018
	(billions of yen)
Condensed Combined Statement of Financial Position Data	
Property, plant and equipment	¥ 1,323.3
Goodwill	4,005.7
Intangible assets	6,557.6
Deferred tax assets	101.5
Other	432.7
Total non-current assets	¥ 12,470.8
Inventories	1,036.5
Trade and other receivables	815.1
Cash and cash equivalents	476.9
Other current assets	202.6
Total current assets	¥ 2,531.1
Total assets	¥ 15,001.9
Bonds and loans (non-current portion)	2,844.6
Deferred tax liabilities	1,207.8
Total non-current liabilities	4,609.0
Bonds and loans (current portion)	3,617.3
Total current liabilities	¥ 5,072.3
Total liabilities	¥ 9,681.3
Total equity	¥ 5,320.6
Total liabilities and equity	¥ 15,001.9

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS OF TAKEDA

The following discussion of our financial condition and results of operations should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this offering circular. Our consolidated financial statements are prepared in accordance with IFRS, which differs in certain significant respects from accounting principles generally accepted in other jurisdictions, including Japan and the United States. The presentation in this section contains forward-looking statements that involve risks, uncertainties and assumptions, and are subject to the qualifications set forth under "Forward-Looking Statements." Our actual results may differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including but not limited to those set forth under "Risk Factors" and elsewhere in this offering circular.

Overview

We are a global pharmaceutical company with an innovative portfolio, engaged primarily in the research, development, production and marketing of prescription drugs. We have a geographically diversified global business base operating in more than 70 countries, and our prescription drugs are marketed in approximately 100 countries and are recognized brands in major countries worldwide. We develop and market pharmaceutical products including prescription drug products to treat a broad range of medical conditions including GI diseases, cancer, neurological and psychiatric diseases and other medical conditions, including diabetes and hypertension. We also produce and sell vaccines as well as consumer healthcare products.

We have recently taken significant steps to refocus and enhance our business. For example:

- In July 2016, we announced a fundamental reorganization of our research and development activities to focus on our three core therapeutic areas, GI, oncology and neuroscience, plus vaccines, to optimize our pipeline and enhance operational efficiency;
- In February 2017, we acquired ARIAD, a commercial-stage biotechnology company headquartered in Cambridge, Massachusetts to enhance our global oncology portfolio by expanding our prescription drug portfolio and research and development pipeline for the treatment of solid tumors and acquiring its capabilities in hematological oncology;
- In the fiscal year ended March 31, 2018, we entered into more than 50 collaborations with third parties to help strengthen our pipeline; and
- In July 2018, we acquired TiGenix NV, an advanced biopharmaceutical company developing novel stem cell therapies for serious medical conditions, with the aim to bring new treatment options to patients with gastrointestinal disorders.

We have also divested a number of businesses in non-core areas. For example:

- In April 2016, we completed the sale of our respiratory business to AstraZeneca;
- In April 2016, we transferred certain long-listed products in Japan to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture we formed with Teva Pharmaceutical Industries Ltd. in which we hold a 49% interest, and subsequently sold seven additional long-listed products to Teva Takeda Yakuhin Ltd. in May 2017;
- In April 2017, we completed the sale of our shares in Wako Pure Chemical to FUJIFILM Corporation;
- In August 2018, we sold and divested all our shares and assets in Guangdong Techpool Bio-Pharma Co., Ltd. to Shanghai Pharmaceutical Holding Co. Ltd.; and
- For the six months ended September 30, 2018, we recorded ¥38.2 billion in proceeds from sales of other shareholdings.

As the next step in our ongoing process to strengthen our business, we are pursuing the Shire Acquisition, which we expect will help us become a global leader in the pharmaceutical industry, reinforcing our strengths in GI and neuroscience, while adding new capabilities in rare diseases and plasma-derived therapies that complement our capabilities in oncology and vaccines. See "—Financial Impact of the Shire Acquisition."

Operating Segments and Geographic Information

We organize our business as a single operating segment, reflecting the presentation of information to our management for the purposes of allocating resources, measuring performance and forecasting future periods.

Our operations are global in scope, and we generate revenue from selling our products across various regions. While our operations in Japan have historically contributed the largest portion of our revenues, we have continued to expand our operations in the United States, Europe, Canada and Emerging Markets (which consists of Russia/CIS, Latin America, Asia excluding Japan and others). Reflecting this expansion, the United States accounted for more revenue than Japan for the first time in the fiscal year ended March 31, 2018.

Our total revenue by geographic region for the fiscal years ended March 31, 2016, 2017 and 2018 and for the six months ended September 30, 2017 and 2018 is set forth in the following table:

	For the fiscal year ended March 31,						For the six months ended September 30,			
	2016		2017		2018		2017		2018	
	(billions of yen, except for percentages)									
Revenue:										
Japan	¥ 688.1	38.1%	¥ 655.3	37.8%	¥ 580.3	32.8%	¥295.0	33.5%	¥274.2	31.1%
United States	514.4	28.5	520.2	30.0	598.3	33.8	301.8	34.2	321.1	36.5
Europe and Canada	309.3	17.1	279.7	16.1	313.7	17.7	148.9	16.9	158.6	18.0
Russia/CIS	61.8	3.4	57.5	3.3	68.2	3.9	35.1	4.0	27.5	3.1
Latin America	68.4	3.8	72.5	4.2	75.7	4.3	36.1	4.1	34.7	3.9
Asia (excluding Japan)	126.0	7.0	112.8	6.5	104.0	5.9	49.2	5.6	51.9	5.9
Other[1]	39.4	2.2	34.0	2.0	30.2	1.7	15.3	1.7	12.6	1.4
Total	¥1,807.4	100.0%	¥1,732.1	100.0%	¥1,770.5	100.0%	¥881.4	100.0%	¥880.6	100.0%

Note:
(1) Other region includes Middle East, Oceania and Africa.

We refer to Russia/CIS, Latin America, Asia (excluding Japan) and Other collectively as "Emerging Markets".

Operating Environment

We believe that global demand for healthcare continues to increase across markets, driven by increased access to healthcare, particularly in low-income and middle-income countries. The global pharmaceutical industry also faces a number of challenges, such as stagnation in creating breakthrough novel drugs due to the difficulties of translating new innovations into products in the marketplace, as well as increasingly stringent criteria for the approval of new drugs in many countries. Drastic changes in the healthcare and reimbursement systems in many countries have also impacted the pharmaceutical industry.

In particular, global efforts toward health care cost containment continue to exert pressure on product pricing and market access. Given the growth of overall healthcare costs as a percentage of gross domestic product in many countries, some governments and payers including the U.S., Japanese, European, Canadian and other governments, have introduced price reductions and/or rebate increases for patented and generic medicines, as well as other healthcare products and services. For further discussion of government policies on price reductions and impact on our revenue, see "—Factors Affecting Our Results of Operations—Revenue—Pricing and government regulation" and "Regulation."

We also continue to be affected by overall economic conditions and financial markets. Economic growth continues to be stagnant in many major developed countries, while the pace of growth in many emerging economies has declined. Recently, developments such as Brexit, the transition to a new presidential administration in 2017 and uncertainty around the mid-term elections in 2018 in the United States, continued instability in the Middle East and North Korea and tensions over trade, including tariff regimes, have increased political and economic uncertainty. Moreover, the volatility of the Japanese yen against the U.S. dollar and the euro in recent years has impacted our consolidated results, as sales in such currencies are translated into Japanese yen.

Financial Impact of the Shire Acquisition

On May 8, 2018, the boards of Takeda and Shire reached agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire, which we refer to as the Shire Acquisition. See "Business of Takeda—Shire Acquisition." Under the proposed terms of the Shire Acquisition, each Shire shareholder will be entitled to receive $30.33 in cash and either 0.839 newly issued shares of our common stock or 1.678 of our ADSs, each representing 0.5 shares of our common

stock. This offer represents an estimated aggregate consideration of approximately £46 billion, or approximately ¥6.96 trillion. The final aggregate value of the consideration to be reflected in our consolidated financial statements for the fiscal year in which the Shire Acquisition is completed will depend on the closing price of our shares, the last trading price of Shire shares and number of issued shares of Shire and the exchange rates between the pound sterling and Japanese yen and between the U.S. dollar and the Japanese yen at the time of the closing of the acquisition. We expect to incur significant indebtedness to finance the cash portion of the consideration, which will result in a significant increase in interest costs in future periods. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Liquidity and Capital Resources—Cash Requirements—Financing Arrangements for the Shire Acquisition."

We will account for the Shire Acquisition as a business combination and will record the net assets acquired at fair value. We expect to record a significant amount of inventory, intangible assets, primarily intellectual property and other proprietary rights of Shire related to its products, in connection with the Shire Acquisition, which will result in significant amortization expense in future periods. We also expect to record a significant amount of goodwill in connection with the acquisition reflecting the sum, by which the aggregate fair value of consideration for the Shire Acquisition exceeds the fair value of the identifiable assets acquired and liabilities assumed as of the Shire Acquisition date. Such intangible assets and goodwill will be presented on our balance sheet as of the end of the fiscal period in which the Shire Acquisition is completed.

As described under "—Critical Accounting Policies—Impairment of Goodwill and Intangible Assets," goodwill and other intangible assets recorded in connection with the Shire Acquisition will be held on our consolidated balance sheet at the recorded value (or amortized value, in the case of intangible assets other than goodwill), less any accumulated impairment losses. If circumstances arise indicating that goodwill or intangible assets recorded in connection with the acquisition may be impaired, such as if we are unable to successfully realize the expected benefits of the acquisition and the carrying amount of goodwill or other intangible assets therefore exceeds their recoverable amount, we may be required to record an impairment loss up to the full value of such goodwill or other intangible assets shown on our consolidated balance sheet.

Following the completion of the Shire Acquisition and the integration of Shire's business into ours, we expect to be able to achieve significant, recurring pre-tax synergies of at least $1.4 billion annually by the end of the third fiscal year following the completion of the Shire Acquisition, originating from efficiencies in the combined company's sales, marketing and administrative functions, research and development efforts and product manufacturing and supply. We believe that the realization of these synergies will require an aggregate of approximately $2.4 billion of non-recurring cash costs relating to the integration of Shire into our business during the first three fiscal years following the completion of the Shire Acquisition. This amount does not include costs relating to the completion of the acquisition, such as advisory, legal or other fees. In the six months ended September 30, 2018, we recorded ¥7.9 billion of acquisition-related costs, such as advisory fees, as a component of selling, general and administrative expenses, ¥3.2 billion of restructuring in other expenses and ¥8.8 billion of finance expense relating to the arrangement of commitments to finance of the Shire Acquisition, and we expect to incur further costs in future periods. Costs related to the Shire Acquisition, including execution, integration and other costs, will be expensed when they are incurred.

Our unaudited pro forma condensed combined balance sheet and statement of income as of and for the fiscal year ended March 31, 2018 are included in this offering circular.

Financial Impact of the ARIAD Acquisition

On February 16, 2017, we acquired ARIAD for a net consideration of ¥583.1 billion. Headquartered in Cambridge, Massachusetts in the United States, ARIAD is a commercial-stage biotechnology company focusing on discovering, developing and commercializing precision therapies for patients with rare forms of chronic and acute leukemia, lung cancer and other rare cancers.

We believe that the acquisition of ARIAD strengthened our global oncology platform by expanding our solid tumors portfolio and pipeline and bringing its capabilities in hematological oncology. In particular, as part of the acquisition, we added ALUNBRIG (brigatinib), an ALK inhibitor for non-small-cell lung cancer ("NSCLC"), approved in the United States in April 2017, which we believe will be a key growth driver for our business. We also added *ICLUSIG*, a treatment for chronic myeloid leukemia and Philadelphia chromosome positive acute lymphoblastic leukemia through the acquisition. The expected contribution of these two therapies to revenues is described under "—Factors Affecting Our Results of Operations—Revenue—Principal Products."

As a result of the acquisition of ARIAD, we recorded ¥273.6 billion in goodwill and ¥433.0 billion in intangible assets. The remaining estimated useful life for products, based on the remaining exclusivity period, acquired as part of the acquisition of ARIAD ranges from 9 to 13 years as of March 31, 2018. Our consolidated results for the fiscal year ended March 31, 2018 included the results of ARIAD for the full fiscal year for the first time, which contributed to increases in revenue and operating profit, as well as the increased importance of the U.S. market to our overall results. We also expensed ¥3.2 billion of costs related to the acquisition of ARIAD, including agency and legal fees, in selling, general and administrative expenses for the fiscal year ended March 31, 2017.

Factors Affecting Our Results of Operations

Revenue

Principal products

We rely on our principal products to generate a significant portion of our revenue. In particular, our ability to maintain and grow our revenue is dependent in part on our ability to generate additional revenue from our "growth drivers," which we define as the core therapeutic areas of GI, oncology and neuroscience, as well as emerging markets. For descriptions of our principal products, see "Business of Takeda—Our Products".

Specifically, we currently depend on *NINLARO* as a key growth driver in oncology, and expect *ICLUSIG* and *ALUNBRIG*, both of which were added to our product portfolio when we acquired ARIAD, to be growth drivers in the future. In GI, *ENTYVIO*, our overall highest selling product, and *TAKECAB* are our main growth drivers. In neuroscience, *TRINTELLIX* is our key growth driver, and we expect future contributions from *AZILECT*, which we in-licensed from Teva Pharmaceutical Industries Ltd. and which received approval for use in Japan in March 2018. In emerging markets, *ADCETRIS* and *ENTYVIO* are our key growth drivers.

In particular, revenue from *ENTYVIO*, which is currently approved in more than 60 countries, grew from ¥86.2 billion in the fiscal year ended March 31, 2016 to ¥201.4 billion in the fiscal year ended March 31, 2018, and *ENTYVIO* has been our highest selling product since the fiscal year ended March 31, 2017. Revenue from *TAKECAB* sold in Japan grew from ¥8.4 billion on a gross basis in the fiscal year ended March 31, 2016 to ¥48.5 billion on a net basis (or ¥55.1 on a gross basis) in the fiscal year ended March 31, 2018. *NINLARO*, which had a strong launch in the United States and was newly approved in countries including the EU in the last quarter in 2016 and Japan in 2017, demonstrated a revenue growth from ¥4.1 billion in the fiscal year ended March 31, 2016 to ¥46.4 billion in the fiscal year ended March 31, 2018. *ICLUSIG* recorded ¥2.9 billion and ¥23.1 billion in revenue, respectively, for the period from February 16, 2017 (the date of the ARIAD acquisition) to March 31, 2017, and for the fiscal year ended March 31, 2018. *ALUNBRIG*, which was also obtained through the acquisition of ARIAD, was launched in the United States in May 2017, and recorded ¥2.8 billion of sales in the fiscal year ended March 31, 2018.

One significant factor affecting revenue of our principal products is the timing of the expiration of the exclusivity period for such products, as well as the timing and success of the sale of newly launched products. For example, following the expiration of patent protection over bortezomib, the active ingredient in *VELCADE*, one of our largest selling products in the United States, a competing bortezomib-containing product has been introduced. This has led to a decrease in sales of *VELCADE*, and further entry of competing products could result in substantial additional declines. Such decreases may accelerate following the scheduled expiration of patent protection over the formulation of *VELCADE* in 2022, or earlier if a competitor is able to develop a way to formulate *VELCADE* in a manner that does not infringe on the relevant patent or by succeeding in having the formulation patent invalidated. In addition, as patent protection has expired for *PANTOPRAZOLE* in many major markets including the United States and the EU, sales of *PANTOPRAZOLE* have continued to decline in those markets. The following table shows revenue, including royalty income and service income, for our key prescription drug products by geographic region for the fiscal years ended March 31, 2016, 2017 and 2018 and for the six months ended September 30, 2017 and 2018:

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
			(billions of yen)		
ENTYVIO					
United States	¥ 63.1	¥ 99.6	¥133.6	¥65.8	¥ 87.3
Europe and Canada	21.9	39.5	60.2	27.9	36.3
Emerging Markets	1.3	4.0	7.5	3.3	4.7
Total	¥ 86.2	¥143.2	¥201.4	¥97.0	¥128.4

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
			(billions of yen)		
NINLARO					
Japan	—	—	¥ 2.5	¥ 0.9	¥ 2.1
United States	¥ 4.0	¥ 29.1	39.4	19.1	22.8
Europe and Canada	—	0.2	4.0	1.5	3.5
Emerging Markets	0.0	0.1	0.6	0.2	1.0
Total	¥ 4.1	¥ 29.4	¥ 46.4	¥21.7	¥ 29.4
VELCADE					
United States	¥131.6	¥112.9	¥113.7	¥60.2	¥ 53.3
Other than United States	30.4	24.7	23.6	11.8	11.6
Total	¥162.0	¥137.6	¥137.3	¥72.0	¥ 64.9
ADCETRIS					
Japan	¥ 3.1	¥ 3.3	¥ 3.8	¥ 1.9	¥ 2.2
Europe	17.4	17.5	20.1	9.9	10.8
Emerging Markets	7.2	9.3	14.3	7.0	8.1
Total	¥ 27.6	¥ 30.1	¥ 38.5	¥19.0	¥ 21.1
TAKECAB					
Japan[(1)]	¥ 8.4	¥ 34.1	¥ 48.5	¥22.3	¥ 27.2
Total	¥ 8.4	¥ 34.1	¥ 48.5	¥22.3	¥ 27.2
TRINTELLIX[(2)]					
United States	¥ 24.5	¥ 31.9	¥ 48.4	¥23.4	¥ 27.1
Total	¥ 24.5	¥ 31.9	¥ 48.4	¥23.4	¥ 27.1
LEUPRORELIN					
Japan (product name: LEUPLIN)[(1)]	¥ 53.8	¥ 48.6	¥ 41.2	¥20.8	¥ 20.1
United States	17.3	18.3	19.7	9.3	11.1
Europe and Canada	35.3	31.1	34.5	16.7	16.8
Emerging Markets	18.0	16.3	12.7	6.2	7.1
Total	¥124.4	¥114.2	¥108.1	¥52.9	¥ 55.1
DEXILANT					
United States	¥ 64.0	¥ 49.7	¥ 49.5	¥26.1	¥ 25.6
Europe and Canada	5.4	5.7	6.4	3.0	3.5
Emerging Markets	5.7	7.3	9.9	4.4	5.9
Total	¥ 75.1	¥ 62.6	¥ 65.7	¥33.4	¥ 34.9
AZILVA					
Japan[(1)]	¥ 59.0	¥ 66.9	¥ 64.0	¥31.4	¥ 35.2
Total	¥ 59.0	¥ 66.9	¥ 64.0	¥31.4	¥ 35.2
ALOGLIPTIN					
Japan (product name: NESINA)[(1)]	¥ 36.9	¥ 32.9	¥ 26.6	¥13.5	¥ 14.3
United States	5.3	5.2	6.0	2.8	2.8
Europe and Canada	3.5	6.1	9.0	4.0	5.1
Emerging Markets	3.3	4.9	8.6	3.5	4.7
Total	¥ 48.9	¥ 49.1	¥ 50.2	¥23.9	¥ 26.8
ULORIC					
United States	¥ 41.8	¥ 41.4	¥ 45.8	¥22.5	¥ 25.9
Europe and Canada	0.7	0.7	0.8	0.4	0.4
Emerging Markets	—	0.1	0.3	0.1	0.2
Total	¥ 42.5	¥ 42.2	¥ 46.8	¥23.0	¥ 26.5
COLCRYS					
United States	¥ 46.5	¥ 38.9	¥ 40.3	¥19.9	¥ 16.3
Total	¥ 46.5	¥ 38.9	¥ 40.3	¥19.9	¥ 16.3
AMITIZA					
United States	¥ 37.2	¥ 33.7	¥ 33.7	¥17.4	¥ 16.2
Europe and Canada	0.1	0.1	0.1	0.0	0.0

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
			(billions of yen)		
Total	¥ 37.3	¥ 33.8	¥ 33.8	¥17.5	¥ 16.3
PANTOPRAZOLE					
United States	¥ 13.6	¥ 10.1	¥ 7.2	¥ 4.0	¥ 3.4
Europe and Canada	43.4	30.5	30.6	15.1	13.7
Emerging Markets	43.7	33.7	28.0	15.4	13.6
Total	¥100.8	¥ 74.2	¥ 65.8	¥34.5	¥ 30.7
LANSOPRAZOLE					
Japan[(1)(3)]	¥ 41.3	¥ 8.1	¥ 4.6	¥ 2.5	¥ 1.6
United States	27.5	20.0	15.2	7.4	4.9
Europe and Canada	10.5	7.1	7.2	3.8	3.3
Emerging Markets	10.2	9.2	9.7	4.8	4.7
Total	¥ 89.5	¥ 44.4	¥ 36.8	¥18.5	¥ 14.6

Notes:

(1) Effective from the fiscal year ending March 31, 2019, sales of certain products in Japan are disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales for the fiscal year ended March 31, 2018 and for the six months ended September 30, 2017. Sales of individual products have been revised retroactively on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of figures from the prior fiscal years. Figures for the fiscal years ended March 31, 2016 and 2017 have not been reclassified retroactively.

(2) *TRINTELLIX* is the brand name used since June 2016 for the product previously marketed as *BRINTELLIX* in the United States. The formulations, indication and dosages of *TRINTELLIX* remain the same as that of *BRINTELLIX*.

(3) Products excluding fixed dose combinations were transferred to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture in Japan we formed with Teva Pharmaceutical Industries Ltd., in April 2016. Fixed dose combinations were sold to Teva Takeda Yakuhin Ltd. in May 2017. Amounts presented above represent supply sales to Teva Takeda Yakuhin Ltd., following such transfers.

For a discussion of our principal products and the conditions they treat, see "Business of Takeda—Our Products."

Pricing and government regulation

Although we consider domestic and international competitive conditions, such as the price of competing products, in setting and revising the price of our pharmaceutical products, government regulation also has a significant effect in determining the price of pharmaceutical products in many of the countries in which we operate. Government policy in many countries has emphasized, and large customers continue to seek, discounts on pharmaceutical products.

The U.S. Healthcare Legislation, enacted in March 2010, has increased the amount of rebates paid by pharmaceutical companies and has negatively impacted operating income of pharmaceutical companies, although these effects may be offset in part in the medium to long term by the effects of an increase in individuals covered by health care programs. While there are currently legislative proposals in the United States to amend or repeal the U.S. Healthcare Legislation or to introduce other regulatory changes, the potential impact of any new legislation is uncertain. Regulatory and legislative debates are particularly driven by public concern over access to and affordability of pharmaceuticals. These policy and political issues increase the risk that taxes, fees, rebates or other federal and state measures that could affect the pricing of pharmaceuticals may be enacted. These may include a reduction in biologic data exclusivity, modifications to Medicare Parts B and D, language that would allow the Department of Health and Human Services to negotiate prices for biologics and drugs in Medicare,

proposals that would require biopharmaceutical manufacturers to disclose proprietary drug pricing information and state-level proposals related to prescription drug prices and reducing the cost of pharmaceuticals purchased by government health care programs. The Bipartisan Budget Act, enacted in February 2018 and scheduled to take effect in 2019, will require manufacturers of brand-name drugs, biologics and biosimilars to pay a 70 percent discount in the Medicare Part D Coverage Gap, up from the current 50 percent discount.

In Japan, the government has the authority to set retail prices for prescription drugs, especially in the context of sales reimbursed by national health insurance programs. Pharmaceutical companies in Japan, including us, are required to list new pharmaceutical products on the NHI price list published by the MHLW in connection with public medical insurance programs. Prices of pharmaceutical products so listed are determined by comparison to comparable products, with necessary adjustments for innovativeness, usefulness and/or size of the markets, or in the absence of comparable products, by the cost calculation method. Prior to 2018, prices on the NHI price list were subject to revision, generally once every two years, on the basis of the actual prices at which the pharmaceutical products are purchased by medical institutions after discounts and rebates off the listed price. Prices on the NHI price list declined by an average of 5.64%, or 2.65% after excluding the 3% consumption tax increase, in 2014, 5.57% in 2016, and 7.48% in 2018, in each case taking into account price revisions on long-listed products. As part of health reform initiatives by the Japanese government aimed at sustaining the universal coverage of the national health insurance program, in December 2016, the Japanese government announced its basic reform principles for fundamental reforms of the drug pricing system in 2018. These include an increase in the frequency of price revisions from every other year to annually, with annual price revisions scheduled to begin with the fiscal year ending March 31, 2022.

Governments in Europe and many emerging countries also have national health programs with similar price control systems. In Europe, drug prices continue to be subject to downward pressure due to measures implemented in many countries to control drug costs, and prices continue to experience pressure due to parallel imports, generic competition, increasing use of health technology assessment based upon cost-effectiveness and other factors. While the United States does not have a general national health insurance system, there has been increasing pricing pressure from managed care groups and institutional and governmental purchasers. The pharmaceutical industry has also experienced significant pricing pressures in certain emerging countries.

See “Regulation—Regulation of the Pharmaceutical Industry.”

Patent protection and generic competition

Legal protections and remedies for intellectual property are significant factors in determining the competitiveness of and demand for, as well as the prices of, our pharmaceutical products. Many of our products are protected by substance patents and may also have secondary patents. Secondary patents can include additional patents, such as patents for the processes for making the compound or additional indications or uses. During the patent period, we benefit from the restrictions on competition afforded by the patent. Once patent protection and regulatory data protection expires, however, other pharmaceutical manufacturers may produce generic versions of the products and sell them at lower prices.

In the United States, as well as in many other countries, including in Europe, the introduction of a generic or biosimilar version of a pharmaceutical product often leads to a swift and substantial decline in the sales of the original. Increased pricing pressure, both from governmental regulation and from the healthcare providers in the private sector, means that the market participants with the decision-making authority over pharmaceutical products are quick to adopt generic or biosimilar products once they become available. We may also be subject to competition from generic drug manufacturers prior to the expiration of such patents if the manufacturer successfully challenges the validity of the patents, or if the manufacturer decides that the benefits of prematurely launching “at risk” the generic drug outweigh the costs of defending infringement litigation. Moreover, even our products that still enjoy the benefit of patent exclusivity must compete with the products of other pharmaceutical manufacturers based not only on efficacy or lack of adverse reactions, but also potentially on price, especially where the parties paying for the treatment, which may be health plans, pharmaceutical benefit managers, wholesalers or other parties, maintain formularies or otherwise choose the pharmaceutical products that will be available to patients.

In Japan, the government is implementing various measures to restrain drug costs, including by encouraging medical practitioners to use and prescribe generic drugs, and has recently announced its intention to raise generic drug penetration to 80% by volume by September 2020 with respect to products for which market exclusivity has expired. Market penetration for such products was 65.8% as of September 2017. We are not

currently able to quantify the impact that these measures will have on our products. However, we attempt to limit the impact of generic competition by highlighting the proven track record and credibility of our products, as well as making certain price revisions as appropriate. We also try to gain further patent protection through incremental improvements and the addition of new indications related to our products. In addition, in order to mitigate our exposure to the increased use of generics, in April 2016, we transferred our long-listed products, consisting of products for which patent protection and regulatory data protection have expired, to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture we formed with Teva Pharmaceutical Industries Ltd. of Israel. In May 2017, we sold additional long-listed products to Teva Takeda Yakuhin Ltd. The objective of the joint venture is to mitigate the competition in Japan from generics while allowing us to generate revenue from providing distribution services and contract manufacturing services to the joint venture. See "—Other Factors Affecting Our Results of Operations—Acquisitions and Divestures."

Introduction of new products

While prescription drugs are generally protected by substance patents and regulatory data protection periods, patents are typically limited to a certain number of years depending on the jurisdiction and the type of patents. Notwithstanding such protection, new therapeutic drugs with potentially higher efficacy, a more favorable side-effect profile or a more convenient mechanism of delivery are constantly being developed and introduced by our competitors even during the patent protected period. Therefore, sales of a given product typically decrease upon the expiration of patent protection and the regulatory data protection period and in some cases earlier if superior products have been introduced to the market. In order to ensure sustained revenue growth, pharmaceutical companies must be able to develop or otherwise acquire the rights to develop or market innovative new products. See "Business of Takeda—Research and Development" for information regarding our research and development activities, including our clinical development pipeline.

Costs and Expenses

Cost of sales

Cost of sales consists primarily of the cost of raw materials and active ingredients, labor and other overhead costs relating to our manufacturing activities as well as sales-based royalty payments to third parties, if any. We believe the ratio of cost of sales to revenue is low in the pharmaceutical industry compared to many other industries due to pricing policies that reflect the need to recoup significant research and development costs necessary to develop and market new pharmaceutical products.

Cost of sales were ¥535.2 billion, ¥558.8 billion and ¥495.9 billion, or 29.6%, 32.3% and 28.0%, respectively, of consolidated revenues, in the fiscal years ended March 31, 2016, 2017 and 2018. The relative proportion of cost of sales to revenue is affected significantly by our product mix, as certain products are comparatively less expensive to produce. For example, products with specialty capabilities developed and manufactured in-house, such as *ENTYVIO* and *NINLARO,* tend to have lower cost of sales than other products which are sourced from or manufactured with third party partners. In addition, we have implemented measures to optimize our source network and achieve procurement savings. Whether we achieve our objective of increasing our profitability will depend in part on our ability to decrease the relative proportion of cost of sales to revenue through such initiatives.

Selling, general and administrative expenses

Our selling, general and administrative costs include advertising and sales promotion expenses, salaries, long-term incentive payments, bonuses and post-employment benefit costs, among others. Beginning in 2016, we have implemented a global operational expenditure initiative to further rationalize expenditures and enhance our profitability and sustainability. Such initiatives include rolling out a new procurement policy, applying discipline to spending, benchmarking general and administrative functions to drive effectiveness and efficiency and reducing our salesforce in the United States to align our sales capabilities with our core therapeutic areas. Our selling, general and administrative expenses were ¥650.8 billion, ¥619.1 billion and ¥628.1 billion in the fiscal years ended March 31, 2016, 2017 and 2018, or 36.0%, 35.7% and 35.5%, respectively, of consolidated revenue.

Research and development expenses

Research and development of new pharmaceutical products is essential to continued positive operating results. Our research and development efforts are centralized, with the allocation of resources made on a global

basis. See "Business of Takeda—Research and Development" for a description of our key research and development policies. Our research and development expenses, which include expenses related to basic research as well as pre-clinical and clinical development, have been significant historically and will continue to be significant. While we expect to achieve greater cost efficiency as a result of our efforts to fundamentally reorganize our research and development activities, we plan to reinvest cost savings attributable to such efficiency improvements in additional research and development in our core therapeutic areas. Research and development expenses are recorded as expenses as they are incurred, and are generally not capitalized until the criteria for recognizing an asset are met, usually when a regulatory filing has been made in a major market and approval is considered highly probable for a given product. In the fiscal years ended March 31, 2016, 2017 and 2018, research and development expenses were ¥335.8 billion, ¥312.3 billion and ¥325.4 billion, or 18.6%, 18.0% and 18.4% of total revenue, respectively. Research and development expenses could increase due to anticipated clinical trials for existing and new late stage pipeline products, including in-licensed products.

Amortization and impairment losses on intangible assets associated with products

Intangible assets associated with products primarily include intangible assets associated with specific products acquired through acquisitions. We amortize intangible assets associated with products over their estimated useful life ranging from 3 to 20 years (generally reflecting the expected length of patent or regulatory data protection for such product) using the straight-line method. Intangible assets associated with products are also subject to impairment, and are held net of accumulated impairment losses and any reversals thereof. Amortization and impairment losses on intangible assets associated with products therefore tend to increase as the total balance of intangible assets associated with products increases, subject to any impairment losses or reversals thereof. In the fiscal year ended March 31, 2016, amortization, impairment and reversal of impairment were ¥121.8 billion, ¥18.6 billion and ¥8.6 billion, respectively. In the fiscal year ended March 31, 2017, amortization, and impairment were ¥112.5 billion and ¥44.6 billion (which includes ¥0.4 billion of impairment included in restructuring expense, which is a component of other operating expenses), respectively. In the fiscal year ended March 31, 2018, amortization, impairment and reversal of impairment were ¥126.1 billion, ¥19.1 billion and ¥23.1 billion, respectively. As of March 31, 2018, intangible assets associated with specific products totaled ¥970.0 billion.

Other Factors Affecting Our Results of Operations

Acquisitions and Divestitures

As part of our business strategy, we regularly engage in acquisitions and divestitures. We may acquire new businesses to expand our research and development capabilities (including expanding into new methodologies) and to acquire new products (whether in the development pipeline or at the marketing stage) or other strategic regions. Similarly, we regularly divest businesses and product lines to maintain our focus on our key growth drivers and to manage our portfolio. As a result of these acquisitions and divestitures, our product portfolio, particularly outside of our key growth drivers, fluctuates from year to year, and our results of operations for a given fiscal year may not be directly comparable to results from prior or future fiscal years. For a description of the expected effect of the Shire Acquisition on our financial condition and results of operations, see "—Financial Impact of the Shire Acquisition." For a description of the effect of the acquisition of ARIAD in 2017 on our financial condition and results of operations, see "—Financial Impact of the ARIAD Acquisition."

We also have recorded substantial goodwill and intangible assets in connection with past acquisitions and had a total goodwill of ¥1,029.2 billion and intangible assets of ¥1,014.3 billion as of March 31, 2018. Intangible assets associated with products are amortized over their estimated useful life over a period of 3 to 20 years. Goodwill and indefinite-lived intangible assets are subject to impairment under certain conditions, as discussed under "—Critical Accounting Policies—Impairment of Goodwill and Intangible Assets."

In April 2016, we transferred certain long-listed products in Japan to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture we formed with Teva Pharmaceutical Industries Ltd. in which we hold a 49% interest, representing shares of Teva Takeda Pharma Ltd. received as consideration for the transfer. At the time of the transfer, we recognized a gain for the difference between the fair value consideration received (shares of Teva Takeda Pharma Ltd.) and the carrying value of the business to the extent we disposed of the business. The remainder of the gain was deferred and will be amortized over a period of 15 years from the date of the transfer, representing the estimated useful life of the intangible assets associated with the products transferred. In the fiscal year ended March 31, 2017, we recognized a gain related to this transfer of ¥115.4 billion. ¥102.9 billion of such amount was the amount of the gain recognized at the time of

disposal. The remainder represents the amount of the deferred gain amortized during such fiscal year. We receive income from the joint venture in the form of a supply and distribution fee, in addition to a 49% share of the joint venture's income or losses. See Note 14 to our audited consolidated financial statements included in this offering circular for a detailed discussion of the results of Teva Takeda Pharma Ltd.

In April 2017, we completed the sale of our shares in Wako Pure Chemical to FUJIFILM Corporation for a sale price of ¥198.5 billion, for which we recognized a gain of ¥106.3 billion in the fiscal year ended March 31, 2018. Wako Pure Chemical generated revenue of ¥76.6 billion and ¥79.1 billion for the fiscal years ended March 31, 2016 and 2017, respectively.

Foreign exchange fluctuations

In the fiscal year ended March 31, 2018, 67.2% of our revenue was from outside of Japan, and we expect that in the future an even more significant portion of our revenue will be generated in foreign currencies from sources outside of Japan due to the expansion of sales outside Japan. Changes in foreign exchange rates, particularly for the U.S. dollar and the euro, relative to the yen, which is our reporting currency, will impact our revenues and expenses. When the yen weakens against other currencies, our revenues attributable to such other currencies increase, having a positive impact on our results of operations, which may be offset by increased expenses denominated in such currencies. Conversely, when the yen strengthens against other currencies, our revenues attributable to such currencies decrease, having a negative impact on our results of operations, which may be offset by decreased expenses denominated in such currencies. We utilize certain hedging measures with respect to some of our significant foreign currency transactions, primarily forward exchange contracts, currency swaps and currency options for individually significant foreign currency transactions. See Note 27 to our consolidated financial statements included in this offering circular.

Periodic trends

Our revenues, operating profit and net income were lower in the fourth quarter of each of the fiscal years ended March 31, 2016, 2017 and 2018, due mainly to fluctuations in sales in Japan. As pricing revisions in Japan generally take effect as of April 1 of the relevant year, Japanese pharmaceutical product wholesalers postpone purchases during the quarter prior to such pricing revisions, causing decreased revenue. Furthermore, Japanese pharmaceutical product wholesalers generally control their inventory more tightly towards their fiscal year ends, typically March 31, which also causes decreased revenue in the fourth fiscal quarter. Japanese pharmaceutical product wholesalers also tend to increase purchases ahead of the New Year holidays, causing a concentration of sales in our third fiscal quarter, from October 1 to December 31. Moreover, the commencement of clinical trials and other research and development activities increases in our fourth fiscal quarter, leading to increased research and development expense compared to other quarters.

Critical Accounting Policies

Our consolidated financial statements have been prepared in accordance with IFRS. The preparation of our consolidated financial statements requires management to make estimates and assumptions that affect the reported amount of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reported period. On an ongoing basis, management evaluates its estimates and assumptions. Management bases its estimates and assumptions on historical experience and on various other factors that it believes to be reasonable at the time the estimates and assumptions are made. Actual outcomes may differ from those estimates and assumptions.

We believe the following critical accounting policies are affected by management's estimates and assumptions, changes to which could have a significant impact on our consolidated financial statements.

Revenue Recognition

Our revenue is primarily related to the sale of pharmaceutical products and is generally recognized at the time product is shipped to the customer. Our gross sales are subject to various deductions, which are primarily composed of rebates and discounts to retail customers, government agencies, wholesalers, health insurance companies and managed healthcare organizations. These deductions represent estimates of the related obligations, requiring the use of judgement when estimating the effect of these sales deductions on gross sales for a reporting period. These adjustments are deducted from gross sales to arrive at net sales. The U.S. market has the most complex arrangements related to revenue deductions.

The following summarizes the nature of the most significant adjustments to revenue:

- U.S. Medicare and Medicaid: The U.S. Medicaid Drug Rebate Program is administered by state governments using state and federal funds to provide assistance to certain vulnerable and needy individuals and families. Calculating the rebates to be paid related to this program involves interpreting relevant regulations, which are subject to challenge or change in interpretative guidance by government authorities. Provisions for Medicaid rebates are calculated using a combination of historical experience, product and population growth, product pricing and the mix of contracts and specific terms in the individual state agreements. The U.S. Federal Medicare Program, which funds healthcare benefits to individuals age 65 or older and certain disabilities, provides prescription drug benefits under Part D section of the program. This benefit is provided and administrated through private prescription drug plans. Provisions for Medicare Part D rebates are calculated based on the terms of individual plan agreements, product sales and population growth, product pricing and the mix of contracts. There is often a time lag of several months between us recording the revenue deductions and our final accounting for Medicare and Medicaid rebates.
- Customer rebates: Offer rebates to purchasing organizations and other direct and indirect customers to sustain and increase market share, and to ensure patient access to our products. Since rebates are contractually agreed upon, the related provisions are estimated based on the terms of the individual agreements, historical experience, and projected product growth rates.
- Wholesaler chargebacks: We have arrangements with certain indirect customers whereby the customer is able to buy products from wholesalers at reduced prices. A chargeback represents the difference between the invoice price to the wholesaler and the indirect customer's contractual discounted price. Provisions for estimating chargebacks are calculated based on the terms of each agreement, historical experience and product growth rates.
- Return reserves: When we sell a product providing a customer the right to return it, we record a provision for estimated sales returns based on our sales return policy and historical return rates.

Because the amounts are estimated, they may not fully reflect the final outcome, and the amounts are subject to change dependent upon, amongst other things, the type of purchasing organization, end consumer, and product sales mix.

Historically, our adjustments of estimates, to reflect actual results or updated expectations, have not been material to our overall business. Product-specific rebates, however, can have a significant impact on year-over-year individual product growth trends. If any of our ratios, factors, assessments, experiences or judgments are not indicative or accurate predictors of our future experience, our results could be materially affected. The sensitivity of our estimates can vary by program, type of customer and geographic location.

Impairment of Goodwill and Intangible Assets

We review long-lived intangible assets for impairment whenever events or changes in circumstance indicate that the asset's balance sheet carrying amount may not be recoverable. Goodwill and other currently not amortized intangible assets are reviewed for impairment at least annually.

Assets are generally considered impaired when their balance sheet carrying amount exceeds their estimated recoverable amount. The recoverable amount is estimated for each individual asset or at the larger cash-generating unit level when cash is generated in combination with other assets. Goodwill is allocated to cash-generating units based on expected synergies as determined and the recoverable amount is estimated at the cash-generating unit level. Our cash generating units are identified base on the smallest identifiable group of assets that generate independent cash inflows and are represented by the regions where we sell our products. The estimation of recoverable value requires us to make a number of assumptions including:

- amount and timing of projected future cash flows;
- behavior of competitors (launch of competing products, marketing initiatives, etc.);
- probability of obtaining regulatory approvals;
- future tax rates;
- terminal growth rate; and
- discount rate.

Due to changes in these assumptions in subsequent periods we have recognized impairments and reversal of impairments during the periods presented. See notes 11 and 12 to our consolidated financial statements.

As of March 31, 2018 we have ¥1,029.2 billion of goodwill and ¥1,014.3 billion of intangible assets which in aggregate represent 49.8% of our total assets. A change in the estimates used to calculate recoverable value could have a material impact on our consolidated financial statements included in this offering circular.

Retirement and Other Post-employment Benefit Plans

We sponsor pension and other post-employment benefit plans that cover a significant portion of our employees. We are required to make significant assumptions and estimates about future events in calculating the expense and the present value of the liability related to these plans. These include assumptions about the interest rates we apply to estimate future defined benefit obligations and net periodic pension expense, as well as rates of future pension increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates.

Assumptions and estimates used by us may differ materially from the actual results we experience due to changing market and economic conditions, higher or lower withdrawal rates, and longer or shorter life spans of participants among other factors. See Note 22 to our consolidated financial statements included in this offering circular for sensitivity information related to the most significant assumptions.

A significant change in the assumption in future periods could have a material impact on our consolidated financial statements.

Contingent Liabilities

We are involved in various legal proceedings primarily related to product liability and commercial liability arising in the normal course of our business. These contingencies are described in detail in Note 32 to our consolidated financial statements.

These and other contingencies are, by their nature, uncertain and based upon complex judgments and probabilities. The factors we consider in developing our provision for litigation and other contingent liability amounts include the merits and jurisdiction of the litigation, the nature and the number of other similar current and past litigation cases, the nature of the product and the current assessment of the science subject to the litigation, and the likelihood of settlement and current state of settlement discussions, if any. In addition, we record a provision for product liability claims incurred, but not filed, to the extent we can formulate a reasonable estimate of their costs based primarily on historical claims experience and data regarding product usage. We also consider the insurance coverage we have to diminish the exposure for periods covered by insurance. In assessing our insurance coverage, we consider the policy coverage limits and exclusions, the potential for denial of coverage by the insurance company, the financial condition of the insurers, and the possibility of and length of time for collection. Any provision and the related estimated insurance recoverable have been reflected on a gross basis as liabilities and assets, respectively, on our consolidated balance sheets.

At March 31, 2018, we have a provision of ¥23.2 billion for outstanding legal cases and other disputes. A change in our assessment related to the factors used to estimate the provision (as described above) could have a material impact on our financial statements in future periods.

Income Taxes

We prepare and file our tax returns based on an interpretation of tax laws and regulations, and we record estimates based on these judgments and interpretations. In the normal course of business, our tax returns are subject to examination by various taxing authorities, which may result in additional tax, interest or penalty assessment by these authorities. Inherent uncertainties exist in estimates of many tax positions due to changes in tax law resulting from legislation, regulation, and/or as concluded through the various jurisdictions' tax court systems. When we conclude that it is not probable that a taxing authority will accept an uncertain tax position, we recognize the best estimate of the expenditure required to settle a tax uncertainty. The amount of unrecognized tax benefits is adjusted for changes in facts and circumstances. For example, adjustments could result from significant amendments to existing tax law, the issuance of regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of a tax examination. We believe our estimates for uncertain tax positions are appropriate and sufficient based on currently known facts and circumstances.

We also assess our deferred tax assets to determine the realizable amount at the end of each period. In assessing the recoverability of deferred tax assets, we consider the scheduled reversal of taxable temporary differences, projected future taxable profits, and tax planning strategies. Based on the level of historical taxable profits and projected future taxable profits during the periods in which the temporary differences become deductible, we determine the amount the tax benefits we believe are realizable. At March 31, 2018, we had unrecognized deferred tax benefits of ¥19.7 billion. A change in our assumptions in future periods could have a significant impact on our income tax provision.

Our income tax expense is also impacted by any change in the tax rate applied to our deferred tax assets and liabilities. During the year ended March 31, 2018, our effective tax rate was reduced by 12.6% due to change in tax rates including the impact of the tax reform in the United States.

Business Combination

Accounting for a business combination requires us to estimate the fair value of the assets and liabilities acquired and the value of any contingent consideration. The estimate of fair value requires us to make a number of assumptions including estimated future cash flows, discount rates, development and approval milestones, expected market performance and for contingent consideration the likelihood of payment.

Contingent consideration is recorded at fair value at the end of each period. The changes in the fair value based on time value of money are recognized in "Finance expenses" while other changes are recognized in "Other operating income" or "Other operating expenses" on the consolidated statement of income. During the year ended March 31, 2018, the change in fair value of contingent consideration resulted in the recording of an additional ¥12.8 billion to be paid by us.

Recently Issued Accounting Pronouncements

For recently issued accounting pronouncements, see Note 2 to our audited consolidated financial statements included elsewhere in this offering circular.

Results of Operations

The following table shows selected consolidated statement of earnings data for the fiscal years ended March 31, 2016, 2017 and 2018 and for the six months ended September 30, 2017 and 2018:

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
	(Billions of yen)				
Revenue	¥ 1,807.4	¥1,732.1	¥1,770.5	¥ 881.4	¥ 880.6
Cost of Sales	(535.2)	(558.8)	(495.9)	(242.7)	(231.3)
Selling, general and administrative expenses	(650.8)	(619.1)	(628.1)	(297.3)	(293.8)
Research and development expenses	(335.8)	(312.3)	(325.4)	(155.1)	(151.4)
Amortization and impairment losses on intangible assets associated with products	(131.8)	(156.7)	(122.1)	(56.9)	(48.3)
Other operating income	21.3	143.5	169.4	136.9	32.3
Other operating expenses	(44.4)	(72.9)	(126.6)	(32.0)	(16.1)
Operating profit	130.8	155.9	241.8	234.3	172.0
Finance income	21.6	12.3	39.5	14.1	4.4
Finance expenses	(31.9)	(23.2)	(31.9)	(16.0)	(19.6)
Share of profit (loss) of investments accounted for using the equity method	(0.0)	(1.5)	(32.2)	0.5	4.0
Profit before tax	120.5	143.3	217.2	233.0	160.8
Income tax expenses	(37.1)	(27.8)	(30.5)	(60.3)	(34.3)
Net profit for the year	83.5	115.5	186.7	172.7	126.5

Six Months Ended September 30, 2018 compared with the Six Months Ended September 30, 2017

Revenue. Revenue decreased ¥0.8 billion, or 0.1%, from ¥881.4 billion for the six months ended September 30, 2017 to ¥880.6 billion for the six months ended September 30, 2018. This decrease was due to the

fact that the growth driven by the continued expansion of Takeda's growth driver products was offset by the adverse impact of divestitures and unfavorable foreign exchange rates.

Change in revenue in our three key therapeutic areas of GI, oncology and neuroscience was primarily attributable to the following products:

- *GI*. In the therapeutic area of GI, revenue grew by 17.3% compared to the same period in the previous fiscal year. This was driven by our top-selling product, *ENTYVIO*, with sales of ¥128.4 billion, an increase of ¥31.4 billion compared to the same period in the previous fiscal year, reflecting increased sales volume. Sales of *TAKECAB* were ¥27.2 billion, an increase of ¥4.9 billion, or 22.1%, compared to ¥22.3 billion in the same period during the previous year, reflecting increased prescriptions in the Japanese market.
- *Oncology*. In the therapeutic area of Oncology, revenue grew by 5.5% compared to the same period in the previous fiscal year. Revenue attributable to *NINLARO* was ¥29.4 billion, an increase of ¥7.7 billion, or 35.3%, compared to ¥21.7 billion during the same period in the previous fiscal year, due to strong growth particularly in the United States. Sales of *VELCADE*, which lost market exclusivity in the United States in 2017, decrease by ¥7.2 billion, or 10.0%, to ¥64.9 billion in the six months ended September 30, 2018, compared to ¥72.0 billion for the same period in the previous fiscal year. Sales of *ICLUSIG* and *ALUNBRIG*, each of which we obtained when we acquired ARIAD, grew by ¥3.3 billion in total, or 30.4%, and ¥1.4 billion, or 175.6%, respectively, compared to the same period in the previous fiscal year.
- *Neuroscience*. In the therapeutic area of neuroscience, revenue grew by 14.5% compare to the same period in the previous fiscal year. Revenue attributable to *TRINTELLIX* was ¥27.1 billion, an increase of ¥3.7 billion, or 15.8%, compared to the same period in the previous fiscal year. This was driven primarily by higher sales volume achieved through the expansion of our market share in the United States anti-depressant market following our patient engagement activities.

Cost of sales. Cost of sales decreased ¥11.4 billion, or 4.7%, from ¥242.7 billion for the six months ended September 30, 2017 to ¥231.3 billion for the six months ended September 30, 2018. Cost of sales as a percentage of revenue decreased from 27.5% for the six months ended September 30, 2017 to 26.3% for the six months ended September 30, 2018. The decrease in cost of sales and cost of sales as a percentage of revenue was primarily due to the disposition of Wako Pure Chemical with generally lower-margin products in April 2017, as well as the effect of other changes to our product mix resulting from faster growth of higher-margin products, such as *ENTYVIO* and *NINLARO*, relative to other products.

Selling, general and administrative expenses. Selling, general and administrative expenses decreased ¥3.5 billion, or 1.2%, from ¥297.3 billion for the six months ended September 30, 2017 to ¥293.8 billion for the six months ended September 30, 2018, reflecting our organization-wide cost savings efforts and lower long-term incentive plan expenses. This was partially offset by transaction costs of ¥7.9 billion recorded in connection with the Shire Acquisition.

Research and development expenses. Research and development expenses decreased ¥3.7 billion, or 2.4%, from ¥155.1 billion for the six months ended September 30, 2017 to ¥151.4 billion for the six months ended September 30, 2018 primarily due to favorable foreign exchange rates.

Amortization and impairment losses on intangible assets associated with products. Amortization and impairment losses on intangible assets associated with products decreased ¥8.6 billion, or 15.1%, from ¥56.9 billion for the six months ended September 30, 2017 to ¥48.3 billion for the six months ended September 30, 2018 primarily due to an overall decrease of impairment losses on intangible assets including a decrease of ¥23.7 billion in amortization costs resulting from the full depreciation of intangible assets attributable to *VELCADE's* patent in the United States. This decrease was partially offset in part by the fact that we recorded impairment reversals of ¥9.8 billion related to *COLCRYS* based on a favorable sales forecast in the six months ended September 30, 2017, which were not recorded during the six months ended September 30, 2018.

Other operating income. Other operating income decreased ¥104.6 billion, or 76.4%, from ¥136.9 billion for the six months ended September 30, 2017 to ¥32.3 billion for the six months ended September 30, 2018 primarily due to the fact that we recorded gains of ¥106.3 billion on the sale of Wako Pure Chemical in the six months ended September 30, 2017.

Other operating expenses. Other operating expenses decreased ¥15.9 billion, or 49.6%, from ¥32.0 billion for the six months ended September 30, 2017 to ¥16.1 billion for the six months ended

September 30, 2018 primarily due to valuation loss of ¥6.7 billion from the pre-launch inventories recorded in the six months ended September 30, 2017, as well as reversal of valuation losses of ¥7.7 billion in pre-launch inventories recorded in the six months ended September 30, 2018 following a new drug application approval of *ENTYVIO* from the MHLW. We recorded restructuring expenses of ¥3.2 billion related to the Shire Acquisition recorded in the six months ended September 30, 2018.

Operating profit. As a result of the above factors, operating profit decreased ¥62.4 billion, or 26.6%, from ¥234.3 billion for the six months ended September 30, 2017 to ¥172.0 billion for the six months ended September 30, 2018.

Profit before tax. As a result of the above factors, profit before tax decreased ¥72.2 billion, or 31.0%, from ¥233.0 billion for the six months ended September 30, 2017 to ¥160.8 billion for the six months ended September 30, 2018.

Income tax (expenses). Income tax expenses decreased ¥26.0 billion, or 43.1%, from ¥60.3 billion for the six months ended September 30, 2017 to ¥34.3 billion for the six months ended September 30, 2018 primarily due to a decrease in our profit before tax as well as a partial release of an uncertain tax provision recognized in the six months ended September 30, 2018. This decrease was partially offset by lower tax credits for the six months ended September 30, 2018 compared to the six months ended September 30, 2017.

Net profit for the year. As a result of the above factors, net profit for the year decreased ¥46.2 billion, or 26.7%, from ¥172.7 billion for the six months ended September 30, 2017 to ¥126.5 billion for the six months ended September 30, 2018.

Fiscal Year Ended March 31, 2018 compared with the Fiscal Year Ended March 31, 2017

Revenue. Revenue increased ¥38.5 billion, or 2.2%, from ¥1,732.1 billion for the fiscal year ended March 31, 2017 to ¥1,770.5 billion for the fiscal year ended March 31, 2018. During the fiscal year ended March 31, 2018, our revenue decreased by ¥94.3 billion as a result of divestitures, which primarily consisted of ¥79.1 billion attributable to the divestiture of Wako Pure Chemical in April 2017 and ¥11.1 billion attributable to the termination of the commercialization agreement for *CONTRAVE* in the U.S. in August 2016. Excluding the impact of divestitures, our revenues increased by ¥132.8 billion primarily due to growth in our core therapeutic areas of GI, oncology and neuroscience, which includes the favorable impact of the strengthening of the U.S. dollar and Euro against the yen as compared to the prior year.

Change in revenue in our three key therapeutic areas of GI, oncology and neuroscience was primarily attributable to the following products:

- *GI*. In the therapeutic area of GI, revenue grew 23.5% compared to the previous fiscal year. Revenue attributable to *ENTYVIO* was ¥201.4 billion in the fiscal year ended March 31, 2018, an increase of ¥58.2 billion, or 40.6%, compared to the previous fiscal year as a result of increase in sales volume, making *ENTYVIO* our top-selling product. Revenue attributable to *TAKECAB* was ¥48.5 billion (or ¥55.1 billion on a gross basis, in the fiscal year ended March 31, 2018, compared to ¥34.1 billion on a gross basis in the previous fiscal year, with prescriptions in Japan as a result of a higher overall volume due to *TAKECAB*'s efficacy in reflux esophagitis and the prevention of recurrence of gastric ulcers during low-dose aspirin administration.
- *Oncology.* In the therapeutic area of oncology, revenue grew 14.6% compared to the previous fiscal year. Revenue attributable to *NINLARO* was ¥46.4 billion, an increase of ¥17.1 billion, or 58.1% compared to the previous fiscal year, reflecting market penetration across several regions, particularly in the United States. Revenue attributable to *ICLUSIG*, which was obtained through the acquisition of ARIAD in February 2017, was ¥23.1 billion, its first full-year contribution to our revenue growth in this key therapeutic area. *ALUNBRIG*, also obtained through the acquisition of ARIAD, was launched in the United States in May 2017, and revenue attributable to it in the fiscal year ended March 31, 2018 was ¥2.8 billion. Revenue attributable to *VELCADE* decreased slightly to ¥137.3 billion in the fiscal year ended March 31, 2018 from ¥137.6 billion in the previous fiscal year.
- *Neuroscience*. In the therapeutic area of neuroscience, revenue grew 24.5% compared to the previous fiscal year. Revenue attributable to *TRINTELLIX* was ¥48.4 billion, an increase of ¥16.5 billion, or 51.6%, versus the previous year, reflecting higher volumes as a result of expansion of market share in the U.S. branded antidepressant market, driven by our patient engagement initiatives.

Cost of sales. Cost of sales decreased ¥62.8 billion, or 11.2%, from ¥558.8 billion for the fiscal year ended March 31, 2017 to ¥495.9 billion for the fiscal year ended March 31, 2018. Cost of sales as a percentage of revenue decreased from 32.3% in the fiscal year ended March 31, 2017 to 28.0% in the fiscal year ended March 31, 2018. The decreases in cost of sales, both overall and relative to revenues, was primarily due to the disposition of Wako Pure Chemical in April 2017, which generally had lower-margin products, as well as the effect of other changes to our product mix due to the faster growth of higher margin products, such as *ENTYVIO* and *NINLARO*, relative to other products.

Selling, general and administrative expenses. Selling, general and administrative expenses increased ¥9.0 billion, or 1.5%, from ¥619.1 billion for the fiscal year ended March 31, 2017 to ¥628.1 billion for the fiscal year ended March 31, 2018, mainly due to increased long-term incentive payments to management, higher co-promotion expenses related to increased sales of *TAKECAB* in Japan and higher compensation costs, which contributed ¥2.6 billion, ¥4.8 billion and ¥3.8 billion, respectively. However, selling, general and administrative expenses increased at a lower rate than revenue, reflecting our overall cost reduction efforts.

Research and development expenses. Research and development expenses increased ¥13.1 billion, or 4.2%, from ¥312.3 billion for the fiscal year ended March 31, 2017 to ¥325.4 billion for the fiscal year ended March 31, 2018, mainly due to our pursuit of increased research and development projects and the effect of a weaker Japanese yen.

Amortization and impairment losses on intangible assets associated with products. Amortization and impairment losses on intangible assets associated with products decreased ¥34.6 billion, or 22.1%, from ¥156.7 billion for the fiscal year ended March 31, 2017 to ¥122.1 billion for the fiscal year ended March 31, 2018. This was primarily driven by a decrease of impairment losses on intangible assets of ¥48.2 billion, including a ¥22.6 billion reversal of the previous impairment related to *COLCRYS*, reflecting updated estimates about the amount of impairment due to better-than-expected sales performance. This was offset in part by increased amortization of intangible assets of ¥13.6 billion, resulting from the inclusion of amortization of intangible assets acquired in the ARIAD acquisition.

Other operating income. Other operating income increased by ¥25.9 billion, or 18.0%, from ¥143.5 billion for the fiscal year ended March 31, 2017 to ¥169.4 billion for the fiscal year ended March 31, 2018, driven mainly by ¥106.3 billion representing a gain on the sale of Wako Pure Chemical in April 2017, ¥27.5 billion representing a gain on divestments to Teva Takeda Yakuhin Ltd. and ¥18.8 billion representing a gain on sales of property, plant and equipment and investment property. Other operating income in the previous fiscal year was primarily driven by a ¥115.4 billion gain on divestments to Teva Takeda Yakuhin Ltd and a ¥12.0 billion gain from the reversal of contingent consideration liability reflecting decreased expected sales of *COLCRYS*.

Other operating expenses. Other operating expenses increased ¥53.7 billion, or 73.6%, to ¥126.6 billion for the fiscal year ended March 31, 2018, as compared to ¥72.9 billion for the fiscal year ended March 31, 2017. This was driven by a loss on liquidation of a foreign subsidiary of ¥41.5 billion primarily reflecting the recognition of cumulative translation losses and an increase in fair value of contingent consideration of ¥10.5 billion driven by an increase in projected sales primarily for *COLCRYS*.

Operating profit. As a result of the above factors, operating profit increased ¥85.9 billion, or 55.1%, from ¥155.9 billion for the fiscal year ended March 31, 2017 to ¥241.8 billion for the fiscal year ended March 31, 2018.

Profit before tax. As a result of the above factors, profit before tax increased ¥73.9 billion, or 51.5%, from ¥143.3 billion for the fiscal year ended March 31, 2017 to ¥217.2 billion for the fiscal year ended March 31, 2018.

Income tax (expenses). Income tax expenses increased ¥2.7 billion, or 9.6%, from ¥27.8 billion for the fiscal year ended March 31, 2017 to ¥30.5 billion for the fiscal year ended March 31, 2018. This increase was mainly due to the tax impact of ¥22.8 billion resulting from the increase in profit before tax compared to the previous fiscal year, as well as the effect of additional tax benefits recognized for the year ended March 31, 2017, resulting from reduction of share capital of a subsidiary, which was responsible for an increase of ¥8.9 billion. These increases were offset in part by the positive impact of the enactment of U.S. tax reforms, principally related to the revaluation of net deferred tax liability at a lower enacted tax rate and improved recoverability of deferred tax assets, which resulted in a decrease of ¥27.5 billion.

Net profit for the year. As a result of the above factors, net profit for the year increased ¥71.2 billion, or 61.6%, from ¥115.5 billion for the fiscal year ended March 31, 2017 to ¥186.7 billion for the fiscal year ended March 31, 2018.

Fiscal Year Ended March 31, 2017 compared with the Fiscal Year Ended March 31, 2016

Revenue. Revenue decreased ¥75.3 billion, or 4.2%, from ¥1,807.4 billion for the fiscal year ended March 31, 2016 to ¥1,732.1 billion for the fiscal year ended March 31, 2017. ¥69.3 billion of this decrease in revenue resulted from divestitures, including the sale of our respiratory portfolio to AstraZeneca and the transfer of long-listed products in Japan to Teva Takeda Yakuhin Ltd. The unfavorable impact of changes in foreign exchange rates, primarily a 10% strengthening of Japanese yen compared to U.S. dollar, contributed an additional ¥125.4 billion to the decrease in revenue. These decreases were partially offset by sales growth in our product portfolio, excluding the effect of foreign exchange rates and divestures, of ¥119.4 billion, which was concentrated in our core therapeutic areas of GI, oncology and neuroscience.

The main drivers for the increase in revenue in our three key therapeutic areas of GI, oncology and neuroscience (including the effect of foreign exchange rate fluctuations) were as follows:

- *GI*. In the therapeutic area of GI, revenue attributable to *ENTYVIO* was ¥143.2 billion in the fiscal year ended March 31, 2017, an increase of ¥57.0 billion, or 66.2%, compared to the previous fiscal year, making *ENTYVIO* our top-selling product. Revenue attributable to *TAKECAB* was ¥34.1 billion in the fiscal year ended March 31, 2017, an increase of ¥25.7 billion, reflecting its rapid penetration into the Japanese market following the expiration of regulatory limitations on continued use in Japan. This increase was partially offset by a decline in sales of ¥12.5 billion for *DEXILANT*.
- *Oncology*. In the therapeutic area of oncology, revenue attributable to *NINLARO* was ¥29.4 billion, an increase of ¥25.3 billion, reflecting strong adoption in the United States. Revenue attributable to *ICLUSIG*, which was obtained through the acquisition of ARIAD in February 2017, was ¥2.9 billion. Revenue attributable to *VELCADE* decreased by ¥24.5 billion, or 15.1%, to ¥137.6 billion in the fiscal year ended March 31, 2017, reflecting the negative effect of foreign exchange rate fluctuation and decrease in sales volume during the fiscal year ended March 31, 2017.
- *Neuroscience*. In the therapeutic area of neuroscience, revenue attributable to *TRINTELLIX* was ¥31.9 billion, an increase of ¥7.4 billion, or 30.1%, versus the previous year, reflecting expanded share of the U.S. branded antidepressant market.

Cost of sales. Cost of sales increased ¥23.6 billion, or 4.4%, from ¥535.2 billion for the fiscal year ended March 31, 2016 to ¥558.8 billion for the fiscal year ended March 31, 2017. Cost of sales as a percentage of revenue increased from 29.6% in the fiscal year ended March 31, 2016 to 32.3% in the fiscal year ended March 31, 2017. The increase in cost of sales was primarily driven by changes in our product mix reflecting the sale of certain long-listed high-margin products to Teva Takeda Yakuhin Ltd.

Selling, general and administrative expenses. Selling, general and administrative expenses decreased ¥31.7 billion, or 4.9%, from ¥650.8 billion for the fiscal year ended March 31, 2016 to ¥619.1 billion for the fiscal year ended March 31, 2017. However, selling, general and administrative expenses as a percentage of sales remained consistent during the fiscal year ended March 31, 2018 compared to the fiscal year ended March 31, 2017.

Research and development expenses. Research and development expenses decreased ¥23.5 billion, or 7.0%, from ¥335.8 billion for the fiscal year ended March 31, 2016 to ¥312.3 billion for the fiscal year ended March 31, 2017, due mainly to the favorable impact of a stronger yen.

Amortization and impairment losses on intangible assets associated with products. Amortization and impairment losses on intangible assets associated with products increased ¥24.9 billion, or 18.9%, from ¥131.8 billion for the fiscal year ended March 31, 2016 to ¥156.7 billion for the fiscal year ended March 31, 2017, mainly due to a ¥16.0 billion impairment loss related to *COLCRYS* recognized due to a decline in sales and a ¥7.9 billion impairment loss related to *TAK-117* due to the project's termination.

Other operating income. Other operating income increased by ¥122.2 billion from ¥21.3 billion for the fiscal year ended March 31, 2016 to ¥143.5 billion for the fiscal year ended March 31, 2017, mainly due to a

¥102.9 billion gain relating to the transfer of the long-listed products in Japan to Teva Takeda Yakuhin Ltd. and a ¥12.0 billion gain from the reversal of contingent consideration liability reflecting decreased expected sales of *COLCRYS*.

Other operating expenses. Other operating expenses increased ¥28.5 billion, or 64.2%, to ¥72.9 billion for the fiscal year ended March 31, 2017, as compared to ¥44.4 billion for the fiscal year ended March 31, 2016, mainly due to an increase of ¥28.8 billion in restructuring expenses, including expenses incurred as a result of our research and development transformation initiative described under "Business of Takeda—Research and Development."

Operating profit. As a result of the above factors, operating profit increased ¥25.0 billion, or 19.1%, from ¥130.8 billion for the fiscal year ended March 31, 2016 to ¥155.9 billion for the fiscal year ended March 31, 2017.

Profit before tax. As a result of the above factors, profit before tax increased ¥22.8 billion, or 18.9%, from ¥120.5 billion for the fiscal year ended March 31, 2016 to ¥143.3 billion for the fiscal year ended March 31, 2017.

Income tax (expenses). Income tax expenses decreased ¥9.2 billion, or 24.9%, from ¥37.1 billion for the fiscal year ended March 31, 2016 to ¥27.8 billion for the fiscal year ended March 31, 2017. The decrease was mainly due to a lower Japanese statutory tax rate and favorable geographical mix of earnings as well as a tax provision during the previous fiscal year related to the revaluation of net deferred tax assets in Japan at a lower enacted rate. These decreases, which totaled ¥29 billion, were partially offset by an increase of ¥13.7 billion due to lower tax credits and ¥5.6 billion due to lower tax benefits from deduction of share capital basis in the current fiscal year.

Net profit (loss) for the year. As a result of the above factors, net profit for the year increased ¥32.0 billion, or 38.4%, from ¥83.5 billion for the fiscal year ended March 31, 2016 to ¥115.5 billion for the fiscal year ended March 31, 2017.

Certain Non-IFRS Performance Measures

In addition to our reported financial results prepared under IFRS, we also prepare and disclose EBITDA and Adjusted EBITDA, which are measures not prepared in accordance with IFRS. We present EBITDA and Adjusted EBITDA because we believe that these measures are useful to investors as they are frequently used by securities analysts, investors and other interested parties in the evaluation of companies in our industry. We further believe that Adjusted EBITDA is helpful to investors in identifying trends in our business that could otherwise be obscured by certain items unrelated to ongoing operations because they are highly variable, difficult to predict, may substantially impact our results of operations and may limit the ability to evaluate our performance from one period to another on a consistent basis.

The usefulness of EBITDA and Adjusted EBITDA to investors has limitations including, but not limited to, (i) they may not be comparable to similarly titled measures used by other companies, including those in our industry, (ii) they exclude financial information and events, such as the effects of an acquisition or amortization of intangible assets, that some may consider important in evaluating our performance, value or prospects for the future, (iii) they exclude items or types of items that may continue to occur from period to period in the future and (iv) they may not exclude all items, which could increase or decrease these measures, which investors may consider to be unrelated to our long-term operations, such as the results of businesses divested during a period. These non-IFRS measures should not be considered in isolation and are not, and should not be viewed as, substitutes for operating income, net profit for the year or any other measure of performance presented in accordance with IFRS. We encourage investors to review our historical financial statements in their entirety and caution investors to use IFRS measures as the primary means of evaluating our performance, value and prospects for the future, and EBITDA and Adjusted EBITDA as supplemental measures.

EBITDA and Adjusted EBITDA

We define EBITDA as net profit before income tax expenses, depreciation and amortization and net interest expense. We define Adjusted EBITDA as EBITDA further adjusted to exclude (reversal of) impairment losses, other operating expenses and income (excluding depreciation and amortization), finance expenses and income (excluding net interest expense), our share of loss (gain) from investments accounted for under the equity method and other items that management believes are unrelated to our core operations such as purchase accounting effects and transaction related costs.

The following table provides a reconciliation from net profit to EBITDA and Adjusted EBITDA for the fiscal years ended March 31, 2016, 2017 and 2018 and for the six months ended September 30, 2017 and 2018.

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
	(billions of yen)				
Net profit for the year	**¥ 83.5**	**¥ 115.5**	**¥ 186.7**	**¥172.7**	**¥ 126.5**
Income tax expenses	37.1	27.8	30.5	60.3	34.3
Depreciation and amortization	182.2	171.4	182.1	93.4	78.0
Interest expense, net	3.0	5.5	6.8	3.3	3.4
EBITDA	**¥ 305.8**	**¥ 320.2**	**¥ 406.1**	**¥329.7**	**¥ 242.2**
(Reversal of) Impairment losses	15.2	51.4	13.5	(9.2)	0.7
Other operating expense (income), net, excluding depreciation and amortization	17.0	(78.3)	(61.1)	(105.5)	(17.5)
Finance expense (income), net, excluding interest income and expense, net	7.3	5.4	(14.4)	(1.4)	11.8
Share of loss (profit) on investments accounted for under the equity method	0.0	1.5	32.2	(0.5)	(4.0)
Other adjustments		—	—	—	—
Loss on deconsolidation	6.3	—	—	—	—
Transaction costs related to the acquisition of ARIAD	—	3.2	—	—	—
Impact on profit related to fair value step up of inventory in ARIAD acquisition	—	—	1.4	0.8	—
Transaction costs related to the acquisition of Shire	—	—	—	—	7.9
Adjusted EBITDA	**¥ 351.6**	**¥ 303.4**	**¥ 377.7**	**¥213.8**	**¥ 241.0**

Liquidity and Capital Resources

Cash Requirements

Our cash and capital requirements are related mainly to our operating cash requirements, capital expenditures, contractual obligations, repayment of indebtedness and payment of interest and dividends. We intend to fund the cash portion of the consideration for the Shire Acquisition through the incurrence of new indebtedness. See "—Financing Arrangements for the Shire Acquisition."

Operating Cash Requirements

We require cash on an ongoing basis to finance our regular operations. Our cash outlays mainly include research and development expenses, milestone payments, sales and marketing expenses, personnel and other general and administrative costs and raw material costs. Income tax payments also require significant cash outlays as well as working capital financing.

Capital Expenditures

Our capital expenditures for tangible assets meeting new regulatory requirements consist primarily of enhancing and streamlining our production facilities, replacing fully depreciated items, and promoting efficiency of our operations. Our capital expenditures for intangible assets represent mainly licensed products, where such assets have been acquired from third-party partners, as well as software development expenditures. Our capital expenditures (consisting of the additions to property, plant and equipment and intangible assets recorded on our consolidated balance sheet) for the fiscal years ended March 31, 2016, 2017 and 2018 were ¥125.8 billion, ¥148.1 billion and ¥124.1 billion, respectively.

	For the fiscal year ended March 31,		
	2016	2017	2018
	(billions of yen)		
Tangible assets[(1)]	¥ 94.0	¥ 72.4	¥ 74.5
Intangible assets[(1)]	31.8	75.7	49.5
Total[(1)]	¥125.8	¥148.1	¥124.1

Note:
(1) Excludes acquisitions through business combinations.

As of March 31, 2018, we had contractual commitments for the acquisition of property, plant and equipment of ¥14.1 billion. We intend to fund such commitments with cash on hand.

Financing Obligations

We have outstanding indebtedness of ¥1,038.8 billion as of March 31, 2018 and our total interest expense for the fiscal years ended March 31, 2016, 2017 and 2018 was ¥5.3 billion, ¥7.6 billion and ¥10.0 billion, respectively.

Our long-term loans included above include the following covenants:

- Our profit before tax must not be a negative number for two consecutive years; and
- Our total equity (excluding foreign currency translation adjustments) on a quarterly basis must be at least 75% of our total equity (excluding foreign currency translation adjustments) reflected in our balance sheet for two consecutive quarters.

Other than as described above, our outstanding loans, bonds and finance lease obligations do not contain any financial covenants or restrictions on the payment of dividends, the incurrence of indebtedness (other than limited negative pledges), or the issuance or repurchase of our securities. As of March 31, 2018, none of our outstanding indebtedness is secured by any of our property.

If the Shire Acquisition is completed successfully, we expect the balance of our debt to increase significantly due to the effect of both of our financing arrangements for the Shire Acquisition and the inclusion of the indebtedness of Shire into our consolidated balance sheet. We plan to de-lever following the Shire Acquisition, with a target rate of net debt to Adjusted EBITDA of 2.0x or less within three to five years following completion of the Shire Acquisition, and are considering selected disposals of non-core assets to increase the pace of deleveraging. We expect that interest expense would increase significantly in future fiscal years until we achieve this deleveraging.

Financing Arrangements for the Shire Acquisition

Bridge Credit Agreement

On May 8, 2018, we entered into the Bridge Credit Agreement, with aggregate commitments of $30.85 billion with, among others, JPMorgan Chase Bank N.A., Sumitomo Mitsui Banking Corporation and MUFG Bank, Ltd. The commitments under the Bridge Credit Agreement were reduced by the amount of commitments under the Term Loan Credit Agreement described below of $7.5 billion and further reduced by $4.5 billion upon the signing of the ¥500.0 billion SSTL described below. The commitments under the Bridge Credit Agreement are expected to be further reduced by reference to the amount of the Notes and the Potential

Future Notes, and we expect to continue to reduce or refinance such commitments through the pursuit of a range of financing options, including additional senior or other borrowings. The Bridge Credit Agreement includes mandatory prepayment and cancellation provisions, which would be triggered by such financing options, as well as by asset sales and equity issuances (in each case subject to customary exceptions). The proceeds of the Bridge Credit Agreement, if drawn upon, will be used primarily to fund the cash portion of the consideration payable to Shire shareholders in connection with the Shire Acquisition, as well as to pay a portion of related expenses and to refinance a portion of the existing indebtedness of Shire and its subsidiaries. The Bridge Credit Agreement is unsecured. Two of the original four tranches under the Bridge Credit Agreement have been fully reduced. One of the remaining two tranches under the Bridge Credit Agreement, which we expect to reduce fully following the issuance of the Notes and the Potential Future Notes, has a maturity of 364 days from the date, following the day after completion of the Shire Acquisition, when all conditions precedent to drawing under the Bridge Credit Agreement are satisfied or waived in accordance with the terms of the Bridge Credit Agreement. The remaining tranche has a maturity of 90 days following such date.

As long as any loans are drawn or commitments are outstanding under the Bridge Credit Agreement, we will be subject to certain covenants, including customary covenants regarding compliance with law, payment of taxes, bookkeeping and reporting, as well as covenants to complete the Shire Acquisition as planned. We will also be subject to the following covenants:

- a "negative pledge," under which we and our consolidated subsidiaries (including, after the completion of the Shire Acquisition, Shire), will not incur or suffer to be incurred liens over our properties to secure any indebtedness, subject to certain exceptions, such that the total amount of indebtedness secured by such liens exceeds $2.5 billion at the time of incurrence; and
- as of March 31 and September 30 of each year (or June 30 and December 31 of each year, if we change our fiscal year end to December 31), beginning on September 30, 2019 at the earliest (or June 30, 2019 at the earliest, in the case of a December 31 fiscal year end) to not allow our ratio of Consolidated Net Debt (as defined in the Bridge Credit Agreement) to Consolidated EBITDA (as defined in the Bridge Credit Agreement) for the previous twelve-month period to surpass the following levels:
  - September 30, 2019 (or June 30, 2019 and December 31, 2019, in the case of a December 31 fiscal year end): 5.95 to 1.00; and
  - March 31, 2020 (or June 30, 2020, in the case of a December 31 fiscal year end) and thereafter: 5.35 to 1.00.

Term Loan Credit Agreement

On June 8, 2018, we entered into the Term Loan Credit Agreement for an aggregate principal amount of $7.5 billion with, among others, JPMorgan Chase Bank N.A., Sumitomo Mitsui Banking Corporation, MUFG Bank, Ltd. and Mizuho Bank, Ltd. The commitments under the Bridge Credit Agreement were reduced by the $7.5 billion amount of commitments under the Term Loan Credit Agreement. The proceeds of the Term Loan Credit Agreement will be used to fund a portion of the cash consideration payable to Shire shareholders in connection with the Shire Acquisition. The Term Loan Credit Agreement is unsecured and will have a maturity of five years from the date following the day after completion of the Shire Acquisition, when all conditions precedent to drawing under the Term Loan Credit Agreement are satisfied or waived in accordance with its terms. Upon the signing of the Term Loan Credit Agreement, we also entered into Amendment No. 1 to the Bridge Credit Agreement, described above, to make certain technical and conforming changes thereto.

For as long as any loans are drawn or commitments are outstanding under the Term Loan Credit Agreement, we will be subject to certain covenants, including customary covenants regarding compliance with law, payment of taxes, bookkeeping and reporting, as well as covenants to complete the Shire Acquisition as planned. We will also be subject to the following financial covenants:

- a "negative pledge," substantially similar to that under the Bridge Credit Agreement; and
- as of March 31 and September 30 of each year (or June 30 and December 31 of each year, if we change our fiscal year end to December 31), beginning on September 30, 2019 at the earliest (or June 30, 2019 at the earliest, in the case of a December 31 fiscal year end), to not allow our ratio of Consolidated Net Debt (as defined in the Term Loan Credit Agreement) to Consolidated EBITDA

(as defined in the Term Loan Credit Agreement) for the previous twelve-month period to surpass the following levels:

- September 30, 2019 (or June 30, 2019 and December 31, 2019, in the case of a December 31 fiscal year end): 5.95 to 1.00;
- March 31, 2020 and September 30, 2020 (or June 30, 2020 and December 31, 2020, in the case of a December 31 fiscal year end): 5.35 to 1.00;
- March 31, 2021 and September 30, 2021 (or June 30, 2021 and December 31, 2021, in the case of a December 31 fiscal year end): 4.30 to 1.00; and
- March 31, 2022 (or June 30, 2022, in the case of a December 31 fiscal year end) and thereafter: 4.00 to 1.00.

Senior Short Term Facility Agreement

On October 26, 2018, we entered into the SSTL, with an aggregate commitment of ¥500.0 billion, with Sumitomo Mitsui Banking Corporation, MUFG Bank, Ltd., Mizuho Bank, Ltd., The Norinchukin Bank and Sumitomo Mitsui Trust Bank, Limited. The commitments under the Bridge Credit Agreement were reduced by $4.5 billion. The proceeds of the loan under the SSTL will be used to fund a portion of the cash consideration payable to Shire shareholders in connection with the Shire Acquisition. The SSTL is unsecured and will mature one month, two months, three months or six months from the date of drawdown (at our option). Upon the signing of the SSTL, we also entered into Amendment No. 2 to the Bridge Credit Agreement, described above, to make certain technical changes thereto.

For as long as any loans are drawn or commitments are outstanding under the SSTL, we will be subject to certain covenants, including customary covenants regarding compliance with law, payment of taxes, bookkeeping and reporting, as well as covenants to complete the Shire Acquisition as planned. We will also be subject to a "negative pledge," substantially similar to that under the Bridge Credit Agreement.

Subordinated Loan Agreement

On October 26, 2018, we entered into the Subordinated Loan Agreement, with aggregate commitments of ¥500.0 billion, with Sumitomo Mitsui Banking Corporation, MUFG Bank, Ltd., Mizuho Bank, Ltd., The Norinchukin Bank and Sumitomo Mitsui Trust Bank, Limited. The proceeds of the loan under the Subordinated Loan Agreement (the "Subordinated Loan"), if drawn upon, will be used to refinance all or a part of any indebtedness incurred pursuant to the SSTL described above. We may choose not to drawdown all or a part of the Subordinated Loan if we obtain alternative financing. The Subordinated Loan is unsecured and will have a maturity of 60 years from its drawdown date (the "Subordinated Closing Date"). Under the Subordinated Loan Agreement, we may make an early repayment of all or part of the principal of the Subordinated Loan on any interest payment date on or after the sixth anniversary of the Subordinated Closing Date.

Under the Subordinated Loan Agreement, interest is payable at the end of each six-month interest period at a rate per annum equal to the sum of:

- the published Japanese Yen TIBOR rate for a period equal in length to such interest period (or, if such rate cannot be ascertained, certain customary fallback rates), plus
- a percentage per annum determined by reference to periods from the Subordinated Closing Date as set out below:
  - From the Subordinated Closing Date to the 10th anniversary of the Subordinated Closing Date, 2.00%;
  - From the 10th anniversary of the Subordinated Closing Date to the 26th anniversary of the Subordinated Closing Date, 2.25%; and
  - After the 26th anniversary of the Subordinated Closing Date, 3.00%.

Under the Subordinated Loan Agreement, we may, at our discretion, defer all or a part of the payment of interest on the Subordinated Loan, subject to certain mandatory payment clauses. As long as the Subordinated Loan or commitments under the Subordinated Loan Agreement are outstanding, we will be subject to certain covenants, including customary covenants regarding compliance with law, payment of taxes, bookkeeping and

reporting. The Subordinated Loan is unsecured and we have agreed not to provide any liens over our properties (including providing options to set any liens over their properties) to secure any indebtedness under the Subordinated Loan Agreement.

Off-Balance Sheet Arrangements

Under the terms of our collaborations with third parties for the development of new products, we may be required to make payments for the achievement of certain milestones related to the development of pipeline products and the launch and subsequent marketing of new products. As of March 31, 2017 and 2018, the contractual amount of potential milestone payments totaled ¥364.9 billion and ¥517.0 billion, respectively, in each case excluding potential commercial milestone payments for pipeline products under development.

Contractual Obligations

The following table summarizes existing contractual obligations as of March 31, 2018.

	Total contractual amount[1]	Years to maturity			
		Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years
		(billions of yen)			
Bonds and loans:[2][3]					
Bonds	¥ 173.2	—	120.0	53.2	—
Loans	813.2	0.0	130.0	75.0	608.2
Purchase obligations for property, plant and equipment	14.1	14.1	—	—	—
Finance lease obligations	99.2	4.8	8.9	5.4	80.0
Operating lease obligations	77.1	12.1	19.2	12.0	33.7
Contributions to defined benefit pension plans[4]	4.7	4.7	—	—	—
Total[5][6]	¥ 1,181.4	¥ 35.7	¥278.1	¥145.7	¥ 721.9

Notes:

(1) Obligations denominated in currencies other than yen have been translated into yen using period-end exchange rates for the fiscal year ended March 31, 2018 and may fluctuate due to changes in exchange rates.

(2) Repayment obligations may be accelerated if we breach the relevant covenants under the relevant instruments.

(3) Does not include interest payment obligations.

(4) Pension and post-retirement contributions cannot be determined beyond the fiscal year ending March 31, 2019.

(5) Does not include contractual obligations whose timing we are unable to estimate, including defined benefit contribution obligations, litigation reserves and long-term income tax liability and does not include liabilities recorded at fair value as amounts will fluctuate based on any changes in fair value including derivative liabilities and contingent consideration. Milestone payments that are dependent on the occurrence of certain future events are not included.

(6) Does not include purchase orders entered into for purchases made in the normal course of business.

Capital Resources

In each of the fiscal years ended March 31, 2016, 2017 and 2018, cash flow generated by our operating activities was sufficient to supply our working capital. We may also utilize the incurrence of short-term or long-term indebtedness or sales of assets to generate capital.

Cash and cash equivalents was ¥319.5 billion as of March 31, 2017 and ¥294.5 billion as of March 31, 2018.

We believe that our sources of liquidity and capital resources are adequate for our present requirements and business operations. We are seeking to ensure that our level of liquidity and access to capital resources continue to be maintained in order for us to successfully conduct our future operations.

Consolidated Cash Flows

The following table shows information about our cash flows during the fiscal years ended March 31, 2016, 2017 and 2018 and the six months ended September 30, 2017 and 2018:

	For the fiscal year ended March 31,			For the six months ended September 30,	
	2016	2017	2018	2017	2018
			(billions of yen)		
Net cash from (used in) operating activities	¥ 25.5	¥ 261.4	¥ 377.9	¥ 167.0	¥ 117.8
Net cash from (used in) investing activities	(71.2)	(655.7)	(93.3)	23.2	(2.1)
Net cash from (used in) financing activities	(124.8)	289.9	(326.2)	(108.1)	(97.2)
Net increase (decrease) in cash and cash equivalents	¥ (170.6)	¥ (104.4)	¥ (41.7)	¥ 82.1	¥ 18.5
Cash and cash equivalents at the beginning of the year	652.1	451.4	319.5	319.5	294.5
Effects of exchange rate changes on cash and cash equivalents	(33.3)	(5.7)	(4.6)	7.6	3.6
Net increase (decrease) in cash and cash equivalents resulting from a transfer to assets held for sale	3.1	(21.8)	21.3	21.8	0.5
Cash and cash equivalents at the end of the year	451.4	319.5	294.5	430.9	317.1

Six Months Ended September 30, 2018 compared with the Six Months Ended September 30, 2017

Net cash from operating activities decreased by ¥49.2 billion, or 29.5%, from ¥167.0 billion in the six months ended September 30, 2017 to ¥117.8 billion in the six months ended September 30, 2018. This was mainly due to ¥18.8 billion increase of inventories, mainly for *ENTYVIO*, for the six months ended September 30, 2018 and a non-recurring ¥28.5 billion cash receipt for the transfer of long-listed products to Teva Takeda Yakuhin Ltd. in the previous fiscal year.

Net cash used in investing activities was ¥2.1 billion in the six months ended September 30, 2018, compared to net cash from investing activities of ¥23.2 billion in the six months ended September 30, 2017. This was mainly due to the effect of the disposal of Wako Pure Chemical in the previous year.

Net cash used in financing activities was ¥97.2 billion in the six months ended September 30, 2018, compared to net cash used in financing activities of ¥108.1 billion in the six months ended September 30, 2017. This decrease was mainly due to ¥17.6 billion decrease in the purchase of treasury shares in the six months ended September 30, 2018 and ¥10.5 billion net repayment of short-term loans related to the bridge loan refinancing to fund the ARIAD acquisition during the six months ended September 30, 2017. This decrease was partially offset by ¥15.4 billion of loan origination fees paid during the six months ended September 30, 2018.

Fiscal Year Ended March 31, 2018 compared with the Fiscal Year Ended March 31, 2017

Net cash from operating activities increased by ¥116.5 billion from ¥261.4 billion in the fiscal year ended March 31, 2017 to ¥377.9 billion in the fiscal year ended March 31, 2018, primarily due to the impact of a higher net profit of ¥71.2 billion and the effect of certain favorable non-cash expenses and other adjustments, including a gain on divestment of a business of ¥87.9 billion, a loss on liquidation of foreign operations of ¥41.5 billion as well as a ¥30.7 billion loss relating to the share of loss of associates. Additional sources of operating cash flow were a ¥9.8 billion decrease in inventories as a result of management effort to reduce inventory levels during the fiscal year ended March 31, 2018. These sources of cash were partially offset by a higher impairment loss of ¥37.8 billion in fiscal year ended March 31, 2017 and a gain on sale of a business of ¥106.6 billion during the fiscal year ended March 31, 2018.

Net cash used in investing activities was ¥93.3 billion for the fiscal year ended March 31, 2018, compared to ¥655.7 billion for the fiscal year ended March 31, 2017. This decrease was primarily attributable to ¥583.1 billion of net consideration paid for the acquisition of ARIAD in the fiscal year ended March 31, 2017. The decrease also reflects the effect of a payment of ¥71.8 billion into a restricted cash account in the fiscal year ended March 31, 2018 in preparation for the acquisition of TiGenix NV. This was offset by ¥84.5 billion proceeds from the divestment of Wako Pure Chemical in the same fiscal year.

Net cash used in financing activities was ¥326.2 billion for the fiscal year ended March 31, 2018, compared to net cash from financing activities of ¥289.9 billion for the fiscal year ended March 31, 2017. This was primarily the result of repayments of ¥403.9 billion of short-term bridge loans, ¥337.2 billion of proceeds from long-term loans related mainly to the refinancing of the bridge loan for the ARIAD acquisition, and repayments of other long-term loans of ¥80.0 billion in the fiscal year ended March 31, 2018, compared to ¥407.0 billion of proceeds primarily from such short-term bridge loans in the previous fiscal year.

Fiscal Year Ended March 31, 2017 compared with the Fiscal Year Ended March 31, 2016

Net cash from operating activities increased by ¥235.9 billion to ¥261.4 billion in the fiscal year ended March 31, 2017 compared to ¥25.5 billion in the fiscal year ended March 31, 2016. The increase was primarily due to the impact of a higher net profit of ¥32.0 billion as well as the favorable effect of a non-cash impairment loss of ¥36.2 billion. Cash generated by operating activities was also favorably affected by the payment of ¥289.1 billion settlement for the *ACTOS* litigation during fiscal year ended March 31, 2016, favorable changes in working capital, including a decrease of inventory of ¥10.7 billion as a result of management effort to reduce inventory levels, as well as an increase of accounts payable of ¥24.6 billion due to extended vendor payment terms. These favorable changes were partially offset by an increase in accounts receivable of ¥49.7 billion, mainly driven by higher sales during the fiscal year ended March 31, 2017, as well as the effect of a gain of ¥115.4 billion on divestment of a business.

Net cash used in investing activities was ¥655.7 billion for the fiscal year ended March 31, 2017, compared to ¥71.2 billion for the fiscal year ended March 31, 2016. This increase was primarily attributable to ¥583.1 billion of net consideration paid for the acquisition of ARIAD.

Net cash from financing activities amounted to ¥289.9 billion for the fiscal year ended March 31, 2017, compared to net cash used in financing activities of ¥124.8 billion for the fiscal year ended March 31, 2016. This was primarily the result of an increase in short-term bridge loans of ¥407.0 billion related to the ARIAD acquisition.

Credit Ratings

Our credit ratings, which reflect each rating agency's opinion of our financial strength, operating performance and ability to meet our obligations are as follows:

Rating Agency	Category	Rating	Rating Structure
S&P Global Ratings	Issuer credit rating/foreign currency long-term and local currency long-term	A-	Third highest of 11 rating categories and third within the category based on modifiers (e.g. A+, A and A- are within the same category).
	Issuer credit rating (short-term)	A-2	Second highest of six rating categories
Moody's	Long-term issuer rating and Long-term senior unsecured rating	A2	Third highest of nine rating categories and second highest within the category based on modifiers (e.g. A1, A2 and A3 are within the same category).

The ratings are not a recommendation to buy, sell or hold securities. The ratings are subject to revision or withdrawal at any time by the assigning rating agency. Each of the financial strength ratings should be evaluated independently.

In May 2018, Moody's lowered our long-term issuer rating from A1 to A2, reflected in the table above, reflecting their expectations for our overall levels of leverage in the future, even in the absence of the Shire Acquisition. Furthermore, in May 2018, S&P Global Ratings announced that it was reviewing our credit ratings with a view to a potential downgrade due to our decision to acquire Shire. S&P Global Ratings also stated that it expects to take any potential ratings action after we complete the required legal procedures and close the acquisition, and all related financing is in place. Any future downgrades of our credit ratings may negatively affect our ability to refinance our existing debt or incur new borrowings on terms that we would consider to be commercially reasonable.

Market Risks

We are exposed to market risks primarily from changes in foreign currency exchange rates, interest rate changes and changes in the value of our investment securities.

Foreign Currency Risks

Our exposure to the risk of changes in foreign exchange rates primarily relates to our operations (when revenue or expense is denominated in a foreign currency) and our net investments in foreign subsidiaries. We manage foreign currency risks in a centralized manner. Our subsidiaries do not bear the risks of fluctuations in exchange rates. Foreign currency risks are hedged by derivative transactions, such as forward exchange contracts to achieve the expected net positions of trade receivables and payables in each foreign currency on a monthly basis.

We use forward exchange contracts, currency swaps and currency options for individually significant foreign currency transactions. Foreign currency risk of the net investments in foreign operations is managed through the use of foreign-currency-denominated borrowing. Starting from April 1, 2016, we designated loans denominated in the U.S. dollar as hedges of net investments in foreign operations and applied hedge accounting in order to manage the foreign currency exposure. The fair value of the foreign-currency-denominated loans was ¥97,928 million as of March 31, 2017.

We designated loans and bonds denominated in the U.S. dollar as hedges of net investments in foreign operations and applied hedge accounting in order to manage the foreign currency exposure. The fair value of the foreign-currency-denominated loans and foreign-currency-denominated bonds were ¥61,200 million and ¥31,930 million, respectively, as of March 31, 2018.

We are exposed mainly to foreign currency risks of the U.S. dollar and Euro. A depreciation of the Japanese yen by 5% against the U.S. dollar and Euro would impact profit or loss by ¥9,346 million, ¥5,156 million, and ¥12,533 million as of March 31, 2016, 2017 and 2018, respectively. These amounts do not include the effects of foreign currency translation on financial instruments in the functional currency or on assets, liabilities, revenue, and expenses of foreign operations. This analysis assumes that all other variables, in particular interest rates, remain constant. Our exposure to foreign currency changes for all other currencies is not material.

Interest Rate Risk

Our exposure to the risk of changes in market interest rates relates to the outstanding borrowings with floating interest rates. We use interest rate swaps that fix the amount of interest payments to manage interest rate risks. There is no impact on profit because the amount of interest payments from all the outstanding borrowings with floating rates are fixed using interest rate swaps.

Price Fluctuation Risk Management

For equity instruments, the Company manages the risk of price fluctuations in the instruments by regularly reviewing share prices and financial positions of the issuers.

Market Price Sensitivity Analysis

The analysis shows that if the market price for the underlying equity instruments, the equity securities held by Takeda and investments in trusts which hold equity securities on behalf of Takeda had increased by 10%, the hypothetical impact on other comprehensive income (before tax effect) would have been ¥15,537 million and ¥16,303 million as of March 31, 2017 and 2018 respectively. This analysis assumes that all other variables, in particular interest rates and foreign currency exchange rates, remain constant.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS OF SHIRE

The following discussion of Shire's financial condition and results of operations should be read in conjunction with the consolidated financial statements of Shire and related notes included elsewhere in this offering circular. Shire's consolidated financial statements are prepared in accordance with U.S. GAAP, and are therefore not directly comparable to our consolidated financial statements, which are prepared in accordance with IFRS. The presentation in this section contains forward-looking statements that involve risks, uncertainties and assumptions, and are subject to the qualifications set forth under "Forward-Looking Statements." Shire's actual contribution to our results after completion of the Shire Acquisition may be affected by a number of factors, including but not limited to those set forth under "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda-Financial Impact of the Shire Acquisition" and elsewhere in this offering circular.

Shire has grown both organically and through acquisition, completing a series of major transactions that have brought therapeutic, geographic and pipeline growth and diversification. Shire's revenues, expenditures and net assets are attributable to the R&D, manufacture, sale and distribution of pharmaceutical products within one reportable segment. Shire also earns royalties and other revenues (where Shire has out-licensed products to third parties) that are recorded as royalty and other revenues.

Revenues are derived primarily from two sources—sales of Shire's own products and royalties and other revenues:

- 2017: 95.3% (2016: 95.5%) of total revenues are derived from Product sales; and
- 2017: 4.7% (2016: 4.5%) of total revenues are derived from royalties and other revenues, including upfront payments from out-license arrangements.

Shire's current portfolio of approved products spans six key therapeutic areas: Immunology, Hematology, Neuroscience, Internal Medicine, Genetic Diseases and Ophthalmics. In 2017, the contribution of each therapeutic area to overall product sales was as follows:

	Product sales	Percentage
	(millions of dollars, except percentages)	
Immunology	$ 4,370.3	30.2%
Hematology	3,785.6	26.2%
Neuroscience	2,664.1	18.4%
Internal Medicine	1,670.3	11.6%
Genetic Diseases	1,437.7	10.0%
Oncology[(1)]	261.7	1.8%
Ophthalmics	259.2	1.8%
	$ 14,448.9	100.0%

Note:
(1) On August 31, 2018, Shire sold its oncology franchise to Servier S.A.S. ("Servier") for $2.4 billion.

Shire has grown in part through acquisition which has brought therapeutic, geographic and pipeline growth and diversification. The acquisition of Baxalta Incorporated ("Baxalta") in June 2016 added the Hematology, Immunology and Oncology franchises and enabled Shire to become the global leader in rare diseases and highly specialized conditions. The acquisition of Dyax in January 2016, with its lead pipeline product, TAKHZYRO, and marketed product KALBITOR, expanded and extended Shire's industry-leading HAE portfolio (FIRAZYR and CINRYZE). In July 2016, Shire licensed the global rights to all indications for SHP647 from Pfizer Inc. SHP647 is an investigational biologic being evaluated for the treatment of moderate-to-severe inflammatory bowel disease. In 2015, Shire acquired NPS Pharma, Meritage Pharma, Inc. ("Meritage Pharma") and Foresight Biotherapeutics Inc. ("Foresight"). The acquisition of NPS Pharma added global rights to an innovative product portfolio with multiple growth catalysts, including GATTEX/REVESTIVE and NATPARA/NATPAR. The acquisition of Meritage Pharma provided global rights to SHP621, a Phase 3 ready asset for the treatment of adolescents and adults with EoE, a rare, chronic inflammatory GI disease. This builds upon Shire's rare disease and GI commercial infrastructure and expertise. With the acquisition of

Foresight, Shire acquired the global rights to SHP640 (topical ophthalmic drops combining 0.6% povidone iodine (PVP-I) and 0.1% dexamethasone), a therapy in late-stage development for the treatment of infectious conjunctivitis, an ocular surface condition commonly referred to as pink eye. This acquisition has a clear strategic fit with XIIDRA, which is approved in the U.S. for the treatment of the signs and symptoms of dry eye disease, and further demonstrates Shire's commitment to building a leadership position in ophthalmics.

On February 20, 2018, Shire, Microsoft, and EURORDIS-Rare Diseases Europe announced a strategic initiative to accelerate time to diagnosis for children with rare diseases. On March 26, 2018, Shire and NanoMedSyn announced a collaboration to conduct pre-clinical research to evaluate a potential enzyme replacement therapy using NanoMedSyn's proprietary synthetic derivatives named AMFA. On May 8, 2018, the Boards of Takeda and Shire announced that they had reached agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire. The acquisition is expected to close in the first half of 2019, subject to a number of conditions, including receipt of regulatory clearances and approval by the shareholders of both companies. Takeda has already received clearances from regulatory agencies in the U.S., Japan, China, and other countries and is in discussions with the European Commission as part of its Phase 1 review of the proposed acquisition. On June 21, 2018, Shire announced that the FDA had approved its submission for the production of GAMMAGARD LIQUID at its new plasma manufacturing facility near Covington, Georgia. The facility will add approximately 30% capacity to Shire's internal network once fully operational. Commercial production began in January 2018 and shipments commenced shortly after approval. On August 31, 2018, Shire sold its oncology franchise to Servier for $2.4 billion. On September 6, Shire announced the acquisition of Sanaplasma AG, a source plasma collection company headquartered in Switzerland. Sanaplasma AG adds 21 new centers in Europe to Shire's European-based plasma collection network. On October 25, 2018, Shire announced it had filed a second submission to the FDA for approval to manufacture albumin therapy at its new plasma manufacturing facility near Covington, Georgia. On October 27, 2018, Takeda announced that it was in discussions with the European Commission, the EU antitrust regulator, in relation to the future potential overlap in the area of IBD between its marketed product ENTYVIO and Shire's pipeline compound SHP647, which is currently in Phase III clinical trials, and that it had proposed an antitrust remedy of a potential divestment of SHP647 and certain associated rights.

In 2017, Shire derived 34% of Product sales from outside of the U.S. Shire has ongoing commercialization and late-stage development activities, which are expected to further supplement the diversification of revenues in the future, including the following:

- the launch of MYDAYIS in the U.S.;
- continued launch of INTUNIV, REVESTIVE and ONIVYDE (sold to Servier as part of the oncology franchise) across Europe;
- the approvals of NATPAR and ADYNOVI in the EU;
- the approval of TAKHZYRO in the U.S.;
- submission of CALPEG NDA for ALL in the U.S. (sold to Servier as part of the oncology franchise);
- the approval of VONVENDI Marketing Authorization Application ("MAA") in Europe; and
- geographic expansion of XIIDRA with the recent approval in Canada and submissions in other key markets.

Geographic Information

Shire's revenues based on the geographic location from which the sale originated for the fiscal years ended December 31, 2015, 2016 and 2017 is set forth in the following table:

	For the fiscal year ended December 31,		
	2015	2016	2017
	(millions of dollars)		
Revenue:			
Ireland	$ 14.1	$ 41.6	$ 55.5
United States	4,659.2	7,666.9	9,642.1
Japan[1]	102.1	289.5	390.0
Rest of the world[1]	1,641.3	3,398.6	5,073.0
Total	$6,416.7	$11,396.6	$15,160.6

Note:
(1) Re-presented herein to report Japan revenues separate from Rest of the world revenues.

Shire's R&D

Shire's R&D efforts are focused on core therapeutic areas including Immunology, Hematology, Neuroscience, Internal Medicine, Genetic Diseases, Oncology (prior to the disposition of the Oncology business) and Ophthalmics. Shire concentrates its resources on obtaining regulatory approval for later stage pipeline products within these therapeutic areas and focuses its early stage research activities in rare diseases.

Evidence of the successful progression of the late stage pipeline can be seen in the granting of approval and associated launches of Shire's products over the last three years. In this time, several products have received regulatory approval including: in the U.S., MYDAYIS in 2017, XIIDRA and CUVITRU in 2016, NATPARA and VYVANSE for BED in 2015; in the EU, ONIVYDE (sold to Servier as part of the Oncology franchise) and CUVITRU in 2016, ELVANSE/TYVENSE for adults, INTUNIV for children and adolescents in 2015.

Shire's management reviews direct costs for all research and development projects by development phase.

Shire's R&D expenses in the fiscal years ended December 31, 2016 and 2017 include costs on programs in all stages of development. The following table summarizes the Shire's direct R&D spend categorized by development stage, based upon the development stage of each program for the fiscal years ended December 31, 2016 and 2017:

	For the fiscal year ended December 31,	
	2016	2017
	(millions of dollars)	
Early stage programs	$325.7	$ 275.3
Late stage programs	291.1	507.5
Currently marketed products	238.1	275.0
Total	$854.9	$1,057.8

Early stage programs also include pre-clinical and research programs. In addition to the above, Shire recorded R&D employee costs of $506.9 million in the fiscal year ended December 31, 2017 (fiscal year ended December 31, 2016: $431.9 million) and other indirect R&D costs of $198.6 million (2016: $153.0 million), comprising mainly of depreciation and up-front and milestone payments for in-licensed development projects.

Shire's Results of Operations for the Nine Months Ended September 30, 2018 and 2017

In the first quarter of 2018, Shire announced a change to its internal structure to create two distinct business segments within Shire: a Rare Disease division and a Neuroscience division. The change was based on the Shire Board's conclusion that the Neuroscience business warranted additional focus and investment and that there was a strong business rationale for creating the two divisions.

In the second quarter of 2018, Shire returned to a single segment approach to managing its business. This decision was precipitated by the Shire Board's acceptance of Takeda's offer to acquire Shire and reflects Shire's focus on the performance of the entire business as it operates in this current environment. This step was taken to more closely align with how the financial information is viewed by the Executive Committee (Shire's chief operating decision maker) for the purposes of making resource allocation decisions and assessing the performance of the business. Additionally, in the second quarter of 2018, Shire introduced a new product franchise called Established Brands to capture revenue for its non-promoted products that are facing or could face generic competition, such as LIALDA and PENTASA. Comparative financial information for 2017 was retrospectively restated herein.

In the nine months ended September 30, 2018, product sales increased 6% to $11,198.5 million (2017: $10,537.9 million), driven by Immunology, up 11%, Neuroscience, up 10%, Genetic Diseases, up 4%, Internal Medicine, up 35%, and Ophthalmics, up 48%, off-setting the impact of generic competition on Established Brands.

The following table provides an analysis of Shire's total revenues by source for and the nine months ended September 30, 2017 and 2018. In 2018, Immunology includes HAE from Genetic Diseases; prior year amounts have been reclassified to conform with the current year presentation.

	Nine months ended September 30,		Product sales growth
	2017	2018	
	(millions of dollars, except percentages)		
Product sales by franchise			
IMMUNOGLOBULIN THERAPIES	$ 1,613.9	$ 1,825.9	13%
HEREDITARY ANGIOEDEMA	968.4	1,063.0	10%
BIO THERAPEUTICS	546.7	583.7	7%
Immunology	3,129.0	3,472.6	11%
HEMOPHILIA	2,119.6	2,225.4	5%
INHIBITOR THERAPIES	631.9	583.2	(8)%
Hematology	2,751.5	2,808.6	2%
VYVANSE	1,620.3	1,779.8	10%
ADDERALL XR	242.3	232.1	(4)%
MYDAYIS	25.9	40.4	N/M(2)
Other Neuroscience(1)	91.3	117.8	29%
Neuroscience	1,979.8	2,170.1	10%
ELAPRASE	454.5	465.5	2%
REPLAGAL	349.0	372.8	7%
VPRIV	257.3	267.3	4%
Genetic Diseases	1.060.8	1,105.6	4%
LIALDA/MEZAVANT	469.6	287.0	(39)%
PENTASA	224.5	215.6	(4)%
Other Established Brands(3)	122.3	105.9	(13)%
Established Brands	816.4	608.5	(25)%
GATTEX/REVESTIVE	229.2	326.8	43%
NATPARA/NATPAR	103.3	160.8	56%
Other Internal Medicine(4)	105.2	101.3	(4)%
Internal Medicine	437.7	588.9	35%
Ophthalmics	173.4	255.8	48%
Oncology(5)	189.3	188.4	N/M(2)
Total Product sales	10,537.9	11,198.5	6%
Royalties and other revenues			
Royalties	329.7	175.4	(47)%
Other revenues	148.1	183.0	24%
Total royalties and other revenues	477.8	358.4	(25)%
Total revenues	$11,015.7	$11,556.9	5%

Notes:
(1) Other Neuroscience includes INTUNIV, EQUASYM, and BUCCOLAM.
(2) N/M: Product sales growth as a percentage is not meaningful due to the sale of the franchise during the quarter or due to product being launched during period.
(3) Other Established Brands includes FOSRENOL and CARBATROL.
(4) Other Internal Medicine includes AGRYLIN, PLENADREN, and RESOLOR.
(5) Results include the Oncology franchise until the date of its sale on August 31, 2018.

Immunology

Immunology product sales were $3,472.6 million in the nine months ended September 30, 2018. Immunoglobulin therapies growth of 13% in the nine months ended September 30, 2018 was primarily driven by increased demand for subcutaneous and intravenous brands and international sales growth. HAE product sales increased 10% during the nine months ended September 30, 2018, primarily due to stocking for both CINRYZE

and FIRAZYR, and partially offset by a decline in CINRYZE demand due to a competitor launch, compared to the corresponding period in 2017. HAE product sales during the nine months ended September 30, 2018 also included $51.3 million of TAKHZYRO product sales for initial launch stocking. Bio therapeutics sales increased 7% in the nine months ended September 30, 2018 driven by volume demand.

Hematology

Hematology product sales were $2,808.6 million in the nine months ended September 30, 2018. Hemophilia sales increased 5% in the nine months ended September 30, 2018, driven by volume demand, primarily related to ADYNOVATE. Sales of inhibitor therapies decreased 8% in the nine months ended September 30, 2018 due to new competition.

Neuroscience

Neuroscience product sales were $2,170.1 million in the nine months ended September 30, 2018. VYVANSE product sales increased 10% in the nine months ended September 30, 2018, due to a U.S. price increase and continued growth in Shire's international markets.

Genetic Diseases

Genetic Diseases product sales were $1,105.6 million in the nine months ended September 30, 2018. Genetic Diseases product sales increased 4% during the nine months ended September 30, 2018, primarily driven by stocking and favorable foreign exchange, compared to the corresponding period in 2017.

Established Brands

Established Brands product sales were $608.5 million in the nine months ended September 30, 2018. LIALDA/MEZAVANT product sales decreased 39% during the nine months ended September 30, 2018 was due to generic competition which began in the second half of 2017.

Internal Medicine

Internal Medicine product sales were $588.9 million in the nine months ended September 30, 2018. During the nine months ended September 30, 2018, GATTEX/REVESTIVE product sales increased 43% and NATPARA/NATPAR product sales increased 56%, driven by demand growth, and to a lesser extent, the benefit of price increases, compared to the corresponding period in 2017.

Ophthalmics

Ophthalmics product sales increased 48% to $255.8 million during the nine months ended September 30, 2018 due to XIIDRA demand growth.

Oncology

As a result of the sale of Shire's Oncology franchise, completed on August 31, 2018, Oncology product sales decreased to $188.4 million (2017: $189.3 million) in the nine months ended September 30, 2018.

Royalties and other revenues

Royalties and other revenues decreased 25% during the nine months ended September 30, 2018 compared to the corresponding period in 2017, primarily due to certain royalty expirations, the reclassification of ADDERALL XR from royalty revenue to product sales, and other changes required under the new revenue accounting standard.

Cost of sales

Cost of sales as a percentage of Total revenues decreased from 31% to 29% for the nine months ended September 30, 2018 compared to the corresponding period in 2017, due to lower expense related to the unwind of inventory fair value adjustments. For the nine months ended September 30, 2018, Cost of sales included depreciation of $228.2 million, respectively (2017: $209.2 million).

R&D

In the nine months ended September 30, 2018, Research and development expenses decreased by $84.5 million, or down 6%, compared to the corresponding period in 2017. The decrease during the nine months ended September 30, 2018 was primarily due to significant milestone and upfront payments associated with license arrangements incurred in 2017 that did not recur in 2018. For the nine months ended September 30, 2018, Research and development expenses included depreciation of $31.3 million (2017: $37.0 million).

SG&A

In the nine months ended September 30, 2018, Selling, general and administrative expenses decreased by $98.4 million compared to the corresponding period in 2017, primarily due to the benefits of on-going cost discipline and operating synergies partially offset by increased depreciation. For the nine months ended September 30, 2018, Selling, general and administrative expenses included depreciation of $173.3 million (2017: $117.3 million).

Amortization of acquired intangible assets

For the nine months ended September 30, 2018, Shire recorded Amortization of acquired Intangible assets of $1,375.3 million compared to $1,280.5 million in the corresponding period in 2017. The increase for the nine months ended September 2018 is primarily related to the acceleration of CINRYZE amortization and launch of TAKHZYRO, offset by the sale of the Oncology franchise.

Integration and acquisition costs

In the nine months ended September 30, 2018, Shire recorded Integration and acquisition costs of $512.0 million compared to $696.7 million in the corresponding period in 2017. These costs relate to the continued integration of Baxalta, which was acquired in June 2016, Takeda's proposed acquisition of Shire, and the change in fair value of contingent consideration, primarily related to TAKHZYRO, which was acquired from Dyax in 2016.

The costs associated with the integration of Baxalta include $151.4 million of asset impairments, $55.5 million of third-party professional fees, $19.2 million of expenses associated with facility consolidations, and $20.7 million of employee severance and acceleration of stock compensation for the nine months ended September 30, 2018. Shire expects the majority of these expenses, except for certain costs related to facility consolidations, to be paid within 12 months from the date the related expenses were incurred. The integration of Baxalta is estimated to be completed by mid to late 2019.

The costs associated with Takeda's proposed acquisition include $72.0 million of third-party professional fees and $40.4 million of employee incentives for the nine months ended September 30, 2018. Shire expects the majority of these expenses to be paid within 12 months from the date the related expenses were incurred.

In the nine months ended September 30, 2018, $100.4 million are included in the Integration and acquisition costs relating to the change in fair value of contingent consideration payable mainly related to TAKHZYRO.

In the nine months ended September 30, 2017, Integration and acquisition costs included a charge of $144.3 million relating to the change in fair value of contingent consideration payable. The Baxalta Integration and acquisition costs include $177.4 million of employee severance and acceleration of stock compensation, $114.0 million of third-party professional fees and $71.4 million of expenses associated with facility consolidations and $147.8 million of asset impairments for the nine months ended September 30, 2017.

Reorganization costs

For the nine months ended September 30, 2018, Shire recorded Reorganization costs of $268.9 million, primarily related to expenses associated with certain office facility closures in Cambridge, MA. For the nine months ended September 30, 2017, Shire recorded Reorganization costs of $24.5 million, primarily related to office and manufacturing facility closures.

Other expense, net

For the nine months ended September 30, 2018, Shire recorded total other expense, net of $417.2 million compared to $412.9 million in the corresponding period in 2017. Other expense, net increased primarily due to costs related to the cash tender offer for the repurchase of $2.3 billion of Shire's outstanding senior notes.

Taxation

For the nine months ended September 30, 2018, the effective tax rate on income from continuing operations was 18% (2017: 4%).

The effective tax rate for the nine months ended September 30, 2018 has been affected by certain provisions of the U.S. Tax Cuts and Jobs Act (Tax Act) passed in December 2017, which reduces the U.S. federal corporate income tax rate from 35% to 21% along with anti-deferral provisions related to non-U.S. operations, new limitations on certain deductions required under the Tax Act, and reductions in the quantum of and tax benefit associated with U.S. integration costs over the prior year.

Shire continued to assess the financial statement impact of the applicable provisions of the Tax Act upon enactment during the nine months ended September 30, 2018 and based on these assessments, income tax expense increased by $37.9 million during this period. The increase in tax expense recorded during the nine months ended September 30, 2018 was due to i) an adjustment to the U.S. deferred tax balances recorded as of December 31, 2017 related to the corporate income tax rate reduction of a $7.1 million tax benefit; and ii) an increase to income tax expense of $45.0 million related to the repatriation toll charge. The change in the toll charge was partially driven by an adjustment of $31.0 million related to the tax rates applied to certain drivers of the provisional repatriation toll charge in 2017, as well as the finalization of inputs to the calculation of the repatriation toll charge and the refinement of Shire's computation for the various guidance and regulations issued during 2018. The changes to its original tax reform impacts increased the effective tax rate for the nine months ended September 30, 2018 by 2%.

It is expected that additional interpretive guidance will be issued during the measurement period that may change how Shire has computed the provisional amounts for the year ended December 31, 2017. Shire will continue to assess the impact of the Tax Act during the measurement period and will record any adjustments to its provisional estimates as needed during the remainder of the measurement period and continues to assert that all amounts recorded and disclosed to date remain provisional.

The effective tax rate for the nine months ended September 30, 2017 was affected by the combined impact of the relative quantum of the profit before tax for the period by jurisdiction as well as significant acquisition and integration costs. Additionally, certain discrete tax adjustments were recorded during the year, which contributed to the low effective rate, including a tax benefit associated with the filing of the US tax returns and reversal of prior period income tax reserves.

Shire's Results of Operations for the Fiscal Years Ended December 31, 2017 and 2016

Shire's product sales increased 33% to $14,448.9 million, primarily driven by the inclusion of a full year of legacy Baxalta product sales, with strong sales from immunoglobulin therapies and bio therapeutics. Shire's royalties and other revenues increased 39% to $711.7 million (2016: $510.8 million), primarily due to the receipt of an upfront license fee and a full year of contract manufacturing revenue acquired with Baxalta.

The following table provides an analysis of Shire's total revenues by source for 2016 and 2017. In 2017, Immunology includes HAE from Genetic Diseases; prior year amounts have been reclassified to conform with the current year presentation.

	Years ended December 31,		Product sales growth[1]
	2016	2017	
	(millions of dollars, except percentages)		
Product sales by franchise			
IMMUNOGLOBULIN THERAPIES	$ 1,143.9	$ 2,236.6	N/M
HEREDITARY ANGIOEDEMA	1,310.9	1,429.6	9%
BIO THERAPEUTICS	372.2	704.1	N/M
Immunology	2,827.0	4,370.3	N/M
HEMOPHILIA	1,789.0	2,957.3	N/M
INHIBITOR THERAPIES	451.8	828.3	N/M
Hematology[2]	2,240.8	3,785.6	N/M
VYVANSE	2,013.9	2,161.1	7%
ADDERALL XR	363.8	348.0	(4)%
MYDAYIS	—	21.6	N/M
Other Neuroscience	112.8	133.4	18%
Neuroscience	2,490.5	2,664.1	7%
LIALDA/MEZAVANT	792.1	569.4	(28)%
GATTEX/REVESTIVE	219.4	335.5	53%
PENTASA	309.4	313.2	1%
NATPARA/NATPAR	85.3	147.4	73%
Other Internal Medicine	349.3	304.8	(13)%
Internal Medicine	1,755.5	1,670.3	(5)%
ELAPRASE	589.0	615.7	5%
REPLAGAL	452.4	472.1	4%
VPRIV	345.7	349.9	1%
Genetic Diseases	1,387.1	1,437.7	4%
Oncology[3]	130.5	261.7	N/M
Ophthalmics	54.4	259.2	N/M
Total Product sales	10,885.8	14,448.9	33%
Royalties and other revenues			
Royalties	382.6	448.4	17%
Other revenues	128.2	263.3	105%
Total royalties and other revenues	510.8	711.7	39%
Total revenues	$11,396.6	$15,160.6	33%

Notes:

(1) N/M: Consolidated results include Baxalta sales as of June 3, 2016, the date of acquisition, or partial year product launches; therefore, Product sales growth as a percentage is not meaningful.

(2) Sales for ADVATE and ADYNOVATE for the fiscal year ended December 31, 2017 were $2.4 billion.

(3) On August 31, 2018, Shire sold its oncology franchise to Servier for $2.4 billion.

Immunology

Immunology product sales, which now include HAE product sales, were $4,370.3 million in 2017 compared to $2,827.0 million in 2016, primarily driven by the inclusion of a full year of immunoglobulin therapies and bio therapeutics product sales following the acquisition of Baxalta in June 2016. Immunoglobulin and bio therapeutics reported total product sales of $2,940.7 million. HAE product sales for the year ended December 31, 2017 increased to $1,429.6 million or 9% from $1,310.9 million in 2016, primarily driven by FIRAZYR, up 15% to $663.0 and CINRYZE up 3% to $699.3 million. During the third quarter of 2017, CINRYZE had a supply constraint caused by a manufacturing interruption at a third-party supplier. The issue was addressed and production resumed in the fourth quarter of 2017. On January 24, 2018, FDA granted approval for the technology transfer of CINRYZE drug product manufacturing process to the Vienna, Austria manufacturing site.

Hematology

Hematology, acquired with Baxalta in June 2016, included sales of recombinant and plasma-derived hemophilia products (primarily Factor VIII and Factor IX) and inhibitor therapies. Hematology product sales were $3,785.6 million in 2017 compared to $2,240.8 million in 2016, primarily driven by the inclusion of a full year of Hematology product sales following the acquisition of Baxalta.

Neuroscience

Neuroscience product sales for the year ended December 31, 2017 increased to $2,664.1 million, or 7%, from $2,490.5 million in 2016, with growth primarily driven by VYVANSE and the inclusion of MYDAYIS. VYVANSE product sales for the year ended December 31, 2017 increased to $2,161.1 million, or 7%, from $2,013.9 million in 2016, due to the benefit of a price increase[(1)] taken since 2016, increased demand resulting from growth in the U.S. ADHD market and strong performance in Shire's international markets, partially offset by lower U.S. stocking. MYDAYIS, which was made available to patients on August 28, 2017, contributed $21.6 million of product sales in 2017.

Information about litigation related to MYDAYIS can be found in Note 25 to Shire's consolidated financial statements contained in this offering circular.

Internal Medicine

Internal Medicine product sales for the year ended December 31, 2017 decreased to $1,670.3 million, or 5%, from $1,755.5 million in 2016, primarily driven by the impact of LIALDA generic competition, partially offset by growth from GATTEX/REVESTIVE and NATPARA. LIALDA/MEZAVANT product sales decreased to $569.4 million, or 28%, for the year ended December 31, 2017 from $792.1 million in 2016, due to the impact of generic competition in 2017. Information about litigation related to LIALDA can be found in Note 25 to Shire's consolidated financial statements contained in this offering circular.

GATTEX/REVESTIVE and NATPARA/NATPAR product sales increased to $335.5 million, or 53%, and $147.4 million or 73%, respectively, for 2017, compared to product sales in 2016 primarily due to an increase in the numbers of patients on therapy and to a lesser extent, the benefit of price increases taken since 2016[(1)].

Genetic Diseases

Genetic Diseases product sales, which now excludes HAE product sales, for the year ended December 31, 2017 increased to $1,437.7 million, or 4%, from $1,387.1 million in 2016, primarily due to ELAPRASE and REPLAGAL, as both products benefited from an increase in the number of patients on therapy.

Oncology

Oncology, acquired with Baxalta in June 2016, reported product sales of $261.7 million for the year ended December 31, 2017 compared to $130.5 million for the year ended December 31, 2016. Oncology includes sales of ONCASPAR and ONIVYDE. ONIVYDE was approved in the EU on October 18, 2016. As Shire sold its oncology franchise to Servier on August 31, 2018, these products are no longer included in its business following such sale.

Ophthalmics

Ophthalmic product sales relate to XIIDRA, which was made available to patients on August 29, 2016. XIIDRA product sales were $259.2 million for the year ended December 31, 2017 compared to $54.4 million for the year ended December 31, 2016.

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(1) The actual net effect of price increases on current period net sales compared to the comparative period is difficult to quantify due to the various managed care rebates, Medicaid discounts, other discount programs in which Shire participates and fee for service agreements with wholesale customers.

Cost of sales

Cost of sales increased by $884.3 million to $4,700.8 million for the year ended December 31, 2017 (31% of Total revenues) from $3,816.5 million in 2016 (33% of Total revenues), due to the inclusion of a full year of legacy Baxalta costs. The decrease in cost of sales as a percentage of Total revenues for the year ended December 31, 2016 to December 31, 2017 is primarily due to the impact of lower expense related to the unwind of inventory fair value adjustments, partially offset by the inclusion of a full year of lower margin product franchises acquired with Baxalta. For the year ended December 31, 2017, cost of product sales included additional depreciation totaling $276.1 million (2016: $160.8 million), primarily due to the acquisition of Baxalta.

R&D

R&D expense increased by $323.5 million, or 22%, to $1,763.3 million for the year ended December 31, 2017 (12% of Total revenues) from $1,439.8 million in 2016 (13% of Total revenues), primarily due to the inclusion of a full year of legacy Baxalta costs. R&D expense for the year ended December 31, 2017 included depreciation of $47.2 million (2016: $34.1 million).

SG&A

SG&A expense increased by $515.7 million, or 17%, to $3,530.9 million for the year ended December 31, 2017 (23% of Total revenues) from $3,015.2 million in 2016 (26% of Total revenues), primarily due to the inclusion of a full year of legacy Baxalta costs. For the year ended December 31, 2017, SG&A expense included depreciation of $172.5 million.

Amortization of acquired intangible assets

For the year ended December 31, 2017, Shire recorded amortization of acquired intangible assets of $1,768.4 million compared to $1,173.4 million in 2016. The increase of $595.0 million was primarily related to a full year of amortization of intangible assets acquired with Baxalta and the acceleration of CINRYZE amortization following positive TAKHZYRO Phase 3 results.

Integration and acquisition costs

For the year ended December 31, 2017, Shire recorded integration and acquisition costs of $894.5 million, primarily relating to the Baxalta acquisition. Costs included asset impairment charges, employee severance and expenses associated with facility consolidations. For the year ended December 31, 2016, Shire recorded integration and acquisition costs of $883.9 million, primarily relating to the Baxalta and Dyax acquisitions. Costs included employee severance, acceleration of stock compensation, third-party professional fees, contract terminations and other transaction-related fees.

Reorganization costs

For the year ended December 31, 2017, Shire recorded reorganization costs of $47.9 million, primarily related to the closure of the Basingstoke, U.K. office. For the year ended December 31, 2016, Shire recorded reorganization costs of $121.4 million, primarily related to the closure of a facility at the Los Angeles, U.S. manufacturing site.

Other expense, net

Other expense, net increased by $85.0 million to $561.8 million for the year ended December 31, 2017 from $476.8 million in 2016, primarily due to a full year of interest expense incurred on borrowings used to fund the acquisition of Baxalta, reduced by repayments of borrowings and partially offset by lower amortization of one-time upfront borrowing costs for Baxalta and Dyax in 2017.

Taxation

The effective tax rate in 2017 was a tax credit of 125% (2016: tax credit of 26%). This was due to the enactment of the Tax Act, which was signed into law on December 22, 2017. Among the changes is a permanent reduction in the federal U.S. corporate income tax rate from 35% to 21% effective January 1, 2018. As a result of the reduction in the U.S. corporate income tax rate, Shire revalued its net deferred tax positions for the year-

ending December 31, 2017. This resulted in a decrease to the net deferred tax liability of approximately $2.5 billion, which was recorded as reduction to income tax expense for the fourth quarter of 2017. In addition, Shire has estimated an income tax liability of $621.7 million related to the transition tax which is applicable to certain non U.S. earnings previously untaxed in the U.S. Shire recorded a $90.1 million income tax expense related to the transition tax and reclassified a deferred tax liability which had been accrued for prior years' unremitted earnings to income tax payable for the remaining amount. Shire continues to analyze the Tax Act to determine the full effects the new law will have on its financial statements and all amounts recorded in the 2017 financial statements are provisional in nature.

Discontinued operations

The gain from discontinued operations for the year ended December 31, 2017 was $18.0 million, net of taxes, primarily the return of funds previously held in escrow related to the acquisition of the DERMAGRAFT business. The loss from discontinued operations for the year ended December 31, 2016 was $276.1 million, net of tax benefit of $98.9 million, primarily due to the establishment of legal contingencies related to the divested DERMAGRAFT business.

Shire's Results of Operations for the Fiscal Years Ended December 31, 2016 and 2015

Shire's product sales increased by 78% to $10,885.8 million. This increase was primarily due to including $3,887.4 million of Baxalta product sales following the acquisition, and double digit growth of existing franchises, with Neuroscience up 13% and Internal Medicine up 17%. In addition, Shire launched XIIDRA in August 2016 and the Ophthalmology franchise contributed sales of $54.4 million. Royalties and other revenues increased by 61% to $510.8 million, as the second half of 2016 benefited from additional revenue following the acquisition of Baxalta, primarily related to contract manufacturing activities.

The following table provides an analysis of Shire's Total revenues by source for the fiscal years ended December 31, 2015 and 2016. In 2017, Immunology includes HAE from Genetic Diseases; prior year amounts have been reclassified to conform with the current year presentation.

	Years ended December 31,		Product sales growth[1]
	2015	2016	
	(millions of dollars, except percentages)		
Product sales by franchise			
IMMUNOGLOBULIN THERAPIES	$ —	$ 1,143.9	N/M
HEREDITARY ANGIOEDEMA	1,062.7	1,310.9	23%
BIO THERAPEUTICS	—	372.2	N/M
Immunology	1,062.7	2,827.0	N/M
HEMOPHILIA	—	1,789.0	N/M
INHIBITOR THERAPIES	—	451.8	N/M
Hematology	—	2,240.8	N/M
VYVANSE	1,722.2	2,013.9	17%
ADDERALL XR	362.8	363.8	— %
Other Neuroscience	115.4	112.8	(2)%
Neuroscience	2,200.4	2,490.5	13%
LIALDA/MEZAVANT	684.4	792.1	16%
GATTEX/REVESTIVE	141.7	219.4	55%
PENTASA	305.8	309.4	1%
NATPARA/NATPAR	24.4	85.3	250%
Other Internal Medicine	344.3	349.3	1%
Internal Medicine	1,500.6	1,755.5	17%
ELAPRASE	552.6	589.0	7%
REPLAGAL	441.2	452.4	3%
VPRIV	342.4	345.7	1%
Genetic Diseases	1,336.2	1,387.1	4%
Oncology[2]	—	130.5	N/M
Ophthalmics	—	54.4	N/M
Total Product sales	6,099.9	10,885.8	78%
Royalties and other revenues			
Royalties	300.5	382.6	27%
Other revenues	16.3	128.2	687%
Total royalties and other revenues	316.8	510.8	61%
Total revenues	$6,416.7	$11,396.6	78%

Notes:

(1) N/M: Consolidated results include Baxalta sales as of June 3, 2016, the date of acquisition, or partial year product launches; therefore, Product sales growth as a percentage is not meaningful.

(2) On August 31, 2018, Shire sold its oncology franchise to Servier for $2.4 billion.

Immunology

Immunology product sales, which now include HAE product sales, were $2,827.0 million in 2016 compared to $1,062.7 million in 2015. Immunoglobulin therapies and bio therapeutics, acquired with Baxalta in June 2016, reported total product sales of $1,516.1 million. HAE product sales for the year ended December 31, 2016 increased to $1,310.9 million or 23% from $1,062.7 million in 2015, primarily driven by increased demand for FIRAZYR and CINRYZE. FIRAZYR product sales for the year ended December 31, 2016 increased to $578.5 million or 30% from $445.0 million in 2015, primarily due to an increase in the number of patients on therapy in both the U.S. and international markets. CINRYZE product sales for the year ended December 31, 2016 increased to $680.2 million or 10% from $617.7 million in 2015, as an increase in the number of patients on therapy was partially offset by reduced utilization as a result of a U.S. supply constraint during the second half of the year.

Hematology

Hematology, acquired with Baxalta in June 2016, included sales of recombinant and plasma-derived hemophilia products (primarily Factor VIII and Factor IX) and inhibitor therapies. Product sales for the year ended December 31, 2016 were $2,240.8 million.

Neuroscience

Neuroscience product sales for the year ended December 31, 2016 increased to $2,490.5 million, or 13%, from $2,200.4 million in 2015, with growth primarily driven by VYVANSE. VYVANSE product sales for the year ended December 31, 2016 increased to $2,013.9 million, or 17%, from $1,722.2 million in 2015, due to prescription growth in the U.S. adult market, which includes ADHD and BED, and the benefit of price increases[(1)] taken since 2015 and growth in Shire's international markets.

Internal Medicine

Internal Medicine product sales for the year ended December 31, 2016 increased to $1,755.5 million, or 17%, from $1,500.6 million in 2015, primarily driven by sales growth from LIALDA/MEZAVANT, GATTEX/REVESTIVE and NATPARA. LIALDA/MEZAVANT product sales increased to $792.1 million or 16% for the year ended December 31, 2016 from $684.4 million in 2015, primarily due to an increase in prescription demand, resulting in a U.S. market share of 40% at the end of 2016 (compared to 36% in 2015). GATTEX/REVESTIVE and NATPARA product sales increased to $219.4 million or 55% and $85.3 million or 250%, respectively, for 2016, compared to product sales in 2015 primarily due to an increase in the numbers of patients on therapy.

Genetic Diseases

Genetic Diseases product sales, which now excludes HAE product sales, for the year ended December 31, 2016 increased to $1,387.1 million or 4% from $1,336.2 million in 2015, primarily driven by an increase in the number of patients on therapy for ELAPRASE and REPLAGAL. ELAPRASE product sales for the year ended December 31, 2016 increased to $589.0 million, or 7%, from $552.6 million in 2015, primarily due to an increase in the number of patients on therapy and partially offset by the impact of foreign exchange.

Oncology

Oncology, acquired with Baxalta in June 2016, reported product sales of $130.5 million. Oncology includes sales of ONCASPAR and ONIVYDE. ONIVYDE was approved in the EU on October 18, 2016. As Shire sold its oncology franchise to Servier on August 31, 2018, these products are no longer included in its business following such sale.

Ophthalmics

Ophthalmic product sales relate to XIIDRA, which was made available to patients on August 29, 2016. XIIDRA product sales were $54.4 million for the year ended December 31, 2016.

Royalties and other revenues

Royalties and other revenues increased to $510.8 million or 61% for the year ended December 31, 2016 from $316.8 million in 2015, primarily due to $99.0 million of contract manufacturing revenue from the acquisition of Baxalta.

Cost of product sales

Cost of product sales increased by $2,847.5 million, or 294%, to $3,816.5 million for the year ended December 31, 2016 (33% of Total revenues) from $969.0 million in 2015 (15% of Total revenues), primarily due to the impact of the unwind of inventory fair value adjustments in 2016 following the acquisitions of Baxalta and Dyax and, to a lesser extent, the impact of lower margin product franchises acquired with Baxalta. Cost of product sales included $1,118.0 million and $31.1 million of amortization of inventory fair value adjustments in 2016 and 2015, respectively. For the year ended December 31, 2016, Cost of product sales included depreciation totaling $160.8 million. Depreciation increased primarily due to the acquisition of Baxalta.

(1) The actual net effect of price increases on current period net sales compared to the comparative period is difficult to quantify due to the various managed care rebates, Medicaid discounts, other discount programs in which Shire participates and fee for service agreements with wholesale customers.

R&D

R&D expense decreased by $124.2 million, or 8%, to $1,439.8 million for the year ended December 31, 2016 (13% of Total revenues) from $1,564.0 million in 2015 (24% of Total revenues), primarily due to lower in-process research and development ("IPR&D") impairment charges in 2016 more than offset the increase in costs related to Baxalta and Dyax and costs related to licensing SHP647. R&D expense in 2015 included impairment charges of $467.0 million related to the SHP625 IPR&D intangible asset, due to a lower probability of regulatory approval following trial results and revised commercial potential, and $176.7 million related to the SHP608 IPR&D intangible asset, following preclinical toxicity findings. No significant impairment charges occurred in 2016. R&D expense for the year ended December 31, 2016 included depreciation of $34.1 million.

SG&A

SG&A expense increased by $1,172.7 million, or 64%, to $3,015.2 million for the year ended December 31, 2016 (26% of Total revenues) from $1,842.5 million in 2015 (29% of Total revenues), primarily due to the inclusion of Baxalta related costs and XIIDRA launch and promotional costs. For the year ended December 31, 2016, SG&A expense included depreciation of $98.0 million.

Amortization of acquired intangible assets

For the year ended December 31, 2016, Shire recorded amortization of acquired intangible assets of $1,173.4 million compared to $498.7 million in 2015. The increase of $674.7 million was primarily related to amortization on the intangible assets acquired with the Baxalta and Dyax transactions.

Integration and acquisition costs

For the year ended December 31, 2016, Shire recorded integration and acquisition costs of $883.9 million, primarily related to the Baxalta and Dyax transactions, which included severance and employee termination benefits. In 2015, Shire recorded integration and acquisition costs of $39.8 million, representing acquisition and integration costs of $189.7 million, primarily related to NPS, ViroPharma, Baxalta and Dyax. These costs were offset by a net credit of $149.9 million from the change in fair value of contingent consideration, primarily relating to SHP625 and SHP608.

Reorganization costs

For the year ended December 31, 2016, Shire recorded reorganization costs of $121.4 million primarily related to the planned closure of a facility at the Los Angeles manufacturing site acquired with Baxalta in June 2016. Reorganization costs of $97.9 million for the year ended December 31, 2015, primarily related to the relocation of roles from Pennsylvania to Massachusetts.

Other expense, net

Other expense, net increased by $443.1 million to $476.8 million for the year ended December 31, 2016 from $33.7 million in 2015, primarily due to higher interest expense and amortization of one-time borrowing costs, including the write off of certain financing costs related to the bridge facility for the acquisition of Baxalta. During the third quarter of 2016, the bridge facility was fully repaid with the proceeds from the $12.1 billion public debt offering.

Taxation

The effective tax rate on income from continuing operations for the year ended December 31, 2016 was a benefit of 26%. The effective tax rate on income from continuing operations in 2016 was lower primarily due to the combined impact of the relative quantum of the profit before tax for the period by jurisdiction and the reversal of deferred tax liabilities (including in higher tax territories) from the Baxalta acquisition, inventory and intangible asset amortization, as well as acquisition and integration costs.

Discontinued operations

The loss from discontinued operations for the year ended December 31, 2016 was $276.1 million, net of tax benefit of $98.8 million, primarily related to legal contingencies established in the second quarter of 2016,

related to the divested DERMAGRAFT business. The loss from discontinued operations for the year ended December 31, 2015 was $34.1 million, net of tax, primarily related to a change in estimate for abandoned facilities charges.

Liquidity and Capital Resources

Shire's funding requirements depend on a number of factors, including the timing and extent of its development programs, corporate, business and product acquisitions, the level of resources required for the expansion of certain manufacturing and marketing capabilities as the product base expands, increases in accounts receivable and inventory which may arise with any increase in Product sales, competitive and technological developments, the timing and cost of obtaining required regulatory approvals for new products, the timing and quantum of milestone payments on business combinations, in-licenses and collaborative projects, the timing and quantum of tax and dividend payments, the timing and quantum of purchases by the Employee Benefit Trust ("EBT") of Shire shares in the market to satisfy awards granted under Shire's employee share plans, the timing and qualification of its refinancing obligations and the amount of cash generated from sales of Shire's products and royalty receipts.

An important part of Shire's business strategy is to protect its products and technologies through the use of patents, proprietary technologies and trademarks, to the extent available. Shire intends to defend its intellectual property and as a result may need cash for funding the cost of litigation.

Shire finances its activities through cash generated from operating activities, credit facilities, private and public offerings of equity and debt securities and the proceeds of asset or investment disposals. Shire's consolidated balance sheets included $193.2 million of cash and cash equivalents as of September 30, 2018.

Shire has a revolving credit facility (RCF) of $2.1 billion which matures in 2021, $915.0 million of which was utilized as of September 30, 2018. The RCF incorporates a $250 million U.S. dollar and Euro swingline facility operating as a sub-limit thereof. In connection with the acquisition of Dyax, Shire entered into a $5.6 billion amortizing term loan facility in November 2015. As of September 30, 2018, there was no outstanding balance under this term loan facility as it was fully repaid and canceled on September 28, 2018. In connection with the acquisition of Baxalta, Shire assumed $5.0 billion of unsecured senior notes previously issued by Baxalta. As of September 30, 2018, a total of $1.9 billion unsecured senior notes are outstanding, following repayment of the $375.0 million floating-rate notes and the $375.0 million fixed-rate notes due June 2018 as well as the repurchase of $2.3 billion of the notes in the third quarter of 2018. In addition, in connection with the acquisition of Baxalta, Shire issued $12.1 billion of unsecured senior notes in September 2016, of which $3.3 billion is due within the next twelve months.

The details of these debt agreements are described below and in Note 17, Borrowings and Capital Leases, to Shire's unaudited consolidated financial statements contained in this offering circular.

In addition, Shire also has access to certain short-term uncommitted lines of credit which are available to utilize from time to time to provide short-term cash management flexibility. As of September 30, 2018, these lines of credit were not utilized. Shire may also engage in financing activities from time to time, including accessing the debt or equity capital markets.

SAIIDAC Notes

On September 23, 2016, Shire Acquisitions Investments Ireland Designated Activity Company ("SAIIDAC"), a wholly-owned subsidiary of Shire, issued senior notes with a total aggregate principal value of $12.1 billion ("SAIIDAC Notes"), guaranteed by Shire plc and by Baxalta Incorporated. SAIIDAC used the net proceeds to fully repay amounts outstanding under the January 2016 Facilities Agreement (discussed below), which was used to finance the cash consideration payable related to Shire's acquisition of Baxalta. Below is a summary of the SAIIDAC Notes as of September 30, 2018:

	Aggregate amount	Coupon rate	Carrying amount as of September 30, 2018
	(millions of dollars, except percentages)		
Fixed-rate notes due 2019	$ 3,300.0	1.900%	$ 3,295.3
Fixed-rate notes due 2021	3,300.0	2.400%	3,289.0
Fixed-rate notes due 2023	2,500.0	2.875%	2,490.8
Fixed-rate notes due 2026	3,000.0	3.200%	2,983.8
Total SAIIDAC Notes	$12,100.0		$ 12,058.9

As of September 30, 2018, there were $41.1 million of debt issuance costs and discounts recorded as a reduction of the carrying amount of debt. These costs will be amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity.

Baxalta Notes

Shire plc guaranteed senior notes issued by Baxalta Incorporated with a total aggregate principal amount of $5.0 billion in connection with the Baxalta acquisition ("Baxalta Notes"). Following repayment of the $375.0 million floating-rate notes and the $375.0 million fixed-rate notes due in June 2018 and the subsequent $2.3 billion bond tender offer on September 11, 2018, the remaining Baxalta Notes as of September 30, 2018 are shown below:

	Aggregate amount	Coupon rate	Carrying amount as of September 30, 2018
	(millions of dollars, except percentages)		
Fixed-rate notes due 2020	$ 404.5	2.875%	$ 403.0
Fixed-rate notes due 2022	219.4	3.600%	221.9
Fixed-rate notes due 2025	800.5	4.000%	799.7
Fixed-rate notes due 2045	500.4	5.250%	515.3
Total Baxalta Notes	$1,924.8		$ 1,939.9

The book values above include any premiums, discounts and adjustments related to hedging instruments. For further details related to the interest rate derivative contracts, please see Note 16. Financial Instruments, to Shire's unaudited consolidated financial statements included in this offering circular.

Debt Tender Offer

On September 11, 2018, Shire purchased an aggregate of $2.3 billion in principal amount of Baxalta Notes from existing holders consisting of its 2.875% Notes due June 2020, 3.600% Notes due June 2022, 4.00% Notes due June 2025 and 5.250% Notes due June 2045 pursuant to a debt tender offer. Shire paid approximately $2.4 billion, including accrued and unpaid interest and tender premium, to purchase such notes. As a result of the debt tender offer, Shire recognized a loss on extinguishment of debt in the third quarter of 2018 of $40.6 million, which is included in Other (expense)/income, net within Shire's unaudited consolidated statements of operations.

Revolving Credit Facilities Agreement

On December 12, 2014, Shire entered into a $2.1 billion revolving credit facilities agreement with a number of financial institutions. Shire plc and SAIIDAC are able to borrow under the RCF; Shire plc, SAIIDAC and Baxalta Incorporated are guarantors under the RCF. As of September 30, 2018 Shire utilized $915.0 million of the RCF. The RCF, which terminates on December 12, 2021, may be applied towards financing the general corporate purposes of Shire. The RCF incorporates a $250 million U.S. dollar and Euro swingline facility

operating as a sub-limit thereof. Interest on any loans made under the RCF is payable on the last day of each interest period, which may be one week or one, two, three or six months at the election of Shire, or as otherwise agreed with the lenders. The interest rate for the RCF is: LIBOR (or, in relation to any revolving loan in Euro, EURIBOR); plus 0.30% per annum subject to change depending upon (i) the prevailing ratio of Net Debt to EBITDA (each as defined in the RCF) in respect of the most recently completed financial year or financial half year and (ii) the occurrence and continuation of an event of default in respect of the financial covenants or the failure to provide a compliance certificate. Shire also will pay (i) a commitment fee equal to 35% of the applicable margin on available commitments under the RCF for the availability period applicable thereto and (ii) a utilization fee equal to (a) 0.10% per year of the aggregate of all outstanding loans up to an aggregate base currency amount equal to $700.0 million, (b) 0.15% per year of the amount by which the aggregate base currency amount of all outstanding loans exceeds $700.0 million but is equal to or less than $1,400.0 million and (c) 0.30% per year of the amount by which the aggregate base currency amount of all outstanding loans exceeds $1,400.0 million.

The RCF includes customary representations and warranties, covenants and events of default, including requirements that Shire's (i) ratio of Net Debt to EBITDA in respect of the most recently-ended 12-month relevant period (each as defined in the RCF) must not, at any time, exceed 3.5:1 except that, following an acquisition fulfilling certain criteria, Shire may elect to increase this ratio to (a) 5.5:1 for the relevant period in which the acquisition was completed (b) 5.0:1 in respect of the first relevant period following the relevant period in which the acquisition was completed and (c) 4.5:1 in respect of the second relevant period following the relevant period in which the acquisition was completed and (ii) ratio of EBITDA to Net Interest for the most recently-ended 12-month relevant period (each as defined in the RCF) must not be less than 4.0:1. Shire elected to increase the Net Debt to EBITDA ratio in connection with the period ending June 30, 2016, following the completion of the acquisition of Baxalta during the period. The final relevant period ended June 2017.

The RCF restricts, subject to certain exceptions, Shire's ability to incur additional financial indebtedness, grant security over its assets or provide loans/grant credit. Further, any lender may require mandatory prepayment of its participation if there is a change of control of Shire, subject to certain exceptions for schemes of arrangement and analogous schemes.

Events of default under the RCF include, subject to customary grace periods and materiality thresholds: (i) non-payment of any amounts due under the finance documents (as defined in the RCF), (ii) failure to satisfy any financial covenants, (iii) material misrepresentation in any of the finance documents, (iv) failure to pay, or certain other defaults, under other financial indebtedness, (v) certain insolvency events or proceedings, (vi) material adverse changes in the business, operations, assets or financial condition of Shire as a whole, (vii) if it becomes unlawful for Shire (or any successor parent company) or any of their respective subsidiaries that are parties to the RCF to perform their obligations thereunder or (viii) if Shire (or any successor parent company) or any subsidiary thereof which is a party to the RCF repudiates such agreement or other finance document, among others.

Term Loan Facilities Agreement

November 2015 Facilities Agreement

On November 2, 2015, Shire entered into a $5.6 billion facilities agreement with various financial institutions (November 2015 Facilities Agreement). Shire plc, SAIIDAC and Baxalta Incorporated are guarantors under the November 2015 Facilities Agreement. SAIIDAC is the borrower under the November 2015 Facilities Agreement. The November 2015 Facilities Agreement comprises three credit facilities: (i) a $1.0 billion term loan facility of which, following the exercise of the one year extension option in the amount of $400.0 million, $600.0 million matured and was repaid on November 2, 2016 and $400.0 million was repaid on July 31, 2017, (ii) a $2.2 billion amortizing term loan facility which was fully paid during 2017 and (iii) a $2.4 billion amortizing term loan facility with ultimate maturity on November 2, 2018. As of September 30, 2018, there were no amounts outstanding under the November 2015 Facilities Agreement as it was fully repaid and cancelled on September 28, 2018.

January 2016 Facilities Agreement

On January 11, 2016, Shire (as original guarantor and original borrower), entered into an $18.0 billion bridge facilities agreement with various financial institutions (January 2016 Facilities Agreement). The January 2016 Facilities Agreement comprised two credit facilities: (i) a $13.0 billion term loan facility originally

maturing on January 11, 2017 (January 2016 Facility A) and (ii) a $5.0 billion revolving loan facility originally maturing on January 11, 2017 (January 2016 Facility B). On April 1, 2016, SAIIDAC became an additional borrower and additional guarantor under the January 2016 Facilities Agreement. The January 2016 Facility A was fully repaid in September 2016. The January 2016 Facility B was canceled effective on July 11, 2016, in accordance with its terms.

Short-term uncommitted lines of credit (credit lines)

Shire has access to various credit lines from a number of banks which are available to be utilized from time to time to provide short-term cash management flexibility. These credit lines can be withdrawn by the banks at any time. The credit lines are not relied upon for core liquidity. As of September 30, 2018, these credit lines were not utilized.

Financing

Shire anticipates that its operating cash flow together with available cash, cash equivalents, and the RCF will be sufficient to meet its anticipated future operating expenses, capital expenditures, tax and interest payments, lease obligations, debt repayments and milestone payments as they become due over the next twelve months. If Shire decides to acquire other businesses, it expects to fund these acquisitions from cash resources, the RCF and through new borrowings (including issuances of debt securities) or the issuance of new equity, if necessary.

Sources and uses of cash

The following table provides an analysis of Shire's gross and net cash (excluding restricted cash):

	As of December 31,		As of September 30,
	2016	2017	2018
	(millions of dollars)		
Cash and cash equivalents	$ 528.8	$ 472.4	$ 193.2
Long term borrowings (excluding capital leases)	(19,552.6)	(16,410.7)	(10,740.7)
Short term borrowings (excluding capital leases)	(3,061.6)	(2,781.2)	(4,239.2)
Capital leases	(353.6)	(349.2)	(366.8)
Total debt	(22,967.8)	(19,541.1)	(15,346.7)

Substantially all of Shire's cash and cash equivalents are held by foreign subsidiaries (i.e. those subsidiaries incorporated outside of Jersey, Channel Islands, the jurisdiction of incorporation of Shire). The amount of cash and cash equivalents held by foreign subsidiaries has not had, and is not expected to have, a material impact on Shire's liquidity and capital resources.

Cash flow activity

Net cash provided by operating activities increased by $70.4 million, or 3%, to $2,807.5 million (2017: $2,737.1 million) during the nine months ended September 30, 2018, primarily due to improvements in working capital offset by decrease in cash generated from business operations resulting in a favorable comparison period as the nine months ended September 30, 2017 included a payment of $351.6 million associated with the settlement of the DERMAGRAFT litigation.

Net cash provided by operating activities for the year ended December 31, 2017 increased 60% to $4,256.7 million (2016: $2,658.9 million), primarily due to inclusion of a full year of Baxalta operating cash flows, increased cash receipts from higher sales and operating profitability, partially offset by a payment of $351.6 million associated with the settlement of the DERMAGRAFT litigation and higher interest payments.

Net cash provided by operating activities for the year ended December 31, 2016 increased 14% to $2,658.9 million (2015: $2,337.0 million), primarily due to increased cash receipts from higher sales, partially offset by higher tax and interest payments, costs related to the Baxalta integration and a payment associated with the termination of a biosimilar collaboration acquired with Baxalta.

Net cash provided by investing activities was $1,676.8 million during the nine months ended September 30, 2018, primarily related due to proceeds from the sale of the Oncology franchise of $2,412.2 million, proceeds from the sale of investments of $31.8 million, offset by purchases of $564.6 million of PP&E due to continued investments in manufacturing operations, and the acquisition of a European plasma company for $104.7 million.

Net cash used in investing activities was $700.9 million for the year ended December 31, 2017, primarily related to purchase of $798.8 million of PP&E due to continued investments in manufacturing operations, offset by $88.6 million of proceeds from the sale of investments.

Net cash used in investing activities was $18,092.2 million for the year ended December 31, 2016, primarily related to the cash paid for the acquisitions of Baxalta ($12,366.7 million, less cash acquired of $583.2 million) and Dyax ($5,934.0 million, less cash acquired of $241.2 million). Shire's investing activities also included the purchase of $648.7 million of PP&E due to the continued investment in manufacturing operations.

Net cash used in financing activities was $4,751.1 million during the nine months ended September 30, 2018, principally due to the repurchase of $2.3 billion of Baxalta notes, $1.2 billion of repayments under the November 2015 Facility, a contingent consideration payment of $396.0 million, repayment of the $375.0 million floating-rate Baxalta notes and the $375.0 million fixed-rate Baxalta notes, and a dividend payment of $276.6 million, which was partially offset by $105.0 million of increased borrowings under the RCF, and $180.8 million of cash proceeds from the exercise of options.

Net cash used in financing activities was $3,619.3 million for the year ended December 31, 2017, principally due to repayments of November Facilities of $3,800.0 million and dividend payments of $281.3 million, offset by monies borrowed under the RCF of $360.0 million and proceeds from the issuance of stock and share-based compensation arrangements of $134.1 million.

Net cash provided by financing activities was $15,825.8 million for the year ended December 31, 2016, principally due to monies borrowed under the January 2016 Facilities Agreement to partially fund the acquisition of Baxalta (repaid using the proceeds of the issuance of the SAIIDAC Notes) and drawings made under the RCF and the November 2015 Facilities Agreement to fund the acquisition of Dyax (net of subsequent repayments). In addition, Shire made dividend payments of $171.3 million.

Outstanding Letters of credit

As of September 30, 2018 and December 31, 2017, Shire had irrevocable standby letters of credit and guarantees with various banks totaling $249.5 million and $224.8 million, providing security for Shire's performance of various obligations. These obligations are primarily in respect of the recoverability of insurance claims, lease obligations and supply commitments.

Cash Requirements

As of December 31, 2017, Shire's cash requirements for current and non-current liabilities reflected on Shire's consolidated balance sheets and other contractual obligations were as follows:

	Payments due by period				
	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
	(millions of dollars)				
Borrowings and capital lease obligations	$23,626.5	$3,330.5	$5,294.7	$4,555.0	$10,446.3
Operating leases obligations	1,579.7	188.5	320.0	275.4	795.8
Purchase obligations	3,946.6	2,113.4	1,501.4	281.1	50.7
Other non-current liabilities	1,077.6	—	473.9	323.9	279.8
Total	$30,230.4	$5,632.4	$7,590.0	$5,435.4	$11,572.6

Calculations of expected interest payments incorporate current period assumptions for interest rates, foreign currency translation rates and hedging strategies (refer to Note 15 to the consolidated financial statements of Shire contained in this offering circular), and assume that interest is accrued through the maturity date or expiration of the related instrument. Shire leases certain land, facilities, motor vehicles and certain equipment under operating leases expiring through 2033.

Purchase obligations include agreements to purchase goods, investments or services (including clinical trials, contract manufacturing and capital equipment), and open purchase orders, that are enforceable and legally binding and that specify all significant terms. Shire expects to fund these commitments with cash flows from operating activities.

Unrecognized tax benefits and associated interest and penalties of $143.8 million are included within payments due in one to three years.

The following items have been excluded from the table above:

- Cash outflows related to the assumed pension and other post-employment benefit plans, in which timing of funding is uncertain and dependent on future movements in interest rates and investment returns, changes in laws and regulations and other variables.
- In connection with Shire's acquisitions, Shire recorded contingent consideration liabilities related to development, regulatory and commercial milestones and royalty payments. These liabilities were recorded at fair value on the respective acquisition dates and revalued each reporting period. Shire may pay up to approximately $2.7 billion, which excludes royalty related payments, upon achieving clinical, regulatory and commercialization milestones. For additional information, see Note 14 to Shire's consolidated financial statements included in this offering circular.
- Milestone payments to third parties upon the achievement of development, regulatory and commercial milestones, as well as potential royalty payments, associated with in-licensing and collaboration agreements. Potential future milestone payments associated with these arrangements was approximately $5.5 billion, which excludes potential royalty payments. For additional information, see Note 4 to Shire's consolidated financial statements included in this offering circular.
- Milestone payments related with collaboration agreements that become payable only if Shire chooses to exercise one or more of its options and potential contingent payments associated with R&D costs that may be funded by collaboration partners in the future.
- An unfunded commitment of $48.9 million as a limited partner in multiple investment companies, in which the timing of future payments is uncertain.

During the nine months ended September 30, 2018, there were no material changes to Shire's contractual obligations disclosed above, except as described below.

On September 11, 2018, Shire purchased an aggregate of $2.3 billion in principal amount of Baxalta Notes from existing holders consisting of its 2.875% Notes due June 2020, 3.600% Notes due June 2022, 4.000% Notes due June 2025 and 5.250% Notes due June 2045 pursuant to a debt tender offer. Shire paid approximately $2.4 billion, including accrued and unpaid interest and tender premium, to purchase such notes. As a result of the debt tender offer, Shire recognized a loss on extinguishment of debt in the third quarter of 2018 of $40.6 million, which is included in Other (expense)/income, net within the unaudited consolidated statements of operations.

Off-balance sheet arrangements

There are no off-balance sheet arrangements, aside from those outlined above, that have, or are reasonably likely to have, a current or future material effect on Shire's financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Foreign currency fluctuations

A number of Shire's subsidiaries have a functional currency other than the U.S. dollar. As such, the consolidated financial results are subject to fluctuations in exchange rates, particularly in the Euro, Swiss franc, Japanese yen and Pound sterling against the U.S. dollar.

Accumulated foreign currency translation differences of $1,279.6 million are reported within Accumulated other comprehensive income as of December 31, 2017. Foreign exchange losses for the year ended December 31, 2017 of $97.3 million are reported in Shire's consolidated statements of operations.

As of December 31, 2017, Shire had outstanding foreign exchange swap and forward contracts that manage the currency risk associated with intercompany transactions. As of December 31, 2017 the fair value of

these contracts was a net asset of $11.4 million. For the year ended December 31, 2017, net gains on foreign exchange swaps and forwards of $93.6 million are reported in Shire's consolidated statements of operations.

Concentration of credit risk

Financial instruments that potentially expose Shire to concentrations of credit risk consist primarily of short-term cash investments, derivative contracts and trade accounts receivable from product sales and from third parties from which Shire receives royalties. Cash is invested in short-term money market instruments, including money market and liquidity funds and bank term deposits or held on account. The money market and liquidity funds where Shire invests are all triple A rated by both Standard and Poor's and by Moody's credit rating agencies.

Shire is exposed to the credit risk of the counterparties with which it enters into bank term deposit arrangements and derivative instruments. Shire limits this exposure through a system of internal credit limits which vary according to ratings assigned to the counterparties by the major rating agencies. The internal credit limits are approved by Shire's board of directors and exposure against these limits is monitored by Shire's corporate treasury function. The counterparties to these derivatives contracts are major international financial institutions.

Inflation

Although at reduced levels in recent years, inflation continues to apply upward pressure on the cost of goods and services which are used in the business. However, Shire believes that the net effect of inflation on its revenues and operations has been minimal during the past three years.

Critical accounting estimates

The preparation of Shire's consolidated financial statements, in conformity with U.S. GAAP and SEC regulations, requires management to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities and equity at the date of Shire's consolidated financial statements and reported amounts of revenues and expenses during the reporting period. On an on-going basis, Shire evaluates its estimates, judgments and methodologies. Estimates are based on historical experience, current conditions and on various other assumptions that are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities and equity and the amounts of revenues and expenses. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition and Related Allowances

(a) Product Revenue

Shire recognizes revenues from Product sales when there is persuasive evidence that an arrangement exists, delivery has occurred, the price is fixed or determinable and collectability is reasonably assured. Shire records Product sales net of sales deductions.

(b) Other Revenue

Royalty income relating to licensed technology is generally recognized when the licensee sells the underlying product. Shire estimates sales amounts and related royalty income based on the historical product information. Estimates are revised pursuant to receiving sales information from the relevant licensee. If Shire is unable to reliably estimate the amount based on past experiences, the amount of royalty income is recorded when sales information from the relevant licensee is received.

(c) Sales Deductions

Sales deductions consist primarily of statutory rebates to State Medicaid and other government agencies, Medicare Part D rebates, commercial rebates and fees to MCOs, Group Purchasing Organizations, distributors and specialty pharmacies, product returns, sales discounts (including trade discounts), distribution service fees, wholesaler chargebacks and allowances for coupon and patient assistance programs. These deductions are recorded as reductions to revenue in the same period as the related sales are recognized. Reserves are based on estimates of the amounts earned or to be claimed on the related sales. Estimates are based on Shire's historical

experience of existing or similar programs, current contractual and statutory requirements, specific known market events and trends, industry data and forecasted customer buying and payment patterns. Additionally, certain rebates are based on annual purchase volumes which are not known until completion of the annual period on which they are based. As a result, Shire estimates the accruals and related reserves required for amounts payable under these programs.

If actual results vary, Shire may need to adjust these estimates, which could have an effect on earnings in the period of the adjustment. Aggregate reserves for Medicaid and MCO rebates as of December 31, 2017, 2016 and 2015 were $1,612.7 million, $1,431.3 million and $982.4 million or 11%, 13% and 16%, respectively, of product sales. Historically, actual rebates have not varied significantly from the reserves provided.

(d) Product Returns

Shire typically accepts customer product returns in the following circumstances: (a) expiration of shelf life on certain products; (b) product damaged while in Shire's possession; (c) under sales terms that allow for unconditional return (guaranteed sales); or (d) following product recalls or product withdrawals. Generally, returns for expired product are accepted three months before and up to one year after expiration date of the relevant product and the returned product is destroyed. Depending on the product and Shire's return policy with respect to that product, Shire may either refund the sales price paid by the customer by issuance of a credit, or exchange the returned product with replacement inventory. Shire typically does not provide cash refunds.

Shire estimates the proportion of recorded revenue that will result in a return by considering relevant factors, including but not limited to:

- past product returns activity;
- the duration of time taken for products to be returned;
- the estimated level of inventory in the distribution channel;
- product recalls and discontinuances;
- the shelf life of products;
- the launch of new drugs or new formulations; and
- the loss of patent protection, exclusivity or new competition.

The accrual estimation process for product returns involves, in each case, a number of interrelating assumptions, which vary for each combination of product and customer. As of December 31, 2017, 2016 and 2015, reserves for product returns were $175.7 million, $118.4 million, and $128.3 million or 1.2%, 1.1% and 2.1%, respectively, of Product sales. Historically, actual returns have not varied significantly from the reserves provided.

Valuation of intangible assets, including IPR&D

In conjunction with the accounting for business combinations, Shire recorded intangible assets primarily related to commercially marketed products and IPR&D projects. Shire has intangible assets, net of $33,046.1 million as of December 31, 2017 and $34,697.5 million as of December 31, 2016.

If Shire acquires an asset or group of assets that do not meet the definition of a business under applicable accounting standards, the acquired IPR&D is expensed on its acquisition date. Future costs to develop these assets are recorded to Research and development expense as they are incurred.

The identifiable intangible assets are measured at their respective fair values as of the acquisition date. When significant identifiable intangible assets are acquired, Shire engages an independent third-party valuation firm to assist in determining the fair values of these assets as of the acquisition date. Discounted cash flow models are typically used in these valuations and the models used in valuing these intangible assets require the use of significant estimates and assumptions including but not limited to:

- estimates of revenues and operating profits related to the products or product candidates;
- the probability of success for unapproved product candidates considering their stages of development;

- the time and resources needed to complete the development and approval of product candidates;
- projecting regulatory approvals; and
- developing appropriate discount rates and probability rates by project.

Shire believes the fair values used to record intangible assets acquired in connection with a business combination are based upon reasonable estimates and assumptions given the facts and circumstances as of the acquisition date.

Impairment and Amortization of Long-lived Assets, including intangible assets

Long-lived assets to be held and used include intangible assets and property, plant and equipment. Property, plant and equipment and intangible assets related to Shire's commercially marketed products are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Management reviews intangible assets related to in-process research and development product rights for impairment annually, as of October 1, and whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. When performing the impairment assessment, management calculates the fair value of the intangible assets using the same methodology as described above under "—Valuation of intangible assets, including IPR&D." For property, plant and equipment, Shire uses a variety of methodologies to determine the fair value, including appraisals and discounted cash flow models, which estimate the future cash flows expected to result from the use of the asset and its eventual disposition. If the carrying value of long lived assets exceeds its fair value, then the asset is written-down to its fair value.

Intangible assets related to commercially marketed products are amortized over their estimated useful lives on an economic consumption method, or a straight-line basis when straight-line method approximates economic consumption method. Intangible assets related to IPR&D product rights are treated as indefinite-lived intangible assets and not amortized until the product is approved for sale by regulatory authorities in specified markets. At that time, Shire will determine the useful life of the asset, reclassify the asset out of IPR&D and begin amortization.

If IPR&D projects are not successfully developed and/or the value of the commercially marketed products becomes impaired, fail during development, are abandoned or subject to significant delay or do not receive the relevant regulatory approvals, Shire may not realize the future cash flows that it has estimated nor recover the value of the initial or subsequent R&D investments made subsequent to acquisition of the asset project. If such circumstances occur, Shire's future operating results could be materially adversely impacted.

Goodwill

Goodwill represents the excess of the consideration transferred over the estimated fair value of assets acquired and liabilities assumed in a business combination. Shire has $19,831.7 million and $17,888.2 million of goodwill as of December 31, 2017 and 2016, respectively, as a result of accounting for business combinations using the acquisition method of accounting.

Shire assesses the goodwill balance within its single reporting unit annually, as of October 1, and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable to determine whether any impairment in this asset may exist and, if so, the extent of such impairment. Shire reviews goodwill for impairment by assessing qualitative and quantitative factors, including comparing the market capitalization of Shire to the carrying value of its assets. Events or circumstances that might require an interim evaluation include unexpected adverse business conditions, economic factors, unanticipated technological changes or competitive activities and acts by governments and courts.

Shire completed its annual impairment test in the fourth quarters of 2017, 2016 and 2015, respectively, and determined in each of those periods that the carrying value of goodwill was not impaired. In each year, the fair value of the reporting unit, which includes goodwill, was significantly in excess of the carrying value of the reporting unit.

Income Taxes

Shire accounts for income taxes under the asset and liability method. Provisions for federal, state and foreign income taxes are calculated on reported pre-tax earnings based on current laws. Deferred taxes are

provided using enacted tax rates on the future tax consequences of temporary differences, which are the differences between the financial statement carrying amount of assets and liabilities and their respective tax bases and the tax benefits of carryforwards. In the normal course of business, Shire is audited by the Irish and foreign tax authorities, and it is periodically challenged regarding the amount of taxes due. These challenges primarily relate to the timing and amount of deductions and the transfer pricing in various tax jurisdictions. Shire believes its tax positions comply with applicable tax law and Shire intends to defend its positions.

In accounting for uncertainty in income taxes, management is required to develop estimates as to whether a tax benefit should be recognized in Shire's consolidated financial statements, based on whether it is more likely than not that the technical merits of the position will be sustained based on audit by the tax authorities. In accounting for income tax uncertainties, management is required to make judgments in the determination of the unit of account, the evaluation of the facts, circumstances and information in respect of the tax position taken, together with the estimates of amounts that Shire may be required to pay in ultimate settlement with the tax authority. Any outcome upon settlement that differs from the recorded provision for uncertain tax positions may result in a materially higher or lower tax expense in future periods, which could significantly impact Shire's results of operations or financial condition. However, Shire does not believe it is possible to reasonably estimate the potential impact of any such change in assumptions, estimates or judgments and the resultant change, if any, in Shire's provision for uncertain tax positions, as any such change is dependent on factors such as future changes in tax law or administrative practice, the amount and nature of additional taxes which may be asserted by the taxation authorities, and the willingness of the relevant tax authorities to negotiate a settlement for any such position.

Shire has significant deferred tax assets due to various tax attributes, including net operating losses and tax credits from research and development activities principally in the Republic of Ireland, the U.S., Switzerland, Belgium and Germany. The realization of these assets is not assured and is dependent on various factors. Management is required to exercise judgment in determining whether it is more likely than not that it would realize these deferred tax assets. In assessing the need for a valuation allowance, management weighs all available positive and negative evidence including cumulative losses in recent years, expectations of future taxable income, carry forward and carry back potential under relevant tax law, expiration period of tax attributes, taxable temporary differences, and prudent and feasible tax-planning strategies. A valuation allowance is established where there is an expectation that on the balance of probabilities management considers it is more likely than not that the relevant deferred tax assets will not be realized. If actual events differ from management's estimates, or to the extent that these estimates are adjusted in the future, any changes to the valuation allowance could significantly impact Shire's financial condition and results of operations.

Litigation and legal proceedings

Shire has a number of lawsuits pending. Shire recognizes loss contingency provisions for probable losses when management is able to reasonably estimate the loss. Estimates of losses may be developed substantially before the ultimate loss is known, and are therefore refined each accounting period as additional information becomes known. In instances where Shire is unable to develop a reasonable estimate of loss, no loss contingency provision is recorded at that time; however, disclosure would be made if the loss contingency is at least reasonably possible to occur. These estimates are reviewed quarterly and changed when expectations are revised. An outcome that deviates from Shire's estimate may result in an additional expense (or credit) in a future accounting period. As of December 31, 2017, provisions for litigation losses, insurance claims and other disputes totaled $76.2 million (2016: $415.0 million).

Contingent consideration payable

The fair value of Shire's contingent consideration payable as of December 31, 2017 was $1,168.2 million (2016: $1,058.0 million). Contingent consideration payable represents future milestones and royalties Shire may be required to pay in conjunction with various business combinations. The amounts ultimately payable by Shire are dependent upon the successful achievement of the relevant milestones and future net sales of the relevant products over the life of the milestone or royalty term, respectively. Shire estimates the fair value of contingent consideration payable using the income approach, based on a discounted cash flow method. The discounted cash flow method uses inputs with values that may not be observable in a public trading market, including, but not limited to: the probability of, and period in which, the relevant milestone event is expected to be achieved; the amount of royalties that will be payable based on forecast net sales of the relevant products; and the discount rates to be applied in calculating the present values of the relevant milestone or royalty. Significant judgment is employed by Shire in developing these estimates and assumptions. If actual

events differ from management's estimates, or to the extent that these estimates are adjusted in the future, Shire's financial condition and results of operations could be materially affected in the period of any such change of estimate.

Pension and other postemployment benefit (OPEB) plans

The valuation of the funded status and net periodic benefit cost is calculated using actuarial assumptions. These significant assumptions include the following:

- interest rates used to discount pension and OPEB plan liabilities;
- the long-term rate of return on pension plan assets;
- rates of increases in employee compensation (used in estimating liabilities);
- anticipated future healthcare costs (used in estimating the OPEB plan liability); and
- other assumptions involving demographic factors such as retirement, mortality and turnover (used in estimating liabilities).

Selecting assumptions involves an analysis of both short-term and long-term historical trends and known economic and market conditions at the time of the measurement date. The use of different assumptions would result in different measures of the funded status and net cost. Actual results in the future could differ from expected results. A 50 basis points decrease in the discount rate would result in an annual increase in pension and other postretirement benefit expense of approximately $6.5 million and an increase in the benefit obligation of approximately $108.2 million. A 50 basis points increase in the discount rate would result in an annual decrease in pension and other postretirement benefit expense of approximately $7.3 million and a decrease in the benefit obligation of approximately $93.8 million. Shire's key assumptions are listed in Note 19 to Shire's consolidated financial statements included in this offering circular.

Share-based compensation

Shire makes certain assumptions in order to value and record expense associated with awards made under the share-based compensation arrangements. Changes in these assumptions may lead to variability with respect to the amount of expense recognized in connection with share-based payments. Shire uses the Black-Scholes model to compute the estimated fair value of stock option awards. Using this model, fair value is calculated based on assumptions with respect to (i) expected volatility of stock price, (ii) the periods of time options are expected to be held prior to exercise (expected lives), (iii) expected dividend yield on common stock, and (iv) risk-free interest rates.

Restructuring costs

Shire has made estimates and judgments regarding the amount and timing of its restructuring expense and liability, including current and future period termination benefits and other exit costs to be incurred when related actions take place. Severance and other related costs are reflected in Shire's consolidated statements of operations as a component of reorganization costs or Integration and acquisition costs. Actual results may differ from these estimates.

Newly Adopted Accounting Standards Requiring Full Retrospective Adoption

Effective January 1, 2018, Shire adopted the following standards that would require a retrospective application to historical financial statements:

- ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. The new standard clarifies certain aspects of the statement of cash flows, and aims to reduce diversity in practice regarding how certain transactions are classified in the statement of cash flows.
- ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. The new guidance is intended to reduce diversity in the presentation of restricted cash and restricted cash equivalents in the statement of cash flows. The guidance requires that restricted cash and restricted cash equivalents be included as components of total cash and cash equivalents as presented on the statement of cash flows. If the requirements of this ASU had been retrospectively applied to the

years ended December 31, 2017, 2016 and 2015, $39.4 million, $25.6 million, and $86.0 million of restricted cash and restricted cash equivalents would have been included in the ending total cash and cash equivalents in the statement of cash flows, resulting in restated ending cash and cash equivalents of $511.8 million, $554.4 million, and $221.5 million for each of the respective periods.

- ASU 2017-07, Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. The standard amends the income statement presentation of the components of net periodic benefit cost for defined benefit pension and other postretirement plans. The standard requires entities to (1) disaggregate the current-service-cost component from the other components of net benefit cost (the "other components") and present it with other current compensation costs for related employees in the income statement and (2) present the other components elsewhere in the income statement and outside of income from operations if such a subtotal is presented. It also requires entities to disclose the income statement lines that contain the other components if they are not presented on appropriately described separate lines. If the requirements of this ASU had been retrospectively applied to the years ended December 31, 2017, 2016 and 2015, $0.1 million, $(47.3) million, and $0.0 million of net periodic benefit cost included in Operating income from continuing operations would have been included in total other expense, net in the income statement, resulting in restated total other expense, net of $561.9 million for the year ended December 31, 2017 and $429.5 million for the year ended December 31, 2016.

Shire's financial statements as of December 31, 2017 and 2016 and for the years ended December 31, 2017, 2016 and 2015 that have been included herein have not been revised for the retrospective application of the above standards since the impact of these standards was not material. Refer to Shire's audited and unaudited consolidated financial statements contained in this offering circular for additional discussion of recently issued accounting standards.

Financial Information Relating to the New Shire IAS Trust

For the year ended December 31, 2017, the Income Access Trust (the "IAS Trust") recorded income before tax of $245.6 million (2016: $150.6 million, 2015: $127.7 million). This income reflected dividends received on the Income Access Share. As of December 31, 2017, the IAS Trust had total equity of $nil. In future periods, to the extent that dividends are unclaimed on the expiry of dividend checks, or to the extent they are returned unpresented, the IAS Trust will record a liability for these unclaimed dividends.

The movements in cash and cash equivalents of the IAS Trust consist of dividends received on the Income Access Share (2017: $245.6 million, 2016: $150.6 million, 2015: $127.7 million), and distributions made on behalf of Shire to shareholders (2017: $245.6 million, 2016: $150.6 million; 2015: $127.7 million).

Non-GAAP EBITDA

In addition to its reported financial results prepared under U.S. GAAP, Shire also reports Non-GAAP EBITDA, which is a measure not prepared in accordance with U.S. GAAP. Shire's Non-GAAP EBITDA is presented to provide investors with an additional analysis of Shire's results of operations, particularly in evaluating performance from one period to another.

In calculating Non-GAAP EBITDA, Shire deducts or adds the following items back to U.S. GAAP net income to arrive at U.S. GAAP operating income: gain or loss from discontinued operations (net of taxes), equity in earnings/losses of equity method investees (net of taxes), income taxes and other expense, net. Then, from U.S. GAAP operating income, the following items are excluded: expense related to the unwind of inventory fair value adjustments, inventory write down related to the closure of a facility, program wind-down and one-time employee related costs, amortization and impairment of acquired intangible assets, costs incurred for acquisitions, integrations and divestments, revenue from upfront license fee, costs related to license arrangements, costs for reorganizations, costs for legal settlements and related litigation costs, gain on sale of Oncology and product rights, depreciation, and costs related to AbbVie's terminated offer. In any given period, Shire may have significant, unusual, or non-recurring gains or losses which it may exclude from its Non-GAAP EBITDA.

Shire's management has historically used Non-GAAP financial measures such as Non-GAAP EBITDA to make operating decisions as they facilitate additional internal comparisons of Shire's performance to historical

results and to competitors' results, and the measures are provided to investors as a supplement to Shire's reported results to provide additional insight into Shire's operating performance. It is important to note that this Non-GAAP measure has no standardized meaning prescribed by U.S. GAAP. In addition, because of its non-standardized definition, this Non-GAAP measure may not be comparable to the calculation of similar measures of other companies. Additionally, this Non-GAAP measure provides a view of Shire's financial performance without including all of the factors that were actually present during a period.

Because of these and other limitations, investors should not solely rely on Non-GAAP measures such as Non-GAAP EBITDA in assessing the performance of Shire. In addition, this Non-GAAP measure is not, and should not be viewed as, a substitute for measures presented under U.S. GAAP such as operating income from continuing operations or net income. The most directly comparable measure under U.S. GAAP for Non-GAAP EBITDA is U.S. GAAP Net income. The following table reconciles Shire's U.S. GAAP Net income to Non-GAAP EBITDA:

	For the fiscal year ended December 31,			For the nine months ended September 30,	
	2015	2016	2017	2017	2018
	(millions of dollars)				
U.S. GAAP Net income	$1,303.4	$ 327.4	$ 4,271.5	$1,166.1	$1,703.3
(Deduct) / add back:					
Loss / (gain) from discontinued operations net of tax	34.1	276.1	(18.0)	(18.6)	—
Equity in losses / (earnings) of equity method investees, net of taxes	2.2	8.7	(2.5)	(0.1)	(11.2)
Income taxes	46.1	(126.1)	(2,357.6)	44.6	371.0
Other expense, net	33.7	476.8	561.8	412.9	417.2
U.S. GAAP Operating income from continuing operations	1,419.5	962.9	2,455.2	1,604.9	2,480.3
Revenue from upfront license fee	—	—	(74.6)	—	—
Expense related to the unwind of inventory fair value adjustments	31.1	1,118.0	747.8	688.7	40.9
Inventory write down related to the closure of a facility	—	18.9	—	—	—
Program wind-down and one-time employee related costs	—	20.0	(4.0)	(4.0)	3.3
Impairment of acquired intangible assets	643.7	8.9	20.0	20.0	10.0
Costs relating to license arrangements	—	110.0	131.2	123.7	10.0
Legal and litigation costs	9.5	16.3	10.6	8.6	—
Amortization of acquired intangible assets	498.7	1,173.4	1,768.4	1,280.5	1,375.3
Integration and acquisition costs	39.8	883.9	894.5	696.7	512.0
Reorganization costs	97.9	121.4	47.9	24.5	268.9
Gain on sale of Oncology and product rights	(14.7)	(16.5)	(0.4)	(0.4)	(267.2)
Depreciation	138.5	292.9	495.8	363.5	432.8
Costs related to AbbVie's terminated offer	60.1	—	—	—	—
Non-GAAP EBITDA	$2,924.1	$4,710.1	$ 6,492.4	$4,806.7	$4,866.3

BUSINESS OF TAKEDA

Overview

We are a global, research and development-driven pharmaceutical company with a presence in more than 70 countries. We bring highly-innovative, life-changing medicines to patients across the globe, with prescription drugs marketed directly or through our partners in approximately 100 countries worldwide. Our global workforce of more than 27,000 employees is committed to bringing better health and a brighter future to patients. We develop and market pharmaceutical products to treat a broad range of medical conditions including GI diseases, cancer, neurological and psychiatric diseases and other medical conditions, including diabetes and hypertension, as well as vaccines. We are also committed to our corporate social responsibility program, which is dedicated to global health, and our access to medicine strategy, which aims to increase access to innovative and potentially life-saving medicines for patients with some of the highest unmet medical needs across the world.

We have a focused, agile and innovative research and development organization whose goal is to impact patients' lives by translating science into transformative medicines. We focus on highly innovative medicine, with 41 clinical stage assets with active development programs as of October 31, 2018, more than one-third of which have orphan drug designation. We focus our research and development efforts on our three key therapeutic areas: GI, oncology and neuroscience, plus vaccines. We have successfully built a distinct research and development strategy based on therapeutic area focus, a robust research engine and a comprehensive, differentiated partnership model of collaborations with academia, biotech firms and startups. Our research and development program aims to leverage a combination of internal and external expertise to deliver a sustainable pipeline, and we currently have approximately 180 active partnerships, helping us actively pursue additional innovation.

We are focusing on three key priorities in the mid-term: growing our portfolio, strengthening our pipeline and boosting our profitability. Pursuing portfolio growth involves a focus on our expected key growth drivers, namely the three key therapeutic areas of GI, oncology and neuroscience, as well as emerging markets. This also includes further strengthening our specialty capabilities, while at the same time working to optimize our portfolio through targeted acquisitions and selected disposals of non-core assets.

History

Our 237-year history started in 1781, when Chobei Takeda I began selling traditional Japanese and Chinese medicines in Doshomachi, Osaka. After Japan's Meiji Restoration opened the country to increased overseas trade in the late 1860s, we were one of the first companies to begin importing western medicines into Japan. In 1895, we began our pharmaceutical manufacturing business, and our research division was formed in 1914, allowing us to begin to introduce our own pharmaceutical products. In 1925, we were incorporated as Chobei Takeda & Co., Ltd. and our name was later changed to Takeda Pharmaceutical Company Limited. In 1949, our shares were listed on the Tokyo and Osaka stock exchanges. We began expanding into overseas markets in the 1960s, first in Asia and, subsequently, other markets around the world. We began enhancing our overseas business infrastructure in the late 1990s, with the formation of new subsidiaries in the United States and Europe.

Since 2014, Takeda has been focused on becoming an agile, research and development driven, global pharmaceutical company that is well positioned to deliver highly innovative medicines and transformative care to patients around the world. We believe that we have successfully strengthened our reputation by our world-class products and innovation, while remaining true to our values. In addition to our efforts to enhance our research and development capabilities, we have a strong track record of successful cross-border merger and acquisition activities and post-acquisition integration, including our acquisition of ARIAD in 2017, Nycomed A/S in 2011 and Millennium Pharmaceuticals, Inc. ("Millennium") in 2008. In July 2018, we acquired TiGenix NV, an advanced biopharmaceutical company developing novel stem cell therapies for serious medical conditions, with the aim to bring new treatment options to patients with gastrointestinal disorders. We also entered into more than 50 collaborations with third parties during the fiscal year ended March 31, 2018 to help strengthen our pipeline. With the Shire Acquisition, we are pursuing the next major step in our development into a global pharmaceuticals company. See "—Shire Acquisition."

Shire Acquisition

Overview

On May 8, 2018, the boards of Takeda and Shire reached agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire,

which we refer to as the "Shire Acquisition." Under the terms of the Shire Acquisition, each Shire shareholder is entitled to receive $30.33 in cash and either 0.839 New Takeda shares or 1.678 Takeda ADSs for each share of Shire. The expected aggregate consideration is approximately £46 billion (approximately ¥6.96 trillion). This estimate is based on the following assumptions:

- the closing price of our shares on the Tokyo Stock Exchange of ¥4,923 per share; and
- exchange rates of £1.00 to ¥151.51 and £1.00 to $1.3945.

In each case, such assumptions are as of April 23, 2018, being the day prior to the announcement that the Shire board would, in principle, be willing to recommend the Shire Acquisition at such consideration. The estimated aggregate consideration is further based on a total issued and to-be-issued share capital of Shire totaling 937,925,528 shares as of May 4, 2018, the last practicable date prior to the announcement of the Shire Acquisition.

Immediately following completion of the Shire Acquisition, we expect that Shire shareholders will own approximately 50% of the combined group. We believe the Shire Acquisition will create a global, values-based and research and development-driven biopharmaceutical company incorporated and headquartered in Japan, with an attractive geographic footprint and the scale to drive future development. Specifically, we expect that the Shire Acquisition will strengthen Takeda's core therapeutic areas, bringing together Takeda and Shire's complementary positions in GI and neuroscience and provide leading positions in rare diseases and plasma-derived therapies to complement our existing strength in oncology and focused efforts in vaccines.

We currently expect that the Shire Acquisition will close in the first half of 2019. Under the Co-operation Agreement with Shire, dated May 8, 2018, we have agreed to use all reasonable endeavors to complete the Shire Acquisition. In addition, we agreed to pay Shire a "break fee" in the amount and manner stated in the Co-operation Agreement if certain triggering events occur, at or prior to termination of the Co-operation Agreement. See "Risk Factors—Risks Relating to the Shire Acquisition—We may be required to pay Shire a significant "break fee" in certain circumstances. No "break fee" will be payable by Shire." The requirement to pay such "break fee" is subject to certain exceptions. Furthermore, we have agreed that, subject to customary governance and shareholder approval, up to three Shire directors will join our board with effect from the completion of the Shire Acquisition.

Following the Shire Acquisition, we intend to maintain our global headquarters in Japan, to expand our research and development presence in the Boston area and to have major regional locations in Japan, Singapore, Switzerland and the United States. We plan to commence a review of the functions to be undertaken at Shire's current headquarters in Dublin within the first year following completion of the Shire Acquisition.

Takeda Following the Shire Acquisition

A global, values-based, R&D-driven biopharmaceutical player headquartered in Japan

We believe that there is a compelling strategic and financial rationale for undertaking the Shire Acquisition, and that the Shire Acquisition will allow us to create a global, values-based, research and development-driven biopharmaceutical company incorporated and headquartered in Japan, with an attractive geographic footprint and the scale to drive future development. Takeda had the highest global sales of prescription drugs among Japanese pharmaceutical companies in the fiscal year ended March 31, 2017, while Shire is a rare-diseases focused leader committed to differentiated and high patient-impact medicines. Takeda generated consolidated revenue for the fiscal year ended March 31, 2018 of ¥1,770.5 billion, while Shire generated revenue of $15,160.6 million in the year ended December 31, 2017 (or ¥1,703.5 billion, based on an exchange rate of $1.00 to ¥112.359). Excluding sales of non-prescription drug products, a combination of our total sales in the fiscal year ended March 31, 2018 and Shire's total sales in the fiscal year ended December 31, 2017 of ¥3,214.0 billion would have placed us within the top ten pharmaceutical companies by prescription drug revenue worldwide in 2017 according to EvaluatePharma®. On a pro forma basis, revenue of the combined company would have been ¥3,474.0 billion for the fiscal year ended March 31, 2018. We expect further revenue growth as a combined company from our respective growth driver products, including *NINLARO*, *ALUNBRIG*, *ADCETRIS, ENTYVIO*, *TAKECAB* and *TRINTELLIX* from Takeda's portfolio and *VYVANSE*, *TAKHZYRO* and various immunoglobulin products from Shire's portfolio.

This expanded revenue base will allow the combined company to produce significant ongoing earnings streams. Takeda produced ¥186.7 billion ($1,661.7 billion, based on an exchange rate of $1.00 to ¥112.359) of net profit for the year in the fiscal year ended March 31, 2018, while Shire produced $4,271.5 million (¥479.9 billion, based on an exchange rate of $1.00 to ¥112.359) of net income in the fiscal year ended December 31, 2017. On a non-IFRS and non-U.S. GAAP basis, Takeda's Adjusted EBITDA in the fiscal year ended March 31, 2018 was ¥377.7 billion ($3.4 billion, based on an exchange rate of $1.00 to ¥112.359), while Shire's Non-GAAP EBITDA for the fiscal year ended December 31, 2017 was $6,492.4 million (¥729.5 billion, based on an exchange rate of $1.00 to ¥112.359). Although our Adjusted EBITDA and the Non-GAAP EBITDA of Shire are defined differently and based on different accounting standards, and therefore are not directly comparable (for reconciliations to the most directly comparable IFRS and U.S. GAAP measures, see "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Certain Non-IFRS Performance Measures" and "Management's Discussion and Analysis of Financial Condition and Results of Operations of Shire—Non-GAAP EBITDA," respectively), we believe they are helpful in assessing our and Shire's respective historical performance. In addition to our respective historical Adjusted EBITDA (for Takeda) and Non-GAAP EBITDA (for Shire), we have also identified cost synergies of ¥157 billion (based on the identified cost synergies of $1.4 billion annually we expect to achieve by the end of the third fiscal year after the completion of the Shire Acquisition, and at an exchange rate of $1.00 to ¥112.359), and aim to achieve additional revenue growth from our growth-driver and other products, and to pursue additional cost savings through our ongoing cost control initiatives.

We believe that research and development will be a key driver of this growth. Takeda's research and development expense totaled ¥325.4 billion in the fiscal year ended March 31, 2018 (or $2.9 billion, based on an exchange rate of $1.00 to ¥112.359), while Shire's totaled $1,763.3 million (or ¥198.1 billion, based on an exchange rate of $1.00 to ¥112.359) for the fiscal year ended December 31, 2017. Following the integration of Shire's business into ours, including our rationalization initiatives, we expect the combined group to have total research and development expenditures of approximately 1.5 times that of Takeda in the fiscal year ended March 31, 2018.

Robust presence in core therapeutic areas

Takeda and Shire focus on complementary therapeutic areas. After combining our strengths in GI, oncology and neuroscience with Shire's leading positions in rare diseases and plasma-derived therapies, we expect approximately 75% of sales of the combined company to be concentrated in five main therapeutic areas, namely GI, oncology, neuroscience, rare diseases and plasma-derived therapies. Following the completion of the Shire Acquisition, we will redefine our core therapeutic areas from "3+1" to "4 (GI, Oncology, Neuroscience and rare diseases) + 2 (vaccines and plasma derived therapies)."

Attractive geographic footprint aligned with market opportunities

The geographic footprint of the combined company following the completion of the Shire Acquisition will allow us to take advantage of expected growth opportunities in the pharmaceutical industry. According to IQVIA, the global pharmaceutical market totaled $1,157 million in 2017 (or ¥130.0 billion, based on an exchange rate of $1.00 to ¥112.359), with the United States accounting for 40%, Japan accounting for 7%, Europe accounting for 21%, China accounting for 11% and the rest of the world accounting for 21%. IQVIA expects that the pharmaceutical market is expected to grow from 2017 to 2022 at a compound annual growth rate of 5.2% in the United States, 5.1% in China, 3.1% in Europe and 4.5% overall worldwide with a compound annual rate of decline of 0.8% in Japan during the same period.

On a combined historical pro forma basis, the combined group would have generated approximately 49% of sales in the United States, 18% in Japan and 33% in the rest of the world in the fiscal year ended March 31, 2018, and we expect that the United States, the largest and the fastest growing market, in particular will account for approximately half of our combined revenue in the future, giving us an attractive geographic presence to take advantage of the market opportunities worldwide.

Recently launched innovative drugs drive cash generation and growth

The combined company will benefit from a strong product portfolio, with recently launched products in particular driving growth. Takeda's products *NINLARO*, *ALUNBRIG*, *ADCETRIS*, *ENTYVIO*, *TAKECAB* and *TRINTELLIX*, and Shire's products *VYVANSE*, *TAKHZYRO* and its various immunoglobulin products, accounted

for a total of ¥886.7 billion of combined revenue in the fiscal year ended March 31, 2018 (for our products) and December 31, 2017 (for Shire products) (in the case of Shire, based on an exchange rate of $1.00 to ¥112.359), and for total revenue growth of 25.4% compared to the previous fiscal year. Most of the aforementioned products were launched in key regions within the last five years (in the case of *ADCETRIS*, in the early 2010s), and we expect the continued performance of these recently-launched products to drive growth at the combined company in the future.

The following table shows the key indications, first launch dates in each region and product sales data of our key products for the fiscal years ended March 31, 2017 and 2018, as well as those of Shire's key products for the fiscal years ended December 31, 2016 and 2017.

				First launch in key region			Product sales		
Entity	**Therapeutic Area**	**Product**	**Key indications**	**US**	**JPN**	**EU**	**2016[1]**	**2017[1]**	**YoY**
							(billions of yen or millions of dollars, except percentages)		
Takeda	Oncology	*NINLARO*	Multiple Myeloma	2015	2017	2016	¥ 29.4 / $262	¥ 46.4 / $413	58.1%
		ALUNBRIG	Non-small cell lung cancer	2017	—	Not yet launched	—	¥ 2.8 / $25	N/A
		ADCETRIS	Hodgkin's lymphoma	—[2]	2014	2012	¥ 30.1 / $268	¥ 38.5 / $343	27.8%
	GI	*ENTYVIO*	Ulcerative colitis, Crohn's disease	2014	Not yet launched	2014	¥143.2 / $1,274	¥201.4 / $1,792	40.6%
		TAKECAB	Acid-related diseases	—	2015	—	¥ 34.1 / $303	¥ 55.1[3] / $490	61.7%
	Neuroscience	*TRINTELLIX*	Major depressive disorder	2014	Not yet launched	—	¥ 31.9 / $284	¥ 48.4 / $431	51.6%
Shire		*VYVANSE*	ADHD	2007	—	2013	¥226.3 / $2,014	¥242.8 / $2,161	7.3%
	HAE	*TAKHZYRO*	Hereditary angioedema	2018	—	2018	N/A	N/A	N/A
	Plasma derived therapies	Immunoglobulin[4]	—	—	—	—	¥212.3 / $1,890[5]	¥251.3 / $2,237	18.4%
						Total	**¥707.3 / $6,295**	**¥886.7 / $7,892**	**25.4%**

Notes:

(1) "2016" refers to the fiscal year ended March 31, 2017 for Takeda, and the fiscal year ended December 31, 2016 for Shire, respectively. "2017" refers to the fiscal year ended March 31, 2018 for Takeda, and the fiscal year ended December 31, 2017 for Shire, respectively.

(2) *ADCETRIS* was launched in the United States in 2011. Seattle Genetics Inc. has commercialization rights to *ADCETRIS* in the United States.

(3) Effective from the fiscal year ending March 31, 2019, sales of certain products in Japan are disclosed on a net basis, deducting items such as discounts and rebates, in alignment with the global managerial approach applied to individual product sales. Sales of individual products for the fiscal year ended March 31, 2018 and for the six months ended September 30, 2017 have been revised retroactively on a net basis to enable year-on-year comparisons. This reclassification has no impact on Takeda's financial statements and does not represent a correction of figures from the prior fiscal periods. Figures for the fiscal years ended March 31, 2016 and 2017 have not been reclassified retroactively.
Sales of *TAKECAB* in the chart above are prior to this restatement. After restatement, sales of *TAKECAB* were ¥48.5 billion in the fiscal year ended March 31, 2018 (or $430 million, based on an exchange rate of $1.00 = ¥112.359).

(4) Includes various immunoglobulin products including Gammagard Liquid.

(5) 2016 immunoglobulin therapies revenue includes sales before and after Shire's acquisition of Baxalta in 2016.

Strengthened pipeline and expanded R&D capacity leveraging Boston and Shonan R&D hubs

As a result of our efforts to strengthen our pipeline, the total number of our New Molecular Entity ("NME") clinical stage-ups in the fiscal year ended March 31, 2018 increased to 17 from 5 in the fiscal year ended March 31, 2017. Moreover, there were seven additional NME clinical stage-ups from April 1, 2018 to October 31, 2018. We will remain committed to developing highly-innovative new medicines following the completion of the Shire Acquisition, and the combined company will benefit from a robust, modality-diverse pipeline, combining Takeda's strength in research and early stage development and small molecule capabilities with Shire's expertise in rare diseases and its modality-diverse mid- and late-stage pipeline enriched with large molecule programs, innovative gene therapy and recombinant protein technologies. In parallel, we intend to continue our strategy of building reciprocally advantageous external partnerships out of our research and development hub in the Boston area.

Significant margin expansion opportunities through continuing cost-saving initiatives and further cost savings from integration

Following the completion of the Shire Acquisition and the subsequent integration of Shire's business into ours, we expect to be able to achieve significant, recurring pre-tax synergies of at least $1.4 billion annually by the end of the third fiscal year after the completion of the Shire Acquisition. We expect approximately 53% of these savings to come from efficiencies in our sales, marketing and administrative functions, including sales and marketing efficiencies, the consolidation of overlapping office locations, the elimination of duplicate IT systems and of duplicated costs across central support functions. Another approximately 43% is expected from research and development synergies, including rationalizing ongoing research and early stage pipeline programs and reducing overlapping resources. The remainder is expected from our manufacturing and supply functions, particularly the in-sourcing of oral solid dose manufacturing by utilizing excess capacity, efficiencies in

operational procurement spending and reduced overhead expenses. We believe there are other potential synergy opportunities, particularly the pursuit of additional revenue growth by leveraging attractive geographic footprint and enhancing our position in our key therapeutic areas. We believe that the realization of these synergies will require non-recurring costs of approximately $2.4 billion in the first three fiscal years following the completion of the Shire Acquisition.

We also intend to continue applying our ongoing "Global Opex Initiative," our organization-wide cost savings effort, to the combined company. The Global Opex Initiative consists of three work streams: "Pay Less" (procurement savings), "Buy Less" (consumption savings) and "Work Better" (organizational optimization). Under "Pay Less", we have put into place price management initiatives across our procurement structure. Under "Buy Less", we have rolled out new policies and guidelines, and believe this has led to significant consumption behavior changes in major cost areas. We have also completed a zero-based budgeting process across our organization. Finally, under "Work Better", we have identified opportunities for organizational optimization and we have initiated a number of functional transformations. In 2017, for example, we formed "Takeda Business Services", a single function consisting of our human resources, finance and procurement functions to realize greater standardization and efficiency. As a result of these initiatives, Adjusted EBITDA margin (calculated as the ratio of Adjusted EBITDA to revenue), improved from 17.5% for the fiscal year ended March 31, 2017 to 21.3% for the fiscal year ended March 31, 2018. Similarly, Adjusted EBITDA margin improved from 24.5% for the six months ended September 30, 2017 to 27.4% for the six months ended September 30, 2018. By applying these initiatives to the combined company, we plan to target additional cost savings and create leaner and more efficient operations.

Diligent financial management policy with a focus on maintaining an investment-grade credit rating

By staying focused on a diligent financial management policy, we intend to maintain our investment grade rating and our well-established dividend policy. We have identified three main pathways to generate and unlock capital: targeting sustainable profit growth, pursuing initiatives to reduce working capital, including extension of supplier terms, initiatives to lower our days inventory outstanding (the average number of days it takes to turn our inventory into sales) and improved focus on our days sales outstanding (the average number of days it takes to collect a payment after a sale has been made), and disposal of assets. Our financial and capital allocation policies will focus on four main priorities: internal investment in research and development and product launches, our commitment to maintain our investment grade credit rating, a dividend for the fiscal year ending March 31, 2019 that is consistent with the previous fiscal year and disciplined acquisitions and business development activity. In particular, we believe that the substantial cash flow generation expected to result from the Shire Acquisition will enable us to maintain our well-established dividend policy, and de-lever following completion. We intend to maintain our investment grade credit rating, with a target net debt to Adjusted EBITDA ratio of 2.0x or less within three to five years following completion of the Shire Acquisition, and are considering selected disposals of non-core assets to increase the pace of deleveraging.

Recent Acquisitions and Dispositions

Acquisition of ARIAD

On February 16, 2017, we acquired ARIAD for a net consideration of ¥583.1 billion. We acquired 81.4% of the outstanding shares of common stock of ARIAD through a tender offer and acquired the remaining shares through the merger of ARIAD with one of our wholly-owned subsidiaries. Headquartered in Cambridge, Massachusetts in the United States, ARIAD was a commercial-stage biotechnology company focusing on discovering, developing and commercializing precision therapies for patients with rare forms of chronic and acute leukemia, lung cancer and other rare cancers.

We believe that the acquisition of ARIAD has strengthened and will continue to significantly strengthen our global oncology platform by expanding our solid tumors portfolio and pipeline and reinforcing our existing strength in hematology treatments. In particular, ARIAD has developed *ALUNBRIG* (brigatinib), a small molecule ALK inhibitor for NSCLC, which was granted accelerated approval in the United States in April 2017. We believe that *ALUNBRIG* has the potential to be a leading ALK inhibitor due to its manageable safety profile, its potential ability to address mutations of ALK resistant to crizotinib, another ALK inhibitor anti-cancer treatment, and its activity in patients with brain metastases. As a result, we believe that *ALUNBRIG* has the potential to develop into a significant revenue driver in the future. In addition, ARIAD has developed and commercialized *ICLUSIG*, a treatment for chronic myeloid leukemia and Philadelphia chromosome positive acute lymphoblastic leukemia. Due to the contribution of these two innovative therapies, we believe that our acquisition of ARIAD will have a significant impact on revenue and will support our growth over the longer term.

ARIAD also has an attractive early-stage research and development pipeline that we believe will support the continued development of leading cancer treatments. We also integrated ARIAD's research and development capabilities into our own platform to achieve cost synergies and in a manner that did not add significantly to our overall research and development costs.

Sale of Wako Pure Chemical

In April 2017, we completed the sale of our shares in Wako Pure Chemical, one of our consolidated subsidiaries, to FUJIFILM Corporation for ¥198.5 billion. Wako Pure Chemical is engaged in the production and distribution of laboratory chemicals, specialty chemicals and diagnostic reagents and was included in our other businesses segment prior to its sale. We pursued the sale of our shares in Wako Pure Chemical as part of our overall strategy to refocus our operations on the development of prescription drugs in our core therapeutic areas. We concluded that Wako Pure Chemical would be better able to accelerate its development with the support of FUJIFILM Corporation, which has maintained a long-term capital and business relationship with Wako Pure Chemical and has a mid- to long-term growth strategy centered on its healthcare and highly functional materials businesses.

Sale of Respiratory Business

In November 2016, we completed the sale of our respiratory business to AstraZeneca for ¥64 billion pursuant to the agreement we signed in April 2016. The sale was part of our ongoing strategy to refocus our business portfolio on our core therapeutic areas. Our respiratory business included our products *Daxas* (roflumilast), *Alvesco* and *Omnaris* (ciclesonide), regional and local products as well as several pre-clinical assets. In connection with the sale, a number of our employees were transferred to AstraZeneca.

Establishment of Teva Takeda Yakuhin Ltd. and Transfer of Long-listed Products

In April 2016, we transferred certain long-listed products in Japan, for which patent protection and regulatory data protection had expired, to Teva Takeda Yakuhin Ltd., a wholly-owned subsidiary of Teva Takeda Pharma Ltd., a joint venture we formed with Teva Pharmaceutical Industries Ltd. of Israel. These long-listed products included lansoprazole, a treatment for peptic ulcers, and candesartan, a treatment for hypertension. The transfer of these long-listed products was effected through an absorption-type corporate split with Teva Pharma Japan Inc. and Taisho Pharmaceutical Industries, Ltd., Japanese subsidiaries of Teva Pharmaceutical Industries Ltd. Pursuant to the absorption-type corporate split, these long-listed products were transferred to Taisho Pharmaceutical Industries, Ltd., and Taisho Pharmaceutical Industries, Ltd. allocated shares of Teva Pharmaceutical Industries Ltd. to us as consideration. Taisho Pharmaceutical Industries, Ltd. subsequently changed its name to Teva Takeda Yakuhin Ltd., and Teva Pharma Japan Inc. changed its name to Teva Takeda Pharma Ltd.

As a result of the corporate split, Teva Pharmaceutical Industries Ltd. holds a 51% interest in Teva Takeda Pharma Ltd. and we hold a 49% interest, and Teva Takeda Pharma Ltd. in turn holds 100% of the shares of Teva Takeda Yakuhin Ltd. Teva Takeda Yakuhin Ltd. began sales of these long-listed products, while both Teva Takeda Yakuhin Ltd. and Teva Takeda Pharma Ltd. continue to operate their existing generics businesses. We provide distribution services to the new joint venture and serve as its contract manufacturing organization for the Takeda original products sold by the joint venture. On May 1, 2017, we sold seven additional long-listed products to Teva Takeda Yakuhin Ltd. for ¥28.5 billion.

Our joint venture arrangement with Teva Pharmaceutical Industries Ltd. is intended to mitigate the potential downside risk of increased use of generics in Japan due to Japanese government policies promoting generic drugs. We believe the spinoff of our long-listed products positions us to mitigate competition from generics while allowing us to generate revenue from providing distribution services to the new joint venture group and serving as its contract manufacturing organization for the Takeda original products sold by them.

Other Acquisitions and Dispositions

In December 2017, we entered into an agreement with Takashimaya Company Limited to sell our Tokyo Takeda building and the Takeda Shin-Edobashi building. In July 2018, we completed our acquisition of TiGenix NV. In July 2018, we also sold and divested all our shares and assets in Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda. to Novamed Fabricação de Produtos Farmacêuticos Ltda. In August 2018, we sold and divested all our shares and assets in Guangdong Techpool Bio-Pharma Co., Ltd. to Shanghai Pharmaceutical Holding Co. Ltd., pursuant to the agreement we signed in May 2018.

Our Products

Our three core therapeutic areas are GI, oncology and neuroscience. Our key growth driver products in these core therapeutic areas include ENTYVIO, TAKECAB, NINLARO, ADCETRIS, ICLUSIG, ALUNBRIG and TRINTELLIX. We also focus on developing vaccines to address global health needs.

In GI, our principal products include:

- *ENTYVIO*, a treatment for moderate to severe ulcerative colitis and Crohn's disease, and a product we expect to be a driver for growth in the future. Sales of *ENTYVIO* have grown strongly since its launch in 2014 to become our top selling product in the fiscal year ended March 31, 2018. In July 2018, we obtained a New Drug Application ("NDA") approval for *ENTYVIO* for the treatment of patients with moderately to severely active ulcerative colitis in Japan. *ENTYVIO* is now approved in more than 50 countries worldwide, and we continue to seek approval for *ENTYVIO* in additional countries. In the fiscal year ended March 31, 2018, our revenue from *ENTYVIO* was ¥201.4 billion.
- *PANTOPRAZOLE*, a proton-pump inhibitor used to treat gastroesophageal reflux disease. We obtained this product in our acquisition of Nycomed A/S in 2011. *PANTOPRAZOLE* is sold worldwide in a number of countries and regions, and while our substance patents have expired in several key markets, including the United States and the EU, it continues to generate strong sales in emerging markets. In the fiscal year ended March 31, 2018, our revenue from *PANTOPRAZOLE* was ¥65.8 billion.
- *DEXILANT*, a treatment for erosive gastroesophageal reflux disease that was launched in the United States in 2009. *DEXILANT* has also been approved in Europe and in a number of emerging markets. In the fiscal year ended March 31, 2018, our revenue from *DEXILANT* was ¥65.7 billion.
- *TAKECAB*, a treatment for acid-related diseases, and a product we expect to be a driver for growth in the future. *TAKECAB* was launched in Japan in 2015 and has achieved significant growth following the expiration of the prescription limitation period in March 2016. In the fiscal year ended March 31, 2018, our revenue from *TAKECAB* was ¥48.5 billion.
- *AMITIZA*, a treatment for constipation that was launched in the United States in 2006. *AMITIZA* is in-licensed from Sucampo Pharmaceuticals, Inc., which became a wholly-owned subsidiary of Mallinckrodt plc in February 2018, and we have the exclusive rights to further develop and commercialize *AMITIZA* in all global markets, except Japan and the People's Republic of China. In the fiscal year ended March 31, 2018, our revenue from *AMITIZA* was ¥33.8 billion.

In oncology, our principal products include:

- *LEUPRORELIN*, a treatment for prostate cancer, breast cancer and endometriosis, is marketed in approximately 100 countries worldwide. In the fiscal year ended March 31, 2018, our revenue from *LEUPRORELIN* was ¥108.1 billion.
- *VELCADE*, a treatment for multiple myeloma ("MM") and relapsed mantle cell lymphoma that is approved in more than 90 countries worldwide. *VELCADE* is indicated in the United States, Europe, and Japan as a first-line treatment for MM patients. Janssen Pharmaceutical Companies have commercialization rights outside the United States and pay royalties to us on *VELCADE* sales in their territories. In the fiscal year ended March 31, 2018, our revenue from *VELCADE* was ¥113.7 billion in the United States, and we recognized ¥23.6 billion from sales outside the United States. Following the expiration of patent protection over its active ingredient in 2017, generic versions of *VELCADE* have been introduced.
- *NINLARO*, the first oral proteasome inhibitor for the treatment of MM, and a product we expect to be a driver for growth in the future. *NINLARO* has experienced a strong uptake in sales since launching in the United States in 2015. Due to its efficacy and safety profile and convenient orally administered dosing of one capsule per week, we believe *NINLARO* has significant potential to improve treatment outcomes in MM by extending therapy duration. We believe *NINLARO* has the potential to become a broadly-used treatment for MM. *NINLARO* was approved in the EU in 2016 and in Japan in 2017, and we are seeking marketing authorization in a number of additional countries. In the fiscal year ended March 31, 2018, revenue from *NINLARO* was ¥46.4 billion.
- *ADCETRIS*, an anti-cancer agent used to treat Hodgkin's lymphoma ("HL") and systemic anaplastic large cell lymphoma ("sALCL"), and a product we expect to be a driver for growth in the future. *ADCETRIS* was launched in the United States, the EU and Japan in 2011, 2012 and 2014, respectively. *ADCETRIS* has received marketing authorization by regulatory authorities in more

than 60 countries worldwide. We jointly develop *ADCETRIS* with Seattle Genetics, Inc. and have commercialization rights in countries outside the United States and Canada. We believe that *ADCETRIS* has the potential to become a cornerstone in the treatment of malignancies with the presence of CD30, a key driver of classical HL tumor pathogenesis, and we are working to expand the target patient population with new indications. In the fiscal year ended March 31, 2018, our revenue from *ADCETRIS* was ¥38.5 billion.

- *ICLUSIG*, a treatment for chronic myeloid leukemia and Philadelphia chromosome positive acute lymphoblastic leukemia, and a product we expect to be a driver for growth in the future. *ICLUSIG* was developed by ARIAD and is approved in the United States, the EU, Australia, Switzerland, Israel, Canada and Japan. In the fiscal year ended March 31, 2018, our revenue from *ICLUSIG* was ¥23.1 billion.
- *ALUNBRIG*, an orally administered small molecule ALK inhibitor used to treat NSCLC, and a product we expect to be a driver for growth in the future. *ALUNBRIG* was developed by ARIAD. *ALUNBRIG* was granted accelerated approval in the United States in April 2017, and is currently under regulatory review in the EU. We believe *ALUNBRIG* has the potential to be the best-in-class ALK inhibitor, and we are conducting studies that aim to broaden its approved indications. In the fiscal year ended March 31, 2018, our revenue from *ALUNBRIG* was ¥2.8 billion.

In neuroscience, our principal product is:

- *TRINTELLIX*, an antidepressant indicated for the treatment of major depressive disorder in adults, and a product we expect to be a driver for growth in the future. *TRINTELLIX* was co-developed with H. Lundbeck A/S, and was launched in 2014 in the United States. We have commercialization rights in the United States and Japan (although *TRINTELLIX* has not yet been launched in Japan). In 2016, the drug was renamed from *BRINTELLIX* to *TRINTELLIX* in the United States to avoid name confusion with another unrelated treatment. In the fiscal year ended March 31, 2018, our revenue from *TRINTELLIX* was ¥48.4 billion in the United States.

Research and Development

Research and Development Process

Our research and development expenses totaled ¥335.8 billion, ¥312.3 billion and ¥325.4 billion for the fiscal years ended March 31, 2016, 2017 and 2018, respectively. Research and development of pharmaceutical products is a lengthy and expensive process that can span more than 10 years. Only a small fraction of compounds that we research result in commercially viable products. The process includes evaluations of the new drug's efficacy and safety, application for approval, and investigation and approval by regulatory authorities. In research and development for the pharmaceutical industry, the first two to three years of the process are generally spent for discovery of a lead compound, followed by optimization of various aspects of the compound, including toxicity and efficacy. The subsequent three to five years are spent investigating in detail the compound's efficacy, safety and pharmaceutical properties. Only a small number of compounds pass such detailed investigation and are used to commence clinical trials. Once approved, there is ongoing research and development support for marketed products, including medical affairs and other investments.

Clinical trials, which comply with regional and international regulatory guidelines, generally take five to seven years or longer and require substantial expenditures. Furthermore, it has become increasingly important to conduct clinical trials with a globally acceptable protocol to satisfy increased governmental safety requirements. As a result, only a small fraction of compounds that enter the clinical trials results in commercially viable products. In general, clinical trials are performed in accordance with the guidelines set by the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use. The relevant regulatory authorities are the MHLW for Japan, the FDA for the United States and the EMA for the EU.

The three phases of human clinical trials, which may overlap with each other, are as follows:

Phase I clinical trials	Conducted using a small group of healthy adult volunteers in order to evaluate safety and absorption, distribution, metabolism and excretion of the drug.
Phase II clinical trials	Conducted using a small group of patient volunteers in order to evaluate safety, efficacy, dosage and administration methods.
Phase III clinical trials	Conducted using a large number of patient volunteers in order to evaluate safety and efficacy in comparison to other medications already available or placebo.

Of these three phases, Phase III requires the largest expenditures, and thus the decision to proceed with Phase III testing is a critical business decision in the drug development process. For those drug candidates that pass Phase III clinical trials, an NDA or a MAA is submitted to the relevant governmental authorities for approval and subsequent launch of the drug. The preparation of an NDA or MAA involves considerable data collection, verification, analysis and expense. In addition, while the review process generally takes about 11 months in the United States for an NDA, about 14 months in the EU for an MAA and generally 10 months in Japan for an NDA, there can be no assurance that approval from the relevant health authority will be granted in a timely manner as the authorities may require additional information. Even after the launch of the product, health authorities require post-marketing surveillance of adverse events, and they may request a post-marketing study to provide additional information regarding the risks and benefits of the product.

We are committed to transparency in conducting clinical trials and regularly publish information about our clinical trials to benefit patients and to foster scientific discovery in a way that maintains patient privacy and preserves the integrity of our research. Our transparency policies meet or exceed pharmaceutical industry's guidelines and best practices relating to clinical trial registration and results disclosure, including guidelines issued by the International Federation of Pharmaceutical Manufacturers & Associations, the European Federation of Pharmaceutical Industries and Associations ("EFPIA"), the Japan Pharmaceutical Manufacturers Association and the Pharmaceutical Research and Manufacturers of America ("PhRMA"). Additionally, our policies meet or exceed the transparency principles set out in the Principles for Responsible Clinical Trial Data Sharing that were issued by EFPIA and PhRMA in July 2013. These five principles call for a broader sharing of clinical trial data in ways that safeguard patient privacy, respect regulatory processes and oversight, and maintain incentives to invest in biomedical research.

In July 2016, we announced our plans to transform our research and development organization by refocusing our efforts on our key therapeutic areas (GI, oncology and neuroscience), plus vaccines.

As part of the refocusing of our research and development operations, we have concentrated our in-house research and development operations in Japan and the United States. We believe that this transformation initiative was critical in providing us with the necessary organizational and financial flexibility to drive innovation, enhance partnerships and improve our research and development productivity to provide long-term, stable growth. An integral part of this transformation initiative is a concentrated effort to develop talent and research capabilities internally, while creating a research and development operating model that will enable us to access technological and other research breakthroughs from outside of Takeda or through collaborations with third-party partners in academia, the private sector, the public sector or elsewhere. Focus areas for key capability building include:

- diversifying therapeutic modalities;
- moving beyond small molecules;
- bioinformatics and genomic research; and
- translational medicine.

Research Facilities

Our key in-house research and development facilities include:

- *Shonan Research Center*: Located in Fujisawa and Kamakura in Kanagawa Prefecture in Japan, the Shonan Research Center was established in 2011 to be the center of our global research and development network. The layout of the facility encourages communication and collaboration across formal organizational boundaries in order to encourage the sharing of knowledge and to stimulate innovation. In July 2017, we transferred part of our research operations located at the Shonan Research Center to Axcelead Drug Discovery Partners, Inc. ("Axcelead"), a newly established wholly-owned subsidiary. The operations transferred included some portion of our molecular screening, chemistry, biology, drug metabolism and pharmacokinetics and nonclinical safety research. We believe this reorganization will enable us to optimize organizational efficiency with the aim of generating innovation. The newly established company will provide integrated research support including drug discovery consulting for a broad range of diseases. The support will range from exploratory research and optimizing candidate compounds, to bridging clinical research not only internally, but also for external research institutions and bio-venture companies. In August 2018, we entered into an agreement with Whiz Partners, Inc. to create a joint investment fund called Drug Discovery Gateway Investment Limited Partnership ("DDG Fund"), aimed at promoting a

drug discovery ecosystem in Japan. Under the terms of the agreement, Whiz Partners, Inc. will establish the DDG Fund and assume the responsibilities of the general partner, while we will invest Axcelead in kind into the DDG Fund in return for limited partner shares. The DDG Fund will be launched in November 2018. In April 2018, at the Shonan Research Center, we opened a new research site and renamed it Shonan Health Innovation Park ("Shonan iPark"). Shonan iPark aims to gather 3,000 researchers by the year 2020 and become a place where experts from the pharmaceutical industry, including venture start-ups, government and academia, can gather and incubate and accelerate research initiatives to create health solutions.

- *Boston Research and Development Base*: Our Boston research and development base is located in Cambridge, Massachusetts in the United States, the former site of Millennium, our wholly-owned subsidiary that was rebranded as our Global Oncology business unit in 2014. Our Boston site is the center of our oncology research and development and also supports research and development in other areas including GI, neuroscience and vaccines, and research in immunomodulation and biologics.
- *San Diego Research and Development Site*: Our research and development base located in San Diego, California in the United States supports research and development of specialized technologies in the GI and neuroscience areas.

Clinical Development Activities

The following table shows a summary of the status of our clinical-stage pipeline as of October 31, 2018, including approved products in life cycle management:

Category	Phase I	Phase II	Phase III / Filed	Approved with Life Cycle Management
GI	4	2	—	3
Oncology	6	3	2	6
Neuroscience	7	2	—	1
Vaccine	2	2	1	—
Total	19	9	3	10

The following table lists the compounds that we are developing as of October 31, 2018. The compounds in our pipeline are in various stages of development, and the contents of the pipeline may change as compounds currently under development drop out and new compounds are introduced. Whether the compounds listed below are ever successfully released as products depends on various factors, including the results of pre-clinical and clinical trials, market conditions for various drugs and regulatory approvals.

GI Pipeline

Development code <generic name> Brand name (country/region)[1]	Drug Class (administration route)	Indications / additional formulations	Stage[2]		In-house/ In-license
MLN0002 <vedolizumab> *ENTYVIO* (U.S., EU, Japan)	Humanized monoclonal antibody against α4ß7 integrin (injection)	Crohn's disease	Japan China	Filed (July 2018) P-III	In-house
		Ulcerative colitis	China	P-III	
		Subcutaneous formulation (for Ulcerative colitis, Crohn's disease)	U.S. EU Japan	P-III P-III P-III	
		Adalimumab head-to-head in patients with ulcerative colitis	Global	P-III	
		Graft-versus-host disease prophylaxis in patients undergoing allogeneic hematopoietic stem cell transplantation	—	P-II(a)	

Development code <generic name> Brand name (country/region)[1]	Drug Class (administration route)	Indications / additional formulations	Stage[2]		In-house/ In-license
Cx601 <darvadstrocel> *ALOFISEL* (EU)	A suspension of allogeneic expanded adipose-derived stem cells (injection)	Refractory complex perianal fistulas in patients with Crohn's disease	U.S.	P-III	In-house
TAK-438 <vonoprazan> *TAKECAB* (Japan)	Potassium-competitive acid blocker (oral)	Acid-related diseases	China	Filed (February 2018)	In-house
		Non-erosive reflux disease in patients with Gastro-esophageal Reflux Disease	Japan	P-III	
		Gastro-esophageal reflux disease in patients who have a partial response following treatment with a proton pump inhibitor	EU	P-II(b)	
TAK-954	5-HT4 receptor agonist (injection)	Enteral feeding intolerance	—	P-II(b)	In-license (Theravance Biopharma, Inc.)
TAK-906[3]	Dopamine D2/D3 receptor antagonist (oral)	Gastroparesis	—	P-II(a)	In-house
TIMP-GLIA[4]	Tolerizing Immune Modifying nanoParticle (TIMP) (injection)	Celiac Disease	—	P-I	In-license (Cour Pharmaceutical Development Company, Inc.)
Kuma-062[5]	Glutenase (oral)	Celiac Disease	—	P-I	In-license (PvP Biologics, Inc.)
TAK-671	Protease inhibitor (injection)	Acute pancreatitis	—	P-I	In-house
TAK-018	FimH antagonist (oral)	Crohn's disease	—	P-I	In-license (Enterome Bioscience SA)

Notes:

(1) Brand name and country/region indicate the brand name and country in which the specific asset has already been approved for any indication in any of the United States, EU, Japan or China and Takeda has commercialization rights for such asset.

(2) Country/region in this column denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the United States, EU, Japan or China.

(3) TAK-906 was previously known as ATC 1906. In March 2017, Takeda executed its option right to acquire Altos Therapeutics.

(4) Cour Pharmaceutical Development Company, Inc. led Phase I development.

(5) PvP Biologics, Inc. led Phase I development.

Oncology Pipeline

Development code <generic name> Brand name (country/region)[1]	Drug Class (administration route)	Indications / additional formulations	Stage[2]		In-house/ In-license
<brigatinib> *ALUNBRIG* (U.S.)	ALK inhibitor (oral)	2L ALK-positive metastatic Non-Small Cell Lung Cancer in patients previously treated with crizotinib	EU China	Filed (February 2017) P-1	In-house
		1L ALK-positive Non-Small Cell Lung Cancer	U.S. EU China	P-III P-III P-I	
		2L ALK-positive Non-Small Cell Lung Cancer in Japanese patients previously treated with ALK inhibitors	Japan	P-II(a)	
SGN-35 <brentuximab vedotin> *ADCETRIS* (EU, Japan)	CD30 monoclonal antibody-drug conjugate (injection)	Front line Hodgkin Lymphoma	EU	Filed (November 2017)	In-license (Seattle Genetics, Inc.)
		Front line Peripheral T-cell Lymphoma	EU Japan	P-III P-III	
		Relapsed/refractory Hodgkin Lymphoma	China	P-II	
		Relapsed/refractory systemic Anaplastic large-cell lymphoma	China	P-II	
MLN9708 <ixazomib> *NINLARO* (Global)	Proteasome inhibitor (oral)	Newly diagnosed multiple myeloma	U.S. EU Japan China	P-III P-III P-III P-I	In-house
		Maintenance therapy in patients with newly diagnosed MM following autologous stem cell transplant	U.S. EU Japan China	P-III P-III P-III P-I	
		Maintenance therapy in patients with newly diagnosed MM not treated with stem cell transplant	Global	P-III	
		Relapsed/refractory primary amyloidosis	U.S. EU China	P-III P-III P-III	
		Relapsed/refractory MM (doublet regimen with dexamethasone)	U.S. EU Japan	P-III P-III P-III	
		Relapsed/refractory MM (triplet regimen with daratumumab and dexamethasone)	Global	P-II	
<ponatinib> *ICLUSIG* (U.S.)	BCR-ABL inhibitor (oral)	Philadelphia chromosome-positive acute lymphoblastic leukemia	U.S. EU Japan	P-III P-III P-III	In-house
		Dose ranging study for second-line patients with chronic-phase chronic myeloid leukemia	U.S.	P-II(b)	
TAK-924 <pevonedistat>	NEDD 8 activating enzyme inhibitor (injection)	High risk myelodysplastic syndromes, chronic myelomonocytic leukemia, low-blast acute myelogenous leukemia	U.S. EU	P-III P-III	In-house

Development code <generic name> Brand name (country/region)[1]	Drug Class (administration route)	Indications / additional formulations	Stage[2]		In-house/ In-license
TAK-385 <relugolix>	LH-RH antagonist (oral)	Prostate cancer	Japan China	P-III P-I	In-house
TAK-228 <sapanisertib>	mTORC1/2 inhibitor (oral)	Endometrial cancer	U.S.	P-II(b)	In-house
TAK-659	SYK/FLT3 kinase inhibitor (oral)	Diffuse large B-cell lymphoma Solid tumors, Hematologic malignancies	— —	P-II(a) P-I	In-house
TAK-931	CDC7 inhibitor (oral)	Metastatic colorectal cancer, Squamous esophageal cancer, Squamous Non-Small Cell Lung Cancer	—	P-II(a)	In-house
<cabozantinib>	Multi-targeted kinase inhibitor (oral)	2L Renal cell carcinoma	Japan	P-II(a)	In-license (Exelixis, Inc.)
		2L Hepatocellular carcinoma	Japan	P-II(a)	
TAK-079	Anti-CD38 monoclonal antibody (injection)	Relapsed/refractory multiple myeloma	—	P-I	In-house
		Systemic lupus erythematosus	—	P-I	
TAK-164	Anti-guanylyl cyclase C antibody drug conjugate (injection)	GI Malignancies	—	P-I	In-house
TAK-573	CD38-targeted lgG4 genetically fused with an attenuated IFNα (injection)	Relapsed/refractory MM	—	P-I	In-house
TAK-788[3]	EGFR/HER2 inhibitor (oral)	Non-Small Cell Lung Cancer	—	P-I	In-house
TAK-522 / XMT-1522[4]	HER2 dolaflexin antibody-drug conjugate (injection)	HER2 positive solid tumors	—	P-I	In-license (Mersana Therapeutics, Inc.)
TAK-981	SUMO inhibitor (injection)	Multiple cancers	—	P-I	In-house
<niraparib>	PARP1/2 inhibitor (oral)	Multiple cancer	Japan	P-I	In-license (Tesaro, Inc.)

Notes:

(1) Brand name and country/region indicate the brand name and country in which the specific asset has already been approved for any indication in any of the United States, EU, Japan or China and Takeda has commercialization rights for such asset.

(2) Country/region in this column denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the United States, EU, Japan or China.

(3) TAK-788 was previously known as AP32788.

(4) Takeda and Mersana Therapeutics, Inc. ("Mersana") will co-develop XMT-1522, and Mersana will lead execution of the Phase I trial.

Neuroscience Pipeline

Development code <generic name> Brand name (country/region)[1]	Drug Class (administration route)	Indications / additional formulations	Stage[2]		In-house/ In-license
Lu AA21004 <vortioxetine> *TRINTELLIX* (U.S.)	Multimodal anti-depressant (oral)	Major depressive disorder	Japan	Filed (September 2018)	In-license (H. Lundbeck A/S)
TAK-935[3]	CH24H inhibitor (oral)	Rare pediatric epilepsies	—	P-II(a)	In-house
TAK-831	D-amino acid oxidase (DAAO) inhibitor (oral)	Friedreich's ataxia	—	P-II(a)	In-house
		Negative symptoms and/or cognitive impairment associated with schizophrenia	—	P-II(a)	
WVE-120101[4]	mHTT SNP1 antisense oligonucleotide (injection)	Huntington's disease	—	P-I/II	In-license (Wave Life Sciences Ltd.)
WVE-120102[4]	mHTT SNP2 antisense oligonucleotide (injection)	Huntington's disease	—	P-I/II	In-license (Wave Life Sciences Ltd.)
TAK-041	GPR139 agonist (oral)	Negative symptoms and/or cognitive impairment associated with schizophrenia	—	P-I	In-house
TAK-418	LSD1 inhibitor (oral)	Kabuki syndrome	—	P-I	In-house
TAK-653	AMPA receptor potentiator (oral)	Treatment Resistant Depression	—	P-I	In-house
TAK-925	Orexin 2R agonist (injection)	Narcolepsy	—	P-I	In-house
TAK-341 / MEDI-1341[5]	Alpha-synuclein antibody (injection)	Parkinson's Disease	—	P-I	In-license (AstraZeneca)

Notes:
(1) Brand name and country/region indicate the brand name and country in which the specific asset has already been approved for any indication in any of the United States, EU, Japan or China and Takeda has commercialization rights for such asset.
(2) Country/region in this column denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the United States, EU, Japan or China.
(3) Co-development with Ovid Therapeutics Inc.
(4) 50:50 co-development and co-commercialization with Wave Life Sciences Ltd.
(5) Partnership with AstraZeneca. AstraZeneca leads Phase I development.

Vaccine Pipeline

Development code <generic name> Brand name (country/ region)	Type of vaccine (administration route)	Indications / additional formulations	Stage		In-house/ In-license
TAK-003	Tetravalent dengue vaccine (injection)	Prevention of dengue fever caused by dengue virus	—	P-III	In-house
TAK-214	Norovirus vaccine (injection)	Prevention of acute gastroenteritis caused by norovirus	—	P-II(b)	In-house
TAK-195	Sabin inactivated polio vaccine (injection)	Prevention of poliomyelitis	—	P-I/II	In-house
TAK-021	EV71 vaccine (injection)	Prevention of hand, foot and mouth disease caused by enterovirus 71	—	P-I	In-house
TAK-426	Zika vaccine (injection)	Prevention of the Zika virus infection	—	P-I	In-house

Recent Progress in Clinical Trials

The chart below shows recent progress in clinical trial stages since May 14, 2018, when the results for the fiscal year ended March 31, 2018 were announced.

Development code <generic name>	Indications / additional formulations	Country/Region[(1)]	Progress in stage
MLN0002 <vedolizumab>	Ulcerative colitis	Japan	Approved (July 2018)
MLN0002 <vedolizumab>	Crohn’s disease	Japan	Filed (July 2018)
MLN9708 <ixazomib>	Relapsed/refractory MM (triplet regimen with daratumumab and dexamethasone)	Global	P-II
MLN0002 <vedolizumab>	Graft-versus-Host Disease prophylaxis in patients undergoing allogeneic hematopoietic stem cell transplantation	—	P-II(a)
Kuma062	Celiac disease	—	P-I
TAK-164	GI malignancies	—	P-I
SGN-35 <brentuximab vedotin>	Front line Hodgkin Lymphoma	Japan	Approved (September 2018)
Lu AA21004 <vortioxetine>	Data added to labeling that demonstrated superiority over escitalopram in improving SSRI-induced sexual dysfunction in patients with Major Depressive Disorder	U.S.	Approved (October 2018)
Lu AA21004 <vortioxetine>	Major depressive disorder	Japan	Filed (September 2018)
<ponatinib>	Philadelphia chromosome-positive Acute Lymphoblastic Leukemia	U.S. EU	P-III
<cabozantinib>	2L hepatocellular carcinoma	Japan	P-II(a)
WVE-120101 < - >	Huntington's disease	—	P-I/II
WVE-120102 < - >	Huntington's disease	—	P-I/II

Development code <generic name>	Indications / additional formulations	Country/Region[1]	Progress in stage
TAK-671 < - >	Acute pancreatitis	—	P-I
TAK-981 < - >	Multiple cancers	—	P-I
TAK-018 < - >	Crohn's disease	—	P-I

Note:

(1) Country/region in this column denote where a clinical study is ongoing or a filing has been made with our specific intention to pursue approval in any of the United States, EU, Japan or China.

Key Research and Development Collaborations

In addition to our concentrated efforts to increase our in-house research and development capabilities, external partnerships with third-party partners are a key component of our strategy for enhancing our research and development pipeline. In the fiscal year ended March 31, 2018, we entered into more than 50 such new partnerships. We do not rely on any single partnership. Instead, our strategy is to expand and diversify our external partnerships to allow ourselves to take part in research into a wide variety of new products, increasing the chances that we will be able to take part in a major research-related breakthrough. Our research and development collaborations as of June 30, 2018 include, but are not limited to, the following:

Oncology

- *Adimab, LLC (U.S.):* We have entered into an agreement for the discovery, development and commercialization of three monoclonal antibodies and three CD3 Bi-Specific antibodies for oncology indications.
- *Centre d'Immunologie de Marseille-Luminy (France):* We have entered into an agreement to bring together expertise of Bernard Malissen group in innate biology with Takeda's BacTrap capabilities to identify novel targets and pathways in myeloid cells.
- *Crescendo Biologics Ltd. (U.K.)*: We have entered into a collaboration and license agreement with Crescendo Biologics Limited for the discovery, development and commercialization of therapeutics for cancer indications based on Crescendo's Humabody® technology. Humabodies® are a novel class of extremely small in size, robust and potent protein therapeutics based on fully human VH domain building blocks. The Humabody® platform can be used to develop cancer therapeutics based on Humabody® Drug Conjugates and multi-specific Immuno-Oncology modulators.
- *Exelixis Inc. (U.S.):* We have entered into an exclusive licensing agreement with Exelixis Inc. for the commercialization and further clinical development in Japan of cabozantinib. We receive exclusive commercial rights for all potential future cabozantinib indications in Japan, including advanced renal cell carcinoma (RCC), for which cabozantinib is marketed in the United States and EU as CABOMETYXTM tablets.
- *GammaDelta Therapeutics Ltd. (U.K.):* We have entered into a collaboration agreement with GammaDelta Therapeutics Ltd. ("GammaDelta") to develop GammaDelta's novel T cell platform, which is based on the unique properties of gamma delta T cells derived from human tissues. The companies intend to use this novel platform to discover and develop new immunotherapies, with the aim of treating a broad range of cancers, including solid tumors, and autoinflammatory diseases.
- *Haemalogix (Australia):* We have entered into a research collaboration and licensing agreement for the development of new therapeutics to novel antigens in multiple myeloma.
- *Heidelberg Pharma GmbH (Germany)*: We have entered into an antibody-drug-conjugate research collaboration on two targets and licensing agreement (α-amanitin payload and proprietary linker).
- *ImmunoGen, Inc. (U.S.)*: We have entered into a licensing agreement with ImmunoGen Inc. for exclusive rights to use ImmunoGen's Inc. ADC technology to develop and commercialize targeted anticancer therapeutics for up to two undisclosed targets.
- *Maverick Therapeutics Inc. (U.S.)*: We have entered into an agreement with Maverick Therapeutics Inc. ("Maverick") to collaborate on the development of Maverick's T-cell engagement platform

created specifically to improve the utility of T-cell redirection therapy for the treatment of cancer. Under the agreement, we have the exclusive right to purchase Maverick after five years.

- *Memorial Sloan Kettering Cancer Center (U.S.):* We have entered into an alliance to discover and develop novel chimeric antigen receptor T ("CAR-T") cell products for the potential treatment of hematological malignancies and solid tumors. This partnership pursues the development of therapies that redirect T cell immunity against liquid or solid tumors.
- *Mersana (U.S.)*: We have entered into agreements with Mersana relating to our collaboration to develop cancer treatments based on Mersana's ADC technology. Pursuant to this collaboration, we and Mersana are developing cancer treatment based on *Fleximer*, Mersana's ADC platform that supports custom design an ADC. In 2016, we expanded our collaboration with Mersana and obtained rights outside the United States and Canada to XMT-1522, an ADC therapy that targets HER2-expressing tumors, including breast, gastric and NSCLC. Mersana is currently leading Phase I trials for XMT-1522.
- *Molecular Templates Inc. (U.S.):* We have entered into a collaboration agreement with Molecular Templates Inc. ("MTEM") for oncology drug discovery programs. The collaboration will apply MTEM's engineered toxin bodies technology platform to potential therapeutic targets. In September 2018, this collaboration was expanded for the joint development and commercialization of CD38-targeted engineered toxin bodies for the treatment of patients with diseases such as multiple myeloma.
- *Nektar Therapeutics (U.S.):* We have entered into a collaboration agreement with Nektar Therapeutics ("Nektar") to explore the combination of Nektar's lead immuno-oncology candidate, the CD122-biased agonist NKTR-214, with five oncology compounds from Takeda's cancer portfolio.
- *Noile-Immune Biotech Inc. (Japan):* We have entered into a collaboration agreement with Noile-Immune Biotech Inc. ("Noile-Immune") to develop next generation CAR-T cell therapy. We will have exclusive options to obtain licensing rights for the development and commercialization of Noile-Immune's pipeline and products resulting from this partnership.
- *Seattle Genetics, Inc. (U.S.)*: We entered into a licensing agreement with Seattle Genetics, Inc. regarding *ADCETRIS* (brentuximab vedotin), an HL treatment. We jointly develop *ADCETRIS* with Seattle Genetics, Inc. and have commercialization rights in countries outside the United States and Canada. *ADCETRIS* was launched in the EU in 2012 and has been approved in 67 countries. Clinical trials are currently being conducted for additional indications of *ADCETRIS*.
- *Shattuck Labs Inc. (U.S.):* We have entered into a collaboration agreement with Shattuck Labs Inc. ("Shattuck") to explore and develop checkpoint fusion proteins using Shattuck's Agonist Redirected Checkpoint platform that have the potential to become highly differentiated, next-generation immunotherapies. We will hold options for exclusive global development and commercialization rights for up to four molecules resulting from the collaboration.
- *Tesaro, Inc. (U.S.):* We have entered into an exclusive licensing agreement with Tesaro, Inc. for the commercialization and clinical development of Niraparib, a novel poly ADP-ribose polymerase inhibitor. The collaboration agreement grants us the right to develop and commercialize all indications in Japan and all indications, except prostate cancer, in South Korea, Taiwan, Russia and Australia.
- *Teva Pharmaceutical Industries Ltd. (Israel):* We entered into a multi-target discovery collaboration with Teva Pharmaceutical Industries Ltd. ("Teva") for access to Teva's attenukine platform including a license to TEV-48573, a CD38 targeted antibody fused with attenuated interferon alpha for the treatment of MM.

GI

- *Altos Therapeutics LLC (U.S.):* We entered into a definitive agreement with Altos Therapeutics LLC ("Altos") to further the development of Altos's proprietary compound ATC-1906. The agreement includes an exclusive option for Takeda to acquire Altos beginning on the date of the agreement and continuing for a period of time following the completion of ongoing Phase 1 studies of ATC-1906. The parties envision future development of ATC-1906 for the treatment of GP and its symptoms. We exercised the option in January 2017 and Altos is now a wholly-owned subsidiary of Takeda.

- *Ambys Medicines (U.S.):* We have entered into a partnership with Ambys Medicines ("Ambys") to collaborate on transformative therapies for the treatment of serious liver diseases. Ambys is applying novel modalities, cell and gene therapy to restore liver function and prevent the progression to liver failure for diseases that are untreatable or poorly treated today. Under the terms of the agreement, Takeda receives an option to ex-U.S. commercialization rights for the first four products that reach an investigational NDA.
- *Arcturus Therapeutics, Inc. (U.S.)*: We have entered into an agreement with Arcturus Therapeutics, Inc. to develop RNA-based therapeutics for the treatment of nonalcoholic steatohepatitis and other gastrointestinal related disorders.
- *Beacon Discovery Inc. (U.S.):* We have entered into a multi-year drug discovery collaboration with Beacon Discovery Inc. ("Beacon") on a number of G-protein coupled receptors (GPCRs) that play an important role in the pathology of gastrointestinal disorders. Through the collaboration, Beacon will leverage its GPCR drug discovery expertise to identify drug candidates for a range of GI diseases with significant unmet medical need. The agreement grants Takeda worldwide rights to develop, manufacture and commercialize products resulting from the collaboration.
- *Cour Pharmaceutical Development Company, Inc. (U.S.)*: We have entered into an agreement with Cour Pharmaceutical Development Company ("Cour") to research and develop novel immune modulating therapies for the potential treatment of celiac disease using nanotechnologies based on Cour's TIMP platform.
- *Emulate, Inc. (U.S.):* We have entered into a collaboration for drug discovery for IBD using organ-on-chip micro-engineered cell models.
- *enGene, Inc. (Canada)*: We have entered into an agreement with enGene, Inc. ("enGene") for a strategic alliance to discover, develop and commercialize novel therapies for specialty gastrointestinal diseases using enGene's "Gene Pill" gene delivery platform.
- *Enterome Bioscience SA (France)*: We have entered into an agreement with Enterome Bioscience SA for a strategic drug discovery collaboration to research and develop potential new therapeutics directed at microbiome targets thought to play crucial roles in gastrointestinal disorders, including IBDs such as ulcerative colitis and motility disorders such as irritable bowel syndrome.
- *Finch Therapeutics Group Inc. (U.S.)*: We have entered into a global collaboration agreement with Finch Therapeutics Group Inc. ("Finch"), a microbiome engineering company, to jointly develop FIN-524. FIN-524 is a live biotherapeutic product in pre-clinical research. It is composed of cultured bacterial strains that have been linked to favorable clinical outcomes in studies of microbiota transplantations in IBD. Under the terms of the agreement, we obtain the exclusive worldwide rights to develop and commercialize FIN-524 and rights to follow-on products in IBD. We and Finch may elect to extend this collaboration to additional and related indications on similar terms.
- *Hemoshear Therapeutics LLC (U.S.):* We have entered into a partnership with Hemoshear Therapeutics LLC ("Hemoshear") to discover and develop novel therapeutics for liver diseases, including nonalcoholic steatohepatitis (NASH). Takeda will receive exclusive access to HemoShear's proprietary disease modeling platform to discover and develop best-in-class therapeutics for specific liver diseases.
- *Karolinska Institutet & Structural Genomics Consortium (Sweden):* We have entered into a proprietary collaboration to discover and validate new potential intervention points for the treatment of IBD.
- *NuBiyota LLC (Canada):* We have entered into an agreement with NuBiyota LLC ("NuBiyota") for the development of Microbial Ecosystem Therapeutic products for GI indications with a high unmet medical need. Under this agreement, we and NuBiyota will collaborate to advance oral microbial consortia products developed by using NuBiyota's microbiome platform for GI indications.
- *PvP Biologics, Inc. (U.S.)*: We entered into a global agreement with PvP Biologics, Inc. ("PvP") for the development of KumaMax, a novel enzyme designed to break down the immune-reactive parts of gluten in the stomach, thereby avoiding the painful symptoms and damage done in the small intestine from accidental gluten ingestion. Under the terms of the development agreement, we will provide financing for PvP to conduct research and development through Phase I proof-of-principle studies and obtain an exclusive option to acquire PvP following receipt of a pre-defined data package.
- *Samsung Bioepis Co., Ltd (South Korea)*: We entered into an agreement to jointly fund and co-develop multiple novel biologic therapies in unmet disease areas. The two companies

immediately began working on the program's first therapeutic candidate, TAK-671, which is intended to treat severe acute pancreatitis.

- *Theravance Biopharma Inc. (Ireland):* We have entered into a global license, development and commercialization agreement with Theravance Biopharma Inc. ("Theravance") for TD-8954, a selective 5-HT4 receptor agonist being investigated for potential use in the treatment of gastrointestinal motility disorders, including enteral feeding intolerance ("EFI"). TD-8954 is being developed for the short-term use with EFI to achieve early nutritional adequacy in critically ill patients at high nutritional risk, an indication for which the compound received the FDA Fast Track Designation. Theravance has most recently completed a study evaluating the safety, tolerability and pharmacodynamics of a single dose of the compound administered intravenously compared to metoclopramide in critically ill patients with EFI.
- *TiGenix NV (Belgium):* Acquisition of an advanced biopharmaceutical company developing novel stem cell therapies for serious medical conditions. The acquisition is a natural extension of an existing partnership agreement between Takeda and TiGenix NV, which aims to bring new treatment options to patients with gastrointestinal disorders. We completed acquisition of TiGenix NV on July 31, 2018.

Neuroscience

- *Affilogic (France)*: We have entered into an agreement with Affilogic regarding research collaboration to explore using Affilogic's proprietary Nanofitins® platform in therapies targeting the central nervous system. Nanofitins® are potent antibody-mimetics, exhibiting high affinity and specificity for capture, targeting and interaction with biomolecules. Under the agreement, we will be entitled to commercialize worldwide products incorporating Affilogic Nanofitins® resulting from the collaboration.
- *AstraZeneca (U.K.):* We have entered into a collaboration to jointly develop and commercialize MEDI-1341, an alpha-synuclein antibody currently in development as a potential treatment for Parkinson's disease with AstraZeneca. MEDI-1341 is an antibody that is differentiated by its high affinity, high selectivity and reduced effector function (lower interaction with the immune system), which has the potential to achieve a better efficacy and safety profile than other alpha-synuclein antibodies. Under the terms of the agreement, AstraZeneca will lead Phase I development while Takeda will lead future clinical development activities. The companies will share equally future development and commercialization costs for MEDI-1341, as well as any future revenues.
- *Cerevance (U.S., U.K.)*: In December 2016, we and Lightstone Ventures established Cerevance, a neuroscience company focused on discovering and developing novel therapeutics for neurological and psychiatric disorders. We provided Cerevance with a 25-person neuroscience research team from our Cambridge, United Kingdom site, fully equipped laboratory space and licenses to a portfolio of preclinical and clinical stage drug programs.
- *Denali Therapeutics Inc. (U.S.):* We have entered into a strategic option and collaboration agreement to develop and commercialize up to three specified therapeutic product candidates for neurodegenerative diseases with Denali Therapeutics, Inc. ("Denali"). Each program is directed to a genetically validated target for neurodegenerative disorders, including Alzheimer's disease and other indications, and incorporates Denali's antibody transport vehicle platform for increased exposure of biotherapeutic products in the brain.
- *H. Lundbeck A/S (Denmark):* We are in collaboration with H. Lundbeck A/S/ to develop and commercialize vortioxetine.
- *Mindstrong Health (U.S.):* We have entered into a collaboration with Mindstrong Health to explore development of digital biomarkers for selected mental health conditions, in particular schizophrenia and treatment-resistant depression.
- *Ovid Therapeutics Inc. (U.S.):* We have entered into an agreement with Ovid Therapeutics Inc., a privately-held biopharmaceutical company that develops medicines for rare neurological diseases, for the formation of a global collaboration focused on the clinical development and commercialization of TAK-935, a novel, potent and highly selective CH24H inhibitor, in rare pediatric epilepsies. Under the terms of the agreement, we received equity in Ovid Therapeutics Inc. and may be eligible to receive certain milestone payments based on the advancement of TAK-935. We and Ovid Therapeutics will share the development and commercialization costs and,

if successful, any profits on a 50/50 basis. We will lead commercialization in Japan, and have the option to lead commercialization in Asia and other selected geographies. Ovid Therapeutics Inc. will lead clinical development activities and commercialization of TAK-935 in the United States, Europe, Canada and Israel. The collaboration will be based on a "One Team" concept, an integrated and interdisciplinary team from both companies devoted to the project.

- *Teva Pharmaceutical Industries Ltd. (Israel):* We are in collaboration with Teva Pharmaceutical Industries Ltd. to develop and commercialize rasagiline.
- *Wave Life Sciences Ltd. (Singapore):* We have entered into a research, development and commercial collaboration and multi-program option agreement with Wave Life Sciences Ltd. to develop antisense oligonucleotides for genetically-defined neurological diseases. The first component of the collaboration will focus on programs targeting Huntington's disease, amyotrophic lateral sclerosis, frontotemporal dementia and spinocerebellar ataxia type 3. The second component of the collaboration provides Takeda with the rights to exclusively license multiple preclinical programs targeting other neurological disorders including Alzheimer's disease and Parkinson's disease.

Vaccines

- *Bill & Melinda Gates Foundation (U.S.)*: We have entered into an agreement with the Bill & Melinda Gates Foundation for a partnership to support polio eradication in developing countries. Under the agreement, we will develop, license and supply at least 50 million doses per year of Sabin-strain inactivated poliovirus vaccine (TAK-195, our vaccine candidate) to more than 70 developing countries. Under the terms of the agreement, the Bill & Melinda Gates Foundation will provide a $38 million grant to us.
- *U.S. Government—Biomedical Advanced Research and Development Authority (U.S.)*: We have been selected by the Biomedical Advanced Research and Development Authority ("BARDA"), a division of the Office of the Assistant Secretary for Preparedness and Response ("ASPR"), within the U.S. Department of Health and Human Services, to develop a Zika vaccine (TAK-426, our Zika vaccination candidate) to support the Zika response in the United States and affected regions around the world. Initial funding from BARDA is for $19.8 million to cover the vaccine development through Phase I, with potential funding of up to $312 million if ASPR/BARDA exercises all options to take the vaccine through Phase III trials and filing of the Biologics License Application ("BLA") in the United States.
- *Zydus Cadila (India)*: We have entered into an agreement with Zydus Cadila for a partnership to address the global threat of chikungunya and develop a chikungunya vaccine (TAK-507, our chikungunya vaccine candidate). Chikungunya is an emerging infectious disease in Africa, Asia and the Indian subcontinent. In recent decades, mosquito vectors of chikungunya have spread to Europe and the Americas as well. According to the Centers for Disease Control and Prevention in the United States, there is currently no vaccine to prevent or medicine to treat chikungunya virus infection.

Other or Multiple Therapeutic Areas

- *Arcellx, Inc. (U.S.)*: We have made an investment in Arcellx, Inc., which is a company that develops format for T cell-mediated anti-tumor therapy.
- *ArmaGen, Inc. (U.S.)*: We have made an investment in ArmaGen, Inc., whose proprietary technology platform takes advantage of the body's natural system to deliver therapeutics to the brain in a non-invasive manner.
- *Arix Biosciences plc (U.K.)*: We have established a relationship with Arix Biosciences plc ("Arix") to bring together the unique combination of entrepreneurial business building, investing and industry operating skills at Arix with our deep industry experience, to the mutual benefit of both businesses. Arix will provide access to deal flow and a specialist team across its activities to create and incubate companies, guided by a joint advisory committee.
- *Atlas Ventures Fund XI (U.S.)*: We invested as a corporate strategic partner in Atlas Venture Fund XI, a $350 million investment vehicle focused exclusively on early stage biotech investing.
- *BioMotiv, LLC (U.S.)*: We have entered into an agreement with BioMotiv, LLC, the therapeutic accelerator company associated with The Harrington Project for Discovery & Development, to

identify and develop pioneering medical innovations specifically in the therapeutic areas of immunology and inflammation and cardio-metabolic diseases.

- *Biosurfaces Inc. (U.S.)*: We have entered into an agreement with Biosurfaces Inc. to develop innovative medical devices to treat patients with GI diseases using BioSurfaces Inc.'s proprietary nanomaterial technology.
- *BiomX Ltd. (Israel)*: We have made an investment in BiomX Ltd., which is a company that discovered and validated proprietary bacterial targets, and develops rationally designed phage therapies that seek and destroy harmful bacteria in microbiome-related diseases such as IBD and cancer.
- *Bridge Medicines (U.S.)*: We partnered with Tri-Institutional Therapeutics Discovery Institute, Bay City Capital and Deerfield Management in the establishment of Bridge Medicines. Research projects accepted into the Tri-Institutional Therapeutics Discovery Institute will be able to graduate to Bridge Medicines, where they will be given financial, operational and managerial support to move seamlessly from validating proof-of-concept studies to clinical trials.
- *Center for iPS Cell Research and Application, Kyoto University (Japan)*: We have entered into a 10-year collaboration and established a joint research program with the Center for iPS Cell Research and Application, at Kyoto University to develop clinical applications of induced pluripotent stem cells in therapeutic areas including cancer, heart failure, diabetes mellitus, neuro-degenerative disorders and intractable muscle diseases.
- *Cortexyme, Inc. (U.S.)*: We have made an investment in Cortexyme, Inc., a company that is developing therapeutics based on data supporting a new theory of the cause of Alzheimer's and other degenerative disorders.
- *Dementia Discovery Fund (Global)*: The Dementia Discovery Fund is a global investment fund to support discovery and development of novel dementia treatments. We are an investor in the Dementia Discovery Fund and also hold a seat on the Scientific Advisory Board.
- *Emendobio Inc. (Israel)*: We have made an investment in Emendobio Inc., a company that is at the forefront of cutting-edge genetic medicine and is developing genome editing technology that can repair and eliminate genetic mutations in living cells that cause serious diseases or disorders.
- *FUJIFILM Corporation (Japan)*: We have entered into a collaboration to develop regenerative medicine therapies using cardiomyocytes derived from induced Pluripotent Stem Cell ("iPSC") for the treatment of heart failure. Takeda obtained Right of First Negotiation to collaboratively and globally commercialize such regenerative medicine products using cardiomyocytes derived from iPSC, currently under development by FUJIFILM Corporation's affiliate company, Cellular Dynamics International, Inc. Under this contract, Takeda will make a one-time payment to FUJIFILM Corporation and both companies will evaluate the safety and efficacy of resulting regenerative medicine therapies.
- *FutuRx (Israel)*: We partnered with Johnson & Johnson Innovation Fund and OrbiMed Israel Partners to team with the Office of the Israeli Innovation Authority of the Ministry of Economy in to transform breakthrough discoveries into novel medicines by applying a unique structure of equally balanced partnership among the three founding organizations. FutuRx envisions its role as a catalyst for drug development by bridging the gap between concept and proof-of-concept through its dedicated system and unique structure.
- *Harrington Discovery Institute at University Hospitals in Cleveland, Ohio (U.S.)*: We have entered into a collaboration with Harrington Discovery Institute at University Hospitals in Cleveland, Ohio for the advancement of medicines for rare diseases.
- *HitGen Ltd. (China)*: HitGen Ltd. will apply its advanced technology platform, based on DNA-encoded library design, synthesis and screening, to discover novel leads, which will be licensed exclusively to Takeda.
- *HiFiBiO Inc. (U.S.)*: We have entered into a collaboration for functional therapeutics high-throughput antibody discovery platform that enables identification of antibodies for rare events, for discovery of therapeutic antibodies for GI and Oncology.
- *Hookipa Pharma Inc. (Austria)*: We have made an investment in Hookipa Pharma Inc. for value creation through venture and biotech partnerships investment.

- *Isogenica Ltd. (U.K.)*: We have entered into an agreement with Isogenica Limited for access to a sdAb (single-domain antibody) platform to generate a toolbox of VHH (Variable domain of Heavy chain of Heavy chain antibody) for various immune cells, and we are targeting pathway validation and pipeline development across our GI and Oncology portfolio.
- *National Cancer Center of Japan (Japan)*: We have entered into a partnership agreement with the National Cancer Center of Japan to discover and develop anticancer agents. Through this partnership, we and the National Cancer Center will share information and hold regular discussions in order to collaborate and transition findings from basic research to clinical research and development activities.
- *Numerate, Inc. (U.S.)*: We have entered into an agreement for joint-discovery programs aimed at identifying clinical candidates for use in Takeda's core therapeutic areas, namely GI. oncology and neuroscience. Numerate, Inc. will use its AI-driven platform, from hit finding and expansion through lead design/optimization and Absorption, Distribution, Metabolism and Excretion ("ADME")/toxicity modeling.
- *OrphoMed, Inc. (U.S.)*: We have made an investment in OrphoMed Inc., a clinical-stage biotechnology company with a proprietary dimer therapeutics platform. OrphoMed Inc. is focused on developing best-in-class treatments for patients with gastrointestinal disorders.
- *Obsidian Therapeutics, Inc. (U.S.)*: We have made an investment in Obsidian Therapeutics, Inc., a company that is developing next-generation cell and gene therapies with pharmacologic operating systems.
- *Portal Instruments, Inc. (U.S.)*: We have entered into a collaboration with Portal Instruments, Inc. ("Portal") to develop and commercialize Portal's needle-free drug delivery device for potential use with our investigational or approved biologic medicines. The first development program to potentially utilize this device will be for investigational use with ENTYVIO, which is currently administered through intravenous infusion.
- *Presage Biosciences, Inc. (U.S.)*; We have made an investment in Presage Biosciences, Inc., a company that uses CIVO®, a platform that enables simultaneous and direct assessment of multiple early stage agents in the context of human patients.
- *Recursion Pharmaceuticals, Inc. (U.S.)*: We have entered into an agreement to provide pre-clinical candidates for Takeda's TAK-celerator™ development pipeline.
- *Ribon Therapeutics, Inc. (U.S.)*: We have made an investment in Ribon Therapeutics, Inc., a company that is pioneering the discovery and development of monoPARP (mono ADP-ribose polymerase) inhibitors to block cancer cells' fundamental ability to survive under stress.
- *Schrödinger, LLC (U.S.)*: We have entered into a multi-target research collaboration combining Schrödinger, LLC's in silico platform-driven drug discovery capabilities with Takeda's deep therapeutic area knowledge and expertise in structural biology.
- *Seattle Collaboration (U.S.)*: We have formed a research alliance, Seattle Partnership for Research on Innovative Therapies ("SPRInT"), aiming to accelerate the translation of Fred Hutchinson Cancer Research Center's and University of Washington's cutting-edge discoveries into treatments for human disease, with a focus on GI. Oncology and Neuroscience.
- *Stanford University (U.S.)*: We have entered into a collaboration with Stanford University to form the Stanford Alliance for Innovative Medicines ("Stanford AIM") to develop innovative treatments and therapies in a more effective manner.
- *StrideBio, Inc. (U.S.)*: We have made an investment in StrideBio, Inc., a company that develops engineered viral vectors for gene therapy for the treatment of rare diseases. StrideBio Inc.'s technology engine utilizes structure-inspired design to engineer Adeno Associated Virus ("AAV") vectors that can escape pre-existing neutralizing antibodies.
- *Trianni, Inc. (U.S.)*: We have entered in to an agreement so that Takeda can use Trianni Inc.'s transgenic mouse platform to identify fully human monoclonal antibodies against disease targets in all therapeutic areas.
- *Tri-Institutional Therapeutics Discovery Institute, Inc. (U.S.)*: We partnered with the Tri-Institutional Therapeutics Discovery Institute, which was formed by the three institutions, the Memorial Sloan Kettering Cancer Center, The Rockefeller University and Weill Cornell Medicine,

in 2013, with the goal of expediting early-stage drug discovery of innovative new therapies. The partnership between us and the Tri-Institutional Therapeutics Discovery Institute was expanded in 2016 from the realm of small molecule discovery into the new research area of antibody drug discovery.

- *Univercells SA (Belgium)*: We have made an investment in Univercells SA, a technology company delivering novel biomanufacturing platforms, aiming at making biologics available and affordable to all.
- *Ultragenyx Pharmaceutical Inc. (U.S.)*: We have entered into an agreement with Ultragenyx Pharmaceutical Inc. ("Ultragenyx"), to partner in the development and commercialization of therapies to treat rare genetic diseases. Ultragenyx will receive an exclusive license to one of our preclinical product candidates in a pre-determined field of use, and will have an exclusive option to co-develop and co-commercialize the product candidate in additional therapeutic areas. We and Ultragenyx have also established a five-year research collaboration under which Ultragenyx will have the option to license up to five additional of our product candidates for rare diseases. We receive an exclusive option to commercialize any licensed products resulting from the collaboration in Asia, including Japan. And an option to exclusively license one Ultragenyx pipeline product in Japan.
- *VelosBio, Inc. (U.S.)*: We have made an investment in VelosBio Inc., a preclinical stage company developing antibody drug conjugates.
- *VHsquared Ltd. (U.K.)*: We have made an investment in VHsquared Ltd., a clinical stage company developing transformational therapies (VorabodiesTM, which are oral domain antibodies) for IBD.

Patents

Due to the lengthy development periods for new drugs, the high costs of research and development and the small percentage of researched compounds that reach the market, intellectual property considerations play an important role in the return of investments for research and development of a new drug.

We seek intellectual property protection under applicable laws for significant product developments in major markets. Patents are our primary means of protecting the technologies we use in relation to prescription drugs. Patents provide the holder with the right to exclude others from using an invention related to the drug. We use various types of patents to protect our pharmaceutical products, including substance patents, which cover active ingredients, as well as patents covering usage, manufacturing processes and formulation of drugs. The substance patent is a drug's primary form of intellectual property protection, and its status can impact the commercial viability of the drug.

In the U.S., patents generally expire twenty years after the filing date of the application, subject to potential patent term adjustments for delays in patent issuance based upon certain delays in prosecution by the United States Patent and Trademark Office. A U.S. pharmaceutical patent that claims a product, method of treatment using a product or method of manufacturing a product may also be eligible for a patent term extension based on the time the FDA took to approve the product. This type of extension may only extend the patent term for a maximum of five years, and may not extend the patent term beyond fourteen years from regulatory approval. Only one patent may be extended for any product based on FDA delay. In addition to patent exclusivities, the FDA may provide data or market exclusivity for a new chemical entity or an "orphan drug," each of which run in parallel to any patent protection. Regulatory data protection or exclusivity prevents a potential generic competitor from relying on clinical trial data that were generated by the sponsor when establishing the safety and efficacy of its competing product. Market exclusivity prohibits any marketing of the same drug for the same indication.

Similarly, in Japan, a patent can be issued for active pharmaceutical ingredients. Although methods of treatment, such as dosage and administration, are not patentable in Japan, pharmaceutical compositions for a specific dosage or administration method as well as processes to make a pharmaceutical composition are patentable. Patents in Japan generally expire 20 years after the filing date of the patent application. Patents for pharmaceuticals may be extended for up to five years, depending on the amount of time spent for the drug approval process. Japan also has a regulatory data protection system called a "re-examination period" of eight years for pharmaceuticals that contain new active pharmaceutical ingredients and four years to six years for new indications and formulations and a ten year orphan drug exclusivity system.

Patent applications in Europe may be filed in the European Patent Office ("EPO") or in a particular country in Europe. The EPO system permits a single application to be granted for the EU, plus certain other non-EU countries, such as Switzerland and Turkey. When the EPO grants a patent, it is then validated in the countries that the patent owner designates. The term of a patent granted by the EPO or a European country office is generally 20 years from the filing date of the patent application, subject to potential patent term extensions and adjustments. Pharmaceutical patents can be granted a further period of exclusivity under the Supplementary Protection Certificate ("SPC") system. SPCs are designed to compensate the owner of the patent for the time it took to receive marketing authorization by the European Health Authorities. An SPC may be granted to provide, in combination with the patent, up to 15 years of exclusivity from the date of the first European marketing authorization. However, an SPC cannot last longer than five years. The SPC duration can additionally be extended by a further Pediatric Extension of six months if the product is the subject of an agreed pediatric investigation plan. The post-grant phase of patents, including the SPC system, is currently administered on a country-by-country basis under national laws that are intended to but do not always have the same effect. The EU also provides a system of regulatory data exclusivity for authorized human medicines, which runs in parallel to any patent protection. The system for drugs being approved today is usually referred to as "8+2+1" because it provides an initial period of eight years of data exclusivity, during which a competitor cannot rely on the relevant data, a further period of two years of market exclusivity, during which the data can be used to support applications for marketing authorization but the competitive product cannot be launched and a possible one-year extension of the market exclusivity period if, during the initial eight-year data exclusivity period, the sponsor registered a new therapeutic indication with "significant clinical benefit." This system applies both to national and centralized authorizations. The EU also has an orphan drug exclusivity system for medicines similar to the U.S system. If a medicine is designated as an orphan drug, it benefits from ten years of market exclusivity, during which time a similar medicine for the same indication will not receive marketing authorization. Under certain circumstances, this exclusivity can be extended with a two-year Pediatric Extension.

Worldwide, we experience challenges in the area of intellectual property from factors such as the penetration of generic versions of our products following the expiry of the relevant patents and the launch by competitors of over-the-counter versions of our products. We work to secure extended patent rights by adding new indications and changing formulations. Our Global General Counsel is responsible for the oversight of our Intellectual Property operations, as well as our legal and compliance operations. Our Intellectual Property Department supports our overall corporate strategy by focusing efforts on three main themes:

- maximization of the value of our products and research pipeline and protection of related rights aligned to the strategies of our therapeutic area units;
- facilitation of more dynamic harnessing of external innovation through partner alliance support; and
- securing and protection of intellectual property rights around the world, including in emerging markets.

As infringement of our intellectual property rights poses a risk of loss of expected earnings derived from those rights, we have internal processes in place to manage patents and other intellectual property. This program includes both remaining vigilant against patent infringement by others as well as exercising caution, starting at the research and development stage, to ensure that our products and activities do not violate intellectual property rights held by others. As part of our strategy to manage intellectual property rights worldwide, we have overseas intellectual property operations in the United States, based in Chicago, San Diego and Cambridge; and in Switzerland, based in Zurich.

The following table shows a summary of the current substance patents (where applicable and unless otherwise noted) and trademarks covering each of our main pharmaceutical products in Japan, the United States and the EU. The "Expiry Date" means an original patent expiry date which may be extended by a patent term extension or supplementary protection certificate ("SPC"). The "Extended Expiry" means an extended patent expiry date. Information is not listed for markets over which we do not have commercialization rights. For certain of these products, there are other patents related to, for example, methods of manufacturing or use of the products in the treatment of particular diseases or conditions, which may protect them even following the expiration of the relevant substance patent. We may also protect our products using other forms of intellectual property, such as trade secrets and proprietary know-how. In addition, expiration dates set forth below do not necessarily reflect possible changes to the patent term caused by patent term extensions, the outcome of litigation or other proceedings or other reasons.

Our product	Japan	United States	EU
GI:			
ENTYVIO	**Substance Patent**		
	—[1]	PAT# 7147851 (biologics, no orange-book listed patent) Expiry Date: 7/24/2017 Extended Expiry Date: 9/27/2021	PAT# 0918797 Expiry Date: 8/6/2017 Extended Expiry: 8/6/2022 in AT, BE, GR, LU, PT, SI, RO, LT and LV
	Trademark		
	Reg. No. 5600446	Reg. No. 4580498	Reg. No. 10493369
PANTOPRAZOLE . . .	**Substance Patent**		
	—[1]	—[1]	—[1]
	Trademark		
	Reg. No. 1004803	Reg. No. 2207706	Reg. No. 1481985 Reg. No. 3175783
DEXILANT	**Substance Patent**		
	N/A Crystal form patent	N/A Crystal form patent	N/A Crystal form patent
	Trademark		
	—	Reg. No. 3887989	Reg. No. 9680745 Reg. No. 9680596
TAKECAB	**Substance Patent**		
	PAT# 4035559 Expiry Date: 8/29/2026 Extended Expiry Date: 8/29/2031	PAT# 7977488 Expiry Date: 8/11/2028	PAT# 1919865 Expiry Date: 8/29/2026
	Trademark		
	Reg. No. 5579687	Reg. No. 4988099	Reg. No. 9608613
AMITIZA	**Substance Patent**		
	N/A[2] Bicyclic Tautomer of AMITIZA	N/A Bicyclic Tautomer of AMITIZA	N/A Bicyclic Tautomer of AMITIZA
Oncology:			
LEUPROLIN	**Substance Patent**		
	—[1]	—[1]	—[1]
	Trademark		
	Reg. No. 2426577	—	Reg. No. IR258104

Our product	Japan	United States	EU
VELCADE	**Substance Patent**		
	PAT# 04162491 Expiry Date: 1/25/2022	PAT# 6713446 Expiry Date: 7/25/2022	PAT# 788360 Expiry Date: 4/28/2019
		PAT# 6958319 Expiry Date: 7/25/2022 (including pediatric exclusivity)	
	Trademark		
	Reg. No. 4643739	Reg. No. 2795745	Reg. No. 2727287
NINLARO	**Substance Patent**		
	PAT# 5261488 Expiry Date: 8/6/2027 Extended Expiry Date: July 2031	PAT# 7442830 Expiry Date: 8/6/2027 Extended Expiry Date: not yet granted but expected to be Nov 2029.	PAT# 2178888 Expiry Date: 2027/8/6 Extended Expiry Date: 11/23/2031
	PAT# 5566380 Expiry Date: 6/16/2029	PAT# 7687662 Expiry Date: 8/6/2027	PAT# 2318419 Expiry Date: 6/16/2029
	PAT# 6010066 Expiry Date: 6/16/2029	PAT# 8003819 Expiry Date: 8/6/2027	
	Trademark		
	Reg. No. 2426577	—	Reg. No. IR258104
ADCETRIS[3]	**Substance Patent**		
	PAT# 4095444 Expiry Date: 2022/4/30	N/A	PAT#1545613 Expiry Date: 7/31/2023 Extended Expiry Date: 10/24-30/2027[5]
	PAT# 4303964[4] Expiry Date: 11/28/2021 Extended Expiry Date: 8/12/2026		
	PAT# 4741838 Expiry Date: 7/31/2023 Extended Expiry Date: 4/3/2026		
	Trademark		
	Reg. No. 5366258	N/A	Reg. No. 9271453
ALUNBRIG	**Substance Patent**		
	PAT# 6190415 Expiry Date: 5/21/2029	PAT# 9012462 Expiry Date: 7/31/2020 Extended Expiry Date: not yet granted but expected to be April 28, 2031.	PAT# 2300013 Expiry Date: 5/21/2029
	PAT# 6271064 Expiry: 5/21/2029		
	Trademark		
	Reg. No. 1303378	Reg. No. 5251769	Reg. No. 015091317
ICLUSIG	**Substance Patent**		
	PAT# 5200939[6] Expiry Date: 7/27/2030[7]	PAT# 8114874 Expiry Date: 12/22/2026[8]	PAT# 1973545[9] Expiry Date: 7/3/2028[10]
	Trademark		
	Reg. No. 5473841	Reg. No. 4324899	Reg. No. 010087633

Our product	Japan	United States	EU
Neuroscience:			
TRINTELLIX	**Substance Patent**		
	PAT# 3896116 Expiry Date: 10/2/2022	PAT# 7144884 Expiry Date: 10/2/2022 Extended Expiry Date: 6/17/2026 (to be issued soon)	N/A
	Trademark		
	Reg. No. 5904166	Reg. No. 5023071	N/A

Notes:
(1) The substance patent has expired.
(2) Takeda has the exclusive rights to commercialize AMITIZA in all global markets, except Japan and the People's Republic of China.
(3) Takeda has commercialization rights for *ADCETRIS* outside the United States and Canada.
(4) This patent is granted for the scope of use.
(5) Current SPC ranges from Oct 24-30, 2027 for the expiry dates.
(6) Out-licensed to Otsuka Pharmaceutical Co., Ltd.
(7) Includes patent term extension.
(8) Excludes additional 33 days of patent term adjustment awarded by the United States District Court for the Eastern District of Virginia, but not recognized by the Patent and Trademark Office. Excludes possible pediatric exclusivity.
(9) Out-licensed to Incyte Corporation.
(10) Includes SPC. Excludes possible pediatric exclusivity.

Manufacturing and Supply

Although we develop and manufacture the active ingredients used in some of our products at our own facilities, we are dependent on third-party suppliers for a portion of the raw materials and compounds used in some of the other products we produce. Although we believe that, in the event we are unable to source any products or ingredients from any of our major suppliers, we could replace those products or substitute ingredients from other suppliers, we may not be able to do so without significant difficulty or significant increases in our cost of goods sold.

We closely monitor, continuously review and revise the supply sourcing strategy for our products to identify in a timely manner any risks in our supply chain, including risks arising from our dependency on outsourced manufacturing relationships with third party suppliers. Where necessary, inventory levels of either key materials and finished products are managed strategically to address potential risks relating to operational and quality issues, production capacity and single sourcing among others. For critical and new technology products, we have decided to make significant long-term capital investments to build internal manufacturing capacity and secure dual sources to reduce the current dependency on outsourced manufacturing relationship with third-party suppliers.

Quality

Our Global Quality Organization operates our quality assurance and related activities, including quality management, quality compliance and quality systems, under the leadership of our Global Quality Officer and the Global Quality Leadership Team. Our Global Quality Organization is focused on three pillars: Science, Systems and People. Our Global Quality Organization is structured to be aligned with related departments, such as Research and Development, Global Manufacturing and Supply, Commercial and the Vaccine and Oncology Business Units. By centralizing our quality assurance and related activities, or Quality, we seek to standardize practices across the legacy companies that have joined our group through recent acquisitions and eliminate redundancies and inefficiencies. In addition, we aim to promote positive changes in our Quality and related operations by incorporating innovation, continuous improvement, knowledge and best-practice sharing internally. We have also established a regional oversight structure, local operating companies and functional quality teams to monitor Quality across our operations. We implement a standard site structure model for quality in our manufacturing sites in order to establish consistent functions, roles and responsibilities across our manufacturing platform.

Our Quality procedures span the entire life-cycle of our products. In non-clinical safety studies, we maintain data integrity and comply with each country's regulations for Good Laboratory Practice, or GLP, to assess the safety of candidate compounds of pharmaceutical products. All of our clinical studies, wherever they are conducted, comply with Good Clinical Practice, or GCP, in addition to applicable national and regional regulations as well as our own standard operating procedures and protocols. In manufacturing, we comply with Good Manufacturing Practices, or GMP. We also apply our own internal quality standards in order to ensure that our products meet all international requirements. In the post-marketing stage, we collect quality-related information from the market to detect potential quality issues early. We have also implemented pharmacovigilance activities to provide the latest safety information on the use of our products by collecting information from patients and healthcare service providers beginning in the development phase and continuously thereafter, throughout the product lifecycle.

Sales and Marketing

We organize our sales channels under five regional business units, United States, Japan Pharma, Emerging Markets, Europe-Canada ("EUCAN") and Japan Consumer Healthcare, and two global specialty business units, Oncology and Vaccines.

Our regional business units, United States, Japan Pharma, Emerging Markets and EUCAN, are focusing on investments that support growth potential in the market and enhance efficiency. Our primary sales and marketing activities are organized around these four business units.

The U.S. business unit focuses on recently approved products in the United States, the largest pharmaceutical market in the world. It has a specialized sales force to support *ENTYVIO* to better meet the needs of those who treat and manage IBD, as well as a general medicine sales force, and added a dedicated neuroscience sales team to support *TRINTELLIX* to reach psychiatrists who treat major depressive disorder.

The Japan Pharma business unit focuses on retaining our position as one of the leading pharmaceutical companies in our home market of Japan, where the government is driving stricter control of drug prices and promoting the penetration of generics.

The Emerging Markets business unit makes focused investments in order to maximize growth potential in areas across Asia Pacific, Greater China, Latin America, Near East, Middle East & Africa and Russia/CIS. Established Products, or branded generics (also referred to as Value Brands in the Emerging Markets), are valued by our customers as quality medicine, and innovative products such as *ENTYVIO*, *NINLARO* and *ADCETRIS* are also crucial for Emerging Markets, as we expect these key growth drivers to exhibit strong growth in the coming years.

The EUCAN business unit continues to grow the business with a more specialized approach in the European and Canadian markets, where public insurance has set a higher bar for the reimbursement of medicines, requiring innovation and differentiation for the products to be reimbursed. As Canada's health insurance system is very similar to that of Europe, the Canadian market is managed by the EUCAN business unit.

Competition

Competitors in the prescription drug industry include large international companies whose capabilities cover the entire drug creation process from research and development to production and marketing. Competitors also include smaller companies that focus on selling generic versions of drugs for which patent protection and regulatory data protection have lapsed.

The competition we face often differs by product and geographic market, and companies emerge and fall away as competitors over time due to innovations, merger activity and other business and market changes.

The following table shows the current principal competing products for our main pharmaceutical products:

Our product	Principal competing product	Primary manufacturer or distributor
GI:		
DEXILANT, PANTOPRAZOLE (Protonix)	generic lansoprazole, esomeprazole	—
ENTYVIO	*Remicade*	Janssen Biotech
	Humira	Abbvie
	Simponi	Janssen Biotech
	Stelara	Janssen Biotech
	Cimzia	UCB
	generic infliximab	—
TAKECAB	*Nexium*	AstraZeneca
	generic lansoprazole, omeprazole	—
Oncology:		
ADCETRIS	chemotherapy regimens	—
ALUNBRIG	*Xalkori*	Pfizer
	Zykadia	Novartis
	Alecensa	Roche
ICLUSIG	*Gleevec*	Novartis
	Tasigna	Novartis
	Sprycel	Bristol-Myers Squibb
	Bosulif	Pfizer
Leuprorelin (Leuplin)	*Zoladex*	AstraZeneca
	generic leuprorelin	—
NINLARO, VELCADE	*Revlimid*	Celgene
	Pomalyst/Imnovid	Celgene
	Kyprolis	Amgen
	Darzalex	Janssen Biotech
	Empliciti	Bristol-Myers Squibb
Neuroscience:		
TRINTELLIX	*Viibryd*	Allergan
	Fetzima	Allergan
	generic duloxetine, escitalopram	—
Other:		
AZILVA	generic candesartan, olmesartan	—
NESINA	*Januvia*	Merck Co., Inc.
	generic pioglitazone	—

Government Regulation and Price Restrictions

The pharmaceutical industry is subject to extensive global regulation by regional, national, state and local agencies. The FDA and other federal statutes and regulations in the United States, MHLW in Japan and laws and regulations of foreign governments govern the testing, approval, production, labeling, distribution, post-market surveillance, advertising, dissemination of information and promotion of our products.

The introduction of new pharmaceutical products generally entails a lengthy approval process. Products must be authorized or registered prior to marketing, and such authorization or registration must subsequently be maintained. In recent years, the registration process has required increased testing and documentation for the approval of new drugs, with a corresponding increase in the expense of product introduction. To register a pharmaceutical product, a registration dossier containing evidence establishing the safety, efficacy and quality of the product must be submitted to regulatory authorities. Generally, a therapeutic product must be registered in each country in which it will be sold. It is possible that a drug can be registered and marketed in one country while the registration authority in another country may, prior to registration, request additional information from the pharmaceutical company or even reject the product. It is also possible that a drug may be approved for different indications in different countries. The registration process generally takes between six months and several years, depending on the country, the quality of the data submitted, the efficiency of the registration authority's procedures and the nature of the product. Many countries provide for accelerated processing of registration applications for innovative products of particular therapeutic interest. In recent years, efforts have

been made among the US, the EU and Japan to harmonize registration requirements in order to achieve shorter development and registration times for medical products.

See "Regulation" for a detailed discussion on the regulations in the Japanese, United States, European and certain other markets.

Insurance

We maintain a range of insurance policies, which we believe are comparable to those of other companies with similar operations, covering the value, or portions of the value, of buildings, plant and machinery, stocks and goods-in-transit and other coverage. These insurance policies generally cover losses related to fire, weather conditions, electrically or mechanically induced accidents, environmental contamination and certain other events. We generally do not maintain insurance policies covering property damages suffered as a result of earthquakes in Japan.

We also carry general liability insurance including product liability insurance and clinical trials insurance, which we believe are comparable to those of other companies with similar operations. We evaluate our insurance requirements on an ongoing basis to ensure we maintain adequate levels of coverage.

Employees

As of March 31, 2018, we had 27,230 employees on a consolidated basis, of which 6,957 employees were based in Japan and 20,273 employees were based outside Japan. We have concluded a collective bargaining agreement with the Takeda Pharmaceutical Workers Union, through which we have established sound relations with our employees. We hold regular dialogues with the union concerning, among other issues, conditions of employment and human resources practices. Similarly, all of our group companies hold discussions with their respective workers unions and employee representatives in accordance with local laws. We have an employee stock ownership association for certain employees of Takeda.

Legal Proceedings

Takeda is involved in various legal and administrative proceedings. The most significant matters are described below.

Takeda may become involved in significant legal proceedings for which it is not possible to make a reliable estimate of the expected financial effect, if any, which may result from ultimate resolution of the proceedings. In these cases, appropriate disclosures about such cases would be included herein, but no provision would be made for the cases. Given the inherent unpredictability of litigation, it is possible that an adverse outcome in one or more pending or future litigation matters could have a material adverse effect on our operating results or cash flows.

With respect to each of the legal proceedings described below, other than those for which a provision has been made, Takeda is unable to make a reliable estimate of the expected financial effect at this stage. Takeda does not believe that information about the amount sought by the plaintiffs, if that is known, would be meaningful with respect to those legal proceedings. This is due to a number of factors, including, but not limited to, the stage of proceedings, the entitlement of parties to appeal a decision and clarity as to theories of liability, damages and governing law.

Legal expenses incurred and charges related to legal claims are recorded in selling, general and administrative expenses line. Provisions are recorded, after taking appropriate legal and other specialist advice, where an outflow of resources is considered probable and a reliable estimate can be made of the likely outcome of the dispute. For certain product liability claims, Takeda will record a provision where there is sufficient history of claims made and settlements to enable management to make a reliable estimate of the provision required to cover unasserted claims. As of March 31, 2018, Takeda's aggregate provision for legal and other disputes was ¥23.2 billion. The ultimate liability for legal claims may vary from the amounts provided and is dependent upon the outcome of litigation proceedings, investigations and possible settlement negotiations.

Takeda's position could change over time, and, therefore, there can be no assurance that any losses that result from the outcome of any legal proceedings will not exceed the amount of the provisions reported in these consolidated financial statements by a material amount.

Product liability and related claims. Pre-clinical and clinical trials are conducted during the development of potential products to determine the safety and efficacy of products for use by humans following approval by regulatory bodies. Notwithstanding these efforts, when drugs and vaccines are introduced into the marketplace, unanticipated safety issues may become, or be claimed by some to be, evident. Takeda is currently a defendant in a number of product liability lawsuits related to its products. For the product liability lawsuits and related claims, other than those for which provision has been made, Takeda is unable to make a reliable estimate of the expected financial effect at this stage. The most significant product liability and related claims are described below.

- *ACTOS*: Takeda has been named as a defendant in lawsuits in U.S. federal and state courts in which plaintiffs allege to have developed bladder cancer or other injuries as a result of taking products containing type 2 diabetes treatment pioglitazone (U.S. brand name: *ACTOS*). Eli Lilly and Company ("Lilly"), which co-promoted *ACTOS* in the United States for a period of time, also has been named as a defendant in many of these lawsuits. Under the parties' co-promotion agreement, Takeda has agreed to defend and indemnify Lilly in the U.S. matters. Outside the U.S., lawsuits and claims have also been brought by persons claiming similar injuries. In April 2015, Takeda reached an agreement with the lead plaintiffs' lawyers that resolved the vast majority of *ACTOS* product liability lawsuits pending against Takeda and Lilly in the U.S. The settlement covered all bladder cancer claims pending in any U.S. court as of the date of settlement. Also, claimants with unfiled claims in the U.S. represented by counsel as of the date of settlement and within three days thereafter were eligible to participate. The settlement became effective when 95% of litigants and claimants opted-in. In connection with this broad settlement, Takeda has paid $2.4 billion (¥288 billion) into a qualified settlement fund. Takeda received insurance proceeds totaling ¥58 billion under various policies covering product liability claims against Takeda. Takeda also established reserves for remaining *ACTOS* claims and lawsuits. In addition to remaining product liability claims, the following lawsuits have been filed against Takeda by public and private third-party payors, as wells as consumers, seeking damages for alleged economic losses. A purported nation-wide class action lawsuit has been filed federal court in California—the Painters' Fund case—on behalf of third-party payors and consumers seeking, among other things, reimbursement of monies spent on *Actos.* In April 2018, the court dismissed the Painters' Fund Case. Plaintiffs appealed. The States of Mississippi and Louisiana have filed lawsuits against Takeda and Lilly alleging that defendants did not warn about bladder cancer and other risks of *ACTOS*. The lawsuits seek reimbursement of the cost of *ACTOS*, paid by the states on behalf of patients through programs such as Medicaid, and for medical treatment of patients allegedly injured by *ACTOS*, attorneys' fees and expenses, punitive damages and/or penalties. The court granted Takeda's motion to dismiss the Louisiana case. The decision has been appealed.

- *PREVACID*: As of March 31, 2018, more than 1,100 product liability lawsuits involving *PREVACID* and/or *DEXILANT* have been filed against Takeda in U.S. federal and state courts. The federal lawsuits are consolidated for pre-trial proceedings in a multi-district litigation in federal court in New Jersey. The plaintiffs allege they developed kidney injuries as a result of taking *PREVACID* or *DEXILANT*, and that Takeda failed to adequately warn them of this potential danger. However, it remains unclear how many of these claimants took Takeda proton-pump inhibitor ("PPI"). Similar claims are pending against other manufacturers of drugs in the same PPI class as *PREVACID* and *DEXILANT*, including AstraZeneca, Proctor & Gamble and Pfizer. In Canada, three proposed class actions have been filed in three provinces (Quebec, Ontario and Saskatchewan). The defendants include Takeda, AstraZeneca and several generic manufacturers. It is unclear how many new lawsuits will be filed against Takeda. At this time, a reserve is not probable or estimable.

Intellectual Property. Intellectual property claims include challenges to the validity and enforceability of Takeda's patents on various products or processes as well as assertions of non-infringement of those patents. A loss in any of these cases could result in loss of patent protection for the product at issue. The consequences of any such loss could be a significant decrease in sales of that product and could materially affect future results of operations for Takeda.

- *PREVACID*: In January 2018, Takeda received notice from Zydus that it has amended its application for a generic version of SoluTab. In response, Takeda filed a patent infringement lawsuit against Zydus and in response, Zydus filed a counterclaim asserting that Takeda's challenge of Zydus' ANDA product violates antitrust laws. Takeda believes the counterclaim is without merit. Other generic companies have filed ANDAs for generic versions of SoluTab and may launch their

products upon approval by the FDA. In June 2009, Apotex filed a lawsuit in Toronto, Canada, against Takeda and Abbott Laboratories ("Abbott") seeking alleged damages for delayed market entry of its generic lansoprazole capsules due to a prior patent infringement lawsuit against Apotex. Previously, Abbott and Takeda filed a patent infringement lawsuit against Apotex in response to Apotex's regulatory submission to the Canadian Minister of Health seeking permission to market generic lansoprazole capsules before the expiration of various Canadian patents relating to this drug. In September 2008, Abbott and Takeda settled that patent infringement lawsuit against Apotex and Apotex was allowed to begin selling generic lansoprazole capsules in Canada on May 1, 2009. Under the terms of the settlement, Apotex retained its right to seek damages for delayed market entry caused by the lawsuit.

- *PANTOPRAZOLE*: On January 15, 2016, Mylan filed a suit in the Federal Court against Takeda claiming damages as a result of the dismissal of Takeda´s previous PM(NOC) proceeding against Mylan. Mylan claimed damages due to being held-off the market with its generic *PANTOPRAZOLE* magnesium product during the time period of June 27, 2013 until June 15, 2015. The parties settled the lawsuit in May 2018.
- *AMITIZA*: In March 2017, Sucampo (Takeda's licensor, which became a wholly-owned subsidiary of Mallinckrodt plc in February 2018) received a paragraph IV certification directed to *AMITIZA* from Amneal Pharmaceuticals, and in August 2017 received a paragraph IV certification directed to *AMITIZA* from Teva. These parties contend that the patents listed in FDA's Orange Book for *AMITIZA* are invalid and/or not infringed by their ANDA product. In response, Sucampo and Takeda filed patent infringement lawsuits against the parties. In June 2018, the parties settled the lawsuits. Patent litigation against other ANDA filers for *AMITIZA* was previously settled.
- *TRINTELLIX*: Takeda has received notices from sixteen generic pharmaceutical companies that they have submitted ANDAs with paragraph IV certifications seeking to sell generic versions of *TRINTELLIX*. To date, at least five generic companies are challenging the patents covering the compound, vortioxetine, which expire in 2026. Takeda filed patent infringement lawsuits against the ANDA filers in federal court in Delaware.
- *ENTYVIO*: Roche has filed patent infringement lawsuits against Takeda in Germany, Italy and the U.K. alleging that *ENTYVIO* infringes a Roche patent. Takeda is vigorously defending the lawsuits. Additionally, Takeda has filed lawsuits seeking nullification of Roche's patent in the U.K. and Germany. Takeda also filed a lawsuit against Genentech in state court in Delaware seeking a declaration that Takeda has a license to the Roche patent under the terms of a prior agreement between Takeda and Genentech.
- Other: In addition to the individual patent litigation cases described above, Takeda is party to a number of cases where Takeda has received notices that companies have submitted ANDAs with paragraph IV certifications to sell generic versions of other Takeda products. These include *ULORIC* and Alogliptin products. Takeda has filed patent infringement lawsuits against parties involved in these situations.

Sales, Marketing and Regulation. Takeda has other litigations related to its products and its activities, the most significant of which are described below.

- Antitrust: There have been purported class action lawsuits filed in federal court in New York by several end payors and wholesalers against Takeda alleging anticompetitive conduct to delay generic competition for *ACTOS*. In September 2015, the court granted defendants' motions to dismiss the antitrust claims asserted by the end payors. The end payors appealed this decision to the Federal 2nd Circuit Court of Appeals. The wholesalers' lawsuit had been stayed pending the appellate court's decision in the end payors' lawsuit. In February 2017, the appellate court reversed in part the dismissal of the end-payors' case and allowed one of plaintiffs' antitrust theories to proceed in the trial court. Specifically, the court ruled that plaintiffs sufficiently alleged that Takeda's characterizations of two patents in the FDA Orange Book were false, and that this resulted in delaying Teva's launch of generic *ACTOS*. Takeda disagrees with these allegations and believes the Orange Book listings were correct. The court, however, affirmed the trial court's dismissal of other antitrust theories. The end payors' case, along with the wholesalers' case, is proceeding in the trial court, where Takeda has filed a motion to dismiss the remaining legal theory.
- Investigation of Patient Assistance Programs: In November 2016, the U.S. Department of Justice (through the U.S. Attorneys' Office in Boston) issued a subpoena to ARIAD, which was acquired

by Takeda during the year ended March 31, 2017, seeking information from January 2010 to the present relating to ARIAD's donations to 501(c) (3) co-payment foundations, financial assistance programs, and free drug programs available to Medicare beneficiaries and the relationship between these copayment foundations and specialty pharmacies, hubs or case management programs. ARIAD is cooperating in the investigation.

BUSINESS OF SHIRE

Shire and its subsidiaries is the leading global biotechnology company focused on serving people with rare diseases and other highly specialized conditions. As of September 30, 2018, Shire had a global workforce of more than 23,000 employees and operated in more than 60 countries. Shire has grown both organically and through acquisition, completing a series of major transactions that have brought therapeutic, geographic and pipeline growth and diversification.

Currently marketed products

The table below lists Shire's main marketed products as of September 30, 2018, indicating the disease area and the key territories in which Shire markets the product.

Products	Disease area	Key territories
Hematology		
ADVATE (Antihemophilic Factor (Recombinant))	Hemophilia A	Global
ADYNOVATE/ADYNOVI (Antihemophilic Factor (Recombinant), PEGylated)	Hemophilia A	U.S., Europe, Canada and Japan
RIXUBIS (Coagulation Factor IX (Recombinant))	Hemophilia B	U.S., Japan, Europe, Australia and Canada
VONVENDI/VEYVONDI (von Willebrand Factor (Recombinant))	Von Willebrand Disease	U.S. and EU
FEIBA (Anti-Inhibitor Coagulant Complex)	Hemophilia A and B patients with inhibitors	Global
OBIZUR (Factor VIII)	Hemophilia A	Global
MyPKFiT	Hemophilia A	U.S. (amendment to Drug BLA) and EU (CE marked Class I medical device)
Genetic Diseases		
ELAPRASE (idursulfase)	Hunter Syndrome (Mucopolysaccharidosis Type II, MPS II)	Global[1]
REPLAGAL (agalsidase alfa)	Fabry Disease	Europe, Latin America and Asia Pacific[2]
VPRIV (velaglucerase alfa)	Gaucher disease, Type I	Global
Neuroscience		
VYVANSE/VENVANSE/ELVANSE/TYVENSE/ VUXEN/ ADUVANZ (lisdexamfetamine dimesylate)	Attention Deficit Hyperactivity Disorder ("ADHD") and binge eating disorder ("BED") ADHD only	U.S., Canada, Europe and Brazil[3]
ADDERALL XR (mixed salts of a single-entity amphetamine)	ADHD	U.S. and Canada
MYDAYIS (mixed salts of a single-entity amphetamine)	ADHD	U.S.
Immunology		
GAMMAGARD LIQUID/KIOVIG (Immune globulin intravenous (Human))	Primary immunodeficiency	Global[4]
GAMMAGARD S/D (Immune globulin intravenous (Human))	Primary immunodeficiency	U.S., Europe, Canada and Japan
HYQVIA (Immune Globulin Infusion 10% (Human) with Recombinant Human Hyaluronidase)	Primary immunodeficiency	U.S., Europe, Canada and Australia

Products	Disease area	Key territories
CUVITRU (Immune Globulin Subcutaneous (Human))	Primary immunodeficiency	U.S., Europe and Canada
FLEXBUMIN (Human Albumin)	Hypovolemia, hypoalbuminemia	Global
CINRYZE (C1 esterase inhibitor (human))	HAE	U.S., Canada, Europe and Latin America[5]
FIRAZYR (icatibant)	HAE	Global
Internal Medicine		
FOSRENOL (lanthanum carbonate)	Hyperphosphatemia in CKD-5D	Global[6], [7], [8]
LIALDA (mesalamine)/MEZAVANT (mesalamine)	Ulcerative Colitis	U.S., Canada, Europe and Japan[8], [9], [10]
PENTASA (mesalamine)	Ulcerative Colitis	U.S.
GATTEX/REVESTIVE (teduglutide (rDNA origin))	Short Bowel Syndrome (SBS)	U.S., Europe, Canada and Australia[11]
NATPAR/A (parathyroid hormone)	Control of hypocalcemia in patients with hypoparathyroidism	Global[12]
Ophthalmic		
XIIDRA (lifitegrast ophthalmic solution) 5%	Dry eye disease	Global

Notes:
(1) Marketed by Genzyme in Asia Pacific, Japan and South Africa under license.
(2) Marketed in Japan under license by Sumitomo Dainippon Pharma Co., Ltd., and distributed in Taiwan by Excelsior Company Ltd.
(3) Marketed in Brazil as VENVANSE and in the EU as ELVANSE or TYVANSE.
(4) Marketed in the U.S. as GAMMAGARD LIQUID and in the EU as KIOVIG.
(5) Shire owns European rights, except in Belgium, Finland, Luxembourg and the Netherlands, which are owned by Sanquin.
(6) Marketed in Japan by Bayer under license.
(7) Depending on the market, available as chewable tablet and/or oral powder.
(8) Marketed by distributors in certain other markets.
(9) Marketed in Japan by Mochida under license.
(10) Marketed in the U.S. as LIALDA and in Europe as MEZAVANT XL or MEZAVANT.
(11) Marketed in the U.S. as GATTEX and in Europe and Canada as REVESTIVE.
(12) Global rights, with the exception of Israel.

In hematology, Shire's principal products include:

- ADVATE (Antihemophilic Factor (Recombinant)), a recombinant Factor VIII (rFVIII) therapy. ADVATE is a recombinant antihemophilic factor indicated for use in adults and children with hemophilia A (congenital Factor VIII deficiency) for control and prevention of bleeding episodes, perioperative management and routine prophylaxis to prevent or reduce the frequency of bleeding episodes. It was approved in the U.S. in 2003 and the EU in 2004. As of September 30, 2018, it was approved in 70 countries worldwide.
- ADYNOVATE/ADYNOVI, an extended halflife rFVIII treatment for hemophilia A based on ADVATE. ADYNOVATE/ADYNOVI uses the same manufacturing process as ADVATE and adds a proven technology, PEGylation (a chemical process that prolongs the amount of time a compound remains in circulation, potentially allowing for fewer injections), which Shire has exclusively licensed from Nektar Therapeutics. ADYNOVATE was approved in the U.S. in November 2015 and in Japan in March 2016. It was approved under the name ADYNOVI in the EU in January 2018 and in Switzerland in September 2016.
- RIXUBIS (Coagulation Factor IX (Recombinant)) was launched in the U.S. in 2013 for the treatment of hemophilia B. RIXUBIS is an injectable medicine used to replace clotting Factor IX that is missing in people with hemophilia B. RIXUBIS was approved in the EU in December 2014 and Japan in December 2014. As of September 30, 2018, RIXUBIS was approved in 46 countries.
- FEIBA (Activated Prothrombin Complex Concentrate—aPCC), a plasma based inhibitor bypass therapy. Currently, FEIBA is the only agent indicated for use in all three settings; on demand,

prophylaxis and surgery. FEIBA can be used in both hemophilia A and hemophilia B patients with inhibitors for control of spontaneous bleeding episodes, to cover surgical interventions and routine prophylaxis to prevent or reduce the frequency of bleeding episodes. FEIBA was first approved in the U.S. in 1986, and as of September 30, 2018 was approved in 74 countries. In a number of markets (not the U.S.), FEIBA is also approved for acquired hemophilia.

- VONVENDI/VEYVONDI, a recombinant von Willebrand factor (VWF) used to replace the VWF the body is missing in von Willebrand disease. VONVENDI is a first in class recombinant factor and was approved by the FDA in December 2015, for on-demand treatment and control of bleeding episodes in adults 18 years and above with VWD. VONVENDI/VEYVONDI can also be given independent of recombinant Factor VIII (rFVIII), based on patient need. This attribute allows for tailored treatment for patients who may not require additional FVIII. VONVENDI/VEYVONDI was approved in the EU in August 2018.
- myPKFiT is Shire's latest development in the personalization of hemophilia care, building on Shire's strong commitment to continued innovation in hematology. Patients have complex needs and treatment goals that cannot be met with a one-size-fits-all approach. myPKFiT offers a personalized approach to hemophilia care that allows healthcare professionals to consider their patients' individual needs and to educate them on their personal pharmacokinetic (PK) profiles. Healthcare professionals can estimate a full PK curve with as few as two measurable blood samples, compared to 9 to 11 as recommended by international guidelines. Using the patient's individualized PK curve and additional patient information, healthcare professionals can develop a personalized, PK-guided prophylactic ADVATE or ADYNOVATE treatment regimen tailored to the individual patient's needs and treatment plan. The myPKFiT software is accompanied by a mobile application for patients that allows users to view estimated FVIII levels, track their treatment, and export data. myPKFiT is only approved in the U.S. for use with ADVATE.

In genetic diseases, Shire's principal products include:

- REPLAGAL, an enzyme replacement marketed for the treatment of Fabry disease outside of the U.S. Fabry disease is a rare, inherited genetic disorder resulting from a deficiency in the activity of the lysosomal enzyme alpha-galactosidase A, which is involved in the breakdown of fats. REPLAGAL is a fully human alpha-galactosidase A protein made in a human cell line which is designed to replace the deficient alpha-galactosidase A with an active enzyme to ameliorate certain clinical manifestations of Fabry disease. In August 2001, REPLAGAL was granted marketing authorization in the EU. As of September 30, 2018, REPLAGAL was approved in 61 countries, excluding the U.S.
- VPRIV, an enzyme replacement treatment for type 1 Gaucher disease. Gaucher disease is a rare, inherited genetic disorder which results in a deficiency of the lysosomal enzyme beta-glucocerebrosidase. VPRIV was approved by the FDA in February 2010, for long term enzyme replacement therapy for patients with type 1 Gaucher disease. The EMA approved the marketing authorization for the use of VPRIV in August 2010. VPRIV has been granted orphan drug status in the EU with up to 12 years of market exclusivity from August 2010. As of September 30, 2018, VPRIV was approved in 54 countries.
- ELAPRASE, an enzyme replacement treatment for Hunter syndrome (also known as Mucopolysaccharidosis Type II or MPS II). Hunter syndrome is a rare, inherited genetic disorder, mainly affecting males that interferes with the body's ability to break down and recycle waste substances. ELAPRASE was approved by the FDA in July 2006 and granted marketing authorization by the EMA in January 2007 for the long term treatment of patients with Hunter syndrome. ELAPRASE benefits from the 12 years of data exclusivity from the date of grant of registration given to innovator biologics in the U.S. under the ACA. ELAPRASE received approval from the MHLW in October 2007. As part of an agreement with Genzyme, Genzyme manages the sales and distribution of ELAPRASE in Japan as well as certain other countries in the Asia Pacific region. As of September 30, 2018, ELAPRASE was approved in 71 countries.

In neuroscience, Shire's principal products include:

- VYVANSE, a stimulant for the treatment of ADHD, where the amino acid l-lysine is linked to d-amphetamine. VYVANSE is therapeutically inactive until metabolized in the body. The FDA approved VYVANSE as a once-daily treatment for children aged 6 to 12 with ADHD in February 2007, for adults in April 2008 and for adolescents aged 13 to 17 in November 2010. In addition,

VYVANSE became the first drug in its class to be approved by the FDA for maintenance treatment, having been approved both as a maintenance treatment in adults with ADHD in January 2012, and for maintenance treatment in pediatrics and adolescents aged 6 to 17 in April 2013. VYVANSE is available in the U.S. in seven dosage strengths and in two different formulations capsules and chewable. The product is approved and marketed in selected European countries, Australia, Canada and Latin America under a variety of trade names VYVANSE/VENVANSE/ELVANSE/ TYVENSE/VUXEN/ADUVANZ. VYVANSE was also approved in the U.S. in January 2015 as the first and only treatment of moderate to severe BED in adults. VYVANSE was approved for the treatment of BED in Canada on September 30, 2018.

- ADDERALL XR, an extended release treatment for ADHD designed to provide once-daily dosing. The FDA approved ADDERALL XR as a once-daily treatment for children aged 6 to 12 with ADHD in October 2001, for adults in August 2004 and for adolescents aged 13 to 17 in July 2005.
- MYDAYIS (mixed salts of a single-entity amphetamine product), a once-daily, extended-release treatment composed of three types of drug-releasing beads now available for prescription in the United States. The FDA approved MYDAYIS on June 20, 2017 for patients 13 years and older with ADHD. MYDAYIS is not for use in children 12 years and younger.

In immunology, Shire's principal products include:

- GAMMAGARD LIQUID (Immune Globulin Intravenous (Human) 10%), a liquid formulation of the antibodyreplacement therapy immunoglobulin product. It was originally approved by the FDA in April 2005. GAMMAGARD LIQUID is used to treat adult and pediatric patients two years of age or older with primary immunodeficiencies ("PID") and can be administered either intravenously or subcutaneously. GAMMAGARD LIQUID is also used to treat adult patients with multifocal motor neuropathy (MMN) administered intravenously. It can be administered either intravenously or subcutaneously. KIOVIG is the brand name used for GAMMAGARD LIQUID in many countries outside of the U.S. KIOVIG is approved in Europe for use by patients with PID and certain secondary immunodeficiencies, and for adults with MMN. As of September 30, 2018, GAMMAGARD LIQUID/KIOVIG was approved in 72 countries.
- GAMMAGARD S/D (Immune Globulin Intravenous (Human)) IgA less than 1 μg/mL in a 5% solution is indicated for the treatment of PID in patients two years old and older. GAMMAGARD S/D is also indicated for prevention of bacterial infections in hypogammaglobulinemia and/or recurrent bacterial infections associated with Bcell chronic lymphocytic leukemia (CLL), treatment of adult patients with chronic idiopathic thrombocytopenic purpura (ITP) to increase platelet count and to prevent and/or control bleeding, and prevention of coronary artery aneurysms associated with Kawasaki Syndrome in pediatric patients. GAMMAGARD S/D is provided for patients who require a low IgA content in their IV treatment (IgA less than 1 μg/mL in a 5% solution). GAMMAGARD S/D was initially approved in the U.S. in 1994. As of September 30, 2018, GAMMAGARD S/D was approved in 21 countries.
- HYQVIA (Immune Globulin Infusion 10% (Human) with Recombinant Human Hyaluronidase), a product consisting of human normal immunoglobulin (IG) and recombinant human hyaluronidase (licensed from Halozyme). The IG provides the therapeutic effect and the recombinant human hyaluronidase facilitates the dispersion and absorption of the IG administered subcutaneously, increasing its bioavailability. The IG is a 10% solution that is prepared from human plasma consisting of at least 98% immunoglobulin G, which contains a broad spectrum of antibodies. HYQVIA is the only subcutaneous IG treatment for PID patients with a dosing regimen requiring only one infusion up to once per month and one injection site per infusion to deliver a full therapeutic dose of IG. HYQVIA is approved in Europe for use by patients with PID syndromes and myeloma or CLL with severe secondary hypogammaglobulinemia and recurrent infections, and in the United States for adults with PID. HYQVIA was approved in Europe in May 2013 and the U.S. in September 2014. As of September 30, 2018, HYQVIA was approved in 36 countries.
- CUVITRU, an Immune Globulin Subcutaneous (Human) (IGSC) 20% Solution indicated as replacement therapy for primary humoral immunodeficiency in adult and pediatric patients two years of age and older. CUVITRU is also indicated in the EU for the treatment of certain secondary immunodeficiencies. CUVITRU is the only 20% subcutaneous IG treatment option without proline and with the ability to infuse up to 60 mL (12 grams) per site and 60 mL per hour, per site as tolerated, resulting in fewer infusion sites and shorter infusion durations compared to other conventional subcutaneous IG treatments. CUVITRU was approved in the U.S. in September 2016. As of September 30, 2018, CUVITRU was approved in 21 countries.

In bio therapeutics, Shire's principal products include:

- FLEXBUMIN (Human Albumin in a bag) and Human Albumin (glass) are available as 5% and 25% solutions. Both products are indicated for hypovolemia, hypoalbuminemia due to general causes and burns, and for use during cardiopulmonary bypass surgery as a component of the pump prime. FLEXBUMIN 25% is also indicated for hypoalbuminemia associated with adult respiratory distress syndrome and nephrosis, and hemolytic disease of the newborn. FLEXBUMIN was first approved in the U.S. in 2005. As of September 30, 2018, FLEXBUMIN was approved in 49 countries.

In Hereditary Angioedema (HAE), Shire's principal products include:

- TAKHZYRO (SHP643), a fully human monoclonal antibody that specifically binds and decreases plasma kallikrein. TAKHZYRO is the only monoclonal antibody (mAb) that provides targeted inhibition of plasma kallikrein, an enzyme which is chronically uncontrolled in people with hereditary angioedema (HAE), to help prevent attacks. Shire added TAKHZYRO to its HAE portfolio with the acquisition of Dyax Corp., which was completed in January 2016. On August 23, 2018, the FDA approved TAKHZYRO injection for prophylaxis to prevent attacks of HAE in patients 12 years of age and older. On October 18, 2018, TAKHZYRO received a positive opinion recommending the granting of marketing authorization in the EU from the CHMP for the prevention of HAE attacks.
- CINRYZE (C1 esterase inhibitor (human)), a C1 esterase inhibitor therapy for routine prophylaxis against HAE attacks. CINRYZE is marketed and sold in the U.S. for routine prophylaxis against HAE attacks in adolescent and adult patients with HAE. CINRYZE enjoys U.S. biological data exclusivity until October 2020. CINRYZE includes a self-administration option for appropriately trained patients. In June 2011, marketing authorization in the EU was granted for CINRYZE in adults and adolescents with HAE for routine prevention, pre-procedure prevention and acute treatment of angioedema attacks. In March 2017, the European Commission approved a label extension for routine prevention of angioedema attacks in children (ages six years and above) with severe and recurrent attacks of HAE who are intolerant to or insufficiently protected by oral preventions treatments, or patients who are inadequately managed with repeated acute treatment. The EC also approved CINRYZE for the treatment and pre-procedure prevention of angioedema attacks in children (ages two years and above) with HAE. As of September 30, 2018, CINRYZE was approved in 36 countries.
- FIRAZYR (icatibant injection), a bradykinin B2 receptor antagonist developed for the treatment of acute attacks of HAE. In July 2008, the EC granted marketing authorization throughout the EU for the use of FIRAZYR for the symptomatic treatment of acute attacks of HAE in adults, and in March 2011 approved FIRAZYR for self-administration after training in subcutaneous injection technique by a healthcare professional. In August 2011, the FDA granted marketing approval for FIRAZYR in the U.S. for treatment of acute attacks of HAE in adults aged 18 and older and, after injection training, patients may self-administer FIRAZYR. FIRAZYR has been granted orphan drug exclusivity by both the FDA and the EMA, providing it with up to seven and ten years market exclusivity in the U.S. and EU, respectively, from the date of the grant of the relevant marketing authorization. On October 26, 2017, Shire announced that the EC approved a label extension for FIRAZYR (icatibant injection), broadening its use to adolescents and children aged 2 years and older, with HAE caused by C1-esterase-inhibitor (C1-INH) deficiency. As of September 30, 2018, FIRAZYR was approved in 46 countries.

In internal medicine, Shire's principal products include:

- GATTEX/REVESTIVE (teduglutide rDNA origin) for injection is the first prescription medicine for the long-term treatment of adults with SBS who are dependent on parenteral support. SBS is an ultra rare condition in which a large portion of the intestine has been removed by surgery. As a result, people cannot absorb enough nutrients or fluids from food and liquids to maintain good health. GATTEX/REVESTIVE may help the remaining intestine absorb more fluids and reduce the need for parenteral support. GATTEX was approved by the FDA in December 2012. REVESTIVE was approved in the EU in August 2012. As of September 30, 2018, GATTEX/REVESTIVE was approved in the U.S., Canada, EU, Australia, Israel, South Korea and Switzerland.
- NATPARA (parathyroid hormone) for injection is indicated as an adjunct to calcium and vitamin D to control hypocalcemia in patients with hypoparathyroidism (HPT). HPT is a rare condition in

which the parathyroid glands fail to produce sufficient amounts of parathyroid hormone (PTH) or where the PTH lacks biologic activity. NATPARA was approved by the FDA in January 2015. NATPARA has been granted orphan drug exclusivity by the FDA. NATPARA also benefits from the 12 years of data exclusivity from the date of registration given to innovator biologics in the U.S. under the ACA. NATPAR was granted conditional marketing authorization in Europe by CHMP in April 2017. As of September 30, 2018, NATPAR/A was approved in the U.S., EU and Israel.

- LIALDA/MEZAVANT is approved for the induction of remission in patients with active mild to moderate UC and for the maintenance of remission of UC. LIALDA is marketed in certain territories outside the U.S. by Shire under the trade name MEZAVANT and MEZAVANT XL. As of September 30, 2018, LIALDA/MEZAVANT was approved in 32 countries and made available either directly or through distributor arrangements. Generic versions of LIALDA are now available in the U.S.

In oncology, Shire's principal products previously included:

- ONCASPAR is approved in the U.S., Canada and EU as a component of a multi-agent chemotherapeutic regimen for the first-line treatment of patients with ALL. As of August 31, 2018, ONCASPAR was approved in 46 countries.
- ONIVYDE (pegylated liposomal formulation of irinotecan) is approved in the U.S. and EU in combination with fluorouracil (5-FU) and leucovorin (LV), for the treatment of patients with metastatic adenocarcinoma of the pancreas after disease progression following gemcitabine based therapy. As of August 31, 2018, ONIVYDE was approved in 38 countries.

On August 31, 2018, Shire sold its oncology franchise, including the above products, to Servier for $2.4 billion. As a result of this transaction, ONCASPAR, ONIVYDE and other oncology-related products marketed by Shire no longer comprise part of its business.

In ophthalmics, Shire's principal product is:

- XIIDRA (Lifitegrast ophthalmic solution 5%), an integrin antagonist that reduces chronic inflammation associated with dry eye disease. It was approved by the FDA in July 2016 as the first and only prescription eye drop indicated for the treatment of the signs and symptoms of dry eye disease. XIIDRA is currently approved and marketed in the U.S. XIIDRA was approved in Canada in December 2017 and further expansion plans are underway, with filings submitted in Israel and other international markets.

Shire also receives royalties from the following products:

- Shire receives royalties arising from collaborations with Amgen. Amgen markets Cinacalcet HCI, a treatment for secondary hyperparathyroidismas, as Sensipar in the U.S. and as Mimpara in the EU. Shire is entitled to royalties from the relevant net sales of these in or through 2018 for all other territories.
- Shire receives royalties on antiviral products licensed to GlaxoSmithKline; 3TC for HIV and Zeffix Hepatitis B virus. Royalty terms expired in most territories outside of the U.S. during 2012. In the U.S., remaining royalty terms expire in 2018.
- Shire licensed the rights to FOSRENOL in Japan to Bayer in December 2003. Bayer launched FOSRENOL in Japan in March 2009. Shire receives royalties from Bayer's sales of FOSRENOL in Japan. Shire has also received milestone payments from Bayer based on the achievement of certain sales thresholds and may receive further milestone payments in the future if certain sales thresholds are achieved.
- Shire currently receives royalties from the sales of the generic version of ADDERALL XR ("AXR") from Impax Laboratories, Inc. and Teva Pharmaceuticals Industries, Ltd. Shire also receives royalties from Prasco, LLC (Prasco) and Sandoz Inc. from sales of the authorized generic version of AXR supplied by Shire. Royalty amounts for authorized generic sales are reported as part of Shire's net product sales. In 2016, Teva Pharmaceuticals Industries, Ltd. began selling a generic version of AXR under an ANDA acquired from Allergan plc.

The table below lists Shire's products in clinical development and registration as of September 30, 2018, by stage of development indicating the most advanced development status reached in major markets and Shire's

territorial rights in respect of each product candidate. If these product candidates are ultimately approved and marketed, they may benefit from patent and/or other forms of exclusivity. However, as these product candidates remain in development and are subject to change as development progresses, the patents listed may not necessarily be representative of the scope of patent protection that may ultimately be available if each product candidate is approved and marketed.

Product	Disease area	Development status as of September 30, 2018	Shire's territorial rights	Modality Shire's territorial rights
SHP489 (VYVANSE)	ADHD in children and adolescents	Registration in Japan	Global[1]	Small Molecule
SHP606 (XIIDRA)	Dry Eye Disease	Registration in EU	Global	Small Molecule
SHP643 (TAKHZYRO)	HAE prophylaxis	Registration[2]	Global	Antibody
SHP555	Chronic idiopathic constipation in adults	Registration[2]	U.S. and EU	Small Molecule
SHP616 (CINRYZE)	Prophylaxis and acute treatment of angioedema	Phase 3 in Japan	Global	Protein Replacement Therapy
SHP616 (CINRYZE)	Antibody Mediated Rejection	Phase 3	Global	Protein Replacement Therapy
SHP616 (CINRYZE)	Subcutaneous formulation for HAE prophylaxis	Phase 3	Global	Protein Replacement Therapy
SHP620*	Treatment of cytomegalovirus infection in transplant patients	Phase 3	Global[3]	Antiviral
SHP621	Treatment of adolescents and adults with Eosinophilic Esophagitis (EoE)	Phase 3	U.S.	Small Molecule
SHP633 (REVESTIVE)	Treatment of adults with SBS	Phase 3 in Japan	Global	Peptide
SHP633 (GATTEX/REVESTIVE)	Treatment of pediatric patients with SBS	Phase 3	Global	Peptide
SHP640*	Treatment of infectious conjunctivitis	Phase 3	Global	Small Molecule
SHP647*	Ulcerative Colitis	Phase 3	Global	Monoclonal Antibody
SHP647*	Crohn's Disease	Phase 3	Global	Monoclonal Antibody
SHP609*	Neurocognitive Decline Associated with Hunter Syndrome	Phase 2/3	Global[5]	Enzyme Replacement Therapy
SHP655*	Congenital Thrombotic Thrombocytopenic Purpura	Phase 3	Global[6]	Protein
SHP671 (HYQVIA)	Chronic Inflammatory Demyelinating Polyradiculoneuropathy (CIDP)	Phase 3	Global	Antibody
SHP671 (HYQVIA)	Primary Immunodeficiency in pediatric patients	Phase 3	Global	Antibody
SHP607*	Chronic Lung Disease	Phase 2	Global	Enzyme Replacement Therapy
SHP615 (BUCCOLAM)	Convulsive Seizures	Phase 3 in Japan	Global	Small Molecule
SHP615 (BUCCOLAM)	Convulsive Seizures	Phase 2 in U.S.	Global	Small Molecule
SHP672 (OBIZUR)	Congenital Hemophilia A with Inhibitors (CHAWI) surgery	Phase 3	Global	Biologic
SHP625*	Alagille Syndrome	Phase 2	Global	Small Molecule
SHP625*	Progressive Familial Intrahepatic Cholestasis	Phase 2	Global	Small Molecule
SHP652	Systemic Lupus Erythematosus	Phase 2 (on clinical hold)	U.S., EU, JP, select APAC and LATAM countries	Protein
SHP659*	Dry Eye Disease	Phase 2	Global	Small Molecule

Product	Disease area	Development status as of September 30, 2018	Shire's territorial rights	Modality Shire's territorial rights
SHP611*	Metachromatic Leukodystrophy	Phase 1	Global	Enzyme Replacement Therapy
SHP631*	Treatment of both the Central nervous system and somatic manifestations in patients with MPS II	Phase 1	Global	Enzyme Replacement Therapy/Fusion Protein
SHP634 (NATPARA)	Hypoparathyroidism	Phase 1 in Japan	Global[7]	Peptide
SHP639*	Glaucoma	Phase 1	Global	Peptide
SHP654*	Hemophilia A	Phase 1	Global	Gene Therapy
SHP680*	Neurological Conditions	Phase 1	Global	Small Molecule

* Denotes NME

Notes:
(1) Under co-development with Shionogi in Japan under a license and collaboration agreement.
(2) Marketed in the EU.
(3) Global Rights, with the exception of Japan.
(4) On October 27, 2018, Takeda announced that it was in discussions with the European Commission, the EU antitrust regulator, in relation to the future potential overlap in the area of IBD between its marketed product *ENTYVIO* and Shire's pipeline compound SHP647, which is currently in Phase III clinical trials, and that it had proposed an antitrust remedy of a potential divestment of SHP647 and certain associated rights.
(5) Under license, Genzyme has rights to manage marketing and distribution in Asia Pacific, Japan and South Africa.
(6) Global rights, with the exception of Japan (where the licensor, Kaketsuken, has retained rights).
(7) Global rights, with the exception of Israel.

Availability of Raw Materials

Shire purchases, in the ordinary course of business, raw materials and supplies essential to its operations from numerous suppliers around the world, including in the U.S. While efforts are made to diversify Shire's sources of components and materials, in certain instances Shire acquires components and materials from a sole supplier. Human plasma is a critical raw material in Shire's business. Shire believes that its ability to internally and externally source plasma represents a distinctive and flexible infrastructure, which provides Shire a unique capability with respect to the consistent delivery of high quality plasma-based products. Shire owns and operates plasma collection facilities in the U.S. and Austria through its wholly owned subsidiary BioLife Plasma Services L.P. ("BioLife"). As of September 30, 2018, BioLife operated and maintained more than 100 plasma collection facilities in 27 states throughout the U.S. and at 21 locations in Europe. Shire also maintains relationships with other plasma suppliers to ensure that it retains the flexibility to meet market demand for its plasma based therapies.

Material Customers

Shire's three largest trade customers are AmerisourceBergen Corporation, McKesson Corp and Cardinal Health, Inc., which are based in the U.S. In 2017, these wholesale customers accounted for approximately 10%, 9% and 7% of product sales, respectively.

Intellectual Property

The following table shows the patent numbers that are listed in the Patent and Exclusivity Information Addendum of the FDA's publication, Approved Drug Products with Therapeutic Equivalence Evaluations (the "Orange Book"), for some of Shire's more significant, revenue-generating products approved via an NDA or an NDA under Section 505(b)(2) under the U.S. Federal Food, Drug, and Cosmetic Act that references a previously approved drug, which are owned by or licensed to Shire and relevant to an understanding of Shire's business taken as a whole. There may be other patents related to these products, methods of manufacturing, or use of the products in the treatment of particular diseases or conditions that are not listed in the Orange Book. Some of Shire's other products are biologics which are protected by patents and forms of unpatented confidential information, including manufacturing trade secrets and proprietary know-how, that are not listed in the Orange Book. In addition, expiration dates set forth below do not necessarily reflect possible changes to the patent term afforded by, among other things, patent term extensions in the U.S. or other territories or changes that may result

as a consequence of the outcome of litigation or other proceedings. Shire also holds patents in other jurisdictions, such as the EU, Canada and Japan, and has patent applications pending in such jurisdictions, as well as in the U.S.

Product	Orange Book listed U.S. patent	Expiration date
ADDERALL XR	US 6322819	October 21, 2018
	US RE41148	October 21, 2018
	US 6605300	October 21, 2018
	US RE42096	October 21, 2018
FIRAZYR	US 5648333	July 15, 2019
LIALDA/MEZAVANT	US 6773720	June 8, 2020
VYVANSE	US 7105486	February 24, 2023
	US 7223735	February 24, 2023
	US 7655630	February 24, 2023
	US 7659253	February 24, 2023
	US 7659254	February 24, 2023
	US 7662787	February 24, 2023
	US 7662788	February 24, 2023
	US 7671030	February 24, 2023
	US 7671031	February 24, 2023
	US 7674774	February 24, 2023
	US 7678770	February 24, 2023
	US 7678771	February 24, 2023
	US 7687466	February 24, 2023
	US 7687467	February 24, 2023
	US 7700561	February 24, 2023
	US 7713936	February 24, 2023
	US 7718619	February 24, 2023
	US 7723305	February 24, 2023
GATTEX/REVESTIVE	US 5789379	April 14, 2020
	US 7056886	September 18, 2022
	US 7847061	November 1, 2025
	US 9060992	November 1, 2025
	US 9539310	November 1, 2025
	US 9545434	November 1, 2025
	US 9545435	November 1, 2025
	US 9555079	November 1, 2025
	US 9572867	November 1, 2025
	US 9592273	November 1, 2025
	US 9592274	November 1, 2025
	US 9968655	November 1, 2025
	US 9968656	November 1, 2025
	US 9968658	November 1, 2025
	US 9974835	November 1, 2025
	US 9974837	November 1, 2025
	US 9981014	November 1, 2025
	US 9981016	November 1, 2025
	US 9987334	November 1, 2025
	US 9987335	November 1, 2025
	US 9993528	November 1, 2025
XIIDRA	US 7314938	March 10, 2025
	US 7745460	November 5, 2024
	US 7790743	November 5, 2024
	US 7928122	November 5, 2024
	US 8084047	May 17, 2026
	US 8168655	May 9, 2029

Product	Orange Book listed U.S. patent	Expiration date
	US 8367701	April 15, 2029
	US 8592450	May 17, 2026
	US 8927574	November 12, 2030
	US 9085553	July 25, 2033
	US 9216174	November 5, 2024
	US 9353088	October 21, 2030
	US 9447077	April 15, 2029
	US 9890141	October 21, 2030
MYDAYIS	US RE41148	October 21, 2018
	US RE42096	October 21, 2018
	US 6913768	May 24, 2023
	US 8846100	August 24, 2029
	US 9173857	May 12, 2026

REGULATION

Regulation of the Pharmaceutical Industry

Overview

The pharmaceutical industry is subject to extensive global regulation by regional, national, state and local agencies. The FDA and other federal statutes and regulations in the United States, MHLW in Japan and laws and regulations of foreign governments govern the testing, approval, production, labeling, distribution, post-market surveillance, advertising, dissemination of information and promotion of our products.

The introduction of new pharmaceutical products generally entails a lengthy approval process. Products must be authorized or registered prior to marketing, and such authorization or registration must subsequently be maintained. In recent years, the registration process has required increased testing and documentation for the approval of new drugs, with a corresponding increase in the expense of product introduction. To register a pharmaceutical product, a registration dossier containing evidence establishing the safety, efficacy and quality of the product must be submitted to regulatory authorities. Generally, a therapeutic product must be registered in each country in which it will be sold. It is possible that a drug can be registered and marketed in one country while the registration authority in another country may, prior to registration, request additional information from the pharmaceutical company or even reject the product. It is also possible that a drug may be approved for different indications in different countries. The registration process generally takes between six months and several years, depending on the country, the quality of the data submitted, the efficiency of the registration authority's procedures and the nature of the product. Many countries provide for accelerated processing of registration applications for innovative products of particular therapeutic interest. In recent years, efforts have been made among the US, the EU and Japan to harmonize registration requirements in order to achieve shorter development and registration times for medical products.

Pharmaceutical Regulation in the United States

All pharmaceutical manufacturers selling products in the United States are subject to extensive regulation by the U.S. federal government, principally by FDA, the Drug Enforcement Administration, and, to a lesser extent, by state and local governments. Applications for drug registration are submitted to and reviewed by the FDA, which regulates the testing, manufacturing, labeling and approval for marketing of pharmaceutical products intended for commercialization. The FDA continues to monitor the safety of pharmaceutical products after they have been approved for sale in the US market. When a pharmaceutical company has gathered data to demonstrate a drug's safety, efficacy and quality, it may file for the drug a NDA or BLA, along with information regarding the clinical experiences of patients tested in the drug's clinical trials. A Supplemental New Drug Application ("sNDA") or BLA amendment must be filed for new indications for a previously approved drug.

Once an application is submitted, the FDA assigns reviewers from its staff, including experts in biopharmaceutics, chemistry, clinical microbiology, pharmacology/toxicology, and statistics. After a complete review, these content experts then provide written evaluations of the NDA or BLA. These recommendations are consolidated and are used by senior FDA staff in its final evaluation of the NDA or BLA. Based on that final evaluation, the FDA then provides to the NDA or BLA's sponsor an approval, or a "complete response" letter if the NDA or BLA application is not approved. If not approved, the letter will state the specific deficiencies in the NDA or BLA which need to be addressed. The sponsor must then submit an adequate response to the deficiencies in order to restart the review procedure. Once the FDA has approved an NDA, BLA, sNDA or BLA amendment, the company can make the new drug available for physicians to prescribe. The drug owner must submit periodic reports to the FDA, including any cases of adverse reactions. For some medications, the FDA requires additional post-approval studies (Phase IV) to evaluate long-term effects or to gather information on the use of the product under specified conditions. Throughout the life cycle of a product, the FDA requires compliance with standards relating to good laboratory, clinical and manufacturing practices. The FDA also requires compliance with rules pertaining to the manner in which we may promote our products.

The Drug Price Competition and Patent Restoration Term Act of 1954, known as the Hatch-Waxman Act, established the application procedures for obtaining FDA approval for generic forms of brand-name drugs. This act also provides market exclusivity provisions for brand-name drugs that can delay the submission and/or the approval of abbreviated new drug applications ("ANDAs"). Under this procedure, instead of conducting full-scale pre-clinical and clinical trials, the FDA can accept data establishing that the drug formulation, which is the subject of an abbreviated application, is bio-equivalent and has the same therapeutic effect as the previously approved drug, among other requirements. The Orphan Drug Act of 1983 grants seven years of exclusive

marketing rights to a specific drug for a specific orphan indication. The term "orphan drug" refers, generally, to a drug that treats a rare disease affecting fewer than 200,000 Americans. Market exclusivity provisions are distinct from patent protections and apply equally to patented and non-patented drug products. Another provision of the Hatch-Waxman Act extends certain patents for up to five years as compensation for the reduction of effective life of the patent which resulted from time spent in clinical trials and time spent by the FDA reviewing a drug application.

Under the Hatch-Waxman Act, any company submitting an ANDA or an NDA under Section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act (i.e., an NDA that, similar to an ANDA, relies, in whole or in part, on the FDA's prior approval of another company's drug product; also known as a "505(b)(2) application") must make certain certifications with respect to the patent status of the drug for which it is seeking approval. In the event that such applicant plans to challenge the validity or enforceability of an existing listed patent or asserts that the proposed product does not infringe an existing listed patent, it files a "Paragraph IV" certification. In the case of ANDAs, the Hatch-Waxman Act provides for a potential 180-day period of generic exclusivity for the first company to submit an ANDA with a Paragraph IV certification. This filing triggers a regulatory process in which the FDA is required to delay the final approval of subsequently filed ANDAs containing Paragraph IV certifications until 180 days after the first commercial marketing. For both ANDAs and 505(b)(2) applications, when litigation is brought by the patent holder, in response to this Paragraph IV certification, the FDA generally may not approve the ANDA or 505(b)(2) application until the earlier of 30 months or a court decision finding the patent invalid, not infringed or unenforceable. Submission of an ANDA or a 505(b)(2) application with a Paragraph IV certification can result in protracted and expensive patent litigation.

As a result of factors such as the adoption of the ACA, the recurring political focus on deficit reduction and public pressure on elected officials in reaction to price increases by certain pharmaceutical manufacturers, there is a significant likelihood of continued actions to control prices. The ACA mandated the creation of a new entity, the Independent Payment Advisory Board (the "IPAB"), which was granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. As part of its 2018 spending bill, Congress repealed the IPAB in February 2018. However, price reduction remains a major priority, and there is a strong possibility that government officials will continue to search for additional ways to reduce or control prices, including new federal or state legislation mandating drug price controls, which could include limits on annual price increases or maximum price levels. In 2017, several states passed legislation impacting pricing or requiring price transparency reporting, including California, Louisiana, Nevada and Maryland. The California law will require 60 day advance notification of price increases for products exceeding a specific threshold over the past two years, as well as additional quarterly reporting requirements

Pharmaceutical Regulation in Japan

The Pharmaceutical Act

Manufacturers and sellers of drugs, quasi-drugs, cosmetics, medical devices and regenerative medical products in Japan are subject to the supervision of the Minister of Health, Labour and Welfare (the "Minister") primarily under the Pharmaceutical Act. Part of the work performed under the authority of the Minister may be undertaken by prefectural governors.

Under the Pharmaceutical Act, a person is required to obtain from the Minister a renewable, generally five-year manufacturing and marketing license in order to conduct the business of marketing, leasing or providing drugs, quasi-drugs, cosmetics, medical devices or regenerative medical products ("Designated Products"), as the case may be, that are manufactured (or outsourced to a third party for manufacturing) or imported by such person. The Minister has the power not to grant the license if (i) the methods of quality control for Designated Products are not in conformity with the standards known as the Good Quality Practice or the Quality Management System ("QMS"), each of which is stipulated by the ministerial ordinance of the MHLW, (ii) the methods of post-marketing safety management (collection and analysis of information and data necessary for proper use, including those related to quality, efficacy and safety, and necessary measures to be taken based on the results thereof) of the Designated Products are not in conformity with the standards known as the Good Vigilance Practice ("GVP"), stipulated by the ministerial ordinance of the MHLW or (iii) an applicant falls under certain disqualifying provisions of the Pharmaceutical Act. A manufacturer and seller that have obtained a manufacturing and marketing license must appoint a qualified general manufacturing and marketing supervisor in order to supervise product quality control and post-marketing safety management. The manufacturing and marketing license holder must also comply with various other items stipulated by the ministerial ordinances of the MHLW conducting the licensed business.

In order to conduct the business of manufacturing drugs, quasi-drugs, cosmetics or regenerative medical products, as the case may be, a person is also required to obtain from the Minister a renewable, generally five-year manufacturing license for each manufacturing site, which is classified in accordance with the ministerial ordinance of the MHLW. The Minister has the power not to grant a license if (i) the facilities and equipment of the manufacturing site for drugs, quasi-drugs, cosmetics or regenerative medical products, as the case may be, are not in conformity with the standards stipulated by the ministerial ordinance of the MHLW or (ii) an applicant falls under certain disqualifying provisions of the Pharmaceutical Act. In order to engage in manufacturing of medical devices, a manufacturer is required to undertake a renewable registration, generally having a five-year term, for each manufacturing site.

In addition, in order to conduct the business of marketing, leasing or providing Designated Products, it is necessary under the Pharmaceutical Act to obtain product approval from the Minister for manufacturing and marketing for each kind of product (other than those specified by the Minister). An approval shall not be granted if (i) an applicant has not obtained the manufacturing and marketing license as set out above, (ii) a manufacturing site for the product has not obtained a manufacturing license to manufacture the relevant type of Designated Product, or has not undertaken a registration to manufacture the relevant type of medical devices, as the case may be, as set out above, (iii) as a result of a review of, among other things, the trade name, ingredients, quantities, manufacturing method, dosage and administration, method of use, indications, performance, side effects and other characteristics (in the case of regenerative medical products, cellular components and introduced genes will also be subject to review), (a) the relevant Designated Product are not recognized to have the indications or performance specified in the application, (b) the relevant Designated Product are found to have no value as drugs, quasi-drugs, medical devices or regenerative medical products since they have harmful side effects outweighing their indications or performance, or (c) the relevant Designated Product fall under the cases prescribed by the ministerial ordinances of the MHLW as not being appropriate as the relevant category of Designated Product or (iv) the methods of manufacturing control or quality control used in the manufacturing site for the relevant Designated Product, is not in conformity with Good Manufacturing Practices, QMS and the Good Gene, Cellular, and Tissue-based Products Manufacturing Practice stipulated by the ministerial ordinances of the MHLW.

The data of results of clinical trials and other pertinent data must be attached for an application for approval. If the drugs, medical devices or regenerative medical products under application are of types designated by ministerial ordinance of the MHLW, the attached data mentioned above must be obtained in compliance with the standards established by the Minister, such as the GLP and the GCP stipulated by the ministerial ordinances of the MHLW. GLP is the standard for non-clinical safety studies on drugs, medical devices and regenerative medical products which provide the standards for personnel and organization for the tests, testing facilities and equipment, operation of testing, as well as for handling of certain substances/materials. GCP is the standard for clinical studies on drugs, medical devices and regenerative medical products for preparing, management and conducting of clinical trials. An application for the approval must be made through the PMDA, an independent administrative agency, which actually implements an approval review as set out above.

Any manufacturing and marketing license holder that obtained product approval for manufacturing and marketing of a new kind of drug or regenerative medical product as described above must have that drug or regenerative medical product re-examined by the Minister or the PMDA after a period ranging from four to ten years (depending on each type of product) from the date of the product approval if the drug or regenerative medical product is a new kind of product designated by the Minister. The re-examination is made by reconfirming whether the drug or regenerative product falls under any of the conditions for denying product approval which are described in (iii) above. Results of usage and other pertinent data must be attached for an application for a re-examination. In addition, if the product in question is a type of drug or regenerative medical product designated by ministerial ordinance of the MHLW, the attached data mentioned above must be obtained pursuant to GLP, GCP and standards known as Good Post-marketing Study Practice. The manufacturing and marketing license holder that obtained the product approval is also required to investigate, among other things, the results of usage and to periodically report to the Minister pursuant to the Pharmaceutical Act and the ministerial ordinances of the MHLW.

In addition, drug and regenerative medical product will be subject to re-evaluation by the Minister if the Minister so designates in consultation with the Pharmaceutical Affairs and Food Sanitation Council and releases a public notice about the re-evaluation. In that event, the re-evaluation is made by reconfirming whether the drug or regenerative medical product falls under any of the conditions for denying product approval in the same way as the re-examination described above.

If any manufacturer and seller that obtained a manufacturing and marketing license as mentioned above becomes aware of an alleged serious side effect or infection from its products of a type prescribed by ministerial ordinance of the MHLW, the manufacturing and marketing license holder must report to the Minister in accordance with the ministerial ordinance of the MHLW generally within 15 or 30 days depending on the seriousness of the side effect or infection. In addition, generally, under the GVP, any manufacturer and seller who obtained a manufacturing and marketing license as mentioned above must intensively examine the post-marketing safety of the products for a six-month period from their release in order to promptly detect any harmful side effect or infection.

The Pharmaceutical Act also provides for special regulations applicable to drugs, quasi-drugs, cosmetics and medical devices made of biological raw materials. These regulations impose various obligations on manufacturers and other persons in relation to manufacturing facilities, explanation to patients, labeling on products, record-keeping and reporting to the Minister.

Furthermore, under the Pharmaceutical Act, the Minister or a prefectural governor may take various measures to supervise manufacturing and marketing license holders of Designated Products. For example, the Minister or a prefectural governor may require manufacturing and marketing license holders of Designated Products to submit reports, and carry out inspections at their offices, if deemed necessary to monitor their compliance with the laws and regulations. The Minister has authority to order manufacturing and marketing license holders to temporarily suspend the marketing, leasing or providing of the Designated Products in order to prevent risks, or increases in risks, to the public health. Also, the Minister may revoke a license or approval granted to a manufacturing and marketing license holders, or order a temporary business suspension under certain limited circumstances such as violation of laws relating to drugs.

Price Regulation

In Japan, public medical insurance systems cover virtually the entire Japanese population. The public medical insurance system, however, is not applicable to any pharmaceutical product which is not listed on the NHI price list published by the Minister. To sell a pharmaceutical product in Japan, a manufacturer or a seller of pharmaceutical products must first have a new pharmaceutical product listed on the NHI price list for coverage under the public medical care insurance systems. Most prescription pharmaceutical products are used in medical services under the public medical insurance systems. The NHI price list provides rates for calculating the costs of pharmaceutical products used in medical services which may be charged to insurers, such as the national government, local government and health insurance societies, under the public medical insurance systems.

When a new pharmaceutical product is listed on the NHI price list, the price of the pharmaceutical product is determined either by daily price comparison of comparable pharmaceutical products with necessary adjustments for, such as, innovativeness, usefulness or size of the market, or, in the absence of comparable pharmaceutical products, by the cost calculation method, after consideration of the opinion of the manufacturer. Prices on the NHI price list are subject to revision, generally once every two years, on the basis of the actual prices at which the pharmaceutical products are purchased by medical institutions. To date, various methods, including a formula intended to accurately reflect the actual market prices, have been used.

In December 2016, the Japanese government announced basic reform principles for fundamental reforms of the drug pricing system, including an increase in the frequency of price revisions from every other year to annually. Annual price revisions are scheduled to become applicable from the fiscal year ending March 31, 2022.

In addition to the foregoing, we are subject to other laws and regulations in Japan applicable to pharmaceutical companies, including with respect to the possession and handling of regulated pharmaceutical substances.

Pharmaceutical Regulation in the EU

In the EU, there are three main procedures for application for authorization to market pharmaceutical products in the EU Member States: the Centralized Procedure, the Mutual Recognition Procedure and the Decentralized Procedure. It is also possible to obtain a pure national authorization for products intended for commercialization in a single EU Member State only, or for additional indications for licensed products.

Under the Centralized Procedure, applications are made to the EMA for an authorization which is valid throughout the EU. The Centralized Procedure is mandatory for all biotechnology products and for new chemical entities in cancer, neurodegenerative disorders, diabetes and AIDS, autoimmune diseases or other immune dysfunctions and optional for other new chemical entities or innovative medicinal products or in the interest of public health. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's safety, efficacy and quality, then the company may submit an application to the EMA. The EMA then receives and validates the application and the Committee for Medicinal Products for Human Use (the "CHMP") appoints a Rapporteur and Co-Rapporteur to lead review of the dossier. The entire review cycle must be completed within 210 days, although there is a "clock stop" at day 120, which allows the company to respond to questions set forth in the Rapporteur and Co-Rapporteur's Assessment Report. After the company's complete response is submitted to the EMA, the clock restarts on day 121. If there are further aspects of the dossier requiring clarification, the EMA will then request an Oral Explanation on day 180, in which case the sponsor must appear before the CHMP to provide the requested additional information. On day 210, the CHMP will then take a vote to recommend the approval or non-approval of the application. The final decision under this Centralized Procedure is a European Community decision which is binding in its entirety on all EU Member States. This decision occurs on average 60 days after a positive CHMP recommendation. In the case of a negative opinion, a written request for re-examination of the opinion can be made by the applicant within a time limit of 15 days from the date of the opinion. The detailed grounds for re-examination must be submitted to the EMA within 60 days from the date of the opinion.

Under the Mutual Recognition Procedure (the "MRP"), the company first obtains a marketing authorization from a single EU Member State, called the Reference Member State (the "RMS"), which will act for the marketing authorization holder to progressively gain national approval in the other EU Member States on the basis of the RMS's assessment. In the Decentralized Procedure (the "DCP"), the application is done simultaneously in selected or all Member States if a medicinal product has not yet been authorized in a Member State. During the DCP, the RMS drafts a Preliminary Assessment Report within 70 days, which is sent to the Concerned Member States (the "CMS") for comments by day 100. On day 105, if no consensus is reached on approval, there is a "clock stop." The clock is restarted on day 106 after the applicant's responses are received by the RMS and CMSs. Between day 106 and day 120, the RMS updates the preliminary assessment report for consideration by CMSs. If consensus is reached on day 120, then the procedure is closed. This will then proceed to the 30 days national procedure for implementing the decision if the product is considered approvable. Otherwise, the procedure will continue until day 210 or until consensus is reached. If consensus is not reached on day 210, the matter is referred to the Co-ordination Group for Mutual Recognition and Decentralized Procedures – Human and eventually to the CHMP for arbitration.

After the Marketing Authorizations have been granted, the company must submit periodic safety reports to the EMA, if approval was granted under the Centralized Procedure, or to the National Health Authorities, if approval was granted under the DCP or the MRP. In addition, several pharmacovigilance measures must be implemented and monitored including Adverse Event collection, evaluation and expedited reporting and implementation, as well as update Risk Management Plans. For some medications, post approval studies (Phase IV) may be required to complement available data with additional data to evaluate long term effects (called a Post Approval Safety Study) or to gather additional efficacy data (called a Post Approval Efficacy Study).

European Marketing Authorizations have an initial duration of five years. After this first five year period, the holder of the marketing authorization must apply for its renewal, which may be granted based on the competent authority's full benefit-risk review of the product. Once renewed, the marketing authorization is generally valid for an unlimited period. Any Marketing Authorization which is not followed within three years of its granting by the actual placing on the market in any EU member state of the corresponding medicinal product ceases to be valid.

In addition, our operations are subject to significant price and marketing regulations. Many governments in the EU are introducing healthcare reforms in an attempt to curb increasing healthcare costs. The governments in the EU influence the price of pharmaceutical products through their control of national healthcare systems that fund a large part of the cost of such products to patients. The general downward pressure on healthcare costs, particularly with regard to prescription drugs, has been increasing. In addition, prices for marketed products are referenced within and amongst the EU Member States, which further affect pricing in each EU Member State. As an additional control for healthcare budgets, some EU Member States have passed legislation to impose further mandatory rebates for pharmaceutical products and financial claw-backs on the pharmaceutical industry. The impact of these rebates and claw-backs on pricing of pharmaceutical products can be difficult to predict.

Other Regulations

Many other countries around the world are also taking steps to control prescription drug prices. For example, in 2017, China organized national price negotiations for certain products directly linked to national drug reimbursement, which will apply nationwide both in public and military hospitals, with drug price reductions of more than 60% in some cases. Drug prices in China may further decline due to a stated national policy of reducing healthcare costs, including continued strategic initiatives specifically designed to reduce drug prices. Canada has proposed amendments to its Patented Medicines Regulations in 2017 that could reduce prices for specialty medicines, such as biologics and medicines for rare diseases, by as much as 30% to 40%.

Under the Companies Act of Japan (Act No. 86 of 2005, as amended), or the Companies Act, joint stock corporations in Japan may adopt a corporate governance structure comprised of a board of directors and an audit and supervisory committee, commonly referred to as the audit and supervisory committee system, in lieu of the traditional structure comprised of a board of directors and a board of corporate auditors or the alternative structure comprised of a board of directors and three statutory committees. The members of the audit and supervisory committee consist of three or more directors. We adopted the audit and supervisory committee system in June 2016, in order to further enhance our corporate governance, accelerate decision-making across our operations and improve our internal decision-making structure to be on a similar level with those of major international companies that are expanding their businesses globally.

Pursuant to the audit and supervisory committee system, our board of directors is comprised of directors who are audit and supervisory committee members and directors who are not. Our articles of incorporation provide for a board of directors consisting of no more than 12 members who are not audit and supervisory committee members and no more than four directors who are audit and supervisory committee members. All directors are elected by our shareholders at a general meeting of shareholders, with directors who are audit and supervisory committee members elected separately from other directors. The term of office for directors who are not audit and supervisory committee members expires at the close of the ordinary general meeting of shareholders held with respect to the last fiscal year ended within one year after their election, and the term of office for directors who are audit and supervisory committee members expires at the close of the ordinary general meeting of shareholders held with respect to the last fiscal year ended within two years after their election. The current terms of our directors are set forth under "—Directors and Corporate Officers." All directors may serve any number of consecutive terms.

Our board of directors has the ultimate responsibility for the administration of our affairs. Our board of directors, however, may delegate by its resolution some or all of its decision-making authority in respect of the execution of operational matters (excluding certain matters specified in the Companies Act) to individual directors and has delegated such decision-making authority as described below. Our board of directors elects one or more representative directors from among its members who are not audit and supervisory committee members. Each of the representative directors has the authority to represent us in the conduct of our affairs.

Our directors who are audit and supervisory committee members are not required to be certified public accountants. They may not serve concurrently as executive directors, managers or any other type of employee for us or for any of our subsidiaries, or as accounting advisors or corporate executive officers for any of our subsidiaries. In addition, more than half of our directors who are audit and supervisory committee members at any one time must be external directors as defined under the Companies Act, who have not served as executive directors, corporate executive officers, managers or any other type of employee for us or any of our subsidiaries for ten years prior to their election and fulfill certain other requirements specified in the Companies Act.

The audit and supervisory committee has a statutory duty to audit the administration of our affairs by our directors, to examine the financial statements and business reports to be submitted to the shareholders by a representative director, to prepare an audit report each year, to determine details of proposals concerning the appointment and dismissal of independent auditors and the refusal to reappoint independent auditors for submission to general meetings of shareholders and to determine the opinion on election, removal, resignation of or compensation for directors who are not audit and supervisory committee members, which may be expressed at a general meeting of shareholders. An audit and supervisory committee member may note his or her opinion in the audit report issued by the audit and supervisory committee if such an opinion differs from that expressed in the audit report. We are required to appoint and have appointed an independent auditor, who has a statutory duty of examining the financial statements to be submitted to the shareholders by a Representative Director and preparing its audit report thereon. KPMG AZSA LLC currently acts as our independent auditor.

As management tasks continue to diversify, we have established a Takeda executive team under the President and Chief Executive Officer, consisting of certain directors and employees in senior positions who manage and supervise our key functions, as well as a business review committee, which is responsible for consideration and determination of general management matters, a portfolio review committee, which is responsible for research and development and products-related matters, and an audit, risk and compliance committee, which is responsible for internal audit, risk management and compliance matters. Our board of directors has delegated all of its decision-making authority in respect of operational matters (excluding certain matters specified in the Companies Act, as well as substantive matters valued at ¥100 billion or more or those

matters which will have substantial impact on us or our stakeholders) to the President and Chief Executive Officer, two directors belonging to the business review committee and one director belonging to the portfolio review committee.

We have also voluntarily established a nomination committee and a compensation committee as advisory committees of the board of directors. As of the date of this offering circular, the nomination committee consists of one external director who serves as chairman, two other external directors and one other director who is not an external director, and the compensation committee consists of one external director who serves as chairman, one other external director and one other director who is not an external director. Together, the committees serve to ensure transparency and objectivity in decision-making relating to personnel matters for directors who are not external directors (including appropriate standards and procedures for appointment and reappointment and establishing and administering appropriate succession plans) and the compensation system (including appropriate levels of compensation for the directors, appropriate performance targets within the bonus system for directors and appropriate bonuses based on business results).

Directors and Corporate Officers

The following table provides information about Directors of the Company as of the date of this offering circular.

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience	End of Term
Christophe Weber (November 14, 1966)	Representative Director, President and Chief Executive Officer	Christophe Weber is President and Chief Executive Officer of Takeda. He joined Takeda in April 2014 as Chief Operating Officer and Corporate Officer, was named President and Representative Director in June 2014 and was subsequently appointed Chief Executive Officer in April 2015. Prior to joining Takeda, Mr. Weber held positions of increasing responsibility at GlaxoSmithKline plc, including President and General Manager at GlaxoSmithKline Vaccines, Chief Executive Officer of GlaxoSmithKline Biologicals SA in Belgium, and member of the GlaxoSmithKline global Corporate Executive Team. From 2008 to 2010, Mr. Weber served as Asia Pacific SVP and Regional Director at GlaxoSmithKline Asia Pacific in Singapore.	Note 1
Masato Iwasaki, Ph.D. (November 6, 1958)	Director and President, Japan Pharma Business Unit	Masato Iwasaki is the President of Takeda's Japan Pharma Business Unit. He joined Takeda in 1985 and had an extensive career in roles of increasing responsibility in sales and marketing under the Pharmaceutical Marketing Division. In 2003, Mr. Iwasaki was appointed Manager of Strategic Product Planning and Project Leader for the Cardiovascular and Metabolic franchise. He was appointed Senior Vice President of the Strategic Product Planning department in 2008. In 2010, Mr. Iwasaki was named Corporate Officer. Mr. Iwasaki has been a Director of our board of directors since 2012 and was named President of the Japan Pharma Business Unit in 2015.	Note 1
Andrew S. Plump, M.D., Ph.D. (October 13, 1965)	Director and Chief Medical & Scientific Officer	Andrew S. Plump, MD., Ph.D. joined Takeda as Chief Medical and Scientific Officer (CMSO) in 2015. Dr. Plump also serves as a member of our executive team and our board of directors.	Note 1

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience	End of Term
		In his position, he leads our global Research & Development organization, where he provides strategic direction and oversight. Prior to joining Takeda, Dr. Plump served as Senior Vice President, Research & Translational Medicine, Deputy to the President of R&D at Sanofi, where he was responsible for global research and translational medicine across all therapeutic areas. Dr. Plump also spent more than 10 years at Merck in a Clinical Pharmacology group, working on programs in neurodegeneration, immunology, metabolism and infectious diseases.	
Masahiro Sakane (January 7, 1941)	External Director	Masahiro Sakane has served as External Director of Takeda since June 2014 and was appointed Chairman of the Board in June 2017. Mr. Sakane currently also serves as Councilor of Komatsu Ltd., and External Director of Kajima Corporation. Mr. Sakane started his career at Komatsu Ltd. in April 1963. In the Komatsu group, he served in several senior leadership positions including Chairman of the Board and Representative Director and President and Representative Director of Komatsu Ltd. and COO of Komatsu Dresser Company (currently Komatsu America Corp.). Mr. Sakane has also served as External Director of Nomura Holdings, Inc., External Director of Nomura Securities Co., Ltd., External Director of Tokyo Electron Limited, External Director of Asahi Glass Company, Ltd. and Vice Chairman of Keidanren (Japan Business Federation).	Note 1
Yoshiaki Fujimori (July 3, 1951)	External Director	Yoshiaki Fujimori has served as External Director of Takeda since June 2016. Mr. Fujimori currently also serves as Advisor of LIXIL Group Corporation and External Director of Tokyo Electric Power Company, Incorporated (currently Tokyo Electric Power Company Holdings, Incorporated). He previously served in a number of senior leadership positions within the LIXIL Group, including Representative Director, Chairman and CEO of LIXIL Corporation. Mr. Fujimori has also served in a number of senior positions in the General Electric Group, including Chairman of GE Japan Corporation and Chairman, President and CEO of General Electric Japan Ltd.	Note 1
Emiko Higashi (November 6, 1958)	External Director	Emiko Higashi has served as External Director of Takeda since June 2016. She currently also serves as External Director of MetLife Insurance K.K., External Director of InvenSense Inc. and External Director of KLA-Tencor Corporation. Ms. Higashi previously served as Managing Director of	Note 1

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience	End of Term
		Tomon Partners, LLC, CEO of Gilo Ventures, LLC, Managing Director of Investment Banking, Merrill Lynch & Co. and Director of Wasserstein Perella & Co., Inc.	
Michel Orsinger (September 15, 1957)	External Director	Michel Orsinger has served as External Director of Takeda since June 2016. He previously served as a Member of Global Management Team of Johnson & Johnson, Worldwide Chairman, Global Orthopedics Group of DePuy Synthes Companies of Johnson & Johnson and President and Chief Executive Officer and Chief Operating Officer of Synthes, Inc. (currently Johnson & Johnson). He has also held several leadership positions at Novartis AG, including Chief Executive Officer and President of OTC Division Worldwide, Consumer Health; President of Global Medical Nutrition, Consumer Health; and Regional President of Europe, Middle East and Africa, Consumer Health.	Note 1
Toshiyuki Shiga (September 16, 1953)	External Director	Toshiyuki Shiga has served as External Director of Takeda since June 2016. Mr. Shiga currently also serves as Chairman and CEO of Innovation Network Corporation of Japan, Vice Chairman of KEIZAI DOYUKAI (Japan Association of Corporate Executives) and Vice Chairman of Nissan Motor Co., Ltd. Mr. Shiga started his career at Nissan Motor Co., Ltd. in April 1976. At Nissan Motor Co., Ltd., he served in a number of leadership positions including Director, Chief Operating Officer and Senior Vice President (Officer). He has also served as Chairman of Japanese Automobile Manufacturers Association, Inc.	Note 1
Yasuhiko Yamanaka (January 18, 1956)	Director (Audit and Supervisory Committee member)	Yasuhiko Yamanaka has served as External Director and Chairperson of the Audit and Supervisory Committee of Takeda since June 2016. Mr. Yamanaka joined Takeda in April 1979 and has served in a number of leadership positions within the company, including Corporate Auditor, Special Missions, Special Missions assigned by President, Assistant to CEO, Globalization of the Company, Managing Director and Director.	Note 2
Shiro Kuniya (February 22, 1957)	External Director (Chairperson of Audit and Supervisory Committee)	Shiro Kuniya has served as External Director and Head of the Audit and Supervisory Committee of Takeda since June 2016. He currently also serves as Managing Partner of Oh-Ebashi LPC & Partners, External Director of NEXON Co., Ltd., External Director of EBARA CORPORATION and External Director of Sony Financial Holdings Inc. Mr. Kuniya was registered as an attorney-at-law (Osaka Bar Association) and joined Oh-Ebashi Law Offices in April 1982 and was also admitted to practice law in New York State in	Note 2

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience	End of Term
		the United States in May 1987. He has also previously served as our Outside Corporate Auditor as well as Chairman of the Inter-Pacific Bar Association, Outside Corporate Auditor of NIDEC CORPORATION and Outside Corporate Auditor of Sunstar Inc.	
Jean-Luc Butel (November 8, 1956)	External Director (Audit and Supervisory Committee member)	Jean-Luc Butel has served as External Director and member of the Audit and Supervisory Committee of Takeda since June 2016. He currently also serves as Global Healthcare Advisor, President of K8 Global Pte. Ltd and Director of Novo Holdings A/S. Mr. Butel previously served as President, International, Corporate Vice President and Operating Committee Member of Baxter International Inc. and has held leadership positions at Medtronic, Inc., Johnson & Johnson, Becton, Dickinson and Company and Nippon Becton Dickinson Company, Ltd.	Note 2
Koji Hatsukawa (September 25, 1951)	External Director (Audit and Supervisory Committee member)	Koji Hatsukawa has served as External Director and member of the Audit and Supervisory Committee of Takeda since June 2016. He currently also serves as Outside Audit and Supervisory Board Member of Fujitsu Limited. Mr. Hatsukawa started his career at Price Waterhouse Accounting Office in March 1974. Mr. Hatsukawa has previously served CEO of PricewaterhouseCoopers Aarata and has held leadership positions at ChuoAoyama PricewaterhouseCoopers and Aoyama Audit Corporation. In addition, he has also served as an Audit and Supervisory Board Member of The Norinchukin Bank and Outside Audit and Supervisory Board Member of Accordia Golf Co., Ltd.	Note 2

Notes:

(1) The term of office for Directors of the Company who are not audit and supervisory committee members is from the end of the ordinary general meeting of shareholders for the fiscal year ended March 31, 2018 through the end of the ordinary general meeting of shareholders for the fiscal year ending March 31, 2019.

(2) The term of office for Directors of the Company who are also audit and supervisory committee members is from the end of the ordinary general meeting of shareholders for the fiscal year ended March 31, 2018 through the end of the ordinary general meeting of shareholders for the fiscal year ending March 31, 2020.

The following table provides information about the Company's Executive Officers who are not also directors as of the date of this offering circular.

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience
Costa Saroukos (April 15, 1971)	Chief Financial Officer (CFO)	In March 2018, Costa Saroukos was appointed Takeda's Chief Financial Officer. He is also a member of the Takeda Executive Team (TET) reporting to the company's President & CEO. Mr. Saroukos has over 20 years of experience in both the private and public sectors, having held a number of finance leadership positions with financial responsibility for businesses in over 100 countries across Asia-Pacific, Europe, Africa and the Middle East. Mr. Saroukos has been with Takeda since May 2015, as Chief Financial Officer of the Europe and Canada Business Unit, significantly contributing to the transformation of the Business Unit towards a specialty healthcare provider. Prior to joining Takeda, Mr. Saroukos was at Allergan as Head of Finance and Business Development for the Asia-Pacific region, including China and Japan. He was also Finance Director for Greater China and Japan. Previously, he spent 13 years at Merck & Co. in roles of increasing responsibility, including Executive Finance Director for EEMEA (Eastern Europe, Middle East and Africa), Finance Director of South Korea and Head of Internal Audit Asia Pacific and Global Joint Ventures.
Christophe Bianchi, M.D. (June 1, 1961)	President, Global Oncology Business Unit	Christophe Bianchi, M.D., is President of the Takeda Global Oncology Business Unit, a position he has held since October 2014. In his current role, Dr. Bianchi is responsible for oncology business activities in seven countries, including the U.S., Japan, U.K., Germany, France, Brazil and Indonesia. Dr. Bianchi has more than 17 years of pharmaceutical industry experience and has held executive positions with Sanofi-Aventis and Millennium Pharmaceuticals. During his career, he has built commercial and sales organizations, launched major brands, delivered sustained growth and managed collaboration with partner companies. Dr. Bianchi joined Millennium in 2006 where he was responsible for growing the company's commercial and sales organizations and overseeing all commercial and sales activities for VELCADE. At Sanofi, Dr. Bianchi led the $2 billion U.S. oncology business unit including Eloxatin and Taxotere. Previously at Sanofi-Synthelabo, Dr. Bianchi headed the internal medicine and central nervous system business unit with sales of $1.2 billion. Dr. Bianchi also spent more than 10 years at Rhone-Poulenc Rorer, where he last served as Vice President, Head of Global Marketing and led many of the commercial efforts for the antithrombotic, Lovenox.
Gerard Greco, Ph.D. (February 8, 1962)	Global Quality Officer	In September 2014, Dr. Gerard Greco joined Takeda as Global Quality Officer. Dr. Greco has more than 31 years

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience
		of experience in quality leadership roles in the pharmaceutical industry. At Takeda, Dr. Greco has introduced key transformations by creating a Global Quality Organization that aligns the quality units and establishes consistent quality systems and programs across the network. Prior to joining Takeda, Dr. Greco held positions of increasing responsibility at Johnson & Johnson, Wyeth Pharmaceuticals, Pfizer Inc. and Teva Pharmaceuticals, where he served as Senior Vice President of Global Quality Operations.
Haruhiko Hirate (August 8, 1957)	Corporate Communications & Public Affairs Officer	Haruhiko Hirate became Takeda's Corporate Communications and Public Affairs Officer in October 2014. He previously served as President of North Asia in 2011, and has held Corporate Officer and Senior Vice President positions at Takeda since 2010. Prior to joining Takeda, Mr. Hirate held the position of Representative Senior Managing Director at GlaxoSmithKline in Japan and, before that, Representative Director and President of Banyu Pharmaceuticals, the Japanese subsidiary of Merck & Co. He joined Banyu Pharmaceuticals in 2004 from his role as Senior Vice President at Merck & Co, based in the U.S. He had previously held the position of Representative Director and President at Roche Diagnostics based in Japan and before that, Asia Pacific Regional President of Draeger. Mr. Hirate began his career with Nissei Sangyo, a subsidiary of Hitachi, in 1980. During his career at Hitachi group companies, he lived for about five years in Germany, mainly working with former Boehringer Manheim, and a series of overseas projects in the U.S. and Asia between 1980 and 1996. Well respected in the Japanese pharmaceutical industry, Mr. Hirate served as Director at the Federation of Pharmaceutical Manufacturers Associations of Japan, and Chairman of the Pharmaceutical Research and Manufacturers of America (PhRMA) Japan. In 2012, he became a member of the Japan Association of Corporate Executives. In 2014, he became Chairman of the International Affairs Committee at the Japan Pharmaceutical Manufacturers Association.
Ricardo Marek (May 30, 1970)	President, Emerging Markets Business Unit	Ricardo Marek is President of Emerging Markets Business Unit (EM BU), and a member of Takeda's Executive Team, reporting to the Company's CEO & President, Christophe Weber. Ricardo has over 25 years of experience in various industries and leadership roles. He has been with Takeda for 6 years and over this time he simultaneously held the roles of Area Head for Latin America (LATAM) since 2014, President for Brazil since 2013. Prior to that, he was Chief Financial Officer (CFO) of Brazil. Ricardo led the realignment and restructuring of the LATAM area, positioning it as one of the top performers

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience
		across EM BU, and Takeda Brazil as one of the top 10 pharmaceutical companies in the country. He also secured a number of acquisitions as well as launched the Oncology business in the region for Takeda's potentially life-saving and life-transforming medicines. Under his leadership, Takeda was recognized for the first time as a top employer in all seven countries across the LATAM region, and also received several other HR awards, such as Great Place to Work. Before joining Takeda in 2011, Ricardo was CFO for Organon International in the US, and Managing Director and Vice President Finance for the Akzo Nobel Group in Brazil. He also has experience in other industries such as chemicals and aerospace.
Yoshihiro Nakagawa (July 26, 1960)	Global General Counsel	In October 2014, Yoshihiro Nakagawa was appointed Corporate Officer and Global General Counsel of Takeda, with responsibility for the company's global legal, compliance and intellectual property organizations. Mr. Nakagawa joined the company in 1983. At that time, he served in varying roles of responsibility including reviewing, negotiating and drafting intellectual property and technology-related licensing agreements as a member of the Patent & Trademark Department. In 1995, he moved to the Legal Department, then spent more than two years in London as Company Secretary for Takeda Europe Holdings. Prior to his current appointment, Mr. Nakagawa served as Senior Vice President of the Legal Department at Takeda headquarters in Japan.
Giles Platford (April 26, 1978)	President, Europe and Canada business unit	Giles Platford is President of Europe & Canada for Takeda. He is also a Corporate Officer and a member of Takeda's Executive Team reporting to the Company's CEO & President. A seasoned industry leader with over 15 years of pharmaceutical experience, Giles was formerly President of Emerging Markets for Takeda, where he oversaw the launch of Takeda's innovative pipeline across the region, and led the design and roll-out of Takeda's global Access to medicines program. Previously Giles headed the Middle East, Turkey and Africa region where he strengthened controls and compliance whilst re-engineering the business for growth. He also held various leadership positions including General Manager Brazil, where he transformed Takeda into a top 10 pharma industry player, being externally recognized for the first time as one of the country's top employers and best companies to work for. Before joining Takeda in 2009, Giles spent eight years in Asia Pacific, where he assumed a number of business development, commercial and general Management roles.
Ramona Sequeira (November 21, 1965)	President, United States business unit	Ramona Sequeira, President, United States Business Unit, is responsible for the company's commercial operations in the U.S. She serves as a member of Takeda's executive team.

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience
		Prior to joining Takeda, Ms. Sequeira held various senior roles of increasing responsibility at Eli Lilly, both in the U.S. and the U.K. During her career, she led several successful product launches, managed relationships with partners, improved operational performance and workforce engagement. In her role as General Manager, U.K. Hub, she had responsibility for all affiliate operations in the U.K., Republic of Ireland and Northern Europe. She was a member of the Association of the British Pharmaceutical Industry. Ms. Sequeira is a member of the PhRMA board of directors. PhRMA is the Pharmaceutical Research and Manufacturers of America, representing the country's leading biopharmaceutical researchers and biotechnology companies. Additionally, Ms. Sequeira is a board member of the Healthcare Leadership Council, a coalition of executives from all disciplines within American healthcare. It is the exclusive forum for the nation's healthcare leaders to jointly develop policies, plans, and programs to achieve their vision of a 21st century system that makes affordable, high-quality care accessible to all Americans.
Padma Thiruvengadam (January 18, 1965)	Chief Human Resources Officer	Padma Thiruvengadam is a senior human resources executive with more than 25 years of experience developing and implementing leading-edge people strategies and organizational solutions. She was appointed as Takeda's Chief Human Resources Officer and a member of the Takeda executive team in June 2018, and is responsible for all HR strategies and programs supporting the company's global business. Prior to joining Takeda, she served as Chief People Officer for Lego, with responsibility for Human Resources and global organizational capability building. Previously, Ms. Thiruvengadam was CVP and Chief Human Resources Officer with Integra Life Sciences. She joined Pfizer, first as Vice President, Human Resources for Oncology and subsequently led global integration activities for Pfizer Oncology following a major acquisition and later as Vice President, Asia Pacific and Canada for the group's Oncology Business Unit. Earlier in her career she worked as a Senior Vice President and Human Resources Executive at Bank of America.
Rajeev Venkayya, M.D. (March 6, 1967)	President, Global Vaccine business unit	Dr. Rajeev Venkayya serves as President of the Vaccine Business Unit. He joined Takeda in 2012 to launch the global vaccine business, building upon a longstanding business in Japan. Since then, he has formed a global organization and established a high-impact vaccine pipeline that includes promising late-stage candidates for dengue and norovirus, gained through the acquisitions of LigoCyte and Inviragen Inc. Prior to Takeda, Dr. Venkayya served as Director of Vaccine Delivery in the Global Health Program at the Bill & Melinda Gates Foundation, where he was responsible for the Foundation's efforts in polio

Name (Date of Birth)	Responsibilities and Status within Takeda	Business Experience
		eradication and new vaccine introduction, and a grant portfolio of $500 million/year. While at the foundation, he served on the board of the Global Alliance for Vaccines and Immunization (GAVI). Dr. Venkayya was previously the Special Assistant to the President for Biodefense at the White House. In this capacity, he oversaw U. S. preparedness for bioterrorism and biological threats, and was responsible for the development and implementation of the National Strategy for Pandemic Influenza. He first came to Washington though the non-partisan White House Fellowship program in 2002. Dr. Venkayya was trained in pulmonary and critical care medicine and served as an Assistant Professor of Medicine in the Division of Pulmonary and Critical Care Medicine at the University of California, San Francisco. He also served as co-director of the Medical Intensive Care Unit and Director of the High-Risk Asthma Clinic at San Francisco General Hospital.
Thomas Wozniewski, Ph.D. (July 26, 1962)	Global Manufacturing and Supply Officer	In July 2014, Thomas Wozniewski, Ph.D. joined Takeda as Global Manufacturing and Supply Officer. He has more than 20 years of experience in the pharmaceutical industry. Dr. Wozniewski joined Takeda from Bayer Healthcare Switzerland, where he was Head of Product Supply Consumer Care. In this role, he was responsible for the end-to-end supply chain for all Bayer global OTC products. Prior to this, he served as Head of Global Pharmaceuticals Product Supply at Bayer Healthcare AG and Schering AG in Germany. While at Schering AG, he was also Head of Global Quality, Environment and Safety, leading the development and implementation of an Integrated Management System for the company. Dr. Wozniewski also worked at Boehringer Ingelheim, where he held several positions in quality & production.

Agreements with Our Directors

Our articles of incorporation provide that we may enter into agreements with our directors (excluding executive directors (as defined under the Companies Act)) to limit their respective liabilities to us arising from their failure to execute their duties in good faith and without gross negligence, subject to applicable laws and regulations. We have entered into such agreements with our external directors, which limit the maximum amount of their respective liabilities to us to the minimum amount stipulated by applicable laws and regulations, so long as those directors act in good faith and without gross negligence in performing their duties.

Executive Compensation

The following table provides information about our executive officers whose compensations were greater than ¥100 million on an individual basis in the fiscal year ended March 31, 2018.

Name (Position)	Total consolidated compensation (millions of yen)	Company	Amount of consolidated compensation by type (millions of yen)			
			Base Compensation	Bonus	Long-Term Incentive[1]	Other
Christophe Weber (Director)	1,217	Takeda	254[2]	334	629[3]	—
James Kehoe (Director)[4]	237	Takeda	152[5]	20	65[6]	—
Andrew S. Plump (Director)	536	Takeda	12	—	—	—
		Takeda Pharmaceuticals International, Inc.[7]	106	173	219[8]	26[9]
Shinji Honda (Director)[10]	105	Takeda	95	—	10[11]	—

Notes:

(1) Compensation expense related to the long-term incentive plan is recognized over multiple fiscal years, depending on the length of the period eligible for earning compensation. This column shows amounts recognized as expenses during the fiscal year ended March 31, 2018.

(2) Base compensation includes the amounts paid for residence and pension expenses for the relevant officers and taxes on such amounts (¥112 million).

(3) The amount recognized as an expense during the fiscal year ended March 31, 2018, representing stock incentive plan (Board Incentive Plan) granted starting in the fiscal year ended March 31, 2015 and ending in the fiscal year ended March 31, 2018.

(4) Resigned on May 31, 2018.

(5) Base compensation includes the amounts paid for residence and pension expenses for the relevant officers and taxes on such amounts (¥66 million).

(6) The amount recognized as an expense during the fiscal year ended March 31, 2018, based on the stock incentive plan (Board Incentive Plan) granted during the fiscal year ended March 31, 2018.

(7) Shows the salary and other amounts earned as the Chief Medical & Scientific Officer of Takeda Pharmaceuticals International, Inc.

(8) The amount recognized as an expense during the fiscal year ended March 31, 2018, representing stock incentive plan (Employee Stock Ownership Plan) granted starting in the fiscal year ended March 31, 2016 and ending in the fiscal year ended March 31, 2018.

(9) Amounts of local pension plan contributions and fringe benefits paid by Takeda Pharmaceuticals International, Inc. during the fiscal year ended March 31, 2018, as well as the amount equal to taxes on such amounts.

(10) Resigned as of the conclusion of the 141st annual meeting of shareholders held on June 28, 2017.

(11) The amount recognized as an expense during the fiscal year ended March 31, 2018, representing the stock incentive plan (Board Incentive Plan) granted starting in the fiscal year ended March 31, 2015 and ending in the fiscal year ended March 31, 2017.

Compensation for Key Management Personnel

The compensation for key management personnel is as follows:

	JPY (millions) For the years ended March 31		
	2016	2017	2018
Basic compensation and bonuses	¥1,456	¥1,478	¥1,332
Share-based payments	896	948	1,176
Retirement benefits	31	38	26
Total	¥2,383	¥2,464	¥2,534

We maintain certain share-based compensation payment plans for the benefit of our directors and certain of our employees. In the fiscal years ended March 31, 2016, 2017 and 2018, we recorded total compensation expense related to our share-based payment plans of ¥14.7 billion, ¥17.4 billion and ¥22.2 billion, respectively, in our consolidated statements of income. For detailed information about our share-based compensation plans, including our stock option plan, stock incentive plan, phantom stock appreciation rights and restricted stock units, see Note 28 to our audited consolidated financial statements included in this offering circular.

RELATED PARTY TRANSACTIONS

From time to time, we enter into agreements and engage in transactions with a number of subsidiaries and affiliates in the ordinary course of our business. Takeda has one major affiliate, Teva Takeda Pharma Ltd., to which Takeda sells products and acts as a sales agent. Total transactions with Teva Takeda Pharma Ltd. for the years ended March 31, 2017 and 2018 were ¥15.7 billion and ¥18.2 billion, respectively. The terms and conditions of the related party transactions are entered into on terms consistent with third-party transactions and considering market prices. In addition, the receivables and payables are settled in cash and consistent with terms of third party settlements.

SUBSIDIARIES AND AFFILIATES

The following table lists the Company's consolidated subsidiaries (including those organized as partnerships) as of March 31, 2018 and their respective countries of incorporation.

Name	Country	Ownership Interest
		(%)
Takeda Pharmaceuticals International, Inc.	United States	100.0
Takeda Pharmaceuticals U.S.A., Inc.	United States	100.0
Millennium Pharmaceuticals, Inc.	United States	100.0
ARIAD Pharmaceuticals, Inc.	United States	100.0
Takeda California, Inc.	United States	100.0
Takeda Vaccines, Inc.	United States	100.0
Takeda Development Center Americas, Inc.	United States	100.0
Takeda Ventures, Inc.	United States	100.0
Takeda Europe Holdings B.V.	Netherlands	100.0
Takeda A/S	Denmark	100.0
Takeda Pharmaceuticals International AG.	Switzerland	100.0
Takeda GmbH	Germany	100.0
Takeda Pharma Vertrieb GmbH & Co.KG.	Germany	100.0
Takeda Italia S.p.A.	Italy	100.0
Takeda Austria GmbH	Austria	100.0
Takeda Pharma Ges.m.b.H	Austria	100.0
Takeda France S.A.S.	France	100.0
Takeda Pharma A/S	Denmark	100.0
Takeda AS	Norway	100.0
Takeda Belgium SCA/CVA	Belgium	100.0
Takeda UK Limited	U.K.	100.0
Takeda Oy	Finland	100.0
Takeda Pharma AG	Switzerland	100.0
Takeda Farmaceutica Espana S.A.	Spain	100.0
Takeda Nederland B.V.	Netherlands	100.0
Takeda Pharma AB	Sweden	100.0
Takeda Pharma Sp.z o.o.	Poland	100.0
Takeda Hellas S.A.	Greece	100.0
Takeda Ireland Limited	Ireland	100.0
Takeda Development Centre Europe Ltd.	U.K.	100.0
Takeda Canada Inc.	Canada	100.0
Takeda Pharmaceuticals Limited Liability Company	Russia	100.0
Takeda Yaroslavl Limited Liability Company	Russia	100.0
Takeda Ukraine LLC	Ukraine	100.0
Takeda Kazakhstan LLP	Kazakhstan	100.0
Takeda Distribuidora Ltda.	Brazil	100.0
Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda.[1]	Brazil	100.0
Takeda Pharma Ltda.	Brazil	100.0
Takeda Mexico S.A. de C.V.	Mexico	100.0
Takeda Pharma, S.A.	Argentina	100.0
Takeda (China) Holdings Co., Ltd.	China	100.0
Takeda Pharmaceuticals (Asia Pacific) Pte. Ltd.	Singapore	100.0
Guangdong Techpool Bio-Pharma Co., Ltd[2].	China	51.3
Takeda Pharmaceutical (China) Company Limited	China	100.0
Tianjin Takeda Pharmaceuticals Co., Ltd.	China	100.0
Takeda Pharmaceuticals Korea Co., Ltd.	Korea	100.0
Takeda (Thailand), Ltd[3].	Thailand	52.0
Takeda Pharmaceuticals Taiwan, Ltd.	Taiwan	100.0
P.T. Takeda Indonesia	Indonesia	70.0
Takeda Healthcare Philippines, Inc.	Philippines	100.0
Takeda Development Center Asia, Pte. Ltd.	Singapore	100.0
Takeda Vaccines Pte. Ltd.	Singapore	100.0
Takeda (Pty.) Ltd.	South Africa	100.0

Name	Country	Ownership Interest
		(%)
Takeda Pharmaceuticals Australia Pty. Ltd.	Australia	100.0
Takeda İlaç Sağlık Sanayi Ticaret Limited Şirketi	Turkey	100.0
Takeda Consumer Healthcare Company Limited	Japan	100.0
Nihon Pharmaceutical Co., Ltd.	Japan	87.3
Takeda Healthcare Products Co., Ltd.	Japan	100.0
Axcelead Drug Discovery Partners, Inc.(4)	Japan	100.0
71 additional immaterial subsidiaries(5)		

Notes:

(1) In July 2018, we sold and divested all our shares and assets in Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda. to Novamed Fabricação de Produtos Farmacêuticos Ltda.

(2) In August 2018, we sold and divested all our shares and assets in Guangdong Techpool Bio-Pharma Co., Ltd. to Shanghai Pharmaceutical Holding Co. Ltd., pursuant to the agreement we signed in May 2018.

(3) In April 2018, we purchased additional shares of Takeda (Thailand), Ltd. and we own 100.0% of its ownership interests as of September 30, 2018.

(4) In August 2018, we entered into an agreement with Whiz Partners, Inc. to create a joint investment fund, Drug Discovery Gateway Investment Limited Partnership, for which we will make an in-kind investment of Axcelead Drug Discovery Partners Inc. When the fund is launched in November 2018, Axcelead Drug Discovery Partners Inc. will no longer be our wholly-owned subsidiary.

(5) We completed acquisition of TiGenix NV on July 31, 2018.

PRINCIPAL SHAREHOLDERS

The following table sets forth the number of shares held of record by each of our principal shareholders as well as the percentage of our issued shares held by each of our principal shareholders as of September 30, 2018.

Shareholder	Number of shares held of record	Percentage of issued shares[1]
	(thousands, except percentages)	
The Master Trust Bank of Japan, Ltd. (Trust account)	44,578	5.61%
Nippon Life Insurance Company	43,560	5.48
Japan Trustee Services Bank, Ltd. (Trust account).	28,774	3.62
Takeda Science Foundation	17,912	2.25
MSCO CUSTOMER SECURITIES	15,806	1.99
Japan Trustee Services Bank, Ltd. (Trust account 5)	14,875	1.87
State Street Bank West Client-Treaty 505234	12,968	1.63
The Bank of New York Mellon as Depositary Bank for Depositary Receipt Holders	11,595	1.46
State Street Bank and Trust Company 505001	10,873	1.37
Japan Trustee Services Bank, Ltd. (Trust account 1)	10,440	1.31
Total	211,383	26.60

Note:

(1) Percentage of issued shares excludes treasury stock held as of September 30, 2018. As of September 30, 2018, we held 10,224,406 shares of common stock as treasury stock, which included 162,380 shares held by us, 9,976,900 shares held in trust for our stock-based compensation plans and 85,126 shares held by equity-method affiliates (based on our ownership percentage in them). The total number of issued shares, less treasury stock, used to calculate percentages in the above table include such shares held in trust or by equity-method affiliates.

Our major shareholders of common stock have the same voting rights as other holders of common stock.

As of September 30, 2018, there were 314,311 record holders of our common stock with addresses in Japan, whose shareholdings represented approximately 66.9% of our outstanding common stock on that date. Because some of these shares were held by brokers or other nominees, the number of record holders with addresses in Japan might not fully reflect the number of beneficial owners in Japan.

DESCRIPTION OF THE NOTES

The following description of the Notes is a summary of the detailed provisions of the Notes and the fiscal agency agreement. It does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the Notes and the fiscal agency agreement, including the definitions of certain terms used therein. We urge you to read those documents in their entirety because they, and not this description, define the rights of holders of the Notes. Whenever particular sections or defined terms of the fiscal agency agreement not otherwise defined herein are referred to, such sections or defined terms are incorporated herein by reference. You may request copies of those documents upon written request from the office of the fiscal agent located at Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AN.

The Notes will be issued pursuant to a fiscal agency agreement to be dated on or around ●, 2018 between us and MUFG Bank, Ltd., as fiscal agent, or the fiscal agency agreement.

General

The Notes will be issued only in fully registered form without interest coupons in denominations of €100,000 and integral multiples of €1,000 in excess thereof. The Notes will be represented by one or more registered notes in global form without coupons and in certain circumstances may be represented by notes in definitive form.

The fiscal agency agreement and the Notes do not contain any financial covenants or restrictions on the payment of dividends, the incurrence of indebtedness, including other senior indebtedness (other than as set forth below under "—Negative Pledge"), or the issuance or repurchase of our securities. The fiscal agency agreement and the Notes do not contain any covenants or other provisions to afford protection to holders of the Notes in the event of a highly leveraged transaction or a change in control of us.

The Notes have not been registered with the U.S. Securities and Exchange Commission, or the SEC, and are being offered and sold by the initial purchasers or their affiliates outside the United States in offshore transactions only to non-U.S. persons in reliance on Regulation S and by the initial purchasers or their affiliates inside the United States to QIBs in reliance on Rule 144A.

Status of the Notes

The Notes will be our direct, unsecured and unsubordinated general obligations and will have the same rank in liquidation as all of our other unsecured and unsubordinated debt.

Principal and Maturity

The initial aggregate principal amount of the 2020 notes is €●; the initial aggregate principal amount of the 2020 floating rate notes is €●; the initial aggregate principal amount of the 2022 notes is €●; the initial aggregate principal amount of the 2022 floating rate notes is €●; the initial aggregate principal amount of the 2026 notes is €●; and the initial aggregate principal amount of the 2030 notes is €●. The 2020 notes will mature on ●, 2020; the 2020 floating rate notes will mature on ●, 2020; the 2022 notes will mature on ●, 2022; the 2022 floating rate notes will mature on ●, 2022; the 2026 notes will mature on ●, 2026; and the 2030 notes will mature on ●, 2030. Principal will be repaid at maturity at a price of 100% of the principal amount of the Notes. The Notes will not be redeemable prior to maturity, except as set forth below under "—Redemption," and will not be subject to any sinking fund.

Interest

Fixed Rate Notes

Interest on the 2020 notes will accrue at the rate of ●% per annum; interest on the 2022 notes will accrue at the rate of ●% per annum; interest on the 2026 notes will accrue at the rate of ●% per annum; and interest on the 2030 notes will accrue at the rate of ●% per annum. We will pay interest on the fixed rate notes annually in arrears on ● of each year (each an interest payment date), beginning on ●, 2019. We will pay interest to the holders of record of the fixed rate notes on the day falling one clearing system business day prior to such interest payment date, as applicable. Interest on the fixed rate notes will be paid to but excluding the relevant interest payment date. Interest on the fixed rate notes will accrue from the date of original issuance or, if interest has already been paid, from the date it was most recently paid. We will compute interest on the basis of a 360-day year consisting of twelve 30-day months, rounding the resultant figure to the nearest sub-unit, half of any such sub-unit being rounded upwards. Interest on the fixed rate notes will be calculated per €1,000 in principal amount of the fixed rate notes.

If any date for payment of principal or interest (or additional amounts, if any) falls on a day that is not a business day, then payment of principal or interest (or additional amounts, if any) need not be made on such date but may be made on the next succeeding business day. Any payment made on such next succeeding business day shall have the same force and effect as if made on the due date, and no interest shall accrue with respect to such payment for the period after such date.

Business day means both a day on which the TARGET2 System is open, and a day other than a Saturday or Sunday, that is neither a legal holiday nor a day on which commercial banking institutions are authorized or required by law, regulation or executive order to be closed in London or Tokyo.

Floating Rate Notes

Interest on the floating rate notes will accrue from and including ●, 2018 or from and including the most recent interest payment date to which interest has been paid or provided for. We will make interest payments on the floating rate notes on each ●, ●, ● and ● of each year (each such date, a "Floating Rate Interest Payment Date"), with the first interest payment being made on ●, 2019. We will make interest payments to the person in whose name the Notes are registered at the close of business on the day falling one clearing system business day prior to the respective interest payment date.

The per annum interest rate on the floating rate notes in effect for each day of a Floating Rate Interest Period (as defined below) will be equal to the Applicable EURIBOR Rate plus ● basis points with respect to the 2020 floating rate notes and ● basis points with respect to the 2022 floating rate notes (the "Floating Interest Rate"), provided, however, that in no event shall the interest rate be less than zero. The Floating Interest Rate for each Floating Rate Interest Period will be set on ●, ●, ● and ● of each year, and will be set for the initial Floating Rate Interest Period on ●, 2018 (each such date, a "Floating Rate Interest Reset Date") until the principal on the floating rate notes is paid or made available for payment (the "Floating Rate Principal Payment Date"). If any Floating Rate Interest Reset Date (other than the initial Floating Rate Interest Reset Date occurring on ●, 2018) and Floating Rate Interest Payment Date would otherwise be a day that is not a EURIBOR business day, such Floating Rate Interest Reset Date and Floating Rate Interest Payment Date shall be the next succeeding EURIBOR business day, unless the next succeeding EURIBOR business day is in the next succeeding calendar month, in which case such Floating Rate Interest Reset Date and Floating Rate Interest Payment Date shall be the immediately preceding EURIBOR business day.

"*EURIBOR business day*" means any day that is not a Saturday or Sunday, that is neither a legal holiday nor a day on which commercial banking institutions are authorized or required by law, regulation or executive order to be closed in London, and is a day on which the TARGET2 System, or any successor thereto, operates.

"*Floating Rate Interest Period*" means the period from and including a Floating Rate Interest Reset Date to but excluding the next succeeding Floating Rate Interest Reset Date and, in the case of the last such period, from and including the Floating Rate Interest Reset Date immediately preceding the maturity date or Floating Rate Principal Payment Date, as the case may be, to but not including such maturity date or Floating Rate Principal Payment Date, as the case may be. If the Floating Rate Principal Payment Date or maturity date is not a EURIBOR business day, then the principal amount of the floating rate notes plus accrued and unpaid interest thereon shall be paid on the next succeeding EURIBOR business day and no interest shall accrue for the maturity date, Floating Rate Principal Payment Date or any day thereafter.

The "*Applicable EURIBOR Rate*" means the rate determined in accordance with the following provisions:

(1) Two prior TARGET days on which dealings in deposits in euros are transacted in the euro-zone interbank market preceding each Floating Rate Interest Reset Date (each such date, an "Interest Determination Date"), MUFG Bank, Ltd. (the "Calculation Agent"), as agent for us, will determine the Applicable EURIBOR Rate which shall be the rate for deposits in euro having a maturity of three months commencing on the first day of the applicable interest period that appears on the Reuters Screen EURIBOR01 Page as of 11:00 a.m., Brussels time, on such Interest Determination Date. "Reuters Screen EURIBOR01 Page" means the display designated on page "EURIBOR01" on Reuters (or such other page as may replace the EURIBOR01 page on that service or any successor service for the purpose of displaying euro-zone interbank offered rates for euro-denominated deposits of major banks). If the Applicable EURIBOR Rate on such Interest Determination Date does not appear on the Reuters Screen EURIBOR01 Page, the Applicable EURIBOR Rate will be determined as described in (2) below.

(2) With respect to an Interest Determination Date for which the Applicable EURIBOR Rate does not appear on the Reuters Screen EURIBOR01 Page as specified in (1) above, the Applicable EURIBOR Rate will be determined on the basis of the rates at which deposits in euro are offered by four major banks in the euro-zone interbank market selected by us (the "Reference Banks") at approximately 11:00 a.m., Brussels time, on such Interest Determination Date to prime banks in the euro-zone interbank market having a maturity of three months, and in a principal amount equal to an amount of not less than €1,000,000 that is representative for a single transaction in such market at such time. We will request the principal euro-zone office of each of such Reference Banks to provide a quotation of its rate. If at least two such quotations are provided, the Applicable EURIBOR Rate on such Interest Determination Date will be the arithmetic mean (rounded upwards) of such quotations. If fewer than two quotations are provided, the Applicable EURIBOR Rate on such Interest Determination Date will be the arithmetic mean (rounded upwards) of the rates quoted by three major banks in the euro-zone selected by us at approximately 11:00 a.m., Brussels time, on such Interest Determination Date for loans in euro to leading European banks, having a maturity of three months, and in a principal amount equal to an amount of not less than €1,000,000 that is representative for a single transaction in such market at such time; provided, however, that if the banks so selected as aforesaid by us are not quoting as mentioned in this sentence, the relevant Floating Interest Rate for the Floating Rate Interest Period commencing on the Floating Rate Interest Reset Date following such Interest Determination Date will be the Floating Interest Rate in effect on such Interest Determination Date (i.e., the same as the rate determined for the immediately preceding Floating Rate Interest Reset Date).

(3) If the Applicable EURIBOR Rate for the relevant Floating Rate Interest Period has ceased to be published on the Reuters Screen EURIBOR01 Page as a result of the Applicable EURIBOR Rate ceasing to be calculated or administered and a suitable substitute reference rate is available which either is officially announced as successor to the Applicable EURIBOR Rate or, failing that, in our opinion after consultation with an independent financial adviser appointed by us, comes as close as possible to the composition of the existing Applicable EURIBOR Rate and is not prejudicial to the holders of the floating rate notes, the existing Applicable EURIBOR Rate will be replaced for the remaining term to maturity of the Notes by this substitute reference rate and such substitute reference rate shall be the Applicable EURIBOR Rate in relation to the Notes for all future Floating Rate Interest Periods. A precondition for this is that, in accordance with Article 29(1) of the Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the "Benchmark Regulation"), the substitute reference rate (x) will be provided by an administrator located in the European Union and which will be included in the register as referred to in Article 36 of the Benchmark Regulation or (y) will be provided by an administrator located in a third country for use in the European Union and the substitute reference rate as well as the administrator will be included in the register as referred to in Article 36 of the Benchmark Regulation. If no suitable substitute reference rate is officially announced as successor to the Applicable EURIBOR Rate or if we are unable or unwilling to determine the substitute reference rate prior to the Interest Determination Date relating to the next succeeding Floating Rate Interest Period in accordance with this paragraph, the Applicable EURIBOR Rate applicable to such Floating Rate Interest Period shall be equal to the offered quotation on the Reuters Screen EURIBOR01 Page, as described above, on the last day preceding the Interest Determination Date on which such offered quotation was displayed, all as determined by the Calculation Agent.

The amount of interest to be paid on the floating rate notes for any Floating Rate Interest Period will be calculated on the basis of the actual number of days in the relevant Floating Rate Interest Period divided by 360 (known as the "Actual/360" day count).

The Floating Interest Rate and amount of interest to be paid on the floating rate notes for each Floating Rate Interest Period will be determined by the Calculation Agent, rounding the amount of interest to the nearest sub-unit, half of any such sub-unit being rounded upwards. Interest on the floating rate notes will be calculated per €1,000 in principal amount of the floating rate notes. The Calculation Agent will, upon the request of any holder of the floating rate notes, provide the interest rate at the time of the last interest payment date with respect to the floating rate notes. All calculations made by the Calculation Agent shall in the absence of manifest error be conclusive for all purposes and binding on us and the holders of the floating rate notes. So long as the Applicable EURIBOR Rate is required to be determined with respect to the floating rate notes, there will at all times be a Calculation Agent. In the event that any then acting Calculation Agent shall be unable or unwilling to act, or that such Calculation Agent shall fail duly to establish the Applicable EURIBOR Rate for any Interest Period, or that

we propose to remove such Calculation Agent, we shall appoint ourselves or another person which is a bank, trust company, investment banking firm or other financial institution to act as the Calculation Agent.

Issuance in Euros

Initial holders of the Notes will be required to pay for the Notes in euros, and principal, premium, if any, and interest payments and additional amounts, if any, in respect of the Notes will be payable in euros.

If, on or after the date of this offering circular, the euro is unavailable to us due to the imposition of exchange controls or other circumstances beyond our control or the euro is no longer used by the then member states of the European Monetary Union that have adopted the euro as their currency or for the settlement of transactions by public institutions within the international banking community, then all payments in respect of the Notes will be made in U.S. dollars until the euro is again available to us or so used. In such circumstances, the amount payable on any date in euros will be converted to U.S. dollars on the basis of the most recently available market exchange rate for euros, as determined by us in our sole discretion. Any payment in respect of the Notes so made in U.S. dollars will not constitute an event of default under the fiscal agency agreement or the Notes. Neither the fiscal agent nor the paying agent will be responsible for obtaining exchange rates, effecting conversions or otherwise handling redenominations.

Repurchase

We, or any subsidiary of ours, may at any time purchase any or all of the Notes in the open market or otherwise at any price. Subject to applicable law, neither we nor any subsidiary of ours shall have any obligation to offer to purchase any Notes held by any holder as result of our or such holder's purchase or offer to purchase Notes held by any other holder in the open market or otherwise.

Any Notes so repurchased by us or any subsidiary of ours shall be cancelled.

Redemption

Special Mandatory Redemption

If (i) the Shire Acquisition has not been consummated on or prior to the Long Stop Date (as defined below) or (ii) we otherwise publicly announce that the Shire Acquisition will not be consummated, then we will be required to redeem all outstanding Notes on the special mandatory redemption date at a special mandatory redemption price equal to 101% of the aggregate principal amount of the Notes plus accrued and unpaid interest, if any, to, but excluding, the special mandatory redemption date.

The "Long Stop Date" means May 8, 2019, or such later date as may be agreed upon in accordance with the Co-Operation Agreement, dated May 8, 2018, between Takeda Pharmaceutical Company Limited and Shire plc; provided, however, that any such later date shall not extend beyond May 8, 2020.

The offering is not conditioned upon the consummation of the Shire Acquisition.

The "special mandatory redemption date" means the 20th day (or if such day is not a business day, the first business day thereafter) after the earliest to occur of (1) the Long Stop Date, if the Shire Acquisition has not been consummated on or prior to the Long Stop Date or (2) the date of public announcement by the Company that the Shire Acquisition will not be consummated.

Notwithstanding the foregoing, installments of interest on the Notes that are due and payable on interest payment dates falling on or prior to the special mandatory redemption date will be payable on such interest payment dates to the registered holders as of the close of business on the relevant record dates in accordance with the terms of the Notes and the fiscal agency agreement.

We will cause the notice of special mandatory redemption to be transmitted, with a copy to the fiscal agent, within five business days after the occurrence of the event triggering the special mandatory redemption to each holder at its registered address. If funds sufficient to pay the special mandatory redemption price of the outstanding Notes to be redeemed on the special mandatory redemption date (plus accrued and unpaid interest, if any, to, but excluding, such date) are deposited with the fiscal agent or a paying agent on or before such special mandatory redemption date, and certain other conditions are satisfied, on and after such special mandatory redemption date, the outstanding Notes will cease to bear interest.

Upon the consummation of the Shire Acquisition, the foregoing provisions regarding the special mandatory redemption will cease to apply.

Optional Redemption

We do not have the right to redeem the floating rate notes before maturity, other than as described below under "—Optional Tax Redemption."

We have the option to redeem the 2020 notes, the 2022 notes, the 2026 notes and the 2030 notes, in whole or in part, at any time prior to ●, 2020 with respect to the 2020 notes, ●, 2022 (the "2022 par call date") with respect to the 2022 notes, ●, 2026 (the "2026 par call date") with respect to the 2026 notes and ●, 2030 (the "2030 par call date") with respect to the 2030 notes, in each case upon giving not less than 30 nor more than 60 days' notice of redemption to the fiscal agent and the holders.

The redemption price for the Notes to be redeemed will be equal to the greater of:

(i) 100% of the principal amount of the Notes being redeemed; or

(ii) the sum of the present values of the principal and the remaining scheduled payments of interest on the Notes being redeemed (exclusive of interest accrued to the date of redemption) that would be due if such Notes were redeemed on the applicable par call date, discounted to the date of redemption on an annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Comparable Government Bond Rate plus ● basis points in the case of the 2020 notes, ● basis points in the case of the 2022 notes, ● basis points in the case of the 2026 notes and ● basis points in the case of the 2030 notes;

plus, in each case, accrued and unpaid interest on the principal amount of the Notes being redeemed up to, but excluding, the date of redemption.

We have the option to redeem the 2022 notes, the 2026 notes and the 2030 notes, in whole or in part, at any time on or after the 2022 par call date with respect to the 2022 notes, the 2026 par call date with respect to the 2026 notes and the 2030 par call date with respect to the 2030 notes, in each case upon giving not less than 30 days nor more than 60 days' notice of redemption to the fiscal agent and the holders, at a redemption price equal to 100% of the principal amount of the Notes to be redeemed plus accrued and unpaid interest on the principal amount of the Notes being redeemed to, but excluding, the date of redemption.

If less than all of the Notes are to be redeemed, the Notes shall be redeemed on a pro rata basis (or, in the case of Notes represented by global notes, in accordance with the procedures of Euroclear and/or Clearstream), based on the then outstanding principal amount of each note, provided, however, that if any such pro-rated redemption would result in any Notes having an authorized principal amount of less than the minimum authorized denomination, all such Notes shall be redeemed in full prior to the redemption of any other Notes, except as may be provided in the form of note or in any supplement to the fiscal agency agreement. Unless the context otherwise requires, all provisions relating to the redemption of the Notes shall relate, in the case of any note redeemed or to be redeemed only in part, to the portion of the principal amount of such note which has been or is to be redeemed.

"Comparable Government Bond" means, in relation to any Comparable Government Bond Rate calculation, at the discretion of an Independent Investment Banker, a German government bond whose maturity is closest to the maturity of the Notes to be redeemed, or if such independent investment bank in its discretion determines that such similar bond is not in issue, such other German government bond as such Independent Investment Banker may, with the advice of three brokers of, and/or market makers in, German government bonds selected by us, determine to be appropriate for determining the Comparable Government Bond Rate.

"Comparable Government Bond Rate" means the price, expressed as a percentage (rounded to three decimal places, with 0.0005 being rounded upwards), at which the gross redemption yield on the Notes to be redeemed, if they were to be purchased at such price on the third business day prior to the date fixed for redemption, would be equal to the gross redemption yield on such business day of the Comparable Government Bond on the basis of the middle market price of the Comparable Government Bond prevailing at 11:00 a.m. (London time) on such business day as determined by an Independent Investment Banker.

"Independent Investment Banker" means one of the Reference Government Bond Dealers appointed by us.

"Reference Government Bond Dealer" means each of J.P. Morgan Securities LLC, Morgan Stanley MUFG Securities Co., Ltd., Barclays Bank PLC, BNP Paribas or HSBC Bank plc (or their respective affiliates that are Primary Government Bond Dealers) and their respective successors, and a Primary Government Bond Dealers selected by SMBC Nikko Capital Markets Limited; provided, however, that if any of the foregoing shall cease to be a broker or dealer of, and/or market maker in, German government bonds (a "Primary Government Bond Dealer"), we will substitute therefor another Primary Government Bond Dealer.

Optional Tax Redemption

Each series of the Notes may be redeemed at any time, at our option and sole discretion, in whole, but not in part, and upon giving not less than 30 nor more than 60 days' notice of redemption to the fiscal agent and the holders (which notice shall be irrevocable), at the principal amount of the Notes together with interest accrued to the date fixed for redemption and any additional amounts thereon, if we have been or will be obliged to pay any additional amounts with respect to such series as a result of (a) any change in, or amendment to, the laws or regulations of Japan or any political subdivision or any authority thereof or therein having power to tax, or any change in application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the date of the issuance of the Notes or (b) after the completion of any Succession Event (as defined below), any change in, or amendment to, the laws or regulations of the jurisdiction of the succeeding entity or any political subdivision or any authority thereof or therein having power to tax, or any change in application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the date of such Succession Event, and in either case such obligation cannot be avoided through the taking of reasonable measures available to us or the succeeding entity, as the case may be (an "Additional Amounts Event").

Prior to the publication of any notice of such redemption, we shall deliver to the fiscal agent (i) a certificate signed by an authorized officer stating that the conditions precedent to our right to so redeem have been fulfilled and (ii) an opinion of independent legal advisors of recognized standing confirming that an Additional Amounts Event has occurred. The fiscal agent shall accept such opinion as sufficient evidence of the satisfaction of the conditions precedent described above, in which event it shall be conclusive and binding on the holders.

No notice of redemption for an Additional Amounts Event shall be given sooner than 90 days prior to the earliest date on which we would actually be obliged to pay such additional amounts on payment with respect to the Notes.

Merger, Consolidation, Sale or Disposition

The fiscal agency agreement provides that we may not merge or consolidate into any other corporation, entity or person (if we are not the continuing entity), or sell, lease or dispose of our properties and assets substantially as an entirety (including by way of a corporate split (*kaisha bunkatsu*)), whether as a single transaction or a number of transactions, related or not, to any other corporation, entity or person unless:

- the corporation, entity or person assumes or succeeds our obligations under all series of the Notes and the fiscal agency agreement (and, if such corporation, entity or person is organized in a jurisdiction other than Japan, agrees to pay any additional amounts in respect of any taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of the jurisdiction of such corporation, entity or person, or any authority therein or thereof having power to tax, corresponding to the obligation to pay additional amounts as described under "—Taxation and Additional Amounts" substituting such jurisdiction for references to "Japan"), and
- after giving effect thereto, no event of default with respect to the Notes shall have occurred and be continuing (such permitted transaction, a "Succession Event").

Taxation and Additional Amounts

All payments of principal and interest in respect of the Notes shall be made without withholding or deduction for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Japan, or any authority thereof or therein having power to tax, unless such withholding or deduction is required by law or by the authority. In such event, we shall pay such

additional amounts as will result in the receipt by the holders of such amounts as would have been received by them had no such withholding or deduction been required, except that no such additional amounts shall be payable with respect to any Notes under any of the following circumstances:

(i) the holder or beneficial owner of the Notes is an individual non-resident of Japan or a non-Japanese corporation and is liable for such taxes in respect of such Notes by reason of its (A) having some present or former connection with Japan other than the mere holding of such Notes or (B) being a specially-related person of ours as described in Article 6, Paragraph (4) of the Act on Special Taxation Measures;

(ii) the holder or beneficial owner of the Notes would otherwise be exempt from any such withholding or deduction but fails to comply with any applicable requirement to provide Interest Recipient Information (as defined below) or to submit a Written Application for Tax Exemption (as defined below) to the relevant paying agent to whom the relevant Notes are presented (where presentation is required), or whose Interest Recipient Information is not duly communicated through the relevant Participant (as defined below) and the relevant international clearing organization to such paying agent;

(iii) the holder or beneficial owner of the Notes is for Japanese tax purposes treated as an individual resident of Japan or a Japanese corporation (except for (A) a Designated Financial Institution (as defined below) that complies with the requirement to provide Interest Recipient Information or to submit a Written Application for Tax Exemption and (B) an individual resident of Japan or a Japanese corporation that duly notifies (directly, through the relevant Participant or otherwise) the relevant paying agent of its status as not being subject to taxes to be withheld or deducted by us by reason of receipt by such individual resident of Japan or Japanese corporation of interest on such Notes through a payment handling agent in Japan appointed by it);

(iv) the note is presented for payment (where presentation is required) more than 30 days after the day on which such payment on the Notes became due or after the full payment was provided for, whichever occurs later, except to the extent the holder thereof would have been entitled to additional amounts on presenting the same for payment on the last day of such period of 30 days;

(v) the withholding or deduction is imposed on a holder or beneficial owner that could have avoided such withholding or deduction by presenting its notes (where presentation is required) to another paying agent maintained by us;

(vi) the holder is a fiduciary or partnership or is not the sole beneficial owner of the payment of the principal of, or any interest on, any note, and Japanese law requires the payment to be included for tax purposes in the income of a beneficiary or settlor with respect to such fiduciary or a member of such partnership or a beneficial owner, in each case, who would not have been entitled to such additional amounts had it been the holder of such note; or

(vii) any combination of (i) through (vi) above.

For the avoidance of doubt, none of us, the fiscal agent, any paying agent or any other person shall be required to pay any additional amounts with respect to any withholding or deduction imposed on or in respect of any note pursuant to Sections 1471 to 1474 of the Internal Revenue Code of 1986, as amended, commonly referred to as FATCA, any treaty, law, regulation or other official guidance implementing FATCA, or any agreement between us, the fiscal agent, a paying agent or any other person and the United States, any other jurisdiction, or any authority of any of the foregoing implementing FATCA.

Where the Notes are held through a participant of an international clearing organization or a financial intermediary (referred to in this section as a "Participant"), in order to receive payments free of withholding or deduction by us for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Japan, or any authority thereof or therein having power to tax, if the relevant beneficial owner is (a) an individual non-resident of Japan or a non-Japanese corporation (other than a specially-related person of ours) or (b) a Japanese financial institution (referred to in this section as a "Designated Financial Institution") falling under certain categories prescribed by the Act on Special Taxation Measures, all in accordance with the Act on Special Taxation Measures, such beneficial owner must, at the time of entrusting a Participant with the custody of the relevant Notes, provide certain information prescribed by the Act on Special Taxation Measures (referred to in this section as "Interest Recipient Information") to enable the Participant to establish that such beneficial owner is exempted from the requirement for taxes to be withheld or deducted, and advise the Participant if the beneficial owner ceases to be so exempted (including the case where a beneficial owner that is an individual non-resident of Japan or a non-Japanese corporation becomes a specially-related person of ours).

Where Notes are not held by a Participant, in order to receive payments free of withholding or deduction by us for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Japan, or any authority thereof or therein having power to tax, if the relevant beneficial owner is (a) an individual non-resident of Japan or a non-Japanese corporation (other than a specially-related person of ours) or (b) a Designated Financial Institution, all in accordance with the Act on Special Taxation Measures, such beneficial owner must, prior to each time at which it receives interest, submit to the relevant paying agent a written application for tax exemption (*hikazei tekiyo shinkokusho*) (referred to in this section as a "Written Application for Tax Exemption") in a form obtainable from the paying agent stating, inter alia, the name and address of the beneficial owner, the title of the Notes, the relevant interest payment date, the amount of interest and the fact that the beneficial owner is qualified to submit the Written Application for Tax Exemption, together with documentary evidence regarding its identity and residence.

By subscribing for the Notes, an investor will be deemed to have represented that it is a "Gross Recipient" for Japanese tax purposes. For more details regarding Japanese withholding tax, see "Taxation—Japanese Taxation."

We will make any required withholding or deduction and remit the full amount withheld or deducted to the Japanese taxing authority in accordance with applicable law. We will use reasonable efforts to obtain certified copies of tax receipts evidencing the payment of any tax, duty, assessment, fee or other governmental charge so withheld or deducted from the Japanese taxing authority imposing such tax, duty, assessment, fee or other governmental charge, and if certified copies are not available, we will use reasonable efforts to obtain other evidence satisfactory to the fiscal agent, and the fiscal agent shall make such certified copies or other evidence available to the holders or the beneficial owners of the Notes upon reasonable request to the fiscal agent.

The obligation to pay additional amounts with respect to any taxes, duties, assessments and other governmental charges shall not apply to (A) any estate, inheritance, gift, sales, transfer, personal property or any similar tax, duty, assessment, fee or other governmental charge or (B) any tax, duty, assessment, fee or other governmental charge which is payable otherwise than by withholding or deduction from payments of principal or interest on the Notes; provided that, except as otherwise set forth in the Notes and in the fiscal agency agreement, we will pay all stamp, court or documentary taxes or any excise or property taxes, charges or similar levies and other duties, if any, which may be imposed by Japan, the United States or any political subdivision or any taxing authority thereof or therein, with respect to the fiscal agency agreement or as a consequence of the initial issuance, execution, delivery, registration or enforcement of the Notes.

References to principal or interest in respect of the Notes shall be deemed to include any additional amounts due which may be payable as set forth in the Notes and the fiscal agency agreement.

Negative Pledge

So long as any of the Notes remain outstanding, we will not, and will procure that none of our Principal Subsidiaries (as defined below) will, create or permit to subsist any Lien (as defined below) on any of our, or, as the case may be, our Principal Subsidiaries', property, assets or revenues, present or future, to secure, for the benefit of the holders of Public External Indebtedness (as defined below), payment of any sum owing in respect of any such Public External Indebtedness, any payment under any guarantee of any such Public External Indebtedness or any payment under any indemnity or other like obligation relating to any such Public External Indebtedness, unless contemporaneously therewith effective provision is made to secure the Notes equally and ratably with such Public External Indebtedness with a similar Lien on the same property, assets or revenues securing such Public External Indebtedness for so long as such Public External Indebtedness are secured by such Lien.

"Principal Subsidiary" means any subsidiary (i) whose revenue, as shown by the latest audited financial statements of such subsidiary, constitute at least 10% of the consolidated revenue of us and our consolidated subsidiaries as shown by our latest audited consolidated financial statements or (ii) whose gross assets, as shown by the latest audited financial statements of such subsidiary, constitute at least 10% of the gross assets of us and our consolidated subsidiaries as shown on our latest audited consolidated financial statements.

"Lien" means, with respect to any property or asset, any mortgage, lien, pledge, charge, security interest or encumbrance of any kind in respect of such property or asset and any other right of or arrangement with any creditor to have its claims satisfied out of any property or assets, or the proceeds therefrom, prior to any general creditor of the owner thereof.

"Public External Indebtedness" means bonds, debentures, notes or other similar investment securities of ours or any other person evidencing indebtedness with a maturity of not less than one year from the issue date thereof, or any guarantees thereof, which are (a) either (i) by their terms payable, or confer a right to receive payment, in any currency other than Japanese yen or (ii) denominated in Japanese yen and more than 50% of the aggregate principal amount thereof is initially distributed outside of Japan by or with the authorization of the issuer thereof; and (b) for the time being, or are intended to be, quoted, listed, ordinarily dealt in or traded, in each case primarily, on a stock exchange or over-the-counter or other securities market outside Japan.

Events of Default and Remedies

Holders of the Notes will have certain rights if an event of default occurs. When we refer to an event of default, we mean any of the following:

(a) We default for more than seven days in the payment of principal when due or for more than 30 days in the payment of interest in respect of any of the Notes;

(b) We default in the performance or observance of any covenant, condition or provision contained in the Notes or in the fiscal agency agreement for a period of 60 days after written notification requesting that we remedy such default shall first have been given to us (and to the fiscal agent in the case of notice by the holders referred to below) by the fiscal agent or holders of at least 25% in principal amount of the then outstanding Notes;

(c) We become bound as a consequence of a default by us in our obligations in respect of any indebtedness for borrowed moneys having a total principal amount then outstanding of at least $50,000,000 (or its equivalent in any other currency or currencies) contracted or incurred by us prematurely to repay the same, or we have defaulted in the repayment of any such indebtedness contracted or incurred by us at the later of the maturity thereof or the expiration of any applicable grace period therefor, or we have failed to pay when properly called upon to do so, and after the expiration of any applicable grace period, any guarantee contracted or incurred by us of any such indebtedness in accordance with the terms of any such guarantee; provided, however, that, prior to any judgment, if we cure any such default under such indebtedness, or it is waived by the holders of such indebtedness, in each case as may be permitted under the terms of such indebtedness, then such event of default shall be deemed to have been thereupon cured or waived;

(d) A final and non-appealable order of a court of competent jurisdiction is made or an effective resolution of us is passed for our winding-up or dissolution except for the purposes of or pursuant to a consolidation, amalgamation, merger or reconstruction under which the continuing corporation or the corporation formed as a result thereof effectively assumes our entire obligations under the fiscal agency agreement in relation to the Notes;

(e) An encumbrancer shall have taken possession, or a trustee or receiver shall have been appointed, in bankruptcy, civil rehabilitation, reorganization or insolvency of us, of all or substantially all of our assets and undertakings and such possession or appointment shall have continued undischarged and unstayed for a period of 60 days;

(f) We stop payment (within the meaning of the bankruptcy law of Japan) or (otherwise than for the purposes of such a consolidation, amalgamation, merger or reconstruction) cease to carry on business or are unable to pay our debts generally as and when they fall due;

(g) A decree or order by any court having jurisdiction shall have been issued adjudging us bankrupt or insolvent, or approving a petition seeking with respect to us reorganization or liquidation under bankruptcy, civil rehabilitation, reorganization or insolvency law of Japan, and such decree or order shall have continued undischarged and unstayed for a period of 60 days; or

(h) We initiate or consent to proceedings relating to us under bankruptcy, civil rehabilitation, reorganization or insolvency law of Japan or shall make a conveyance or assignment for the benefit of, or shall enter into any composition with, our creditors generally.

If an event of default with respect to the Notes occurs and is continuing, then in every such case (other than an Event of Default specified in (g) or (h) above) the fiscal agent or the holders of not less than 25% in principal amount of the outstanding Notes of each affected series may declare the principal amount of all the Notes of such affected series to be due and payable immediately, by a notice in writing to us (and to the fiscal agent if given by holders), and upon any such declaration such principal amount shall become immediately due and payable.

Notwithstanding the foregoing, in the case of an Event of Default arising under subsection (g) or (h) above with respect to us, the principal of and interest on all outstanding Notes will become immediately due and payable without further action or notice. In addition, the fiscal agent shall have no obligation to accelerate the Notes if, in the reasonable judgment of the fiscal agent, acceleration is not in the best interest of the holders.

Limitation on Suits

Other than the right to institute a suit for the enforcement of the payment of principal of, or interest on (including, in each case, any additional amounts, if applicable), any Notes after the applicable due date specified in the Notes, no holder of any note has any right to institute any proceeding with respect to the fiscal agency agreement, or for the appointment of a receiver or trustee, or for any other remedy under the fiscal agency agreement, unless:

- such holder has previously given written notice to the fiscal agent of a continuing event of default;
- the holders of not less than 25% in aggregate principal amount of the Notes of each affected series shall have made written request to the fiscal agent to institute proceedings in respect of such event of default in its own name as fiscal agent;
- such holder or holders have offered to the fiscal agent indemnity reasonably satisfactory to it against the costs, expenses and liabilities to be incurred in compliance with such request;
- the fiscal agent for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and
- no direction inconsistent with such written request has been given to the fiscal agent during such 60-day period by the holders of a majority in aggregate principal amount of the Notes of each affected series.

Further Issuances

We reserve the right, from time to time, without the consent of the holders of the Notes, to issue additional Notes on terms and conditions identical to those of the Notes of a series offered hereby (other than the issue date, the issue price and, in some cases, the first interest payment date), which additional Notes shall increase the aggregate principal amount of, and shall be consolidated and form a single series with, the Notes of the relevant series; provided that if any additional Notes are not fungible with the Notes of the relevant series offered hereby for U.S. federal income tax purposes, such additional Notes will be issued as a separate series under the fiscal agency agreement and will have a separate "CUSIP" or similar identifying number from the Notes of the relevant series offered hereby.

Indemnification of Judgment Currency

We will indemnify each holder of a note to the full extent permitted by applicable law against any loss incurred by the holder as a result of any judgment or order being given or made for any amount due under the note and the judgment or order being expressed and paid in a currency, referred to as judgment currency, other than Euros and as a result of any variation as between (a) the rate of exchange at which the Euro is converted into the judgment currency for the purpose of the judgment or order and (b) the spot rate of exchange in London at which the holder on the date that payment is made pursuant to the judgment or order is able to purchase Euros with the amount of the judgment currency actually received by the holder.

Modification and Waiver

Modification and amendment of the Notes of any series and the fiscal agency agreement may be made by us and the fiscal agent with the written consent of the holders of at least 66% in aggregate principal amount of the outstanding Notes of each affected series; provided, however, that no such modification or amendment may, without the consent of the holder of each outstanding note affected thereby:

(i) change the maturity date of the principal or payment date of any interest or change any obligation of ours to pay any additional amounts,

(ii) reduce the principal amount of, or rate of interest on, any note,

(iii) change the redemption date or price at which Notes are redeemed, including the special mandatory redemption,

(iv) affect the rights of holders of less than all the outstanding Notes,

(v) change the place of payment where, or the coin or currency in which, any note or interest thereon is payable, or

(vi) impair the right of a holder to institute suit for the enforcement of any payment on or with respect to any note on or after the date when due;

provided, further, that no such modification may, without the consent of the holders of all Notes of the affected series outstanding at the time, alter the respective percentages of outstanding Notes necessary, pursuant to the fiscal agency agreement, to modify the terms of the Notes, waive past defaults or accelerate the payment of the principal amount of the Notes.

It shall not be necessary for any act of holders under the relevant section of the fiscal agency agreement to approve the particular form of any proposed supplement to the fiscal agency agreement, but it shall be sufficient if such act shall approve the substance thereof.

Notwithstanding the foregoing, without the consent of any holders of the Notes, we and the fiscal agent, at any time and from time to time, may enter into one or more supplements to the fiscal agency agreement, in form satisfactory to the fiscal agent, for any of the following purposes:

(i) to evidence the succession of another corporation, entity or person to us and the assumption by any such successor of our covenants in the fiscal agency agreement and the Notes,

(ii) to add to our covenants or to surrender any right or power in the fiscal agency agreement conferred upon us for the benefit of the holders of the Notes,

(iii) to evidence and provide for the acceptance of appointment under the fiscal agency agreement by a successor fiscal agent,

(iv) to cure any ambiguity, to correct or supplement any provision in the fiscal agency agreement which may be defective or inconsistent with any other provision in the fiscal agency agreement, or to make any other provisions with respect to matters or questions arising under the fiscal agency agreement, provided that such action shall not adversely affect the interests of the holders of the Notes in any material respect, or

(v) to make any other change that does not adversely affect the interests of the holders of the Notes in any material respect.

Paying and Transfer Agent and Notes Registrar

MUFG Bank, Ltd., located in London, will initially act as paying and transfer agent and registrar for the Notes. We may change the paying agent, transfer agent or registrar without prior notice to the holders of the Notes, and we or any of our subsidiaries may act as paying agent, transfer agent or registrar.

For so long as the Notes are listed on the Singapore Exchange and the rules of the Singapore Exchange so require, we will appoint and maintain a paying agent in Singapore, where the Notes may be presented or surrendered for payment or redemption in the event that the global notes are exchanged for definitive notes. In addition, in the event that the global notes are exchanged for definitive notes, an announcement of such exchange shall be made by or on our behalf through the Singapore Exchange and such announcement will include all material information with respect to the delivery of the definitive notes, including details of the paying agent in Singapore.

The Fiscal Agent

The fiscal agent, MUFG Bank, Ltd., is organized under the laws of Japan, with offices located in London. The fiscal agent need only perform the duties specifically set forth in the fiscal agency agreement. The fiscal agent is not a trustee for the holders of the Notes and does not have the same responsibilities or duties to act for such holders as would a trustee.

The fiscal agency agreement does not contain limitations on the rights of the fiscal agent under the fiscal agency agreement, should it be or become a creditor of ours, to obtain payment of claims. The fiscal agent is not precluded from engaging in other transactions and if it has or acquires any conflicting interest, it is not required to eliminate the conflict or resign.

Repayment of Funds

Any money deposited by us with the fiscal agent or a paying agent in trust for payment of principal of or interest and any additional amounts on any note which remains unclaimed for two years after such principal, interest or additional amounts have become due and payable and paid to the fiscal agent shall, upon our written request, be repaid to us and all liability of the fiscal agent or such paying agent with respect to such payments will cease, and to the extent permitted by law, the holder of that note shall thereafter look only to us for payment thereof as a general unsecured creditor.

Governing Law; Consent to Jurisdiction and Service of Process; Communications

The fiscal agency agreement and the Notes will be governed by, and construed in accordance with, the laws of the State of New York.

We have irrevocably submitted to the non-exclusive jurisdiction of the courts of any New York State or United States federal court sitting in the Borough of Manhattan, The City of New York with respect to any action that may be brought in connection with the fiscal agency agreement or the Notes. As long as any of the Notes remain outstanding, we will at all times have an authorized agent upon whom process may be served in any action arising out of or relating to the fiscal agency agreement or the Notes. We have appointed Cogency Global Inc. as our agent for such purpose.

The fiscal agency agreement provides that if any holder of a note applies in writing to the fiscal agent for information for the purpose of communicating with other holders of the Notes, the fiscal agent must, upon satisfaction of certain conditions by such applicant, either afford such applicant access to such information or mail copies of the communication prepared by such applicant to the registered holders of the Notes, at the expense of such applicant.

Undertaking for Costs

In any suit for the enforcement of any right or remedy under the fiscal agency agreement or against the fiscal agent for any action taken, suffered or omitted by it as fiscal agent, other than a suit instituted by us, the fiscal agent, a holder or group of holders holding more than 10% in aggregate principal amount of the outstanding Notes of a series, or by any holder for the enforcement of the payment of the principal of or interest on any outstanding note on or after the due date expressed in such note, a court may require any party litigant in such suit to file an undertaking to pay the costs of such suit, and may assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in such suit.

Book Entry, Delivery and Form

Global Clearance and Settlement

The Notes will initially be issued to investors only in book-entry form. The Notes sold in reliance on Regulation S under the Securities Act will be initially in the form of one or more fully-registered global notes, or the Regulation S global notes, and the Notes sold in reliance on Rule 144A under the Securities Act will initially be in the form of one or more fully-registered global notes, or the Rule 144A global notes. The Notes will be deposited with, or on behalf of, a common depositary, and registered in the name of the nominee of the common depositary, for, and in respect of interests held through, Euroclear and Clearstream. Except as described herein, certificates will not be issued in exchange for beneficial interests in the global notes representing the Notes.

The Notes (including beneficial interests in the global notes) will be subject to certain restrictions on transfer set forth in the Notes and the fiscal agency agreement and will bear a legend regarding the restrictions as set forth under "Transfer Restrictions." Under certain circumstances, transfers may be made only upon receipt by the fiscal agent of a written certification (in the form provided in the fiscal agency agreement).

Prior to the 40th day after the later of the commencement of the offering and the closing date, a beneficial interest in a Regulation S global note may be transferred to a person who takes delivery in the form of an interest in a Rule 144A global note upon receipt by the fiscal agent of a written certification (in the form provided in the fiscal agency agreement) from the transferor to the effect that the transferor (i) reasonably believes that the transferee is a QIB purchasing for its own account (or for the account of one or more QIBs over which account it exercises sole investment discretion) and (ii) has notified the transferee of the restrictions on transfer set forth under "Transfer Restrictions."

Beneficial interests in a Rule 144A global note may be transferred to a person who takes delivery in the form of an interest in a Rule 144A global note without any written certification from the transferor or the transferee. Beneficial interests in a Rule 144A global note may be transferred to a person who takes delivery in the form of an interest in a Regulation S global note only upon receipt by the fiscal agent of a written certification (in the form provided in the fiscal agency agreement) from the transferor to the effect that such transfer is being made in compliance the restrictions on transfer set forth under "Transfer Restrictions" and pursuant to and in accordance with Rule 903 or 904 of Regulation S under the Securities Act.

Any beneficial interest in one of the global notes that is transferred to an entity that takes delivery in the form of an interest in another global note will, upon transfer, cease to be an interest in such global note and become an interest in the other global note and, accordingly, will thereafter be subject to all transfer restrictions, if any, and other procedures applicable to beneficial interest in such other global note for as long as it remains such an interest.

Except as set forth below, the global notes representing the Notes may be transferred, in whole and not in part, only to Euroclear or Clearstream or their respective nominees.

Depositary Procedures

As long as the common depositary (or its nominee) is the registered holder of the global notes, the common depositary (or its nominee) will be considered the sole owner and holder of the Notes represented by the global notes for all purposes under the fiscal agency agreement and the Notes, and, accordingly, our obligations under the Notes represented by the global notes are to the common depositary (or its nominee) as the registered holder of such Notes, and not to the holders of beneficial interests in such Notes.

Transfer of beneficial interests in the global notes will be subject to the applicable rules and procedures of the depositaries and their respective direct or indirect participants, which may change from time to time.

Euroclear and Clearstream Procedures

Distributions of interest and other payments with respect to book-entry interests in the Notes held through Euroclear and Clearstream will be credited, to the extent received by any paying agent, to the cash accounts of Euroclear and Clearstream or any other securities intermediary that holds a book-entry interest in the Notes through one or more securities intermediaries standing between such other securities intermediary and Euroclear or Clearstream.

As Euroclear and Clearstream act on behalf of their respective account holders only, who in turn may act on behalf of their respective clients, the ability of beneficial owners who are not account holders with Euroclear and Clearstream to pledge interests in the global notes to persons or entities that are not account holders with Euroclear or Clearstream, or otherwise take action in respect of interests in the global notes, may be limited.

Euroclear was created in 1968 to hold securities for its participants and to clear and settle transactions among its participants through simultaneous electronic book-entry delivery against payment, thereby eliminating the need for physical movement of certificates and any risk from lack of simultaneous transfers of securities and cash. Euroclear provides various other services, including securities lending and borrowing, and interfaces with domestic markets in several countries. The Euroclear system is operated by Euroclear Bank SA/NV, a bank incorporated under the laws of the Kingdom of Belgium as the "Euroclear operator." All operations are conducted by the Euroclear operator, and all Euroclear securities clearance accounts and Euroclear cash accounts are accounts with the Euroclear operator. Euroclear participants include banks (including central banks), securities brokers and dealers and other professional financial intermediaries and may include the initial purchasers or their affiliates. Indirect access to Euroclear is also available to other firms that clear through or maintain a custodial relationship with a Euroclear participant, either directly or indirectly.

Securities clearance accounts and cash accounts with the Euroclear operator are governed by the Terms and Conditions Governing Use of Euroclear and the related operating procedures of the Euroclear system and applicable Belgian law. The Euroclear terms and conditions govern transfers of securities and cash within Euroclear, withdrawals of securities and cash from Euroclear, and receipts of payments with respect to securities in Euroclear. All securities in Euroclear are held on a fungible basis without attribution of specific certificates to specific securities clearance accounts. The Euroclear operator acts under the Euroclear terms and conditions only on behalf of Euroclear participants, and has no record of or relationship with persons holding through Euroclear participants.

Clearstream is incorporated under the laws of Luxembourg as a professional depositary. Clearstream holds securities for its participating organizations and facilitates the clearance and settlement of securities transactions between its participants through electronic book-entry changes in accounts of its participants, eliminating the need for physical movement of certificates. Clearstream provides to its participants, among other things, services for safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Clearstream interfaces with domestic markets in several countries. As a professional depositary, Clearstream is subject to regulation by the Luxembourg Monetary Institute. Clearstream participants are recognized financial institutions around the world, including underwriters, securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations and may include the initial purchasers or their affiliates. Indirect access to Clearstream is also available to others, such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Clearstream participant, either directly or indirectly.

Limitations on Responsibilities

Euroclear and Clearstream have no knowledge of the actual beneficial owners of interests in a global note. The records of Euroclear and Clearstream reflect only the identity of the Euroclear or Clearstream participants to whose accounts those Notes are credited, which also may or may not be the beneficial owners of interests in a global note. Euroclear and Clearstream participants and indirect participants will remain responsible for keeping account of their holdings on behalf of their customers.

Exchange of Global Notes for Definitive Notes

No definitive notes will be issued in exchange for the global notes unless (i) Euroclear or Clearstream, as the case may be, is at any time unwilling or unable to continue as a depositary for the global notes or has ceased to be qualified to act as such as required by the fiscal agency agreement and a successor depositary is not appointed by us within 90 days or (ii) there shall have occurred and be continuing an event of default with respect to the Notes. Definitive notes delivered in exchange for beneficial interests in any global note will be registered in such names, and issued in such approved denominations, as directed by Euroclear or Clearstream, as the case may be, or the successor depositary, in accordance with its customary procedures, and will be issued without coupons.

The laws of some states require that certain persons take physical delivery of certificates evidencing securities they own. Consequently, the ability to transfer beneficial interests in a global note to such persons will be limited to that extent. Because Euroclear and Clearstream can act only on behalf of participants, which in turn act on behalf of indirect participants, the ability of beneficial owners of interests in a global note to pledge such interests to persons or entities that do not participate in the Euroclear and Clearstream systems, or otherwise take actions in respect of such interests, may be affected by the lack of a physical certificate evidencing such interests.

Fiscal Agent's Powers

In considering the interests of the noteholders while title to the Notes is registered in the name of a nominee of the depositary, the fiscal agent may have regard to any information made available to it by the depositary as to the identity (either individually or by category) of its participants or persons who hold interests through such participants with entitlements to Notes and may consider such interests as if such accountholders were the holders of the Notes.

Enforcement

For the purposes of enforcement of the provisions of the fiscal agency agreement against the fiscal agent, the persons named in a certificate of the holder of any global certificate in respect of which a global certificate is issued will be recognized as the beneficiaries of this fiscal agency agreement, to the extent of the principal amounts of their interests in the Notes set out in the certificate of the holder, as if they were themselves the holders of the Notes in such principal amounts.

Clearance and Settlement

The Notes have been accepted for clearance through Euroclear and Clearstream.

Minimum Board Lot Size on the Singapore Exchange

The Notes will be traded on the Singapore Exchange in a minimum board lot size of €100,000 with a minimum of 2 lots to be traded in a single transaction for so long as any of the Notes are listed on the Singapore Exchange.

TAXATION

The following summaries are not intended to be a complete analysis of the tax consequences under Japanese or United States law as a result of the acquisition, ownership and sale of Notes by investors. Potential investors should consult their own tax advisers on the tax consequences of acquisition, ownership, sale, and other relevant circumstances concerning the Notes, including specifically the applicable tax consequences under Japanese or United States law, the law of the jurisdiction of their country of residence (if different) and any tax treaty between Japan and their country of residence.

Japanese Taxation

The following general description of certain aspects of Japanese taxation (limited to those regarding national taxes) is applicable to the Notes to be offered or sold outside Japan. It is not intended to constitute a complete analysis of all the tax consequences relating to the purchase, ownership and disposition of the Notes. Prospective purchasers should consult their own tax advisers as to the exact tax consequences of their particular situations.

Interest payments on the Notes to an individual resident of Japan or a Japanese corporation (except for (i) a Japanese financial institution or a Japanese financial instruments business operator designated by the Cabinet Order pursuant to Article 6, Paragraph (9) of the Act on Special Taxation Measures, which has complied with the requirement for tax exemption under that paragraph, and (ii) a public corporation, a financial institution or a financial instruments business operator, etc. described in Article 3-3, Paragraph (6) of the Act on Special Taxation Measures which receives interest payments on the Notes through a Japanese payment handling agent as described in Paragraph (1) of said article and which has complied with the requirement for tax exemption under that Paragraph (6) of said article), or an individual non-resident of Japan or a non-Japanese corporation who is a specially-related person of the issuer or fails to comply with procedures for establishing its eligibility for exemption from the imposition of Japanese income tax as described below, will be subject to withholding tax pursuant to the Income Tax Act of Japan (Act No. 33 of 1965, as amended) and other applicable tax laws, or collectively, the Income Tax Law, at a rate of 15.315% until December 31, 2037 and 15% thereafter on the amount of such interest.

Interest payments on the Notes to a Japanese corporation will be included in the recipient's income that is subject to Japanese corporate tax (which includes surtax, if applicable) under the Corporate Tax Act of Japan (Act No. 34 of 1965, as amended) and other applicable Japanese tax law, or collectively, the Corporate Tax Law, provided that the amount of Japanese income tax (which includes surtax, if applicable) withheld under the Income Tax Law will generally be credited against the amount of Japanese corporate tax due. Interest payments on the Notes to an individual non-resident of Japan or a non-Japanese corporation that is a specially-related person of the issuer and has any kind of permanent establishment in Japan to which such interest is attributable will be included in the recipient's income that is subject to Japanese income tax or corporate tax, as appropriate, payable other than by way of withholding tax, with any necessary adjustment pursuant to the Income Tax Law or the Corporate Tax Law, as appropriate, in consideration of the amount of the Japanese income tax withheld under the Income Tax Law.

Under the Act on Special Taxation Measures, payment of interest on the Notes outside Japan to a beneficial owner that is an individual non-resident of Japan or a non-Japanese corporation, other than a specially-related person of the issuer, will not be subject to Japanese withholding tax, provided that the beneficial owner complies with procedures for establishing its eligibility for exemption from the imposition of Japanese income tax, including withholding tax, pursuant to the Act on Special Taxation Measures, as summarized below:

(1) if the Notes are deposited with an agent which handles the interest payments on the Notes as defined in the Cabinet Order, or the payment handling agent, in accordance with the Cabinet Order, (A) the recipient of the interest provides such payment handling agent which holds the Notes in its custody, or the payment handling custodian, with information including, *inter alia*, its name and address, and proves to the payment handling custodian the correctness of such information by presenting certain documentary or other evidence to such payment handling custodian; (B) such payment handling custodian notifies us of the interest recipient information, or the Interest Recipient Information (providing, *inter alia*, (i) that all recipients are individual non-residents of Japan or non-Japanese corporations other than specially-related persons of the issuer (if applicable); or (ii) the amount of the interest payable to the recipients which are individual non-residents of Japan or non-Japanese corporations other than specially-related persons of the issuer), which is prepared by such payment

handling custodian based on the information provided by the recipient, or (if the Notes are further sub-deposited with another payment handling agent including a clearing organization, or the sub-depositary, by such payment handling custodian) notifies us of the Interest Recipient Information through the sub-depositary, at the latest one day prior to the date on which such payment handling custodian receives from us the amount of the interest for the payment to the recipients; and (C) we prepare an interest recipient confirmation based upon Interest Recipient Information and submit it to the relevant Japanese tax authority; or

(2) if the Notes are held otherwise than through a payment handling custodian, upon each payment of interest on the Notes the recipient files a claim for exemption from taxation, or a Claim for Exemption from Taxation (providing, *inter alia*, the name and address of the recipient), with the relevant Japanese tax authority through us or (if payment of interest is made through the payment handling agent) through the payment handling agent and us.

If the recipient of interest on the Notes is an individual non-resident of Japan or a non-Japanese corporation other than a specially-related person of the issuer, failure by such individual non-resident of Japan or non-Japanese corporation to comply with the above requirements will result in the withholding of Japanese income tax. The above exemption from the withholding of Japanese income tax also applies to any Japanese financial institution or Japanese financial instruments business operator designated by Article 3-2-2, paragraph (28) of the Cabinet Order pursuant to Article 6, paragraph (9) of the Act on Special Taxation Measures, which receives the interest on the Notes otherwise than through the payment handling agent in Japan.

If the recipient of interest on the Notes is an individual non-resident of Japan or a non-Japanese corporation other than a specially-related person of the issuer that complies with the above requirements, and such recipient has a permanent establishment in Japan to which the receipt of interest is attributable, such interest will be subject to Japanese income tax or corporate tax, as appropriate, payable other than by way of withholding.

If the recipient of redemption gain (i.e., the difference between the acquisition price of the Notes and the amount received upon redemption of the Notes), if any, is an individual non-resident of Japan or a non-Japanese corporation other than a specially-related person of the issuer having no permanent establishment within Japan or having a permanent establishment within Japan but the receipt of such redemption gain is not attributable to such permanent establishment, no income tax or corporate tax is payable with respect to the redemption gain. If the receipt of such redemption gain is attributable to a permanent establishment in Japan of any such individual non-resident of Japan or non-Japanese corporation other than a specially-related person of the issuer, such redemption gain will be subject to Japanese income tax or corporate tax, as appropriate, payable other than by way of withholding. If the recipient of the redemption gain is an individual non-resident of Japan or a non-Japanese corporation that is a specially-related person of the issuer, income tax or corporate tax, as appropriate, other than by way of withholding, may be payable with respect to such redemption gain.

Gains derived from the sale of Notes outside Japan by an individual non-resident of Japan or a non-Japanese corporation having no permanent establishment within Japan are, in general, not subject to Japanese income tax or corporate tax.

No stamp, issue, registration or similar taxes or duties are payable in Japan by holders of the Notes in connection with the issue of the Notes or a subsequent transfer of the Notes if such transfer takes place outside of Japan.

Japanese inheritance tax or gift tax at progressive rates may be payable by an individual, wherever resident, who has acquired the Notes from another individual as legatee, heir or donee.

Representation of Gross Recipient Status upon Initial Distribution

BY SUBSCRIBING FOR THE NOTES, AN INVESTOR WILL BE DEEMED TO HAVE REPRESENTED THAT IT IS A "GROSS RECIPIENT," i.e., (i) a beneficial owner that is, for Japanese tax purposes, neither (x) an individual resident of Japan or a Japanese corporation, nor (y) an individual non-resident of Japan or a non-Japanese corporation that in either case is a person having a special relationship with us as described in Article 6, Paragraph (4) of the Act on Special Taxation Measures, (ii) a Japanese financial institution or a Japanese financial instruments business operator, designated in Article 3-2-2, Paragraph (28) of the Cabinet Order that will hold the Notes for its own proprietary account or (iii) any other excluded category of persons, corporations or other entities under the Act on Special Taxation Measures.

United States Federal Income Taxation

This section describes the material United States federal income tax consequences of the ownership and disposition of the Notes we are offering. It applies to you only if you acquire Notes in the offering at the offering price and you hold your Notes as capital assets for tax purposes. This section addresses only United States federal income taxation and does not discuss all of the tax consequences that may be relevant to you in light of your individual circumstances, including foreign, state or local tax consequences, and tax consequences arising under the Medicare contribution tax on net investment income or the alternative minimum tax. This section does not apply to you if you are a member of a class of holders subject to special rules, such as:

- a dealer in securities or currencies,
- a trader in securities that elects to use a mark-to-market method of accounting for your securities holdings,
- a bank,
- an insurance company,
- a tax-exempt organization,
- a person that owns Notes that are a hedge or that are hedged against interest rate or currency risks,
- a person that owns Notes as part of a straddle or conversion transaction for tax purposes,
- a person that purchases or sells Notes as part of a wash sale for tax purposes, or
- a United States holder (as defined below) whose functional currency for tax purposes is not the U.S. dollar.

If you purchase Notes at a price other than the offering price, the amortizable bond premium or market discount rules may also apply to you. You should consult your tax advisor regarding this possibility.

This section is based on the Internal Revenue Code of 1986, as amended, its legislative history, existing and proposed regulations under the Internal Revenue Code, published rulings and court decisions, all as currently in effect. These authorities are subject to change, possibly on a retroactive basis.

If an entity or arrangement that is treated as a partnership for United States federal income tax purpose holds the Notes, the United States federal income tax treatment of a partner will generally depend on the status of the partner and the tax treatment of the partnership. A partner in a partnership holding the Notes should consult its tax advisor with regard to the United States federal income tax treatment of an investment in the Notes.

Please consult your own tax advisor concerning the consequences of owning the Notes in your particular circumstances under the Internal Revenue Code and the laws of any other taxing jurisdiction.

United States Holders

This subsection describes the tax consequences to a United States holder. You are a United States holder if you are a beneficial owner of a Note and you are, for United States federal income tax purposes:

- a citizen or individual resident of the United States,
- a domestic corporation,
- an estate whose income is subject to United States federal income tax regardless of its source, or
- a trust if a United States court can exercise primary supervision over the trust's administration and one or more United States persons are authorized to control all substantial decisions of the trust.

If you are not a United States holder, this subsection does not apply to you and you should refer to "Non-United States Holders" below.

Certain Contingent Payments. In certain situations involving the Shire Acquisition, we will be required to redeem all outstanding Notes at a price equal to 101% of the aggregate principal amount of the Notes plus accrued and unpaid interest (see "Description of the Notes—Redemption—Special Mandatory Redemption"). This potential payment in excess of the stated principal amount of the Notes may implicate the provisions of the

United States Treasury regulations relating to "contingent payment debt instruments." The regulations, however, provide that a contingency will generally be disregarded for this purpose if the contingency is remote or incidental or if it is significantly more likely than not that the contingency will not occur. Although the matter is not free from doubt, we believe that the redemption contingency that is described above should be disregarded under this rule. We therefore intend to take the position, and the discussion below assumes, that the Notes will not be treated as contingent payment debt instruments because of this possible redemption. Assuming such position is respected, you would be required to include in income the amount of any such additional payment at the time such payments are received or accrued in accordance with your method of accounting for United States federal income tax purposes. If the Internal Revenue Service ("IRS") successfully challenged this position, and the Notes were treated as contingent payment debt instruments, you could be required to accrue interest income at a rate higher than the stated interest rate on the Notes and to treat as ordinary income, rather than capital gain, gain recognized on a sale, retirement or other disposition of the Notes. You are urged to consult your own tax advisor regarding the potential application to the Notes of the contingent payment debt instrument rules and the consequences thereof.

Payments of Interest. A scheduled interest payment date on the fixed rate notes may fall on a day that is not a "business day" as defined above in "Description of the Notes—Interest—Fixed Rate Notes" (and that also is not a Saturday, Sunday or U.S. federal holiday), such that at least one of the intervals between interest payments may exceed one year. Under current law, the status of such interest is unclear, and it is possible that if the fixed rate notes provide for such a scheduled interest payment date, none of the interest on the fixed rate notes would be treated as "qualified stated interest" and thus all of the interest on the fixed rate notes would be treated as original issue discount ("OID"). This would have the effect of requiring all United States holders of the fixed rate notes to accrue the stated interest on the fixed rate notes in taxable income on an accrual basis even if the holder is otherwise subject to the cash basis method of tax accounting. Although the law is not clear in this regard, we intend to take the position, and the discussion below assumes, that the fixed rate notes will not be treated as issued with OID (other than de minimis OID as discussed below) even if there is a scheduled interest payment date on the fixed rate notes that is not a business day (and that also is not a Saturday, Sunday or U.S. federal holiday).

You will be taxed on interest on your Note as ordinary income at the time you receive the interest or when it accrues, depending on your method of accounting for tax purposes.

If you are a taxpayer that uses the cash receipts and disbursements method of accounting for tax purposes and you receive an interest payment that is denominated in euros, you would recognize income equal to the U.S. dollar value of the interest payment, based on the exchange rate in effect on the date of receipt, regardless of whether you actually convert the payment into U.S. dollars.

If you are a taxpayer that uses an accrual method of accounting for tax purposes, you may determine the amount of income that you recognize with respect to an interest payment denominated in euros by using one of two methods. Under the first method, you would determine the amount of income accrued based on the average exchange rate in effect during the interest accrual period or, with respect to an accrual period that spans two taxable years, that part of the period within the taxable year.

If you elect the second method, you would determine the amount of income accrued on the basis of the exchange rate in effect on the last day of the accrual period, or, in the case of an accrual period that spans two taxable years, the exchange rate in effect on the last day of the part of the period within the taxable year. Additionally, under this second method, if you receive a payment of interest within five business days of the last day of your accrual period or taxable year, you may instead translate the interest accrued into U.S. dollars at the exchange rate in effect on the day that you actually receive the interest payment. If you elect the second method it would apply to all debt instruments that you hold at the beginning of the first taxable year to which the election applies and to all debt instruments that you subsequently acquire. You may not revoke this election without the consent of the IRS.

When you actually receive an interest payment (including a payment attributable to accrued but unpaid interest upon the sale, retirement or other disposition of your Note) denominated in euros for which you accrued an amount of income, you will recognize United States source ordinary income or loss based on the difference, if any, between the exchange rate that you used to accrue interest income and the exchange rate in effect on the date of receipt, regardless of whether you actually convert the payment into U.S. dollars.

You must include any tax withheld from the interest payment as ordinary income even though you do not in fact receive it. You will also be required to include in income as interest any additional amounts paid with

respect to withholding tax on the Notes, including withholding tax on payments of such additional amounts. You may be entitled to deduct or credit this tax, subject to applicable limits. The rules governing foreign tax credits are complex and you should consult your tax advisor regarding the availability of the foreign tax credit in your situation.

The Notes may be issued with a de minimis amount of OID. While a United States holder is generally not required to include de minimis OID in income prior to the sale or maturity of the Notes, under recently enacted legislation, United States holders that maintain certain types of financial statements and that are subject to the accrual method of tax accounting may be required to include de minimis OID on the Notes in income no later than the time upon which they include such amounts in income on their financial statements. United States holders that maintain financial statements should consult their tax advisors regarding the tax consequences to them of this legislation.

Interest paid by us on the Notes is generally income from sources outside the United States for purposes of the rules regarding the foreign tax credit allowable to a United States holder and will generally be "passive" income for purposes of computing the foreign tax credit.

Purchase, Sale and Retirement of the Notes. Your tax basis in your Note generally will be its U.S. dollar cost. If you purchase your Note with euros, the U.S. dollar cost of your Note would generally be the U.S. dollar value of the purchase price on the date of purchase. However, if you are a cash basis taxpayer, or an accrual basis taxpayer if you so elect, and your Note is traded on an established securities market, as defined in the applicable Treasury regulations, the U.S. dollar cost of your Note would be the U.S. dollar value of the purchase price on the settlement date of your purchase. You will generally recognize gain or loss on the sale, retirement or other disposition of your Note equal to the difference between the amount you realize on the sale, retirement or other disposition, excluding any amounts attributable to accrued but unpaid interest (which will be treated as interest payments), and your tax basis in your Note. If your Note is sold, retired or otherwise disposed of for an amount in euros, the amount you realize would be the U.S. dollar value of such amount on the date of the sale, retirement or other disposition, except that in the case of a Note that is traded on an established securities market, as defined in the applicable Treasury regulations, a cash basis taxpayer, or an accrual basis taxpayer that so elects, would determine the amount realized based on the U.S. dollar value of the euros on the settlement date of the disposition. Any gain or loss recognized upon the sale, redemption or other disposition of your Notes will be United States source capital gain or loss, except to the extent attributable to changes in exchange rates as described below. Capital gain of a noncorporate United States holder is generally taxed at preferential rates where the property is held for more than one year.

You must treat any portion of the gain or loss that you recognize on the sale, retirement or other disposition of a Note as United States source ordinary income or loss to the extent attributable to changes in exchange rates since the date of acquisition. However, you take exchange gain or loss into account only to the extent of the total gain or loss you realize on the disposition.

Treatment of Euros. If you receive euros as interest on your Note or on the sale, retirement or other disposition of your Note, your tax basis in the euros would equal their U.S. dollar value on the date of receipt. If you purchase euros, you generally would have a tax basis equal to the U.S. dollar value of the euros on the date of your purchase. If you sell or dispose of euros, including if you use euros to purchase Notes or exchange euros for U.S. dollars, any gain or loss recognized generally would be United States source ordinary income or loss.

Information with Respect to Foreign Financial Assets. A United States holder that owns "specified foreign financial assets" with an aggregate value in excess of $50,000 (and in some circumstances, a higher threshold) may be required to file an information report with respect to such assets with its tax returns. "Specified foreign financial assets" may include financial accounts maintained by foreign financial institutions, as well as the following, but only if they are held for investment and not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-United States persons, (ii) financial instruments and contracts that have non-United States issuers or counterparties, and (iii) interests in foreign entities. United States holders are urged to consult their tax advisors regarding the application of this reporting requirement to their ownership of the Notes.

Non-United States Holders

This subsection describes the tax consequences to a Non-United States holder. You are a Non-United States holder if you are a beneficial owner of a Note and you are, for United States federal income tax purposes:

- a nonresident alien individual,

- a foreign corporation or
- an estate or trust that in either case is not subject to United States federal income tax on a net income basis on income or gain from a Note.

If you are a United States holder, this subsection does not apply to you.

Payments of Interest. Under United States federal income tax law, and subject to the discussion of backup withholding below, if you are a Non-United States holder, interest on a Note paid to you is exempt from United States federal income tax, including withholding tax, whether or not you are engaged in a trade or business in the United States, unless you both:

- have an office or other fixed place of business in the United States to which the interest is attributable and
- derive the interest in the active conduct of a banking, financing or similar business within the United States, or are a corporation with a principal business of trading in stocks and securities for your own account.

Purchase, Sale, Retirement and Other Disposition of the Notes. If you are a Non-United States holder, you generally would not be subject to United States federal income tax on gain realized on the sale, retirement or other disposition of a Note unless:

- the gain is effectively connected with your conduct of a trade or business in the United States or
- you are an individual, you are present in the United States for 183 or more days during the taxable year in which the gain is realized and certain other conditions exist.

Treasury Regulations Requiring Disclosure of Reportable Transactions

Treasury regulations require United States taxpayers to report certain transactions that give rise to a loss in excess of certain thresholds (a "Reportable Transaction"). Under these regulations, a United States holder (or a Non-United States holder that holds the Notes in connection with a U.S. trade or business) that recognizes a loss with respect to the Notes that is characterized as an ordinary loss due to changes in currency exchange rates (under any of the rules discussed above) would be required to report the loss on IRS Form 8886 (Reportable Transaction Disclosure Statement) if the loss exceeds the thresholds set forth in the regulations. For individuals and trusts, this loss threshold is $50,000 in any single taxable year. For other types of taxpayers and other types of losses, the thresholds are higher. You should consult with your tax advisor regarding any tax filing and reporting obligations that may apply in connection with acquiring, owning and disposing of Notes.

Backup Withholding and Information Reporting

If you are a noncorporate United States holder, information reporting requirements, on IRS Form 1099, generally would apply to payments of principal and interest on a Note within the United States, and the payment of proceeds to you from the sale of a Note effected at a United States office of a broker.

Additionally, backup withholding may apply to such payments if you fail to provide a correct taxpayer identification number and comply with applicable certification requirements or (in the case of interest payments) are notified by the IRS that you have failed to report all interest and dividends required to be shown on your federal income tax returns.

If you are a Non-United States holder, you are generally exempt from backup withholding and information reporting requirements with respect to payments of principal and interest made to you outside the United States by us or another non-United States payor. You are also generally exempt from backup withholding and information reporting requirements in respect of payments of principal and interest made within the United States and the payment of the proceeds from the sale of a Note effected at a United States office of a broker, as long as either (i) the payor or broker does not have actual knowledge or reason to know that you are a United States person and you have furnished a valid IRS Form W-8 or other documentation upon which the payor or broker may rely to treat the payments as made to a non-United States person, or (ii) you otherwise establish an exemption.

Payment of the proceeds from the sale of a Note effected at a foreign office of a broker generally will not be subject to information reporting or backup withholding. However, a sale effected at a foreign office of a

broker could be subject to information reporting in the same manner as a sale within the United States (and in certain cases may be subject to backup withholding as well) if (i) the broker has certain connections to the United States, (ii) the proceeds or confirmation are sent to the United States or (iii) the sale has certain other specified connections with the United States.

You generally may obtain a refund of any amounts withheld under the backup withholding rules that exceed your income tax liability by filing a refund claim with the IRS.

TRANSFER RESTRICTIONS

Because of the following restrictions, investors are advised to consult legal counsel prior to making any reoffering, resale, pledge or transfer of the Notes.

The offering is being made in accordance with Rule 144A and Regulation S under the Securities Act. The Notes have not been and will not be registered under the Securities Act or with any securities regulatory authority of any state or other jurisdiction and, accordingly, may not be offered, sold, pledged or otherwise transferred or delivered within the United States or to, or for the account or benefit of, U.S. persons (as defined in Regulation S) except as set forth below.

Rule 144A Notes

Each purchaser of the Notes offered hereby in reliance on Rule 144A will be deemed to have represented and agreed as follows:

(1) It (A) is a qualified institutional buyer within the meaning of Rule 144A under the Securities Act, or a QIB, (B) is aware that the sale of the Notes to it is being made in reliance on Rule 144A, and (C) is acquiring the Notes for its own account or for the account of a QIB, as the case may be.

(2) It understands that the Notes have not been and will not be registered under the Securities Act and may not be offered, resold, pledged or otherwise transferred except as permitted by the legend set forth in paragraph (3) below.

(3) It understands that the Notes will bear a legend to the following effect, unless Takeda determines otherwise in compliance with applicable law:

"THIS NOTE HAS NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF AGREES FOR THE BENEFIT OF TAKEDA PHARMACEUTICAL COMPANY LIMITED (THE "COMPANY") THAT THIS NOTE MAY BE RESOLD, PLEDGED OR OTHERWISE TRANSFERRED ONLY (1) TO THE COMPANY, (2) TO A QUALIFIED INSTITUTIONAL BUYER (AS DEFINED IN RULE 144A UNDER THE SECURITIES ACT ("RULE 144A")) OR A PERSON WHO THE SELLER AND ANY PERSON ACTING ON ITS BEHALF REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER IN ACCORDANCE WITH RULE 144A, PURCHASING FOR ITS OWN ACCOUNT OR FOR THE ACCOUNT OF A QUALIFIED INSTITUTIONAL BUYER, (3) IN AN OFFSHORE TRANSACTION IN ACCORDANCE WITH RULE 903 OR RULE 904 OF REGULATION S UNDER THE SECURITIES ACT, (4) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, PROVIDED THAT, AS A CONDITION TO THE REGISTRATION OF THE TRANSFER THEREOF, THE COMPANY OR THE FISCAL AGENT MAY REQUIRE THE DELIVERY OF ANY DOCUMENTS, INCLUDING AN OPINION OF COUNSEL, THAT IT, IN ITS SOLE DISCRETION, MAY DEEM NECESSARY OR APPROPRIATE TO EVIDENCE COMPLIANCE WITH SUCH EXEMPTION (IF AVAILABLE), OR (5) PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT, IN EACH CASE IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES AND OTHER JURISDICTIONS. THE HOLDER HEREOF, BY, PURCHASING OR ACCEPTING THIS NOTE, REPRESENTS AND AGREES FOR THE BENEFIT OF THE COMPANY THAT IT WILL NOTIFY ANY PURCHASER OF THIS NOTE FROM THE HOLDER OF THE RESALE RESTRICTIONS REFERRED TO ABOVE."

Regulation S Notes

Each purchaser of the Notes offered hereby in reliance on Regulation S will be deemed to have represented and agreed as follows:

(1) It is a non-U.S. person who is acquiring such Notes in an offshore transaction in accordance with Rule 903 or Rule 904 of Regulation S under the Securities Act.

(2) It understands that such Notes have not been and will not be registered under the Securities Act and may not be offered, resold, pledged or transferred within the United States or to, or for the account or benefit of U.S. persons except as permitted by the legend set forth in paragraph (3) below.

(3) It understands that the Notes will bear a legend to the following effect, unless Takeda determines otherwise in compliance with applicable law:

"THIS NOTE HAS NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR WITH ANY SECURITIES REGULATORY AUTHORITY OF ANY JURISDICTION AND MAY NOT BE REOFFERED, RESOLD, PLEDGED OR OTHERWISE TRANSFERRED WITHIN THE UNITED STATES OR TO A U.S. PERSON (AS DEFINED IN REGULATION S UNDER THE SECURITIES ACT) EXCEPT PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OR PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT. TAKEDA PHARMACEUTICAL COMPANY LIMITED HAS AGREED THAT THIS LEGEND SHALL BE DEEMED TO HAVE BEEN REMOVED ON THE 41ST DAY FOLLOWING THE LATER OF THE COMMENCEMENT OF THE OFFERING OF THE NOTES AND THE FINAL DELIVERY DATE WITH RESPECT THERETO."

PLAN OF DISTRIBUTION

Under the terms and subject to the conditions set forth in a purchase agreement, dated ●, 2018, or the purchase agreement, between us and the initial purchasers named below, for whom J.P. Morgan Securities plc, SMBC Nikko Capital Markets Limited, Morgan Stanley MUFG Securities Co., Ltd., Barclays Bank PLC, BNP Paribas and HSBC Bank plc are acting as representatives, the initial purchasers have severally, and not jointly, agreed to purchase, and we have agreed to sell to the initial purchasers, the respective principal amount of the Notes listed opposite their names below.

Initial Purchasers	Principal amount of the 2020 notes	Principal amount of the 2020 floating rate notes	Principal amount of the 2022 notes	Principal amount of the 2022 floating rate notes	Principal amount of the 2026 notes	Principal amount of the 2030 notes
J.P. Morgan Securities plc	€ ●	€ ●	€ ●	€ ●	€ ●	€ ●
SMBC Nikko Capital Markets Limited	●	●	●	●	●	●
Morgan Stanley MUFG Securities Co., Ltd.	●	●	●	●	●	●
Barclays Bank PLC	●	●	●	●	●	●
BNP Paribas	●	●	●	●	●	●
HSBC Bank plc	●	●	●	●	●	●
Total	€ ●	€ ●	€ ●	€ ●	€ ●	€ ●

The initial purchasers have advised us that they propose initially to offer the Notes at the offering price listed on the cover page of this offering circular. After the initial offering, the price to investors may be changed. The initial purchasers have agreed to purchase the Notes from us at a purchase price that reflects a discount from the offering price, and the initial purchasers will retain the difference between such purchase price and offering price as compensation.

The initial purchasers are entitled to be released and discharged from their obligations under, and to terminate, the purchase agreement in certain circumstances prior to paying us for the Notes. If an initial purchaser defaults, the purchase agreement provides that the purchase commitments of the non-defaulting initial purchasers may be increased. The initial purchasers are offering the Notes subject to their acceptance of the Notes from us and subject to prior sale. The purchase agreement provides that the obligations of the several initial purchasers to pay for and accept delivery of the Notes are subject to approval of certain legal matters by their counsel and to certain other conditions.

The purchase agreement provides that we will indemnify the initial purchasers and their affiliates against specified liabilities, including liabilities under the Securities Act, in connection with the offer and sale of the Notes, and will contribute to payments the initial purchasers and their affiliates may be required to make in respect of those liabilities.

The Notes are being offered by the initial purchasers or affiliates of certain of the initial purchasers outside the United States in offshore transactions to non-U.S. persons in reliance on Regulation S under the Securities Act and by initial purchasers or affiliates of certain of the initial purchasers to QIBs in the United States in reliance on Rule 144A under the Securities Act.

Price Stabilization

In connection with this offering J.P. Morgan Securities plc (the "stabilization manager") (or person(s) acting on behalf of the stabilization manager) may over-allot Notes or effect transactions with a view to supporting the market price of the Notes at a level higher than that which might otherwise prevail. However, there can be no assurances that the stabilization manager (or person(s) acting on behalf of the stabilization manager) will undertake any such stabilization action. Such stabilization action, if commenced, may begin on or after the date of adequate public disclosure of the final terms of the offer of the Notes and may be ended at any time, but it must end no later than the earlier of 30 calendar days after the issue date and 60 calendar days after the date of allotment of the Notes. Any stabilization action or over-allotment must be conducted by the stabilization manager (or person(s) acting on behalf of the stabilization manager) in accordance with all applicable laws and rules.

No Sale of Similar Securities

We have agreed that, during a period of 30 days from the date of this offering circular, we will not, without the prior written consent of the representatives of the initial purchasers, directly or indirectly, issue, sell,

offer or agree to sell, or otherwise dispose of, any other Euro-denominated debt securities or U.S. dollar-denominated debt securities with a maturity greater than one year, or guarantee any Euro-denominated debt securities or U.S. dollar-denominated debt securities or with a maturity greater than one year issued by any of our subsidiaries, except that we may make an offering of Potential Future Notes.

New Issues of the Notes

The Notes are new issues of securities with no established trading market. In addition, the Notes are subject to certain restrictions on resale and transfer as described under "Transfer Restrictions." Approval in principle has been received for the listing of the Notes on the Singapore Exchange. For so long as the Notes are listed on the Singapore Exchange, the Notes will be traded on the Singapore Exchange in a minimum board lot size of €100,000 with a minimum of 2 lots to be traded in a single transaction. The initial purchasers have advised us that they presently intend to make a market in the Notes after completion of this offering. Such market-making activity will be subject to the limits imposed by applicable laws. However, they are under no obligation to do so and may discontinue any market-making activities at any time without any notice. A liquid or active public trading market for any of the Notes may not develop. If an active trading market for the Notes does not develop, the market price and liquidity of the Notes may be adversely affected. If such Notes are traded, they may trade at a discount from the initial offering price, depending on the market for similar securities, our performance and other factors. See "Risk Factors—Risks Relating to the Notes—The market for the Notes may have limited liquidity."

Selling Restrictions

General

No action has been or will be taken by us that would permit a public offering of the Notes, or possession or distribution of this offering circular, any amendment or supplement thereto, or any other offering or publicity material relating to the Notes in any country or jurisdiction where, or in any circumstances in which, action for that purpose is required. Accordingly, the Notes may not be offered or sold, directly or indirectly, and neither this offering circular nor any other offering or publicity material relating to the Notes may be distributed or published, in or from any country or jurisdiction except under circumstances that will result in compliance with applicable laws and regulations.

United States

The Notes have not been registered under the Securities Act and may not be offered or sold within the United States (as defined in Regulation S) or to, or for the account or benefit of, U.S. persons except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. The initial purchasers or U.S. affiliates of the initial purchasers may arrange for the sale of a portion of the Notes in the United States exclusively to persons reasonably believed by them to be qualified institutional buyers (as defined in Rule 144A) in reliance on the exemption from registration provided by Rule 144A under the Securities Act, and each United States purchaser of the Notes is hereby notified that the offer and sale of the Notes to it is being made in reliance upon such exemption. The offering of the Notes to non-U.S. persons will be made outside the United States in offshore transactions in compliance with Regulation S under the Securities Act.

In addition, until 40 days after the commencement of the offering, an offer or sale of the Notes within the United States by a dealer (whether or not participating in the offering) may violate the registration requirements of the Securities Act if such offer is made otherwise than pursuant to Rule 144A under the Securities Act or another exemption from registration under the Securities Act.

Japan

The Notes have not been and will not be registered under the FIEA, and are subject to the Act on Special Taxation Measures. The Notes may not be offered or sold in Japan or to, or for the benefit of, any person resident in Japan, or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, a person resident in Japan, for Japanese securities law purposes (including any corporation or other entity organized under the laws of Japan) except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEA and any other applicable laws, regulations and governmental guidelines of Japan. In addition, the Notes are not, as part of the initial distribution by the initial purchasers at any time, to be directly or indirectly offered or sold to, or for the benefit of, any person other than a Gross Recipient or to

others for re-offering or resale, directly or indirectly, to, or for the benefit of, any person other than a Gross Recipient, except as specifically permitted under the Act on Special Taxation Measures. A Gross Recipient for this purpose is (i) a beneficial owner that is, for Japanese tax purposes, neither an individual resident of Japan or a Japanese corporation, nor an individual non-resident of Japan or a non-Japanese corporation that in either case is a specially-related person of the issuer, (ii) a Japanese financial institution or a Japanese financial instruments business operator, designated in Article 3-2-2, Paragraph (28) of the Cabinet Order, relating to the Act on Special Taxation Measures that will hold the Notes for its own proprietary account or (iii) any other excluded category of persons, corporations or other entities under the Act on Special Taxation Measures.

Member States of the European Economic Area

The Notes which are the subject of the offering contemplated by this offering memorandum, as supplemented by any applicable supplement or pricing term sheet in relation thereto, may not be offered, sold or otherwise made available and will not be offered, sold or otherwise made available to any retail investor in the EEA. For the purposes of this provision, the expression "retail investor" means a person who is one (or more) of the following:

(a) a retail client as defined in point (11) of Article 4(1) of MiFID II; or

(b) a customer within the meaning of the Insurance Mediation Directive where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II.

Consequently no key information document required by Regulation (EU) No 1286/2014, or the PRIIPs Regulation as amended, for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

United Kingdom

Each initial purchaser has represented and agreed that:

it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of the Notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and

it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Switzerland

This offering circular is not intended to constitute an offer or solicitation to purchase or invest in the Notes described herein. The Notes may not be publicly offered, sold or advertised, directly or indirectly, in, into or from Switzerland and will not be listed on the SIX Swiss Exchange or on any other exchange or regulated trading facility in Switzerland. Neither this offering circular nor any other offering or marketing material relating to the Notes constitutes a prospectus as such term is understood pursuant to article 652a or article 1156 of the Swiss Code of Obligations, and neither this offering circular nor any other offering or marketing material relating to the Notes may be publicly distributed or otherwise made publicly available in Switzerland.

Hong Kong

The contents of this offering circular have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution in relation to the offer. If you are in any doubt about any of the contents of this offering circular, you should obtain independent professional advice.

Each initial purchaser (i) has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Notes other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong, or the SFO, and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance; and (ii) has not issued or had in its possession for the purposes of

issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Notes, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

Singapore

This offering circular has not been and will not be registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this offering circular and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Notes may not be circulated or distributed, nor may the Notes be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined in the SFA) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which

is:

(a) a corporation (which is not an accredited investor (as defined in the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

the securities or securities-based derivatives contracts (each as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law; or

(4) as specified in Section 276(7) of the SFA

Any reference to the SFA is a reference to the Securities and Futures Act, Chapter 289 of Singapore and a reference to any term as defined in the SFA or any provision in the SFA is a reference to that term as modified or amended from time to time including by such of its subsidiary legislation as may be applicable at the relevant time.

Section 309B(1) Notification—the Issuer has determined, and hereby notifies all persons (including relevant persons (as defined in Section 309A(1) of the SFA)) that the Notes are prescribed capital markets products (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Dubai International Financial Centre

This offering circular relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority ("DFSA"). This offering circular is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this offering circular nor taken steps to verify the information set forth herein and has no responsibility for this offering circular. The securities to which this offering circular relates

may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this offering circular you should consult an authorized financial advisor.

In relation to its use in the DIFC, this offering circular is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

United Arab Emirates

The Notes have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Centre) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Centre) governing the issue, offering and sale of securities. Further, this offering circular does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Centre) and is not intended to be a public offer. This offering circular has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

Stamp Taxes and Other Charges

Purchasers of the Notes offered by this offering circular may be required to pay stamp taxes and other charges in accordance with the laws and practices of the country of purchase and in addition to the offering price on the cover page of this offering circular.

Other Relationships

The initial purchasers and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the initial purchasers and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us or our subsidiaries and affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the initial purchasers and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities), financial instruments (including bank loans), currencies and commodities for their own account (including purchasing the Notes for their own account) and for the accounts of their customers, and such investment and securities activities may involve securities, instruments or assets of ours or related to our business. If any of the initial purchasers or their affiliates has a lending relationship with us, certain of those initial purchasers or their affiliates routinely hedge, and certain other of those initial purchasers or their affiliates may hedge, their credit exposure to us consistent with their customary risk management policies. Typically, these initial purchasers and their affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities, including potentially the Notes offered hereby. Any such credit default swaps or short positions could adversely affect future trading prices of the Notes offered hereby. The initial purchasers and their respective affiliates may also make investment recommendations and may publish or express independent research views in respect of such securities or instruments or in respect of assets, currencies or commodities that may be related to our business, and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities, instruments, currencies or commodities.

In addition, J.P. Morgan Securities plc and its affiliate JPMorgan Securities Japan Co., Ltd. are acting together with Nomura International plc as financial advisors to us in connection with the Shire Acquisition and may receive fees in connection therewith. Morgan Stanley & Co. International plc is acting as one of Shire's financial advisors in connection with the Shire Acquisition and may receive fees in connection therewith. Morgan Stanley MUFG Securities Co., Ltd. is a subsidiary of Morgan Stanley. Mitsubishi UFJ Financial Group, Inc. or MUFG, holds approximately 24% of the common shares in Morgan Stanley. MUFG Bank, Ltd. is a subsidiary of MUFG. Certain of the initial purchasers or their affiliates, including JPMorgan Chase Bank, N.A., Sumitomo Mitsui Banking Corporation and Mizuho Bank, Ltd., and MUFG Bank, Ltd., are acting as agent, arranger and/or lender under the Term Loan Credit Agreement and receive fees in connection with such roles. In addition, certain of the initial purchasers or their affiliates, including JPMorgan Chase Bank, N.A. and Sumitomo

Mitsui Banking Corporation, and MUFG Bank, Ltd. have agreed to provide us with interim financing through the Bridge Credit Agreement in the event this offering is not consummated, for which these initial purchasers and/or their respective affiliates will be paid customary fees. Furthermore, certain of the initial purchasers or their affiliates, including Sumitomo Mitsui Banking Corporation, and MUFG Bank, Ltd., are acting as administrative agent or lender under the SSTL and the Subordinated Loan Agreement. These interim financing commitments are expected to be reduced by reference to the aggregate proceeds of the Notes and Potential Future Notes. See "Management's Discussion and Analysis of Financial Condition and Results of Operations of Takeda—Liquidity and Capital Resources—Financing Arrangements for the Shire Acquisition."

Settlement

We expect delivery of the Notes will be made against payment therefor on or about ●, 2018, which is the ● New York business day following the date of pricing of the Notes. Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Notes prior to the delivery of the Notes may be required, by virtue of the fact that the Notes initially will settle ● New York business days after pricing of the Notes, to specify an alternate settlement cycle at the time of any such trade to prevent failed settlement and should consult their own advisers.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRMS

The consolidated financial statements of Takeda as of March 31, 2017 and 2018, and for each of the years in the three-year period ended March 31, 2018, have been included in this offering circular in reliance upon the report of KPMG AZSA LLC, independent registered public accounting firm, appearing elsewhere herein.

With respect to the unaudited condensed interim consolidated financial statements as of September 30, 2018 and for the six months ended September 30, 2017 and 2018 included elsewhere in this offering circular, KPMG AZSA LLC, has applied limited procedures in accordance with quarterly review standards generally accepted in Japan. However, they did not audit and they do not express an opinion on such unaudited condensed interim consolidated financial statements. Accordingly, the degree of reliance on their review on such information should be restricted in light of the limited nature of the review procedures applied.

The consolidated financial statements of Shire as of December 31, 2017 and 2016, and for each of the three years in the period ended December 31, 2017, 2016, and 2015, included in this offering circular, have been audited by Deloitte LLP, an independent registered public accounting firm, as stated in their report appearing herein.

LEGAL MATTERS

The validity of the Notes and certain legal matters will be passed upon for us by Sullivan & Cromwell LLP and for the initial purchasers by Simpson Thacher & Bartlett LLP. Certain Japanese legal matters will be passed upon for us by Nishimura & Asahi and for the initial purchasers by Anderson Mori & Tomotsune.

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INDEX TO FINANCIAL STATEMENTS AND OTHER FINANCIAL INFORMATION

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Takeda Pharmaceutical Company Limited:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of Takeda Pharmaceutical Company Limited and subsidiaries (the "Company") as of March 31, 2018 and 2017, the related consolidated statements of income, income and other comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended March 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of March 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended March 31, 2018, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG AZSA LLC

We have served as the Company's auditor since 2007.

Tokyo, Japan
September 10, 2018

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Income for the Year Ended March 31,

	Note	JPY (millions) 2016	2017	2018
Revenue	4	¥1,807,378	¥1,732,051	¥1,770,531
Cost of sales		(535,180)	(558,755)	(495,921)
Selling, general and administrative expenses		(650,770)	(619,061)	(628,106)
Research and development expenses		(335,772)	(312,303)	(325,441)
Amortization and impairment losses on intangible assets associated with products	12	(131,787)	(156,717)	(122,131)
Other operating income	5	21,345	143,533	169,412
Other operating expenses	5	(44,386)	(72,881)	(126,555)
Operating profit		130,828	155,867	241,789
Finance income	6	21,645	12,274	39,543
Finance expenses	6	(31,931)	(23,249)	(31,928)
Share of loss of investments accounted for using the equity method	14	(3)	(1,546)	(32,199)
Profit before tax		120,539	143,346	217,205
Income tax expenses	7	(37,059)	(27,833)	(30,497)
Net profit for the year		¥ 83,480	¥ 115,513	¥ 186,708
Attributable to:				
Owners of the Company	8	¥ 80,166	¥ 114,940	¥ 186,886
Non-controlling interests	8	3,314	573	(178)
Net profit for the year	8	¥ 83,480	¥ 115,513	¥ 186,708
Earnings per share (JPY)				
Basic earnings per share	8	¥ 102.26	¥ 147.15	¥ 239.35
Diluted earnings per share	8	101.71	146.26	237.56

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Income and Other Comprehensive Income for the Year Ended March 31,

	Note	JPY (millions) 2016	2017	2018
Net profit for the year		¥ 83,480	¥115,513	¥186,708
Other comprehensive income (loss)				
Items that will not be reclassified to profit or loss:				
Re-measurement (loss) gain on defined benefit plans	9	(18,140)	15,554	724
		(18,140)	15,554	724
Items to be reclassified subsequently to profit or loss:				
Exchange differences on translation of foreign operations	9	(85,496)	(51,820)	46,611
Net changes on revaluation of available-for-sale financial assets	9	(17,313)	9,521	4,714
Cash flow hedges	9	(1,867)	4,412	3,525
Share of other comprehensive (loss) income of investments accounted for using the equity method	9, 14	(266)	(38)	382
		(104,942)	(37,925)	55,232
Other comprehensive income (loss) for the year, net of tax	9	(123,082)	(22,371)	55,956
Total comprehensive income (loss) for the year		¥ (39,602)	¥ 93,142	¥242,664
Attributable to:				
Owners of the Company		¥ (40,334)	¥ 93,552	¥242,444
Non-controlling interests		732	(410)	220
Total comprehensive income (loss) for the year		¥ (39,602)	¥ 93,142	¥242,664

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Financial Position as of March 31,

	Note	JPY (millions) 2017	2018
Assets			
Non-current assets:			
Property, plant and equipment	10	¥ 527,344	¥ 536,801
Goodwill	11	1,019,574	1,029,248
Intangible assets	12	1,063,037	1,014,264
Investments accounted for using the equity method	14	126,411	107,949
Other financial assets	15	176,636	196,436
Other non-current assets		54,408	77,977
Deferred tax assets	7	118,968	64,980
Total non-current assets		3,086,378	3,027,655
Current assets:			
Inventories	16	226,048	212,944
Trade and other receivables	17	423,405	420,247
Other financial assets	15	56,683	80,646
Income tax receivables		21,373	8,545
Other current assets		75,146	57,912
Cash and cash equivalents	18	319,455	294,522
Assets held for sale	19	138,306	3,992
Total current assets		1,260,416	1,078,808
Total assets		¥4,346,794	¥4,106,463

	Note	JPY (millions) 2017	2018
Liabilities and Equity			
Liabilities:			
Non-current liabilities:			
Bonds and loans	20	¥ 599,862	¥ 985,644
Other financial liabilities	21	81,778	91,223
Net defined benefit liabilities	22	80,902	87,611
Provisions	23	38,108	28,042
Other non-current liabilities	24	77,437	68,300
Deferred tax liabilities	7	153,396	90,725
Total non-current liabilities		1,031,483	1,351,545
Current liabilities:			
Bonds and loans	20	545,028	18
Trade and other payables	25	240,623	240,259
Other financial liabilities	21	28,898	29,613
Accrued income taxes		70,838	67,694
Provisions	23	135,796	132,781
Other current liabilities	24	256,507	263,930
Liabilities held for sale	19	88,656	3,214
Total current liabilities		1,366,346	737,509
Total liabilities		2,397,829	2,089,054
Equity:			
Share capital		65,203	77,914
Share premium		74,973	90,740
Treasury shares		(48,734)	(74,373)
Retained earnings		1,511,817	1,557,307
Other components of equity		291,002	350,631
Other comprehensive income related to assets held for sale		—	(4,795)
Equity attributable to owners of the company		1,894,261	1,997,424
Non-controlling interests		54,704	19,985
Total equity		1,948,965	2,017,409
Total liabilities and equity		¥4,346,794	¥4,106,463

(*) Takeda revised the provisional fair value for the assets acquired and the liabilities assumed related to business combinations during the year ended March 31, 2018. Accordingly, the corresponding balances in the Consolidated Statements of Financial Position as of March 31, 2017 were, retrospectively revised. (refer to Note 31)

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Changes in Equity

JPY (millions)

	Equity attributable to owners of the Company												
					Other components of equity								
	Share Capital	Share Premium	Treasury Shares	Retained Earnings	Exchange Differences on Translation of Foreign Operations	Net changes on Revaluation of Available-for-Sale Financial Assets	Cash Flow Hedges	Re-measurement Gain or Loss on Defined Benefit Plans	Total	Other comprehensive income related to non-current assets held for sale	Total	Non-Controlling Interests	Total Equity
As of April 1, 2015	¥64,044	¥59,575	¥(18,203)	¥1,601,326	¥355,692	¥ 75,685	¥(1,073)	¥ —	¥ 430,304	¥ —	¥2,137,046	¥69,129	¥2,206,175
Net profit for the year	—	—	—	80,166	—	—	—	—	—	—	80,166	3,314	83,480
Other comprehensive income (loss)	—	—	—	—	(83,331)	(17,162)	(1,867)	(18,140)	(120,500)	—	(120,500)	(2,582)	(123,082)
Comprehensive income (loss) for the year	—	—	—	80,166	(83,331)	(17,162)	(1,867)	(18,140)	(120,500)	—	(40,334)	732	(39,602)
Transactions with owners:													
Issuance of new shares	722	722	—	—	—	—	—	—	—	—	1,444	—	1,444
Acquisition of treasury shares	—	—	(22,346)	—	—	—	—	—	—	—	(22,346)	—	(22,346)
Disposal of treasury shares	—	1	3	—	—	—	—	—	—	—	4	—	4
Dividends (Note 26)	—	—	—	(141,585)	—	—	—	—	—	—	(141,585)	(1,868)	(143,453)
Changes in ownership	—	—	—	1,360	—	—	—	—	—	—	1,360	(5,482)	(4,122)
Transfers from other components of equity	—	—	—	(18,140)	—	—	—	18,140	18,140	—	—	—	—
Share-based compensation (Note 28)	—	12,845	—	—	—	—	—	—	—	—	12,845	—	12,845
Exercise of share-based awards (Note 28)	—	(4,314)	4,572	—	—	—	—	—	—	—	258	—	258
Total transactions with owners	722	9,254	(17,771)	(158,365)	—	—	—	18,140	18,140	—	(148,020)	(7,350)	(155,370)
As of March 31, 2016	¥64,766	¥68,829	¥(35,974)	¥1,523,127	¥272,361	¥ 58,523	¥(2,940)	¥ —	¥ 327,944	¥ —	¥1,948,692	¥62,511	¥2,011,203

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Changes in Equity

JPY (millions)

	Equity attributable to owners of the Company												
					Other components of equity								
	Share Capital	Share Premium	Treasury Shares	Retained Earnings	Exchange Differences on Translation of Foreign Operations	Net Changes on Revaluation of Available-for-Sale Financial Assets	Cash Flow Hedges	Re-measurement Gain or Loss on Defined Benefit Plans	Total	Other comprehensive income related to non-current assets held for sale	Total	Non-Controlling Interests	Total Equity
As of April 1, 2016	¥64,766	¥68,829	¥(35,974)	¥1,523,127	¥272,361	¥58,523	¥(2,940)	¥ —	¥327,944	¥ —	¥1,948,692	¥62,511	¥2,011,203
Net profit for the year	—	—	—	114,940	—	—	—	—	—	—	114,940	573	115,513
Other comprehensive income (loss)	—	—	—	—	(50,811)	9,457	4,412	15,554	(21,388)	—	(21,388)	(983)	(22,371)
Comprehensive income (loss) for the year	—	—	—	114,940	(50,811)	9,457	4,412	15,554	(21,388)	—	93,552	(410)	93,142
Transactions with owners:													
Issuance of new shares	437	437	—	—	—	—	—	—	—	—	874	—	874
Acquisition of treasury shares	—	—	(23,117)	—	—	—	—	—	—	—	(23,117)	—	(23,117)
Disposal of treasury shares	—	(0)	4	—	—	—	—	—	—	—	4	—	4
Dividends (Note 26)	—	—	—	(141,804)	—	—	—	—	—	—	(141,804)	(1,910)	(143,714)
Changes in ownership	—	—	—	—	—	—	—	—	—	—	—	(5,487)	(5,487)
Transfers from other components of equity	—	—	—	15,554	—	—	—	(15,554)	(15,554)	—	—	—	—
Share-based compensation (Note 28)	—	15,322	—	—	—	—	—	—	—	—	15,322	—	15,322
Exercise of share-based awards (Note 28)	—	(9,615)	10,353	—	—	—	—	—	—	—	738	—	738
Total transactions with owners	437	6,144	(12,760)	(126,250)	—	—	—	(15,554)	(15,554)	—	(147,983)	(7,397)	(155,380)
As of March 31, 2017	¥65,203	¥74,973	¥(48,734)	¥1,511,817	¥221,550	¥67,980	¥ 1,472	¥ —	¥291,002	¥ —	¥1,894,261	¥54,704	¥1,948,965

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Changes in Equity

JPY (millions)

	Equity attributable to owners of the Company												
					Other components of equity								
	Share Capital	Share Premium	Treasury Shares	Retained Earnings	Exchange Differences on Translation of Foreign Operations	Net changes on Revaluation of Available-for-Sale Financial Assets	Cash Flow Hedges	Re-measurement Gain or Loss on Defined Benefit Plans	Total	Other comprehensive income related to non-current assets held for sale	Total	Non-Controlling Interests	Total Equity
As of April 1, 2017	¥65,203	¥ 74,973	¥(48,734)	¥1,511,817	¥221,550	¥67,980	¥1,472	¥ —	¥291,002	¥ —	¥1,894,261	¥ 54,704	¥1,948,965
Net profit for the year	—	—	—	186,886	—	—	—	—	—	—	186,886	(178)	186,708
Other comprehensive income (loss)	—	—	—	—	46,252	5,057	3,525	724	55,558	—	55,558	398	55,956
Comprehensive income (loss) for the year	—	—	—	186,886	46,252	5,057	3,525	724	55,558	—	242,444	220	242,664
Transactions with owners:													
Issuance of new shares	12,711	12,609	—	—	—	—	—	—	—	—	25,320	—	25,320
Acquisition of treasury shares	—	—	(41,545)	—	—	—	—	—	—	—	(41,545)	—	(41,545)
Disposal of treasury shares	—	0	1	—	—	—	—	—	—	—	1	—	1
Dividends (Note 26)	—	—	—	(142,120)	—	—	—	—	—	—	(142,120)	(2,189)	(144,309)
Changes in ownership	—	—	—	—	—	—	—	—	—	—	—	(32,750)	(32,750)
Transfer from other components of equity	—	—	—	724	—	—	—	(724)	(724)	—	—	—	—
Share-based compensation (Note 28)	—	18,610	—	—	—	—	—	—	—	—	18,610	—	18,610
Exercise of share-based awards (Note 28)	—	(15,452)	15,905	—	—	—	—	—	—	—	453	—	453
Transfers to other comprehensive income related to assets held for sale	—	—	—	—	4,795	—	—	—	4,795	(4,795)	—	—	—
Total transactions with owners	12,711	15,767	(25,639)	(141,396)	4,795	—	—	(724)	4,071	(4,795)	(139,281)	(34,939)	(174,220)
As of March 31, 2018	¥77,914	¥ 90,740	¥(74,373)	¥1,557,307	¥272,597	¥73,037	¥4,997	¥ —	¥350,631	¥(4,795)	¥1,997,424	¥ 19,985	¥2,017,409

See accompanying notes to consolidated financial statements.

TAKEDA PHARMACEUTICAL COMPANY LIMITED AND ITS SUBSIDIARIES

Consolidated Statements of Cash Flows for the Year Ended March 31,

	Note	JPY (millions) 2016	2017	2018
Cash flows from operating activities:				
Net profit for the year		¥ 83,480	¥ 115,513	¥ 186,708
Depreciation and amortization		182,179	171,426	182,127
Impairment losses		15,202	51,361	13,544
Share-based compensation		13,178	15,385	18,610
Loss (gain) on sales and disposal of property, plant and equipment		1,244	(129)	(434)
Gain on divestment of business		—	(115,363)	(27,481)
Gain on sales of subsidiaries		(75)	—	(106,619)
Loss on liquidation of foreign operations		—	—	41,465
Change in fair value of contingent consideration		(5,636)	(18,441)	10,523
Finance income and expenses, net		10,286	10,975	(7,615)
Share of loss of associates accounted for using the equity method		3	1,546	32,199
Income tax expenses		37,059	27,833	30,497
Changes in assets and liabilities:				
Decrease (increase) in trade and other receivables		12,372	(37,315)	(647)
Decrease (increase) in inventories		(6,845)	3,886	13,719
Increase in trade and other payables		17,910	42,557	6,862
Increase (decrease) in provisions		(290,650)	20,547	(6,530)
Other, net		(10,579)	12,333	20,809
Cash generated from operations		59,128	302,114	407,737
Income taxes paid		(52,294)	(53,227)	(54,874)
Tax refunds and interest on tax refunds received		18,657	12,476	24,991
Net cash from operating activities		25,491	261,363	377,854
Cash flows from investing activities:				
Interest received		2,394	2,001	2,412
Dividends received		3,557	3,674	7,699
Payments into time deposits		(40,000)	(70,000)	—
Proceeds from withdrawal of time deposits		40,000	70,000	—
Acquisition of property, plant and equipment		(48,758)	(61,660)	(67,005)
Proceeds from sales of property, plant and equipment		498	2,629	2,965
Acquisition of intangible assets		(36,099)	(50,367)	(61,257)
Acquisition of investments		(17)	(12,106)	(16,883)
Proceeds from sales and redemption of investments		16,454	5,268	40,743
Acquisition of business, net of cash and cash equivalents acquired	31	(8,269)	(589,144)	(28,328)
Proceeds from sales of business, net of cash and cash equivalents divested		1,217	64,405	85,080
Payments into restricted deposits		—	—	(71,774)
Other, net		(2,185)	(20,391)	13,006
Net cash used in investing activities		(71,208)	(655,691)	(93,342)
Cash flows from financing activities:				
Net increase (decrease) in short-term loans	27	(5)	406,971	(403,931)
Proceeds from long-term loans	27	150,000	260,226	337,154
Repayment of long-term loans	27	(30,012)	(12,363)	(80,000)
Proceeds from issuance of bonds	27	—	—	56,299
Repayment of bonds	27	(70,000)	(179,400)	(60,000)
Purchase of treasury shares		(22,346)	(23,117)	(18,756)
Interest paid		(4,889)	(6,971)	(8,365)
Dividends paid		(141,538)	(141,688)	(141,893)
Acquisition of non-controlling interests		(804)	(4,822)	—
Repayment of obligations under finance lease	27	(4,066)	(4,013)	(2,658)
Other, net		(1,179)	(4,927)	(4,076)
Net cash from (used in) financing activities		(124,839)	289,896	(326,226)
Net decrease in cash and cash equivalents		(170,556)	(104,432)	(41,714)
Cash and cash equivalents at the beginning of the year (Consolidated statements of financial position)	18	652,148	451,426	319,455
Cash and cash equivalents reclassified back from assets held for sale	19	3,096	—	21,797
Cash and cash equivalents at the beginning of the year		655,244	451,426	341,252
Effects of exchange rate changes on cash and cash equivalents		(33,262)	(5,742)	(4,565)
Cash and cash equivalents at the end of the year		451,426	341,252	294,973
Cash and cash equivalents reclassified to assets held for sale	19	—	(21,797)	(451)
Cash and cash equivalents at the end of the year (Consolidated statements of financial position)	18	¥ 451,426	¥ 319,455	¥ 294,522

See accompanying notes to consolidated financial statements.

1. Reporting Entity

Takeda Pharmaceutical Company Limited (the "Company") is a public company incorporated in Japan. The Company and its subsidiaries (collectively, "Takeda") is a major global pharmaceutical group and is engaged in the research, development, manufacturing and marketing of pharmaceutical products, over-the-counter ("OTC") medicines and quasi-drug consumer products, and other healthcare products. Takeda's principal pharmaceutical products include medicines in the following therapeutic areas: gastroenterology, oncology and neuroscience.

2. Basis of Preparation

Compliance with International Financial Reporting Standards

Takeda's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board ("IASB"). The term IFRS also includes International Accounting Standards ("IASs") and the related interpretations of the interpretations committees (SIC and IFRIC).

Approval of Financial Statements

The Company's consolidated financial statements as of and for the year ended March 31, 2018 were approved on September 10, 2018 by Representative Director, President & Chief Executive Officer ("CEO") Christophe Weber and Corporate Officer & Chief Financial Officer Costa Saroukos.

Basis of Measurement

The consolidated financial statements have been prepared on a historical cost basis, except for certain assets and liabilities recorded at fair value including investments, derivatives, and contingent considerations.

Functional Currency and Presentation Currency

The consolidated financial statements are presented in Japanese yen ("JPY"), which is the functional currency of the Company. All financial information presented in JPY has been rounded to the nearest million JPY, except when otherwise indicated.

New Accounting Standards and Interpretations Adopted

During the year ended March 31, 2018, Takeda has adopted the amendments to IAS 12 'Income Taxes', which requires recognition of deferred tax assets for unrealized losses. Takeda has also adopted the amendments to IAS 7 'Statement of Cash Flows' Disclosure Initiative which requires additional disclosures about changes in liabilities arising from financing activities. The adoption of these standards did not have a material impact on Takeda's consolidated financial statements.

New Accounting Standards and Interpretations Issued and Not Yet Adopted

New or amended accounting standards and interpretations that have been issued as of the date of approval of the consolidated financial statements but are not effective and have not yet been adopted by Takeda as of March 31, 2018 are discussed below:

IFRS 15 'Revenue from Contracts with Customers' ("IFRS 15") was issued in May 2014 and has been implemented by Takeda on April 1, 2018. IFRS 15 provides a single, principles-based approach to the recognition of revenue from all contracts with customers. The standard focuses on the identification of performance obligations in a contract and requires revenue to be recognized when or as those performance obligations are met. The standard also updates revenue disclosure requirements. IFRS 15 is not expected to have a material impact on the amount or timing of revenue recognition from the sale of goods and associated provisions for rebates and returns. In addition, our current accounting for royalty and service revenue under IAS 18 'Revenue' includes an analysis of the performance obligations under the arrangement and up-front

revenue recognition requires the transfer of substantive rights, for example, a license to use our intellectual property and an appropriate allocation of revenue to the remaining performance obligations. While the basis for such allocation is different in IFRS 15, the impact of the adoption of the new standard on our historical allocations is not material. In our financial statements for the year ended March 31, 2019, Takeda will adopt IFRS 15 applying the modified retrospective approach and will record a cumulative adjustment to equity at April 1, 2018. As a result of the adoption of IFRS 15, opening retained earnings as of April 1, 2018 will increase by 1,328 million JPY. In accordance with the requirements of IFRS 15 where the modified retrospective approach is adopted, prior year results will not be restated. As the result of implementing IFRS 15, Takeda will provide additional disclosure regarding revenue in its financial statements.

IFRS 9 'Financial instruments' ("IFRS 9") was issued in its final form in July 2014 and has been implemented by Takeda as of April 1, 2018. IFRS 9 replaces the majority requirements of IAS 39 'Financial Instruments: Recognition and Measurement' and covers the classification, measurement and de-recognition of financial assets and financial liabilities; introduces a new impairment model for financial assets based on expected losses rather than incurred losses and provides a new hedge accounting model. The principal impact for Takeda will be the re-measurement of certain available-for-sale financial instruments to fair value on initial application on April 1, 2018. As a result, opening balance of retained earnings and other components of equity as of April 1, 2018 will increase by 14,073 million JPY and 10,257 million JPY, respectively.

IFRS 16 'Leases' ("IFRS 16") was issued in January 2016 and Takeda is required to adopt the new lease standard by April 1, 2019. The standard will replace IAS 17 'Leases' and will require lease liabilities and 'right of use' assets to be recognized on the balance sheet for almost all leases. This is expected to result in a significant increase in both assets and liabilities recognized. The costs of operating leases currently included within cost of sales, selling, general and administrative expenses, research and development expenses, and other operating expenses will be disaggregated and the financing element of the expense will be reported within finance expenses. As a lessee, this standard can be applied retrospectively to each prior reporting period (retrospective approach) or retrospectively with the cumulative effect of initially applying this standard recognized at the date of initial application (modified retrospective approach). Takeda is assessing the potential impact of IFRS 16 and the method of transition.

IFRIC 23 'Uncertainty over Income Tax Treatments' was issued in June 2017 and Takeda is required to adopt the standard by April 1, 2019. The interpretation clarifies that if it is considered probable that a tax authority will accept an uncertain tax treatment, the tax charge should be calculated on that basis. If it is not considered probable, the effect of the uncertainty should be estimated and reflected in the tax charge. In assessing the uncertainty, it is assumed that the tax authority will have full knowledge of all information related to the matter. Takeda is continuing to assess the potential impact of the new interpretation.

In addition, the following amendments and interpretations have been issued:

- Amendments to IFRS 10 and IAS 28 'Sale or Contribution of Assets between an Investor and its Associate or Joint Venture'. The IASB has deferred these amendments until a date to be determined by the IASB.
- Amendments to IFRS 2 'Classification and Measurement of Share-based Payment Transactions', effective for periods beginning on or after January 1, 2018.
- IFRIC 22 'Foreign Currency Transactions and Advance Consideration', effective for periods beginning on or after January 1, 2018.
- Amendments to IAS 40 'Transfers of Investment Property', effective for periods beginning on or after January 1, 2018

These additional amendments and interpretations are not expected to have a significant impact on Takeda's net results, net assets or disclosures.

Use of Judgments, Estimates, and Assumptions

The preparation of consolidated financial statements in accordance with IFRS requires management to make certain judgments, estimates, and assumptions that affect the application of accounting policies, the reported amount of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. Actual results could differ from these estimates.

These estimates and underlying assumptions are reviewed on a continuous basis. Changes in these accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about judgments and estimates that have been made in the process of applying accounting policies and that have significant effects on the amounts reported in the consolidated financial statements and information about accounting estimates and assumptions that have significant effects on the amounts reported in the consolidated financial statements are as follows:

- Recognition and measurement of taxes based on uncertain tax positions (Note 7)
- Recoverability of deferred tax assets (Note 7)
- Impairment of property, plant and equipment; goodwill; and other intangible assets (Note 10, Note 11, and Note 12, respectively)
- Measurement of defined benefit obligations (Note 22)
- Measurement of provisions, including estimation of rebates and return reserves associated with Takeda's product sales (Note 23)
- Valuation assumptions relating to share-based compensation (Note 28)
- Measurement of fair value of assets acquired and liabilities assumed and contingent consideration in business combinations (Note 31)
- Probability of an outflow of resources embodying economic benefits on contingent liabilities (Note 32)

3. Significant Accounting Policies

Basis of Consolidation

The consolidated financial statements include the accounts of the Company and its subsidiaries that are directly or indirectly controlled by the Company. All significant intercompany balances and transactions have been eliminated in consolidation.

Takeda controls an entity when Takeda is exposed or has rights to variable returns from involvement with the entity, and has the ability to affect those returns using its power, which is the current ability to direct the relevant activities, over the entity. To determine whether Takeda controls an entity, status of voting rights or similar rights, contractual agreements and other specific factors are taken into consideration.

The financial statements of the subsidiaries are included in the consolidated financial statements from the date when control is obtained until the date when control is lost. The financial statements of subsidiaries have been adjusted in order to ensure consistency with the accounting policies adopted by the Company as necessary.

Changes in ownership interest in subsidiaries that do not result in loss of control are accounted for as equity transactions. Any difference between the adjustment to non-controlling interests and the fair value of consideration transferred or received, is recognized directly in equity attributable to owners of the Company. When control over a subsidiary is lost, the investment retained after the loss of control is re-measured at fair value as of the date when control is lost, and any gain or loss on such re-measurement and disposal of the interest sold is recognized in profit or loss.

Investments in Associates and Joint Arrangements

Associates are entities over which Takeda has significant influence over the decisions on financial and operating policies, but does not have control or joint control. Investments in associates are accounted for using the equity method and recognized at cost on the acquisition date. The carrying amount is subsequently increased or decreased to recognize Takeda's share of profit or loss and other comprehensive income of the affiliate. Intra-group profits on transactions with associates accounted for using the equity method are eliminated against the investment to the extent of Takeda's equity interest in the associates. Intra-group losses are eliminated in the same way as intra-group profits unless there is evidence of impairment.

Joint arrangement is an arrangement of which two or more parties have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant

activities require the unanimous consent of the parties sharing control. Takeda classifies joint arrangement into either joint operations or joint ventures. The classification of a joint arrangement as a joint operation or a joint venture depends upon the rights and obligations of the parties to the arrangement. Joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. The assets, liabilities, revenues and expenses in joint operations are recognized in relation to Takeda's interest. The investment in joint ventures is accounted for using the equity method. At each reporting date, the Company determines whether there is objective evidence that the investment in the associate or joint venture is impaired. If there is such evidence, the Company calculates the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value, and then recognizes the loss within profit or loss.

Business Combinations

Business combinations are accounted for using the acquisition method. The identifiable assets acquired and the liabilities assumed are measured at the fair values at the acquisition date. Goodwill is measured as the excess of the sum of the fair value of consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquirer's previously held equity interest in the acquiree less the fair value of identifiable assets acquired, net of liabilities assumed at the acquisition date.

The consideration transferred for the acquisition of a subsidiary is measured as the fair value of the assets transferred, the liabilities incurred to former owners of the acquiree, and the equity interests issued by Takeda. Non-controlling interests is initially measured either at fair value or at the non-controlling interests' proportionate share of the recognized amounts of the acquiree's identifiable net assets on a transaction-by-transaction basis. The consideration for certain acquisitions includes amounts contingent upon future events, such as the achievement of development milestones and sales targets. Any contingent consideration included in the consideration payable for a business combination is recorded at fair value at the date of acquisition. These fair values are generally based on risk-adjusted future cash flows discounted using appropriate discount rates. The fair values are reviewed at the end of each reporting period. The changes in the fair value based on the time value of money are recognized in "Finance expenses" and the other changes are recognized in "Other operating income" or "Other operating expenses" in the consolidated statements of income.

Acquisition related costs are recognized as expenses in the period they are incurred. Changes in Takeda's ownership interests in subsidiaries arising from transactions between Takeda and non-controlling interests that do not result in Takeda losing control over a subsidiary are treated as equity transactions and therefore, do not result in adjustments to goodwill.

Foreign Currency Translations

Foreign Currency Transactions

Foreign currency transactions are translated into the functional currency of each entity within Takeda using the exchange rates at the dates of the transactions or rates that approximate the exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency using the spot rates of exchange at the end of each reporting period. Non-monetary assets and liabilities that are measured at fair value in foreign currencies are translated using historical exchange rates at the date when the fair value was determined. Non-monetary assets and liabilities measured based on historical cost that are denominated in foreign currencies are translated at the exchange rate at the date of the initial transaction. Exchange differences arising from the translation or settlement are recognized in profit or loss except when related to financial assets measured at fair value through other comprehensive income, as well as financial instruments designated as hedges of net investments in foreign operations and cash flow hedges subsequently recognized as other comprehensive income. The gain or loss arising from translation of non-monetary items measured at fair value is treated in line with the recognition of the gain or loss on the change in fair value of the item (i.e., translation differences on items whose fair value gain or loss is recognized in other comprehensive income or profit or loss, are also recognized in other comprehensive income or profit or loss, respectively).

Foreign Operations

The assets and liabilities of foreign operations are translated using the spot exchange rates at the end of the reporting period, while income and expenses of foreign operations presented in net profit or loss and other comprehensive income are translated using the exchange rates at the dates of the transactions or rates that approximate the exchange rates at the dates of the transactions.

Exchange differences arising from translation are recognized as other comprehensive income. In cases in which foreign operations are disposed of, the cumulative amount of exchange differences related to the foreign operations is recognized as part of the gain or loss on disposal.

Revenue

Revenue consists primarily of sales of pharmaceutical products, as well as royalty and service income.

Revenue is recognized when significant risks and rewards of ownership have been transferred to a third party. Product sales are recognized when title passes to the customer, either upon shipment or upon receipt of goods by the customer, as specified in the sales agreement. Service and royalty income are recognized on an accrual basis in accordance with the substance of the relevant agreement.

Revenue is reduced by rebates, discounts, and products returned or expected to be returned which vary by product arrangements, government pricing, and the purchasing organization. In certain areas, Takeda has arrangements with purchasing organizations, as well as product sales subject to government pricing arrangements that are dependent upon the submission of claims sometime after the initial recognition of the sale. Provisions are made at the time of sale for the estimated rebates, discounts, or returns to be made, based on available market information and historical experience.

Because the amounts are estimated, they may not fully reflect the final outcome, and the amounts are subject to change dependent upon, amongst other things, the type of purchasing organization, end consumer, and product sales mix.

The level of accrual for rebates and returns is reviewed and adjusted regularly in light of contractual and legal obligations, historical trends, past experience, and projected market conditions. Market conditions are evaluated using wholesaler and other third-party analysis, market research data, and internally generated information.

Future events could cause the actual assumptions on which the accruals are based to change, which could affect the future results of Takeda.

Government Grants

Government grants are recognized when there is reasonable assurance that Takeda will comply with the conditions attached to them and receive the grants. Government grants for the purchasing of property, plant and equipment are recognized as deferred income and then recognized as net profit or loss and offset the related expenses on a systematic basis over the useful lives of the related assets. Government grants for expenses incurred are recognized as net profit or loss and offset the related expenses over the periods in which Takeda recognizes costs for which the grants are intended to compensate.

Advertising and Sales Promotion Expenses

Costs of advertising and sales promotion are expensed as incurred. Advertising and sales promotion expenses were 121,055 million JPY, 112,842 million JPY, and 115,708 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively.

Research and Development Expenses

Research costs are expensed in the period incurred. Internal development expenditures are capitalized when the criteria for recognizing an asset are met in accordance with IAS 38 ‘Intangible Assets,’ usually when a regulatory filing has been made in a major market and approval is considered highly probable. Where regulatory and other uncertainties are such that the criteria are not met, the expenditures are recognized in the income statement. Property, plant and equipment used for research and development is capitalized and depreciated in accordance with IFRS.

Income Taxes

Income taxes consist of current taxes and deferred taxes. Current and deferred taxes are recognized in profit or loss, except for income taxes resulting from business combinations, and income taxes recognized in either other comprehensive income or equity related to items that are recognized, in the same or different period, outside of profit or loss.

Current Taxes

The current tax payable or receivable is based on taxable profit for the year. Taxable profit differs from reported profit because taxable profit excludes items that are either never taxable or tax deductible or items that are taxable or tax deductible in a different period. Accrued income taxes and income tax receivable, including those from prior fiscal years, are measured at the amount that is expected to be paid to or received from the taxation authorities, reflecting uncertainty related to income taxes, if any. Takeda's current taxes also include liabilities related to uncertain tax positions. Takeda's current tax assets and liabilities are calculated using tax rates that have been enacted or substantively enacted by the reporting date.

Deferred Taxes

Deferred taxes are calculated based on the temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes at the end of the reporting period. Deferred tax assets are recognized for deductible temporary differences, unused tax credits and unused tax losses to the extent that it is probable that future taxable profit will be available against which the assets can be utilized. This requires us to evaluate and assess the probability of future taxable profit and our business plan, which are inherently uncertain. Uncertainty of estimates of future taxable profit could increase due to changes in economies in which we operate, changes in market conditions, effects of currency fluctuations, or other factors. Takeda's deferred taxes also include liabilities related to uncertain tax positions. Deferred tax liabilities are generally recognized for taxable temporary differences.

Deferred tax assets and liabilities are not recognized for the following temporary differences:

- Taxable temporary differences arising on the initial recognition of goodwill
- The initial recognition of assets and liabilities in transactions that are not business combinations and affect neither accounting profit nor taxable profit (loss) at the time of the transaction
- Deductible temporary differences arising from investments in subsidiaries and associates, when it is not probable that the temporary differences will reverse in the foreseeable future and that taxable profit will be available against which the temporary differences can be utilized
- Taxable temporary differences arising from investments in subsidiaries and associates when the timing of the reversal of the temporary differences is controllable and it is not probable that they will reverse in the foreseeable future

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the periods in which the temporary differences are expected to reverse based on the tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period. Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and the deferred tax assets and liabilities are for those related to income taxes levied by the same taxation authority on the same taxable entity.

Earnings per Share

Basic earnings per share is calculated by dividing profit or loss for the year attributable to owners of ordinary shares of the Company, by the weighted-average number of ordinary shares outstanding during the reporting period, adjusted by the number of treasury shares. Diluted earnings per share is calculated by adjusting all the effects of dilutive potential ordinary shares.

Property, Plant and Equipment

Property, plant and equipment are measured using the cost model and is stated at cost less accumulated depreciation and accumulated impairment loss. Acquisition cost includes mainly the costs directly attributable to the acquisition and the initial estimated dismantlement, removal, and restoration costs associated with the asset. Except for assets that are not subject to depreciation, such as land and construction in progress, assets are depreciated mainly using the straight-line method over the estimated useful life of the asset. Leased assets are depreciated using the straight-line method over the shorter of the lease term or the estimated useful life if it is reasonably certain that Takeda will obtain ownership by the end of the lease term. The depreciation of these assets begins when they are available for use.

The estimated useful life of major asset items is as follows:

- Buildings and structures 3 to 50 years
- Machinery and vehicles 2 to 20 years
- Tools, furniture and fixtures 2 to 20 years

Goodwill

Goodwill arising from business combinations is stated at its cost less accumulated impairment losses. Goodwill is not amortized. Goodwill is allocated to cash-generating units or groups of cash-generating units based on expected synergies and tested for impairment annually or whenever there is any indication of impairment. Impairment losses on goodwill are recognized in the consolidated statements of income and no subsequent reversal will be made.

Intangible Assets Associated with Products

Takeda regularly enters into collaboration and in-license agreements with third parties for products and compounds for research and development projects. Payments for collaboration agreements generally take the form of subsequent development milestone payments. Payments for in-license agreements generally take the form of up-front payments and subsequent development milestone payments.

Up-front payments for in-license agreements are capitalized upon commencement of the in-license agreements, and development milestone payments are capitalized when the milestone is triggered.

These intangible assets relating to products in development that are not yet available for use are not amortized. These intangible assets are assessed for impairment on an annual basis, or more frequently if indicators of a potential impairment exist. An impairment is recorded if the carrying value exceeds the recoverable amount of the intangible assets. Intangible assets relating to products which fail during development, or for which development ceases for any reason are written down to their recoverable amount which is typically nil.

If and when Takeda obtains approval for the commercial application of a product in development, the related in-process research and development assets will be reclassified to intangible assets associated with products and amortized over its estimated useful life from marketing approval.

An intangible asset associated with a product is amortized on a straight-line basis over the estimated useful life, which is based on expected exclusivity period, ranging from 3 to 20 years. Amortization of intangible assets is included in “Amortization and impairment losses on intangible assets associated with products” in the consolidated statements of income. “Amortization and impairment losses on intangible assets associated with products” is separately stated in the consolidated statement of income because intangible assets associated with products have various comprehensive rights and contribute to our ability to sell, manufacture, research, market and distribute products, compounds and benefit multiple business functions.

Intangible Assets – Software

Software is recognized at cost and amortized on a straight-line basis over the expected useful life. The useful life used for this purpose is three to seven years. Amortization of intangible assets – software is included in “Cost of sales,” “Selling, general and administrative expenses,” and “Research and development expenses” in the consolidated statements of income.

Leases

Leases are classified as finance leases if substantially all the risks and rewards incidental to ownership are transferred to the lessee. Leases other than finance leases are classified as operating leases.

As Lessee

At the commencement of the lease term, Takeda recognizes finance leases as assets and liabilities in the consolidated statements of financial position at amounts equal to the fair value of the leased property or, if lower,

the present value of the minimum lease payments, each determined at the inception of the lease. Lease payments for operating leases are recognized as expenses on a straight-line basis over the lease term, unless another systematic basis is more representative of the time pattern of the user's benefit is available.

Impairment of Non-Financial Assets

Takeda assesses the carrying amounts of non-financial assets at the end of each reporting period, excluding inventories, deferred tax assets, assets held for sale, and assets arising from employee benefits, to determine whether there is any indication of impairment. If any such indication exists, or in cases in which an impairment test is required to be performed each year, the recoverable amount of the asset is estimated. In cases in which the recoverable amount cannot be estimated for each asset, they are estimated at the cash-generating unit level. The recoverable amount of an asset or a cash-generating unit is determined at the higher of its fair value less cost of disposal, or its value in use. In determining the value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects the time value of money and the risks specific to the asset. If the carrying amount of the asset or cash-generating unit exceeds the recoverable amount, impairment loss is recognized in profit or loss and the carrying amount is reduced to the recoverable amount. An asset or a cash-generating unit other than goodwill, for which impairment losses were recognized in prior years, is assessed at the end of the reporting period to determine whether there is any indication that the impairment loss recognized in prior periods may no longer exist or may have decreased. If any such indication exists, the recoverable amount of the asset or cash-generating unit is estimated. In cases in which the recoverable amount exceeds the carrying amount of the asset or cash-generating unit, the impairment loss is reversed up to the lower of the estimated recoverable amount or the carrying amount that would have been determined if no impairment loss had been recognized in prior years. The reversal of impairment loss is immediately recognized in profit or loss.

Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is determined mainly using the weighted-average cost formula. The cost of inventories includes purchase costs, costs of conversion, and other costs incurred in bringing the inventories to the present location and condition. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. Pre-launch inventory is held as an asset when there is a high probability of regulatory approval for the product. Before that point, a provision is made against the carrying value to its recoverable amount; the provision is then reversed at the point when a high probability of regulatory approval is determined.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, demand deposits and short-term, highly liquid investments that are readily convertible to known amounts of cash and subject to insignificant risk of change in value and due within three months from the date of acquisition.

Assets Held for Sale

An asset or disposal group for which the cash flows are expected to arise principally from sale rather than continuing use is classified as an asset held for sale when it is highly probable that the asset or disposal group will be sold within one year, the asset or disposal group is available for immediate sale in its present condition, and the management of Takeda is committed to the sale. In such cases, the asset held for sale is measured at the lower of its carrying amount and fair value less costs to sell.

Property, plant and equipment and intangible assets are not depreciated or amortized once classified as held for sale. Assets and liabilities classified as held for sale are presented separately as current items in the consolidated statements of financial position.

Post-employment Benefit

Takeda sponsors lump-sum payments on retirement, pensions and other plans such as post-retirement medical care as post- employment benefit plans. They are classified into defined benefit plans and defined contribution plans.

Defined Benefit Plans

Takeda uses the projected unit credit method to determine the present value, the related current service cost, and the past service cost by each defined benefit obligation. The discount rate is determined by reference to market yields on high quality corporate bonds at the end of the reporting period. The net defined benefit liabilities (assets) in the consolidated statements of financial position are calculated by deducting the fair value of the plan assets from the present value of the defined benefit obligations. Past service cost defined as the change in the present value of the defined benefit obligation resulting from a plan amendment or curtailment is recognized in profit or loss upon occurrence of the plan amendment or curtailment.

Re-measurement of net defined benefit plans is recognized in full as other comprehensive income and transferred to retained earnings in the period in which they are recognized.

Defined Contribution Plans

The costs for defined contribution plans are recognized as expenses when the employees render the related service.

Provisions

Provisions are recognized when Takeda has present legal or constructive obligations as a result of past events, it is probable that outflows of resources embodying economic benefits will be required to settle the obligations and reliable estimates can be made of the amount of the obligations. Takeda's provisions consist primarily of rebates and return reserves, as well as provisions for litigation and restructuring.

Financial Instruments

Takeda's financial instruments include financial instruments related to lease contracts, trade and other receivables and payables, liabilities for contingent consideration under business combinations, and rights and obligations under employee benefit plans, which are dealt with in specific accounting policies.

Financial Assets

Initial Recognition and Measurement

Financial assets are recognized in the consolidated statements of financial position when Takeda becomes a party to the contractual provisions of the instruments. At the initial recognition, the financial assets are classified based on the nature and purpose in accordance with the following:

- Financial assets at fair value through profit or loss – Either held-for-trading financial assets or financial assets designated as financial assets at fair value through profit or loss.
- Loans and receivables – Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.
- Available-for-sale financial assets – Non-derivative financial assets and either designated as available-for-sale financial assets or not classified as (a) financial assets at fair value through profit or loss, or (b) loans and receivables.

Financial assets, except for financial assets at fair value through profit or loss, are initially measured at fair value plus transaction costs that are directly attributable to the acquisition.

Subsequent Measurement

- Financial assets at fair value through profit or loss – Financial assets at fair value through profit or loss are measured at fair value, and any gains or losses arising on re-measurement are recognized in profit or loss.
- Loans and receivables – Loans and receivables are measured at amortized cost using the effective interest method less any impairment loss. Interest income is recognized principally by applying the effective interest rate, unless the recognition of interest is immaterial as in the case of short-term receivables.

- Available-for-sale financial assets – Available-for-sale financial assets are measured at fair value as of the end of the reporting period, and the gains and losses arising from changes in fair value are recognized in other comprehensive income. Exchange differences on monetary assets are recognized in profit or loss. Dividends on available-for-sale financial assets (equity instruments) are recognized in profit or loss in the reporting period when Takeda's right to receive the dividends is established.

Impairment

Financial assets, other than financial assets at fair value through profit or loss, are assessed for indicators of impairment at the end of each reporting period. Financial assets are considered impaired when there is objective evidence that one or more events occurred after the initial recognition of the financial asset and it is reasonably anticipated to have had a negative impact on the estimated future cash flows of the asset. For available-for-sale equity instrument, a significant or prolonged decline in the fair value below its cost is considered objective evidence of impairment. Even when there is no objective evidence of impairment individually, certain categories of financial assets, such as trade receivables, are collectively assessed for impairment. For financial assets measured at amortized cost, the impairment loss is the difference between the carrying amount of the asset and the present value of the estimated future cash flows discounted at the original effective interest rate on the asset. In a subsequent period, if the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized; the previously recognized impairment loss is reversed through profit or loss. When an available-for-sale financial asset is determined to be impaired, the cumulative gain or loss that was previously accumulated in accumulated other comprehensive income (loss) is reclassified to profit or loss in the same period. In respect to available-for-sale equity investments, impairment loss previously recognized in profit or loss is not reversed through profit or loss. In respect to available-for-sale debt instruments, if the amount of the fair value increases in a subsequent period and the increase can be related objectively to an event occurring after the impairment was recognized; the previously recognized impairment loss is reversed through profit or loss.

Derecognition

Takeda derecognizes a financial asset only when the contractual right to receive the cash flows from the asset expires or when Takeda transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. On derecognition of a financial asset, the difference between the carrying amount and the consideration received or receivable is recognized in profit or loss, and the cumulative gain or loss that was previously accumulated in accumulated other comprehensive income (loss) is reclassified to profit or loss.

Financial Liabilities

Initial Recognition and Measurement

Financial liabilities are recognized in the consolidated statements of financial position when Takeda becomes party to contractual provisions of financial instruments. Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, bonds and loans, or payables.

Financial liabilities, except for financial liabilities at fair value through profit or loss, are initially measured at fair value less transaction costs that are directly attributable to the issuance.

Subsequent Measurement

- Financial liabilities at fair value through profit or loss – Financial liabilities at fair value through profit or loss are measured at fair value, and any gains or losses arising on re-measurement are recognized in profit or loss.
- Other financial liabilities, including bonds and loans – Other financial liabilities are measured at amortized cost mainly using the effective interest method.

Derecognition

Takeda derecognizes a financial liability only when the obligation specified in the contract is discharged, cancelled, or expires. On derecognition of a financial liability, the difference between the carrying amount and the consideration paid or payable is recognized in profit or loss.

Derivatives

Takeda hedges the risks arising mainly from their exposure to fluctuations in foreign currency exchange rates and interest rates using derivative financial instruments such as foreign exchange forward contracts, interest rate swaps, and currency swaps. Takeda does not enter into derivative transactions for trading or speculative purposes. Derivatives not qualifying for hedge accounting are classified as financial assets or liabilities at fair value through profit or loss.

Hedge Accounting

Takeda designates certain derivatives and non-derivatives such as foreign-currency-denominated debt as cash flow hedges and hedges of net investments in foreign operations, respectively, and applies hedge accounting to them. Takeda documents the relationship between hedging instruments and hedged items based on the strategy for undertaking hedge transactions at the inception of the transaction. Takeda also assesses whether the derivatives used in hedging transactions are highly effective in achieving offsetting changes in cash flows and foreign currency of hedged items both at the hedge inception and on an ongoing basis.

Cash flow hedges – the effective portion of changes in the fair value of derivatives designated and qualifying as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss. The cumulative gain or loss that was previously recognized in other comprehensive income is reclassified to profit or loss in the same period when the cash flows of the hedged items are recognized in profit or loss and in the same line item in the consolidated statements of income.

Net investment hedges – the gain or loss on hedging instruments is recognized in other comprehensive income. At the time of disposal of the foreign operations, the cumulative gain or loss recognized in other comprehensive income is reclassified to profit or loss.

Hedge accounting is discontinued when Takeda revokes the designation, when the hedging instrument expires or is sold, terminated or exercised, or when the hedge no longer qualifies for hedge accounting.

Share-based Payments

Takeda has implemented share-based payment programs and provides equity and cash-settled share-based payments.

Equity-settled Share-based Payments

Equity-settled share-based payments are granted based on the service performed by the employees, directors, and senior management. The service received and the corresponding increase in equity are measured at the fair value of the equity instruments at the grant date. The fair value of the equity instruments granted to employees, directors, and senior management are recognized as expense over the vesting period of the awards with a corresponding amount as an increase in equity.

Cash-settled Share-based Payments

Cash-settled share-based payments are granted based on the service performed by the employees, directors, and senior management. The service received and the corresponding liability are measured at the fair value of the corresponding liability. The fair value of the liability-classified awards granted to employees, directors, and senior management are recognized as expense over the vesting period of the awards with a corresponding amount as an increase in liability. Takeda re-measures the fair value of the liability at the end of each reporting period and at the date of settlement, and recognize any changes in fair value in profit or loss.

Capital

Ordinary Shares

Proceeds from the issuance of ordinary shares by the Company are included in share capital and share premium.

Treasury Shares

When the Company acquires treasury shares, the consideration paid is recognized as a deduction from equity. When the Company sells the treasury shares, the difference between the carrying amount and the consideration received is recognized in share premium.

4. Operating Segment and Revenue Information

Takeda has historically reported Prescription Drug, Consumer Healthcare, and Other as its three operating and reportable segments.

In April 2017, Takeda disposed Wako Pure Chemical Industries, Ltd. which represented substantially all of the Other segment in terms of revenue and operating profit. Further, in March 2018, the Company announced it was considering an offer to purchase Shire plc (refer to Note 33). In connection with these changes and the Company's focus on prescription drug, the Company has reconsidered its segment structure and reporting and concluded that Takeda comprises one operating segment, consistent with how the financial information is viewed in allocating resources, measuring performance, and forecasting future periods by the CEO who is Takeda's Chief Operating Decision Maker.

As a result, the segment reporting has been changed for the year ended March 31, 2018, and the historical disclosures in the comparative periods have been restated to present the segments on a consistent basis for all periods.

Takeda's revenue is comprised of the following for the years ended March 31:

	JPY (millions)		
	2016	2017	2018
Sales of pharmaceutical products	¥1,750,910	¥1,671,911	¥1,693,838
Royalty and service income	56,468	60,140	76,693
Total	¥1,807,378	¥1,732,051	¥1,770,531

Takeda's revenue from customers is based in the following geographic locations for the years ended March 31:

	JPY (millions)							
	Japan	United States	Europe and Canada	Russia/ CIS	Latin America	Asia	Other	Total
2016	¥688,090	¥514,420	¥309,270	¥61,821	¥68,392	¥125,961	¥39,424	¥1,807,378
2017	655,344	520,161	279,693	57,550	72,516	112,799	33,988	1,732,051
2018	580,349	598,341	313,723	68,240	75,658	104,026	30,194	1,770,531

Other includes the Middle East, Oceania and Africa.

Takeda's non-current assets are held in the following geographic locations:

	JPY (millions)			
	Japan	United States	Other	Total
As of March 31, 2017	¥410,606	¥1,293,798	¥920,316	¥2,624,720
As of March 31, 2018	413,457	1,231,051	972,401	2,616,909

Non-current assets exclude financial instruments, deferred tax assets and net defined benefit assets.

Balances as of March 31, 2017, are revised to reflect the completed purchase price allocation of ARIAD Pharmaceutical Inc. ("ARIAD") acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Information Related to Major Customers

Takeda has one customer, Medipal Holdings Corporation and its subsidiaries (collectively, "Medipal Group"), that represents more than 10% of Takeda's total sales. The sales to the Medipal Group were

258,661 million JPY, 265,646 million JPY, and, 220,249 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively, and 56,521 million JPY and 49,565 million JPY of trade receivables at March 31, 2017 and 2018, respectively.

5. Other Operating Income and Expenses

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Other operating income:			
Receipt of contingent consideration	¥ 4,915	¥ 1,543	¥ 91
Change in fair value of contingent consideration (Note 31)	5,636	18,441	—
Gain on sales of property, plant and equipment and investment property (Note 19)	54	762	18,814
Gain on divestment of business to Teva Takeda Yakuhin (Note 14)	—	115,363	27,481
Gain on sale of shares of Wako Pure Chemical Industries, Ltd. (Note 19)	—	—	106,337
Other	10,740	7,424	16,689
Total	¥21,345	¥143,533	¥169,412
Other operating expenses:			
Donations and contributions	¥ 2,442	¥ 3,763	¥ 5,603
Restructuring expense (Note 23)	25,760	54,589	44,736
Loss on liquidation of foreign operations	—	—	41,465
Change in fair value of contingent consideration (Note31)	—	—	10,523
Other	16,184	14,529	24,228
Total	¥44,386	¥ 72,881	¥126,555

For the year ended March 31, 2009, Takeda sold a business under terms and conditions that included a consideration that was contingent upon future events. The receipt of contingent consideration shown above represents payments received related to this disposal.

Loss on liquidation of foreign operations represents the recognition of the cumulative translation loss in the consolidated statement of income upon the liquidation of certain foreign operations.

6. Finance Income and Expenses

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Finance Income:			
Interest income	¥ 2,316	¥ 2,019	¥ 3,282
Dividends income	3,329	3,236	3,165
Gain on sales of available-for-sale financial assets	15,051	3,638	30,430
Gain on foreign currency exchange, net	—	1,897	—
Other	949	1,484	2,666
Total	¥21,645	¥12,274	¥39,543
Finance Expenses:			
Interest expense	¥ 5,271	¥ 7,560	¥10,036
Change in fair value of contingent consideration liabilities (Note 31)	7,605	3,693	2,261
Impairment of available-for-sale financial assets	2,332	3,659	6,657
Loss on derivative financial assets	5,139	5,428	—
Loss on foreign currency exchange, net	8,896	—	10,279
Other	2,688	2,909	2,695
Total	¥31,931	¥23,249	¥31,928

7. Income Taxes

Income Tax Expenses

The major components of income tax expenses are as follows:

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Current tax expenses	¥45,270	¥ 60,239	¥37,758
Deferred tax expenses	(8,211)	(32,406)	(7,261)
Total	¥37,059	¥ 27,833	¥30,497

Current tax expenses include the benefits arising from previously unused tax losses, tax credits, and temporary differences of prior periods. These effects decreased current tax expenses by 614 million JPY, 1,563 million JPY, and 8,005 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively.

Deferred tax expenses include the benefits arising from previously unused tax losses, tax credits, and temporary differences of prior periods. These effects decreased deferred tax expenses by 26,378 million JPY, 10,915 million JPY, and 2,998 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively.

The Company is mainly subject to income taxes, inhabitant tax, and deductible enterprise tax in Japan. The statutory tax rate calculated based on these taxes for the years ended March 31, 2016, 2017 and 2018 were 33.0%, 30.8% and 30.8%, respectively. The tax law changed during the periods presented, which resulted in the reduction in the statutory tax rate for the Company.

The following is a reconciliation from the Company's domestic (Japanese) tax rate to the effective tax rate for the year ended March 31:

	(Unit: Percentage)		
	2016	2017	2018
Company's domestic (Japanese) tax rate	33.0	30.8	30.8
Non-deductible expenses for tax purposes	3.4	4.7	2.6
Changes in unrecognized deferred tax assets and deferred tax liabilities	(13.4)	(5.0)	(0.6)
Tax credits	(22.2)	(6.4)	(4.7)
Differences in applicable tax rates of subsidiaries	9.7	(7.1)	(5.4)
Changes in tax effects of undistributed profit of overseas subsidiaries	(5.7)	0.5	0.1
Effect of changes in applicable tax rates	7.2	(1.8)	(12.6)
Tax contingencies	15.3	3.7	2.7
Non-deductible impairment of goodwill	—	2.3	—
Changes in fair value of contingent consideration	0.7	(3.7)	1.7
Others	2.7	1.4	(0.6)
Effective tax rate	30.7	19.4	14.0

The Japanese statutory tax rate was reduced from 33.0% to 30.8% beginning April 1, 2016 due to the enactment of a partial amendment of the Income Tax Act, passed by the National Diet of Japan on March 29, 2016.

In the United States, the Tax Cuts and Jobs Act ("U.S. Tax Reform") was enacted on December 22, 2017. The federal corporate tax rate was reduced from 35% to 21% beginning January 1, 2018 under the new tax law. As a consequence of U.S. Tax Reform enactment, Takeda recognized tax benefits of 27,516 million JPY during the year ended March 31, 2018, primarily from the revaluation of net deferred tax liabilities at lower future tax rates and the improved recoverability of deferred tax attributes resulting from U.S. Tax Reform enacted federal law changes. The impacts of U.S. Tax Reform described above are based on information currently available. As further interpretative guidance and clarification becomes available through legislation, U.S. Treasury action or other means, the assumptions underlying these estimates could change which could have a material impact on Takeda's results.

The decrease in Takeda's effective tax rate from 30.7% to 19.4% between the years ended March 31, 2016 and 2017, resulted primarily from a lower Japanese statutory tax rate; favorable geographical mix of

earnings (in "Differences in applicable tax rates of subsidiaries"); a non-recurring favorable audit settlement during the year ended March 31, 2017, (in "Tax contingencies"); and a one-time tax provision during the year ended March 31, 2016, related to the revaluation of net deferred tax asset in Japan at a lower enacted rate, (in "Effect of changes in applicable tax rates"), partially offset by a non-recurring unfavorable audit settlement during the year ended March 31, 2016, (in "Tax contingencies"), and lower tax credits, (in "Tax credits") and less subsidiary capital redemption, (in "Changes in unrecorded deferred tax assets and deferred tax liabilities") during the year ended March 31, 2017, versus prior year.

The decrease in Takeda's effective tax rate from 19.4% to 14.0% between the years ended March 31, 2017 and 2018, was primarily due to a one-time tax benefit from the enactment of U.S. Tax Reform principally related to the revaluation of net deferred tax liability at a lower enacted tax rate and improved recoverability of deferred tax attributes resulting from U.S. Tax Reform during the year ended March 31, 2018 (in "Effect of changes in applicable tax rates"), partially offset by tax benefit from subsidiary capital redemption (in "Changes in unrecorded deferred tax assets and deferred tax liabilities") during the prior year that did not occur in the current year.

Deferred Taxes

Deferred tax assets and liabilities reported in the consolidated statements of financial position are as follows:

	JPY (millions) As of March 31	
	2017	2018
Deferred tax assets	¥ 118,968	¥ 64,980
Deferred tax liabilities	(153,396)	(90,725)
Net deferred tax liabilities	¥ (34,428)	¥(25,745)

The major items and changes in deferred tax assets and liabilities are as follows:

	JPY (millions)					
	As of April 1, 2016	Recognized in Profit or (Loss)	Recognized in Other Comprehensive Income	Acquisitions through Business Combinations	Others*	As of March 31, 2017
Research and development expenses	¥ 60,836	¥ (8,111)	¥ —	¥ —	¥ (130)	¥ 52,595
Inventories	29,565	10,120	—	(1,135)	(98)	38,452
Property, plant and equipment	(41,590)	884	—	5,796	1,336	(33,574)
Intangible assets	(173,450)	77,813	—	(149,654)	(9,617)	(254,908)
Available-for-sale financial assets	(25,235)	—	(2,986)	—	(20)	(28,241)
Accrued expenses and provisions	85,493	(6,047)	—	1,482	(662)	80,266
Defined benefit plans	11,885	386	(7,688)	—	232	4,815
Deferred income	18,504	(1,652)	—	748	(38)	17,562
Unused tax losses	47,543	(26,132)	—	43,126	(1,651)	62,886
Tax credits	25,989	(872)	—	6,469	(2,023)	29,563
Investments in subsidiaries and associates	(150)	(35,311)	—	—	—	(35,461)
Other	7,914	21,328	(2,103)	749	3,729	31,617
Total	¥ 47,304	¥ 32,406	¥(12,777)	¥ (92,419)	¥(8,942)	¥ (34,428)

	JPY (millions)					
	As of April 1, 2017	Recognized in Profit or (Loss)	Recognized in Other Comprehensive Income	Acquisitions through Business Combinations	Others*	As of March 31, 2018
Research and development expenses	¥ 52,595	¥(34,007)	¥ —	¥—	¥ (225)	¥ 18,363
Inventories	38,452	(6,561)	—	—	18	31,909
Property, plant and equipment	(33,574)	656	—	—	(111)	(33,029)
Intangible assets	(254,908)	84,254	—	—	1,696	(168,958)
Available-for-sale financial assets	(28,241)	—	4,074	—	89	(24,078)
Accrued expenses and provisions	80,266	(10,373)	—	—	(1,560)	68,333
Defined benefit plans	4,815	(3,032)	(432)	—	1,027	2,378
Deferred income	17,562	709	—	—	(503)	17,768
Unused tax losses	62,886	(16,114)	—	—	915	47,687
Tax credits	29,563	9,314	—	—	(2,456)	36,421
Investments in subsidiaries and associates	(35,461)	6,762	—	—	89	(28,610)
Other	31,617	(24,347)	(1,570)	—	371	6,071
Total	¥ (34,428)	¥ 7,261	¥ 2,072	¥—	¥ (650)	¥ (25,745)

* Other consists primarily of foreign currency translation difference and the tax impact relating to assets and liabilities classified as held for sale.

Balances as of March 31, 2017 are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Takeda considers the probability that a portion, or all of the future deductible temporary differences or unused tax losses can be utilized against future taxable profits upon recognition of deferred tax assets. In assessing the recoverability of deferred tax assets, Takeda considers the scheduled reversal of taxable temporary differences, projected future taxable profits, and tax planning strategies. Based on the level of historical taxable profits and projected future taxable profits during the periods in which the temporary differences become deductible, Takeda determined that it is probable that the tax benefits can be utilized.

The unused tax losses, deductible temporary differences, and unused tax credits for which deferred tax assets were not recognized are as follows:

	JPY (millions) As of March 31	
	2017	2018
Unused tax losses	¥87,070	¥36,878
Deductible temporary differences	984	11,593
Unused tax credits	10,442	7,954

The unused tax losses and unused tax credits for which deferred tax assets were not recognized will expire as follows:

	JPY (millions) As of March 31	
Unused tax losses	2017	2018
1st year	¥ —	¥ —
2nd year	—	92
3rd year	56	8,901
4th year	1,599	505
5th year	577	301
After 5th year	84,838	27,079
Total	¥87,070	¥36,878

Unused tax credits	JPY (millions) As of March 31 2017	2018
Less than 5 years	¥ 4,114	¥3,201
5 years or more	6,328	4,753
Total	¥10,442	¥7,954

The aggregate amounts of temporary differences associated with investments in subsidiaries for which deferred tax assets were not recognized were 200,322 million JPY and 140,647 million JPY as of March 31, 2017 and 2018, respectively.

The aggregate amounts of temporary differences associated with investments in subsidiaries for which deferred tax liabilities were not recognized were 178,529 million JPY, and 157,656 million JPY as of March 31, 2017 and 2018, respectively.

8. Earnings per Share

The basis for calculating basic and diluted earnings per share ("EPS") (attributable to owners) for the years ended March 31 is as follows:

	2016	2017	2018
Net profit for the year attributable to owners of the Company:			
Net profit for the year attributable to owners of the Company JPY (millions)	80,166	114,940	186,886
Net profit used for calculation of earnings per share JPY (millions)	80,166	114,940	186,886
Weighted-average number of ordinary shares outstanding during the year (thousands of shares) [basic]	783,933	781,096	780,812
Dilutive effect (thousands of shares)	4,235	4,792	5,895
Weighted-average number of ordinary shares outstanding during the year (thousands of shares) [diluted]	788,168	785,888	786,707
Earnings per share			
Basic (JPY)	102.26	147.15	239.35
Diluted (JPY)	101.71	146.26	237.56

Basic EPS is calculated by dividing the net profit for the year attributable to owners of the Company, with the weighted average number of ordinary shares outstanding during the year. This calculation excludes the average number of treasury shares. Diluted EPS is calculated by dividing the net profit for the year attributable to owners of the Company, with the weighted-average number of ordinary shares outstanding during the year plus the weighted-average number of ordinary shares that would be issued upon conversion of all the dilutive ordinary shares into ordinary shares.

There were 901 thousand shares, such as stock options that are anti-dilutive, not included in the calculation of diluted earnings per share for the year ended March 31, 2017. There were no anti-dilutive shares for the years ended March 31, 2016 and 2018.

9. Other Comprehensive Income (Loss)

Amounts arising during the year, reclassification adjustments to profit or loss, and tax effects for each component of other comprehensive income (loss) are as follows:

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Re-measurement (loss) or gain on defined benefit plans:			
Amounts arising during the year	¥ (27,905)	¥ 23,242	¥ 1,156
Tax effects	9,765	(7,688)	(432)
Re-measurement (loss) or gain on defined benefit plans	(18,140)	15,554	724
Exchange differences on translation of foreign operations:			
Amounts arising during the year	(85,326)	(51,252)	8,125
Reclassification adjustments to (loss) or profit	(170)	22	39,964
Before tax effects	(85,496)	(51,230)	48,089
Tax effects	—	(590)	(1,478)
Exchange differences on translation of foreign operations	(85,496)	(51,820)	46,611
Net changes in revaluation of available-for-sale financial assets:			
Amounts arising during the year	(11,083)	12,485	24,413
Reclassification adjustments to (loss) or profit	(15,036)	22	(23,773)
Before tax effects	(26,119)	12,507	640
Tax effects	8,806	(2,986)	4,074
Net changes on revaluation of available-for-sale financial assets	(17,313)	9,521	4,714
Cash flow hedges:			
Amounts arising during the year	(79,255)	6,933	1,670
Reclassification adjustments to profit or (loss)	76,533	(418)	3,425
Before tax effects	(2,722)	6,515	5,095
Tax effects	855	(2,103)	(1,570)
Cash flow hedges	(1,867)	4,412	3,525
Share of other comprehensive income of investments accounted for using the equity method:			
Amounts arising during the year	(265)	(38)	295
Reclassification adjustments to (loss) or profit	(1)	—	87
Before tax effects	(266)	(38)	382
Tax effects	—	—	—
Share of other comprehensive income of investments accounted for using the equity method	(266)	(38)	382
Total other comprehensive (loss) income for the year	¥(123,082)	¥(22,371)	¥ 55,956

10. Property, Plant and Equipment

	JPY (millions)					
	Buildings and structures	Machinery and vehicles	Tools, furniture, and fixtures	Land	Construction in progress	Total
Acquisition cost						
As of April 1, 2016	¥ 547,039	¥ 423,357	¥ 129,303	¥ 81,607	¥ 42,533	¥1,223,839
Additions	14,485	11,519	5,102	—	41,301	72,407
Acquisitions through business combinations	2,460	507	101	—	—	3,068
Transfers	7,347	16,289	1,501	(118)	(25,632)	(613)
Disposals and other decreases	(9,160)	(12,758)	(7,877)	(229)	(271)	(30,295)
Reclassification to assets held for sale (Note 19)	(40,778)	(46,499)	(18,681)	(10,231)	(844)	(117,033)
Foreign currency translation differences	(3,806)	(4,584)	(1,357)	(529)	(309)	(10,585)
Other	(2,385)	(3,647)	(684)	(914)	1,274	(6,356)
As of March 31, 2017	¥ 515,202	¥ 384,184	¥ 107,408	¥ 69,586	¥ 58,052	¥1,134,432
Additions	19,778	11,327	6,288	63	37,071	74,527
Acquisitions through business combinations	—	—	—	—	—	—
Transfers	15,741	19,184	1,615	72	(37,382)	(770)
Disposals and other decreases	(864)	(8,459)	(9,564)	(77)	(376)	(19,340)
Reclassification to assets held for sale (Note 19)	(1,830)	(2,066)	(276)	(94)	—	(4,266)
Foreign currency translation differences	630	5,020	767	541	626	7,584
Other	(328)	(445)	313	(2)	(307)	(769)
As of March 31, 2018	¥ 548,329	¥ 408,745	¥ 106,551	¥ 70,089	¥ 57,684	¥1,191,398
Accumulated depreciation and accumulated impairment losses						
As of April 1, 2016	¥(237,696)	¥(325,977)	¥(107,312)	¥ (938)	¥ —	¥ (671,923)
Depreciation expenses	(20,683)	(22,241)	(8,511)	—	—	(51,435)
Impairment losses	(723)	(1,840)	(512)	(154)	(2,619)	(5,848)
Transfers	425	(1,604)	1,569	—	—	390
Disposals and other decreases	8,460	11,668	7,749	146	—	28,023
Reclassification to assets held for sale (Note19)	23,237	40,691	16,198	—	—	80,126
Foreign currency translation differences	2,041	3,825	1,081	23	—	6,970
Other	2,145	3,361	541	562	—	6,609
As of March 31, 2017	¥(222,794)	¥(292,117)	¥ (89,197)	¥ (361)	¥ (2,619)	¥ (607,088)
Depreciation expenses	(19,480)	(21,357)	(6,670)	—	—	(47,507)
Impairment losses	(13,620)	(454)	(9)	—	(137)	(14,220)
Transfers	637	5	90	—	—	732
Disposals and other decreases	701	7,126	9,268	—	—	17,095
Reclassification to assets held for sale (Note 19)	525	846	171	—	—	1,542
Foreign currency translation differences	(774)	(3,829)	(533)	(34)	—	(5,170)
Other	106	21	(108)	—	—	19
As of March 31, 2018	¥(254,699)	¥(309,759)	¥ (86,988)	¥ (395)	¥ (2,756)	¥ (654,597)
Carrying amount						
As of April 1, 2016	¥ 309,343	¥ 97,380	¥ 21,991	¥ 80,669	¥ 42,533	¥ 551,916
As of March 31, 2017	292,408	92,067	18,211	69,225	55,433	527,344
As of March 31, 2018	293,630	98,986	19,563	69,694	54,928	536,801

Balances as of March 31, 2017 are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Property, plant and equipment includes assets held under finance leases. The carrying amount of these assets is as follows:

	JPY (million)		
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures
As of April 1, 2016	¥48,564	¥3,948	¥1,044
As of March 31, 2017	61,375	2,702	494
As of March 31, 2018	55,941	1,523	330

Takeda recognized the following impairment losses, which are reflected as follows, in the consolidated statements of income:

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Cost of sales	¥ (65)	¥(1,079)	¥ (365)
Selling, general and administrative expenses	(434)	—	—
Research and development expenses	(68)	(678)	—
Other operating expenses	(1,817)	(4,091)	(13,855)
Total	¥(2,384)	¥(5,848)	¥(14,220)

Impairment loss for the year ended March 31, 2016 was primarily related to the write down of a manufacturing plant to fair value less costs to sell upon its classification as held for sale assets. Impairment loss for the year ended March 31, 2017 was primarily due to the impairment of construction in progress relating to construction of a facility that was terminated following the decision to discontinue a product to be manufactured at this facility. Impairment loss for the year ended March 31, 2018 was related primarily to buildings and structures in research equipment which were deemed as underutilized assets, related to the Research and Development ("R&D") transformation strategy.

The carrying amounts of the impaired assets were reduced to the recoverable amounts, which were measured at the fair value less costs of disposal using values, such as expected sales amounts. This fair value is classified as Level 3 in the fair value hierarchy.

11. Goodwill

	JPY (millions)	
	2017	2018
Acquisition cost		
As of beginning of the year	¥ 779,316	¥1,020,471
Acquisitions (Note 31)	273,627	3,256
Deconsolidation	—	(899)
Foreign currency translation differences	(32,472)	6,512
Reclassification to assets held for sale (Note 19)	—	(49)
As of end of the year	¥1,020,471	¥1,029,291
Accumulated impairment losses		
As of beginning of the year	¥ —	¥ (897)
Impairment losses	(903)	—
Deconsolidation	—	899
Foreign currency translation differences	6	(45)
As of end of the year	¥ (897)	¥ (43)
Carrying amount		
As of beginning of the year	¥ 779,316	¥1,019,574
As of end of the year	1,019,574	1,029,248

Goodwill is allocated to the following groups of cash-generating units ("CGU"):

	JPY (millions) As of March 31	
	2017	2018
Prescription drugs sold worldwide	¥ 554,659	¥ 527,481
Prescription drugs sold outside of the United States and Japan	391,889	429,363
Other	73,026	72,404
Total	¥1,019,574	¥1,029,248

Balances as of March 31, 2017 are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Impairment loss for goodwill is recognized if the recoverable amount of goodwill is less than the carrying amount. The recoverable amount is the greater of fair value less costs to sell, or value in use. Value in use is calculated by discounting the estimated future cash flows based on a three-year projection approved by management using an appropriate growth rate and a discount rate.

The significant assumptions used to calculate the recoverable amount (value in use) are as follows:

	Growth Rate	Discount Rate (Post-tax)	Discount Rate (Pre-tax)
	Based on country/market specific long-term average growth rate for the CGU	Based on country/market specific weighted average cost of capital	Based on country/market specific weighted average cost of capital
March 31, 2016	1.6% – 2.6%	5.8% – 13.5%	8.3% – 16.9%
March 31, 2017	1.5% – 2.7%	4.9% – 13.5%	7.0% – 16.9%
March 31, 2018	1.5% – 3.2%	5.6% – 14.4%	8.0% – 18.0%

During the year ended March 31, 2017, Takeda recognized a goodwill impairment loss of 903 million JPY, which is recorded in other operating expenses. There was no impairment recognized during the years ended March 31, 2016 and 2018.

The value in use substantially exceeds the relevant carrying amount in each group of CGUs, and a reasonable change in the assumptions would not result in an impairment.

12. Intangible Assets

	JPY (millions)			
	Software	Intangible Assets Associated with Products	Other	Total
Acquisition cost				
As of April 1, 2016	¥ 62,143	¥ 1,556,854	¥ 23,813	¥ 1,642,810
Additions	12,990	62,282	463	75,735
Acquisitions through business combinations (Note 31)	—	433,047	—	433,047
Disposals and other decreases	(3,152)	(47,368)	(8)	(50,528)
Reclassification to assets held for sale (Note 19)	(1,774)	—	(1,048)	(2,822)
Foreign currency translation differences	(1,053)	(27,219)	117	(28,155)
As of March 31, 2017	¥ 69,154	¥ 1,977,596	¥ 23,337	¥ 2,070,087
Additions	16,934	32,594	1	49,529
Acquisitions through business combinations (Note 31)	—	41,764	—	41,764
Disposals and other decreases	(1,975)	(4,517)	(8)	(6,500)
Reclassification to assets held for sale (Note 19)	(158)	(2,655)	—	(2,813)
Deconsolidation	—	(2,356)	—	(2,356)
Foreign currency translation differences	830	(21,565)	(1,126)	(21,861)
As of March 31, 2018	¥ 84,785	¥ 2,020,861	¥ 22,204	¥ 2,127,850
Accumulated amortization and accumulated impairment losses				
As of April 1, 2016	¥(42,871)	¥ (845,242)	¥(11,569)	¥ (899,682)
Amortization	(6,312)	(112,459)	(300)	(119,071)
Impairment losses	—	(44,609)	—	(44,609)
Disposals and other decreases	2,796	41,908	267	44,971
Reclassification to assets held for sale (Note 19)	657	—	510	1,167
Foreign currency translation differences	719	9,280	175	10,174
As of March 31, 2017	¥(45,011)	¥ (951,122)	¥(10,917)	¥(1,007,050)
Amortization	(8,045)	(126,108)	(41)	(134,194)
Impairment losses	(88)	(19,080)	—	(19,168)
Reversal of impairment losses	—	23,057	—	23,057
Disposals and other decreases	1,242	2,397	6	3,645
Reclassification to assets held for sale (Note 19)	118	2,079	—	2,197
Deconsolidation	—	2,356	—	2,356
Foreign currency translation differences	13	15,557	1	15,571
As of March 31, 2018	¥(51,771)	¥(1,050,864)	¥(10,951)	¥(1,113,586)
Carrying amount				
As of April 1, 2016	¥ 19,272	¥ 711,612	¥ 12,244	¥ 743,128
As of March 31, 2017	24,143	1,026,474	12,420	1,063,037
As of March 31, 2018	33,014	969,997	11,253	1,014,264

There were no material internally generated intangible assets recorded in the consolidated statements of financial position.

The intangible assets associated with products are comprised of the following:

	JPY (millions)		
	Marketed Products	In-Process R&D	Carrying amount
As of April 1, 2016	¥617,269	¥ 94,343	¥ 711,612
As of March 31, 2017	645,449	381,025	1,026,474
As of March 31, 2018	698,329	271,668	969,997

Balances as of March 31, 2017 are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Marketed products mainly represent license rights associated with commercialized products. These include intangible assets associated with *Pantoprazole* acquired through the acquisition of Nycomed, which represent 340,396 million JPY and 318,281 million JPY as of March 31, 2017 and 2018, respectively, and intangible assets associated with Brigatinib and ICLUSIG acquired through the acquisition of ARIAD Pharmaceuticals, Inc., which represent 134,872 million JPY and 204,378 million JPY as of March 31, 2017 and 2018, respectively.

The remaining amortization period is 4 to 9 years as of March 31, 2018 for the assets acquired through the acquisition of Nycomed and 9 to 13 years for the assets acquired through the acquisition of ARIAD Pharmaceuticals, Inc.

In-process R&D mainly represents products in development and license rights obtained in connection with Takeda's in-licensing and collaboration agreements. These agreements relate to the right to sell products that are being developed (refer to Note 13). These intangible assets are not subject to amortization. These include intangible assets associated mainly with Brigatinib acquired through the acquisition of ARIAD Pharmaceuticals, Inc., which represent 288,189 million JPY and 182,002 million JPY as of March 31, 2017 and 2018, respectively.

Impairment

Takeda's impairment assessment for intangible assets requires a number of significant judgments to be made by management to estimate the recoverable amount, including the estimated pricing and costs, likelihood of regulatory approval, and the estimated market and Takeda's share of the market. The most significant assumption for intangible assets associated with marketed products is the product market share of the therapeutic area and estimated pricing, whereas the most significant assumption with pre-marketed products and In-process R&D is the probability of regulatory approval. A change in these assumptions may have a significant impact on the amount, if any, of an impairment charge recorded during a period. For example, negative results from a clinical trial may change the assumption and result in an impairment. Products in development may be fully impaired when a trial is unsuccessful and there is no alternative use for the development asset.

Takeda recorded impairment losses of 10,002 million JPY (net of reversal of previous impairment), impairment losses of 44,609 million JPY, and reversal of impairment losses 3,889 million JPY (net of impairment losses) during the year ended March 31, 2016, 2017, and 2018, respectively. These losses are primarily recognized in amortization and impairment losses on intangible assets associated with products in the consolidated statement of income.

During the year ended March 31, 2016, Takeda recorded impairment losses of 18,555 million JPY resulting from a decision to relinquish its marketing rights for a product that was in-licensed during the prior year because of reduced sales of the product. The recoverable amount of the impaired assets amounted to 16,151 million JPY. This was offset by reversal of a previously recorded impairment loss of 8,553 million JPY related to COLCRYS, which was previously impaired due to a decline in expected profitability caused by the launch of a competing product. The subsequent sales performance indicated that the impairment loss had decreased and, therefore, was partially reversed. The recoverable amount of the assets subject to reversal amounted to 72,884 million JPY.

During the year ended March 31, 2017, Takeda recorded impairment losses of 44,609 million JPY primarily resulting from a decision to terminate development of certain products and competitive product launches. The recoverable amount of the impaired assets amounted to 45,275 million JPY. Specifically, during the year ended March 31, 2017, Takeda recorded an impairment of 16,003 million JPY due to a decline in expected profitability of COLCRYS, an impairment of 7,889 million JPY due to the termination of development of an oncology product, and an impairment of 3,359 million JPY due to the termination of development of a vaccine product.

During the year ended March 31, 2018, Takeda recorded reversal of a previously recorded impairment loss of 23,057 million JPY mainly related to COLCRYS based on more favorable sales performance. The recoverable amount of the assets related to the reversal was 49,113 million JPY. This was offset by impairment losses of 19,168 million JPY primarily resulting from a decision to terminate development of certain products. The recoverable amount of the impaired assets amounted to 3,185 million JPY.

Impairment losses were calculated by deducting the recoverable amount from the carrying amount.

The significant assumptions used to calculate the recoverable amount (value in use) are as follows:

	Discount Rate (Post-tax)	Discount Rate (Pre-tax)
March 31, 2016	7.7% – 14.5%	10.6% – 23.4%
March 31, 2017	5.7% – 13.5%	8.3% – 16.9%
March 31, 2018	6.5% – 14.4%	9.4% – 18.5%

A part of the recoverable amount was measured at the fair value, less cost of disposal (the amount that was expected to be received by selling the assets). This fair value is classified as Level 3 in the fair value hierarchy.

13. Collaborations and Licensing Arrangements

Takeda is party to certain collaborative and licensing arrangements. These agreements generally provide for commercialization rights to a product or products being developed by the counterparty, and, in exchange, often resulted in an up-front payment is paid upon execution of the agreement and resulting an obligation that requires Takeda to make future development, regulatory approval, or commercial milestone payments as well as royalty payments. In some of these arrangements, Takeda and the licensee are both actively involved in the development and commercialization of the licensed product, and have exposure to risks and rewards that are dependent on its commercial success.

Under the terms of these collaboration and licensing arrangements, Takeda made the following payments during the years ended March 31:

	JPY (millions)		
	2016	2017	2018
Initial up-front and milestone payments	¥22,472	¥62,282	¥32,594
Acquisition of shares of collaboration and in-licensing partners	1,207	2,480	15,074

As of March 31, 2018, Takeda had the potential to make future payments related to its option when exercised to acquire the collaboration and in-licensing partners' equity interest for the future development and the commercialization of the licensed products. Such potential future payments may total up to approximately 80 billion JPY.

Collaboration and in-licensing arrangements

The following is a description of Takeda's significant collaboration agreements.

Mersana Therapeutics ("Mersana")

In March 2014, Takeda entered into an agreement with Mersana related to the development of antibody drug conjugates, which was expanded in January 2015 and again in February 2016. Under the agreements, Takeda and Mersana have identified certain product candidates and agreed terms of development and commercial rights between the parties. The rights vary based on product candidates. Takeda's rights include various combination of development rights (exclusive, non-exclusive and development led by Mersana) and commercialization rights (worldwide and specific geographic regions). The agreement required an up-front payment, investment in Mersana, future milestone payments and royalties on the future sales of products.

TESARO, Inc. ("TESARO")

In July 2017, Takeda entered into an exclusive licensing agreement with TESARO for the commercialization and clinical development of Niraparib, a novel poly ADP-ribose polymerase inhibitor. The collaboration agreement grants Takeda the right to develop and commercialize all indications in Japan and all indications, except prostate cancer, in South Korea, Taiwan, Russia and Australia. Under the terms of this agreement, Takeda has made an up-front payment and is required to make additional milestone payments upon the achievement of certain regulatory and commercial goals. TESARO will also be eligible to receive from Takeda tiered royalties based on a double-digit percentage of net product sales.

Denali Therapeutics ("Denali")

In January 2018, Takeda entered into a collaboration agreement with Denali to develop and commercialize up to three specified therapeutic product candidates for neurodegenerative diseases. Each program is directed to a genetically validated target for neurodegenerative disorders, including Alzheimer's disease and other indications, and incorporates Denali's Antibody Transport Vehicle platform for increased exposure of biotherapeutic products in the brain. Under the terms of the agreement, Takeda made an up-front payment in exchange for certain option rights and the purchase of Denali equity. In addition, Denali is eligible to receive development and commercial milestone payments. Denali will be responsible for all development activities and costs prior to Investigational New Drug filing for each of the three programs. Takeda has the option to co-develop and co-commercialize each of the three programs. If Takeda exercises the option, the parties will then jointly conduct clinical development and share all costs equally. Denali will lead early clinical development activities and Takeda will lead late-stage clinical development activities. Takeda and Denali will jointly commercialize the products in the United States and China, and Takeda will have exclusive commercialization rights in all other markets. The parties will share global profits equally.

Wave Life Sciences Ltd. ("Wave")

In February 2018, Takeda entered into an agreement with Wave to discover, develop and commercialize nucleic acid therapies for disorders of the central nervous system ("CNS") and the agreement became effective in April 2018 after the receipt of clearance under the Hart-Scott-Rodino Antitrust Improvement Act (HSR Act). Under the agreement, Wave will provide Takeda the option to co-develop and co-commercialize programs in areas of Huntington's disease (HD), amyotrophic lateral sclerosis (ALS), frontotemporal dementia (FTD) and spinocerebellar ataxia type 3 (SCA3). In addition, Takeda will have the right to license multiple preclinical programs targeting CNS disorders, including Alzheimer's disease and Parkinson's disease. The agreement required an up-front payment, investment in Wave and future contingent payments such as development and commercial milestone payments. Wave will continue to independently advance its activities in neuromuscular diseases, including its lead clinical program for the treatment of Duchene muscular dystrophy (DMD).

Out-licensing agreements

Takeda has entered into various licensing arrangements where it has licensed certain product or intellectual property rights for consideration such as equity interests of partners, up-front payments, development milestones, sales milestones and/or royalty payments.

14. Investments Accounted for Using the Equity Method

Teva Takeda Pharma

Teva Takeda Pharma Ltd. ("Teva Takeda Pharma") is a business venture of Takeda and Teva Pharmaceutical Industries Ltd. ("Teva") headquartered in Israel.

On April 1, 2016, Takeda sold its off-patented and long-listed products business in Japan to Teva Takeda Yakuhin Ltd. ("Teva Takeda Yakuhin"), a subsidiary of Teva Takeda Pharma, and received 49.0% of shares of Teva Takeda Pharma as consideration for the business. The remainder of Teva Takeda Pharma is owned by a subsidiary of Teva. The long-listed products business had a book value of 3,755 million JPY on the date of disposal. Takeda has significant influence over Teva Takeda Pharma and has applied the equity method. Takeda accounted for the transaction based on IAS 28 'Investments in Associates and Joint Ventures'. Under this accounting, Takeda recognized a gain for the difference between the fair value consideration received (shares of Teva Takeda Pharma) and the carrying value of the business to the extent it had disposed of the business and it deferred the remainder of the gain (49%). The gain on transfer of business recorded in other operating income for the year ended March 31, 2017 was 115,363 million JPY, which included the gain of 102,899 million JPY recognized at the date of disposal. The remainder of the gain was deferred and is amortized over 15 years, which is the same period as the intangible assets identified in the purchase price allocation. The amortization of the gain is recorded in other operating income.

Teva Takeda Pharma, which continues its generics business, and Teva Takeda Yakuhin, which operates the long-listed products business and its generics business, are jointly engaged in business in Japan. Takeda recognizes revenue for product sales of goods related to its supply of the long-listed products, to Teva Takeda Yakuhin and service revenue for its distribution using its channel to deliver products including generic products of Teva Takeda Pharma and Teva Takeda Yakuhin, to healthcare providers.

The summarized consolidated financial information of Teva Takeda Pharma and Teva Takeda Yakuhin is as follows:

	JPY (millions) For the Year Ended March 31	
	2017	2018
Revenue	¥105,547	¥103,719
Net loss for the year	(4,132)	(66,301)
Other comprehensive income (loss)	—	—
Total comprehensive loss for the year	(4,132)	(66,301)
Total comprehensive loss for the year (49.0%)	(2,025)	(32,487)
Other	(120)	(137)
Takeda's share of loss for the year	¥ (2,145)	¥ (32,624)

	JPY (millions) As of March 31	
	2017	2018
Non-current assets	¥255,179	¥163,979
Current assets	107,656	97,865
Non-current liabilities	(57,412)	(31,901)
Current liabilities	(25,019)	(20,119)
Equity	¥280,404	¥209,824
Takeda's share of equity	¥137,398	¥102,814
Goodwill	66,094	66,094
Deferred gain	(86,519)	(73,554)
Carrying amount of investments accounted for using the equity method	¥116,973	¥ 95,354

The results of Teva Takeda Pharma and Teva Takeda Yakuhin for the year ended March 31, 2018 included an impairment loss of 104,753 million JPY of which, 35,725 million JPY represents Takeda's share which was due to the 2018 revision of the pharmaceutical pricing system in Japan and the resulting changes in the business environment.

No dividend was received from Teva Takeda Pharma for the year ended March 31, 2017. Takeda received dividends of 4,159 million JPY from Teva Takeda Pharma for the year ended March 31, 2018. Teva Takeda Pharma cannot distribute its profits without the consent from the two venture partners.

Associates that are Individually Immaterial to Takeda

Financial information for associates, which are individually immaterial to Takeda, is as follows: These amounts are based on the shareholding ratio of Takeda.

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Net (loss) profit for the year	¥ (3)	¥599	¥425
Other comprehensive (loss) income	(266)	(38)	382
Total comprehensive (loss) income for the year	¥(269)	¥561	¥807

The carrying amount of the investments in associates, which are individually immaterial to Takeda, is as follows:

	JPY (millions) As of March 31	
	2017	2018
Carrying amount of investments accounted for using the equity method	¥9,438	¥12,595

15. Other Financial Assets

	JPY (millions) As of March 31	
	2017	2018
Derivative assets	¥ 2,960	¥ 3,289
Available-for-sale financial assets	164,490	171,884
Restricted deposits	52,530	87,381
Time deposits	1,131	—
Other	12,208	14,528
Total	¥233,319	¥277,082
Non-current	¥176,636	¥196,436
Current	¥ 56,683	¥ 80,646

As of March 31, 2017, and 2018, available-for-sale financial assets included 155,368 million JPY and 163,030 million JPY, respectively, of investments in public companies, and are considered Level 1 in the fair value hierarchy as defined in Note 27. The remainder of the available-for-sale assets primarily relate to investments acquired in connection with collaboration and research agreements (refer to Note 13).

The restricted deposits mainly represent cash held as required by the agreements entered into for anticipated acquisitions. This included cash held at March 31, 2017 for the acquisition of business from Unipharm, Inc., and at March 31, 2018 primarily for the expected acquisition of TiGenix NV (refer to Note 33).

16. Inventories

	JPY (millions) As of March 31	
	2017	2018
Finished products and merchandise	¥ 94,281	¥ 86,254
Work-in-process	61,951	63,145
Raw materials and supplies	69,816	63,545
Total	¥226,048	¥212,944

Balances as of March 31, 2017 are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

The amount of inventory write-offs recognized as expenses was 10,936 million JPY, 11,621 million JPY, and 10,292 million JPY for the years ended March 31, 2016, 2017 and 2018 respectively.

17. Trade and Other Receivables

	JPY (millions) As of March 31	
	2017	2018
Trade receivables	¥366,181	¥369,652
Other receivables	66,952	59,414
Allowance for doubtful receivables	(9,728)	(8,819)
Total	¥423,405	¥420,247

18. Cash and Cash Equivalents

	JPY (millions) As of March 31	
	2017	2018
Cash and deposits	¥278,488	¥243,324
Short-term investments	40,967	51,198
Total	¥319,455	¥294,522

19. Assets and Disposal Groups Held for Sale

Assets Held for Sale

	JPY (millions) As of March 31	
	2017	2018
Buildings and structures	¥ 349	¥ 98
Machinery and vehicles	477	—
Tools, furniture and fixtures	23	—
Land	227	65
Investment property	15,835	—
Investments accounted for using the equity method	—	18
Total	¥16,911	¥181

Takeda has classified certain assets as held for sale in the consolidated statement of financial position. Non-current assets and disposal groups are transferred to assets held for sale when it is expected that their carrying amounts will be recovered principally through a sale and the sale is considered highly probable. The assets held for sale are held at the lower of carrying amount or fair value, less costs to sell.

The assets held for sale as of March 31, 2017, represent primarily investment property that was classified as held for sale during the year based on management's decision to sell this property. No impairment was recorded upon classification of the building as held for sale. The building was sold during the year ended March 31, 2018 and a gain of 16,022 million JPY was recognized in other operating income.

The assets held for sale as of March 31, 2018 represent primarily buildings and structures that were classified as held for sale during the year then ended based on management decision to sell this property. No impairment was recorded upon classification of the building as held for sale.

The fair value of assets is based on valuations by independent appraisers who hold recognized and relevant professional qualifications in the respective location of assets held for sale. The valuations, which conform to the standards of the location, are based on market evidence of transaction prices for similar assets. The fair value of assets held for sale is classified as Level 3 in the fair value hierarchy.

Disposal Groups Held for Sale

	JPY (millions) As of March 31	
	2017	2018
Property, plant and equipment	¥ 36,634	¥ —
Intangible assets	1,655	—
Inventories	22,223	1,202
Trade and other receivables	28,978	1,466
Cash and cash equivalents	21,797	451
Other	10,108	692
Total assets	¥121,395	¥3,811
Bonds and loans	¥ 60,000	¥ —
Net defined benefit liabilities	2,372	—
Provisions	107	1,066
Deferred tax liabilities	832	—
Trade and other payables	14,999	165
Other	10,346	1,983
Total liabilities	¥ 88,656	¥3,214

Gains or losses recognized resulting from measuring the disposal groups classified as held for sale at the lower of their carrying amounts or fair value, less costs to sell when assets or disposal groups are classified to held for sale, are recorded as other operating expense.

The disposal groups held for sale as of March 31, 2017, consisted mainly of a group of assets and liabilities related to Takeda's consolidated subsidiary, Wako Pure Chemical Industries, Ltd. ("Wako"). On December 15, 2016, Takeda entered into an agreement to sell the subsidiary to FUJIFILM Corporation, and reclassified the disposal group as held for sale. Wako, a chemical company, was disposed of as it was no longer aligned with Takeda's core business activities. No impairment was recorded upon classification of the disposal group as held for sale. At the time of sale, the carrying value of Wako's net assets was de minimis. Takeda sold Wako and recorded a gain of 106,337 million JPY in other operating income. The proceeds from the sale netted with Wako's cash-on-hand of 21,782 million JPY comprised the majority of Takeda's proceeds from sales of business of 85,080 million JPY for the year ended March 31, 2018.

The disposal groups held for sale as of March 31, 2018, consisted mainly of a group of assets, liabilities, and other comprehensive income related to Takeda's consolidated subsidiary, Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda., and reclassified as held for sale. The shares of the subsidiary have been sold in July 2018.

Takeda recorded a loss of 3,213 million JPY on the classification of the disposal group as held for sale for the year ended March 31, 2018. The fair value of disposal group held for sale is classified as Level 2 in the fair value hierarchy.

20. Bonds and Loans

	JPY (millions) As of March 31			
	2017	2018	Average Interest Rate (%)	Maturity Period
Bonds	¥ 179,836	¥172,889	1.2	July 2019 – January 2022
Short-term loans	405,054	18	1.1	
Long-term loans	560,000	812,755	0.5	July 2019 – April 2027
Total	¥1,144,890	¥985,662		
Non-current	¥ 599,862	¥985,644		
Current	¥ 545,028	¥ 18		

"Average interest rate" represents the weighted-average rate on the balance as of March 31, 2018. The interest rate fixed by the interest rate swaps is used for a portion of the long-term loans identified in the above table.

A summary of the bond terms is as follows:

		JPY (millions) As of March 31				
Name of Bond	Date of Issuance	2017	2018	Interest Rate (%)	Collateral	Date of Maturity
13th Unsecured straight bonds	March 22, 2012	¥ 59,974	¥ —	0.5	—	March 22, 2018
14th Unsecured straight bonds	July 19, 2013	59,942	59,967	0.5	—	July 19, 2019
15th Unsecured straight bonds	July 19, 2013	59,920	59,944	0.7	—	July 17, 2020
US dollar unsecured senior notes (Due in 2022)	July 18, 2017	—	52,978 (500 million USD)	2.5	—	January 18, 2022
	Total	¥179,836	¥ 172,889			

The US dollar unsecured senior notes were issued in overseas markets, and are presented in US dollar amounts. At the time of issuance, Takeda had entered into foreign currency swap agreement to hedge the JPY amount for 200 million US dollar of the unsecured senior notes.

21. Other Financial Liabilities

	JPY (millions) As of March 31	
	2017	2018
Derivative liabilities	¥ 9,893	¥ 8,871
Finance lease obligations	58,811	53,149
Contingent consideration arising from business combinations (Note 31)	28,976	30,569
Other	12,996	28,247
Total	¥110,676	¥120,836
Non-current	¥ 81,778	¥ 91,223
Current	¥ 28,898	¥ 29,613

The future minimum payments related to the finance lease obligations are as follows:

	JPY (millions) As of March 31			
	Minimum Lease Payments		Present Value of Minimum Lease Payments	
	2017	2018	2017	2018
Within one year	¥ 4,995	¥ 4,808	¥ 2,111	¥ 2,127
Between one year and five years	17,647	14,335	7,297	4,704
More than five years	87,474	80,018	49,403	46,318
Total	¥110,116	¥99,161	¥58,811	¥53,149
Less: Future finance charges	51,305	46,012		
Present value of minimum lease payments	¥ 58,811	¥53,149		
Non-current	¥ 56,700	¥51,022		
Current	¥ 2,111	¥ 2,127		

The weighted average interest rates of the non-current and current finance lease obligations as of March 31, 2018 were 5.0 % and 5.6 %, respectively.

22. Employee Benefits

Defined Benefit Plans

The Company and some of its subsidiaries have various defined benefit plans such as lump-sum retirement payments plans, and defined benefit pension plans, which define the amount of benefits that an employee will receive on or after retirement, usually based on one or more factors, such as age, years of service, compensation, classes, and earned points, based on service.

The Company's defined benefit plans account for the majority of Takeda's defined benefit obligations and plan assets. The Company has a corporate defined benefit pension plan and a lump-sum retirement payment plan.

Defined benefit pension plans

The Company's corporate defined benefit pension plan in Japan is a funded defined benefit pension plan, which is regulated by the Defined-Benefit Corporate Pension Act, one of the Japanese pension laws. Benefits are paid in exchange for services rendered by employees who worked for more than a specified period, typically three years, considering their years of service and the degree of their contribution to the Company.

The Company's pension fund (the "Fund") is an independent entity established in accordance with the Japanese pension laws, and Takeda has an obligation to make contributions. The Director(s) of the Fund has the fiduciary duty to comply with laws; the directives by the Minister of Health, Labor and Welfare, and the Director-Generals of Regional Bureaus of Health and Welfare made pursuant to those laws; and the by-laws of the Fund and the decisions made by the Board of Representatives of the Fund. Contributions are also regularly reviewed and adjusted as necessary to the extent permitted by laws and regulations.

The present value of the defined benefit obligation is calculated annually based on actuarial valuations that are dependent upon a number of assumptions, including discount rates and future salary (benefit) increases, in accordance with IAS 19 'Employee Benefits.' Service costs charged to operating expense related to defined benefit plans represent the increase in the defined benefit liability arising from pension benefits earned by active participants in the current period. Takeda is exposed to investment and other experience risks and may need to make additional contributions where it is estimated that the benefits will not be met from regular contributions, expected investment income, and assets held.

Other types of defined benefit pension plans operated by Takeda are generally established and operated in the same manner as described above and in accordance with local laws and regulations where applicable.

Certain of the Company's European subsidiaries changed a portion of their existing defined benefit plans into defined contribution plans during the year ended March 31, 2016. As a result, settlement gains and losses were recognized in the consolidated statement of income for the year ended March 31, 2016.

The amounts recognized in the consolidated statements of income and the consolidated statements of financial position are as follows:

Consolidated statements of income

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Japan	¥ 5,436	¥ 6,779	¥ 4,582
Rest of the world	5,268	5,210	5,772
Defined benefit costs	¥10,704	¥11,989	¥10,354

Consolidated statements of financial position

	JPY (millions) As of March 31		
	Japan	Rest of the World	2017
Present value of defined benefit obligations	¥217,026	¥90,424	¥307,450
Fair value of plan assets	246,952	18,079	265,031
Net defined benefit liabilities	10,846	72,427	83,273
Net defined benefit assets	40,772	82	40,854
Net amount of liabilities (assets) recognized in the consolidated statement of financial position	¥(29,926)	¥72,345	¥ 42,419

	JPY (millions) As of March 31		
	Japan	Rest of the World	2018
Present value of defined benefit obligations	¥198,686	¥99,174	¥297,860
Fair value of plan assets	230,421	21,207	251,628
Net defined benefit liabilities	9,604	78,007	87,611
Net defined benefit assets	41,339	40	41,379
Net amount of liabilities (assets) recognized in the consolidated statement of financial position	¥(31,735)	¥77,967	¥ 46,232

Net defined benefit assets were included in "Other non-current assets" in the consolidated statement of financial position, except for 1,210 million JPY included in "Assets held for sale" as of March 31, 2017. Net defined benefit liabilities included 2,372 million JPY in "Liabilities held for sale" as of March 31, 2017, related to disposal groups held for sale (refer to Note 19).

Defined benefit obligations

A summary of changes in present value of the defined benefit obligations for the periods presented is as follows:

	JPY (millions) For the Year Ended March 31		
	Japan	Rest of the World	2017
At beginning of the year	¥236,957	¥94,135	¥331,092
Current service cost	6,015	3,601	9,616
Interest cost	964	1,515	2,479
Re-measurement of defined benefit plans			
Re-measurement gains and losses arising from changes in demographic assumptions	(5,264)	(349)	(5,613)
Re-measurement gains and losses arising from changes in financial assumptions	(9,824)	(1,826)	(11,650)
Experience adjustments	259	601	860
Past service cost	823	294	1,117
Settlement	—	—	—
Benefits paid	(12,847)	(2,871)	(15,718)
Effect of business combinations and disposals	(57)	(185)	(242)
Foreign currency translation differences	—	(4,491)	(4,491)
At end of the year	¥217,026	¥90,424	¥307,450

	JPY (millions) For the Year Ended March 31		
	Japan	Rest of the World	2018
At beginning of the year	¥217,026	¥90,424	¥307,450
Current service cost	4,866	4,295	9,161
Interest cost	1,424	1,713	3,137
Re-measurement of defined benefit plans			
Re-measurement gains and losses arising from changes in demographic assumptions	3,294	(1,179)	2,115
Re-measurement gains and losses arising from changes in financial assumptions	(3)	782	779
Experience adjustments	466	297	763
Past service cost	11	5	16
Settlement	(2,515)	2,346	(169)
Benefits paid	(13,134)	(3,093)	(16,227)
Effect of business combinations and disposals	(12,749)	81	(12,668)
Foreign currency translation differences	—	3,503	3,503
At end of the year	¥198,686	¥99,174	¥297,860

The remaining weighted average duration of the defined benefit obligations was 14.1 years and 14.4 years as of March 31, 2017 and 2018, respectively.

Significant actuarial assumptions used to determine the present value are as follows:

	Discount Rate	Future Salary Increases
2017		
Japan	0.7%	0.2%
Rest of the world	1.8%	2.5%
2018		
Japan	0.7%	0.2%
Rest of the world	1.7%	2.7%

A 0.5% change in these actuarial assumptions would affect the present value of defined benefit obligations by the amounts shown below:

	JPY (millions)			
	Discount Rate		Future Salary Increases	
	Change in assumption	Impact	Change in assumption	Impact
2017				
Japan	+ 0.50%	¥(12,910)	+ 0.50%	¥ 593
	- 0.50%	14,475	- 0.50%	(559)
Rest of the world	+ 0.50%	(6,761)	+ 0.50%	485
	- 0.50%	7,543	- 0.50%	(654)
2018				
Japan	+ 0.50%	(12,250)	+ 0.50%	517
	- 0.50%	13,778	- 0.50%	(477)
Rest of the world	+ 0.50%	(7,371)	+ 0.50%	479
	- 0.50%	8,247	- 0.50%	(665)

Plan assets

The defined benefit plans are independent of Takeda and funded only by contributions from Takeda. Takeda's investment policies are designed to secure the necessary returns in the long-term within acceptable risk levels to ensure payments of pension benefits to eligible participants, including future participants. The acceptable risk level in the return rate on the plan assets is derived from a detailed study considering the mid- to long-term trends and the changes in income such as contributions and payments. Based on policies and studies, after consideration of issues such as the expected rate of return and risks, Takeda formulates a basic asset mix which aims at an optimal portfolio on a long-term basis with the selection of appropriate investment assets.

A summary of changes in fair value of plan assets for the periods presented is as follows:

	JPY (millions)	
	2017	2018
Balance at beginning of the year	¥262,977	¥265,031
Interest income on plan assets	1,224	1,959
Re-measurement of defined benefit plans		
Return on plan assets	6,839	4,813
Contributions by the employer	5,851	4,753
Settlement	—	(3,564)
Benefits paid	(12,068)	(11,507)
Effect of business combinations and disposals	—	(11,225)
Foreign currency translation differences	208	1,368
Balance at end of the year	¥265,031	¥251,628

Takeda expects to contribute 4,694 million JPY to the defined benefit plans for the year ending March 31, 2019.

Breakdown of fair value by asset class:

	JPY (millions) As of March 31			
	2017		2018	
	With Quoted Prices in Active Markets	No Quoted Prices in Active Markets	With Quoted Prices in Active Markets	No Quoted Prices in Active Markets
Equities:				
Japan	¥16,761	¥ 2,838	¥15,494	¥ 2,804
Outside Japan	16,136	44,992	6,396	58,286
Bonds:				
Japan	6,125	29,235	1,568	19,157
Outside Japan	8,057	26,086	2,278	38,716
Life insurance company general accounts	—	70,799	—	68,551
Cash and cash equivalent	7,409	—	8,452	—
Others	14,533	22,060	514	29,412
Total plan assets	¥69,021	¥196,010	¥34,702	¥216,926

Life insurance company general accounts are accounts with guaranteed capital and minimum interest rate, in which life insurance companies manage funds on a contractual basis.

Defined Contribution Plans

The Company and some of the Company's subsidiaries offer defined contribution benefit plans. Benefits of defined contribution plans are linked to contributions paid, the performance of each participant's chosen investments, and the form in which participants choose to redeem their benefits. Contributions made into these plans are generally paid into an independently administered fund. Contributions payable by Takeda for these plans are charged to operating expenses. Takeda has no exposure to investment risks and other experience risks with regard to defined contribution plans.

The amount of defined contribution costs was 19,608 million JPY, 20,897 million JPY, and 19,525 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively. These amounts include contributions to publicly provided plans.

Other Employee Benefit Expenses

Major employee benefit expenses other than retirement benefits for each fiscal year are as follows:

	JPY (millions) For the Year Ended March 31		
	2016	2017	2018
Salary	¥241,335	¥226,985	¥215,256
Bonuses	76,713	68,935	70,708
Other	72,148	75,949	81,616

The above table does not include severance expenses.

23. Provisions

The movements in the provisions are as follows:

	JPY (millions)				
	Litigation (Note 32)	Restructuring	Rebates and Return Reserves	Other	Total
As of April 1, 2016	¥ 37,949	¥ 10,215	¥ 78,652	¥ 22,946	¥ 149,762
Increases	1,410	28,465	267,566	13,413	310,854
Decreases (utilized)	(7,471)	(10,554)	(247,594)	(10,894)	(276,513)
Decreases (reversed)	(376)	(632)	(9,202)	(2,642)	(12,852)
Increases (decreases) due to changes in consolidation scope	2,567	—	1,645	215	4,427
Reclassification to liabilities held for sale	—	—	—	(107)	(107)
Foreign currency translation differences	(633)	(376)	(197)	(461)	(1,667)
As of March 31, 2017	¥ 33,446	¥ 27,118	¥ 90,870	¥ 22,470	¥ 173,904
Increases	3,692	5,935	310,070	14,009	333,706
Decreases (utilized)	(12,372)	(19,183)	(284,164)	(11,579)	(327,298)
Decreases (reversed)	(286)	(128)	(9,557)	(2,045)	(12,016)
Increases (decreases) due to changes consolidation scope	—	(133)	—	(107)	(240)
Reclassification to liabilities held for sale	(676)	—	—	(390)	(1,066)
Foreign currency translation differences	(622)	(993)	(5,378)	826	(6,167)
As of March 31, 2018	¥ 23,182	¥ 12,616	¥ 101,841	¥ 23,184	¥ 160,823

The current portion of the provision is 115,341 million JPY, 135,796 million JPY, and 132,781 million JPY as of April 1, 2016, March 31, 2017 and 2018, respectively. The non-current portion of the provision is 34,421 million JPY, 38,108 million JPY and 28,042 million JPY, as of April 1, 2016, March 31, 2017 and 2018, respectively.

Balances as of March 31, 2017, are revised to reflect the completed purchase price allocation of ARIAD acquisition that resulted from adjustments to the provisional fair value of the acquired net assets (refer to Note 31).

Restructuring

Takeda has commenced various restructuring efforts during the years ended March 31, 2016, 2017 and 2018, in connection with efforts to transform its R&D function and to improve the efficiency of its operations. These initiatives included consolidation of sites and functions and reduction in workforce. A restructuring provision is recorded when Takeda has a detailed formal plan for the restructuring, including communication of the overall plan to its employees. Takeda records the provision and associated expenses based on estimated costs associated with the plan. The ultimate cost and the timing of any payments under the plan will be impacted by the actual timing of the actions and the actions of employees impacted by the restructuring activities. The payments for non-current restructuring provision are expected to be made within approximately 4 years.

Restructuring expenses recorded during the years ended March 31 are as follows:

	JPY (millions)		
	2016	2017	2018
Cash:			
Severance	¥ 7,692	¥32, 290	¥ 6,397
Consulting fees	7,571	7,271	7,205
Other	8,371	11,611	16,528
Total	¥23,634	¥ 51,172	¥30,130
Non-Cash:			
Depreciation and impairment	2,126	3,417	¥14,606
Total	¥25,760	¥ 54,589	¥44,736

The other restructuring costs mainly relate to contract termination costs.

Rebates and Returns

Takeda has recognized a provision related mainly to sales rebates and sales returns for products and merchandises, which include sales linked rebates such as government health programs in the US. These are expected to be paid out generally within one year. Sales rebates and sales returns are reviewed and updated monthly or when there is a significant change in its amount.

Other

Other provisions are primarily related to asset retirement obligations, contract termination fees and onerous contracts.

24. Other Liabilities

	JPY (millions) As of March 31	
	2017	2018
Accrued expenses	¥219,749	¥231,497
Deferred income	62,918	52,527
Other	51,277	48,206
Total	¥333,944	¥332,230
Non-current	¥ 77,437	¥ 68,300
Current	¥256,507	¥263,930

Accrued expenses include accrued labor cost of 110,988 million JPY and 108,766 million JPY as of March 31, 2017 and 2018, respectively.

Deferred income includes government grants for the purchase of property, plant and equipment. The grants amounts received were 26,215 million JPY and 23,937 million JPY during the years ended March 31, 2017 and 2018, respectively. The primary government grants relate to funding a portion of Takeda's investment in the development and production of new influenza vaccines. Takeda was reimbursed for investments it made in facilities. The grant income is recognized over the life of the associated assets and is recorded as an offset to the depreciation expense (included in cost of sales, selling, general, and administrative expenses, and research and development expenses). Deferred income also includes unearned co-promotion fees received in advance of 26,453 million JPY and 21,656 million JPY as of March 31, 2017 and 2018, respectively. The unearned co-promotion fees will offset selling, general and administrative expenses during the periods as planned on a pro rata basis.

25. Trade and Other Payables

	JPY (millions) As of March 31	
	2017	2018
Trade payables	¥125,713	¥133,705
Other payables	114,910	106,554
Total	¥240,623	¥240,259

Trade payables relate to expenditures associated with Takeda's manufacturing and other payables relate to other expenditures associated with its day-to-day operations.

26. Equity and Other Equity Items

	(Thousands of Shares)	
	2017	2018
Authorized shares as of April 1	3,500,000	3,500,000
Outstanding shares:		
At April 1	790,284	790,521
Exercise of stock options	237	617
Issuance of shares	—	3,550
At March 31	790,521	794,688

The shares issued by the Company are ordinary shares with no par value that have no restrictions on any rights. The number of treasury shares included in the above "Outstanding shares" was 4,032 thousand shares, 6,745 thousand shares, 9,680 thousand shares, and 13,379 thousand shares as of April 1, 2015, March 31, 2016, 2017 and 2018, respectively. The number of treasury shares as of March 31, 2018 includes 13,133 thousand shares held by the Employee Stock Ownership Plan ("ESOP") Trust and the Board Incentive Plan ("BIP") Trust. The ESOP and BIP Trust acquired 6,804 thousand shares and sold 3,116 thousand shares during the year ended March 31, 2018.

During the year ended March 31, 2018, the Company issued 3,550,000 shares through third-party allotment to the Master Trust Bank of Japan, Ltd., which is the trust account for Takeda's ESOP subsidiary. The issuance of these shares resulted in an increase in share capital of 11,388 million JPY and share premium of 11,286 million JPY. The Master Trust Bank of Japan is a co-trustee of the ESOP. This issuance was approved by the resolution of our Board of Directors. These shares were reacquired by the Company from the ESOP trust for distribution of share based compensation awards. The reacquisition of the shares resulted in an increase in treasury shares of 22,773 million JPY.

Dividends Declared	Total Dividends JPY (millions)	Dividends per Share (JPY)	Basis Date	Effective Date
April 1, 2015 to March 31, 2016				
Q1 2015	¥71,081	¥90.00	March 31, 2015	June 29, 2015
Q3 2015	71,101	90.00	September 30, 2015	December 1, 2015
April 1, 2016, to March 31, 2017				
Q1 2016	71,112	90.00	March 31, 2016	June 30, 2016
Q3 2016	71,122	90.00	September 30, 2016	December 1, 2016
April 1, 2017, to March 31, 2018				
Q1 2017	71,133	90.00	March 31, 2017	June 29, 2017
Q3 2017	71,165	90.00	September 30, 2017	December 1, 2017

Dividends declared for which the effective date falls in the following fiscal year are as follows:

Dividends Declared and Paid	Total Dividends JPY (millions)	Dividends per Share (JPY)	Basis Date	Effective Date
April 1, 2018 to March 31, 2019				
Q1 2018	¥71,507	¥90.00	March 31, 2018	June 29, 2018

27. Financial Instruments

Capital Management

The capital structure of Takeda consists of shareholders' equity (Note 26), debt (Note 20), and cash and cash equivalents (Note 18). The fundamental principles of Takeda's capital risk management are to build and maintain a steady financial base for the purpose of maintaining soundness and efficiency of operations and achieving sustainable growth. According to these principles, Takeda conducts capital investment, profit distribution such as dividends, and repayment of loans based on steady operating cash flows through the development and sale of competitive products. Takeda balances its capital structure between debt and equity and adheres to a conservative financial discipline. Takeda monitors this balance through the use and has a target of a medium-term net debt to earnings before interest, taxes, depreciation, and amortization ratio of 2.0x or less.

Financial Risk Management

Takeda promotes risk management to reduce the financial risks arising from business operations. The principal risks to which Takeda is exposed include customer credit risk, liquidity risk and market risks caused by changes in the market environment such as fluctuations in the price of foreign currency, interest rates and market prices. Each of these risks are managed in accordance with Takeda's policies.

Financial assets

	JPY (millions) As of March 31	
	2017	2018
Cash and cash equivalents	¥319,455	¥294,522
Financial assets at fair value through profit or loss (derivatives)	2,960	762
Derivative transactions to which hedge accounting is applied	—	2,527
Loans and receivables	489,274	522,157
Available-for-sale financial assets	164,490	171,884

Financial liabilities

	JPY (millions) As of March 31	
	2017	2018
Financial liabilities at fair value through profit or loss(derivatives)	¥ 7,419	¥ 5,373
Financial liabilities at fair value through profit or loss (contingent considerations arising from business combinations)	28,976	30,569
Derivative transactions to which hedge accounting is applied	2,474	3,498
Other financial liabilities, including bonds and loans	1,457,320	1,307,317

Credit Risk

Takeda is exposed to credit risk from its operating activities (primarily trade receivables) and from its financing activities, including deposits with banks and financial institutions, foreign exchange transactions, and other financial instruments. Trade and other receivables are exposed to customer credit risk. Takeda monitors the status of overdue balances, reviews outstanding balances for each customer and regularly examines the credibility of major customers in accordance with Takeda's policies for credit management to facilitate the early evaluation and the reduction of potential credit risks. If necessary, Takeda obtains rights to collateral or guarantees on the receivables.

Cash reserves of the subsidiaries are concentrated mostly with the Company and regional treasury centers located in the United States and Europe through the group cash pooling system. These cash reserves are primarily managed exclusively by investments in highly rated short-term bank deposits and bonds of highly rated issuers within the investment limits determined by reviewing the investment ratings and terms under Takeda's policies for fund management, resulting in limited credit risk. Cash reserves, other than those subject to the group cash pooling system, are managed by each consolidated subsidiary in accordance with the Company's fund management policies.

For derivatives, Takeda enters into trading contracts only with highly rated financial agencies in order to minimize counterparty risk.

The maximum exposure to credit risk, without taking into account of any collateral held at the end of the reporting period, is represented by the carrying amount of the financial instruments which is exposed to credit risk on the consolidated statement of financial position.

The following represents the age of trade receivables that are past due but not impaired:

		JPY (millions) Amount Past Due				
	Total	Within 30 Days	Over 30 Days but within 60 Days	Over 60 Days but within 90 Days	Over 90 Days but within One Year	Over One Year
As of March 31, 2017	¥ 8,955	¥2,746	¥1,912	¥369	¥2,696	¥1,232
As of March 31, 2018	16,222	6,453	2,243	782	5,042	1,702

The amounts in the above table are net of allowances for doubtful receivables. Management believes that the unimpaired amounts that are past due are still collectible in full, based on historical payment behavior and extensive analysis of customer credit risk.

The following is a summary of the change in allowance for doubtful receivables for the periods presented:

	JPY (millions)		
	2016	2017	2018
At beginning of the year	¥ 3,278	¥ 9,165	¥ 9,733
Increases	7,972	2,438	1,946
Decreases (utilized)	(1,192)	(1,185)	(1,941)
Decreases (reversed)	(733)	(712)	(1,130)
Reclassification to assets held for sale	—	(40)	(45)
Foreign currency translation differences	(160)	67	262
At end of the year	¥ 9,165	¥ 9,733	¥ 8,825

Liquidity Risk

The Company manages liquidity risk and establishes an adequate management framework for liquidity risk to secure stable short-, mid-, and long-term funds and sufficient liquidity for operations. Takeda manages liquidity risk by continuously monitoring forecasted cash flows, actual cash flows and the balance of available-for-sale financial assets. In addition, Takeda has commitment lines with some counterparty financial institutions to manage liquidity risk.

The table below presents the balances of financial liabilities by maturity. The contractual cash flows are presented on an undiscounted cash flow basis, including interest expense.

	JPY (millions)							
	Carrying Amount	Contract Amount	Within One Year	Between One and Two Years	Between Two and Three Years	Between Three and Four Years	Between Four and Five Years	More than Five Years
As of March 31, 2017								
Bonds and loans								
Bonds	¥179,836	¥182,459	¥ 61,068	¥ 746	¥60,520	¥60,125	¥ —	¥ —
Loans	965,054	973,043	486,862	1,005	60,937	70,849	878	352,512
Trade and other payables	240,623	240,623	240,623	—	—	—	—	—
Finance leases	58,811	110,116	4,995	5,839	5,272	3,678	2,858	87,474
Derivative liabilities	9,893	9,880	8,413	731	552	184	—	—
Derivative assets	(2,960)	(2,960)	(2,960)	—	—	—	—	—
As of March 31, 2018								
Bonds and loans								
Bonds	¥172,889	¥179,567	¥ 2,050	¥61,824	¥61,429	¥54,264	¥ —	¥ —
Loans	812,773	872,738	5,556	66,611	76,879	6,881	81,882	634,929
Trade and other payables	240,259	240,259	240,259	—	—	—	—	—
Finance leases	53,149	99,161	4,808	5,410	3,495	2,709	2,721	80,018
Derivative liabilities	8,871	6,364	5,639	40	(336)	1,021	—	—
Derivative assets	(3,289)	(33,590)	(3,049)	(3,383)	(3,729)	(3,698)	(3,699)	(16,032)

For bonds and loans denominated in a foreign currency, Takeda uses currency swaps and applies hedge accounting. The contract amount of foreign currency bonds applicable for hedge accounting was 0 million JPY and 21,287 million JPY (200 million USD) as of March 31, 2017 and 2018 respectively. The contract amount of foreign currency loans applicable for hedge accounting was 0 million JPY and 98,451 million JPY (925 million USD) as of March 31, 2017 and 2018 respectively.

Market Risk

Major market risks to which Takeda is exposed are 1) foreign currency risk, 2) interest rate risk and 3) commodity price fluctuation risk. Financial instruments affected by market risk include loans and borrowings, deposits, available-for-sale financial assets and derivative financial instruments. Takeda uses derivatives, such as forward exchange contracts, for hedging.

Takeda enters into derivative hedging contracts according to Takeda's policies which determine the authority for entering into such transactions and the transaction limits.

Foreign Currency Risk

Takeda's exposure to the risk of changes in foreign exchange rates primarily relates to its operations (when revenue or expense is denominated in a foreign currency) and the Company's net investments in foreign subsidiaries. The Company manages foreign currency risks in a centralized manner. Takeda's subsidiaries do not bear the risks of fluctuations in exchange rates. Foreign currency risks are hedged by derivative transactions, such as forward exchange contracts to achieve the expected net positions of trade receivables and payables in each foreign currency on a monthly basis.

Takeda uses forward exchange contracts, currency swaps, and currency options for individually significant foreign currency transactions. Foreign currency risk of the net investments in foreign operations is managed through the use of foreign-currency-denominated borrowing.

	JPY (millions) For the Year Ended March 31, 2017		
	Contract Amount	More than one year	Fair Value
Forward exchange contracts:			
Selling:			
Euro	¥130,322	¥—	¥ 1,690
United States Dollar	54,389	—	(1,481)
Chinese Yuan	20,231	—	(2,013)
Taiwan New Dollar	930	—	(60)
Thai Bhat	945	—	(53)
Buying:			
Euro	119,874	—	(2,814)
United States Dollar	8,833	—	656
British Pound	2,839	—	(134)
Singapore Dollar	1,074	—	28
Currency options:			
Buying (put option):			
Russian Ruble	1,496	—	(276)

Other than the above, starting from April 1, 2016, Takeda designated loans denominated in the US dollar as hedges of net investments in foreign operations and applied hedge accounting in order to manage the foreign currency exposure. The fair value of the foreign-currency-denominated loans was 97,928 million JPY as of March 31, 2017.

	JPY (millions) For the Year Ended March 31, 2018		
	Contract Amount	More than one year	Fair Value
Forward exchange contracts:			
Selling:			
Euro	¥ 98,198	¥ —	¥ (894)
United States Dollar	39,799	—	100
Chinese Yuan	20,528	—	(1,211)
Taiwan New Dollar	944	—	14
Thai Bhat	910	—	(15)
Buying:			
Euro	173,627	—	(964)
United States Dollar	9,585	—	(19)
Thai Bhat	2,388	—	71
British Pound	1,601	—	41
Singapore Dollar	938	—	(16)
Chinese Yuan	178	—	(1)
Currency swaps:			
Buying:			
United States Dollar	124,028	123,993	(1,773)

The above currency swaps were related to bonds and loans denominated in foreign currency, which the Company designated as cash flow hedges.

Other than the above, Takeda designated loans and bonds denominated in the US dollar as hedges of net investments in foreign operations and applied hedge accounting in order to manage the foreign currency exposure. The fair value of the foreign-currency-denominated loans and foreign-currency-denominated bonds were 61,200 million JPY and 31,930 million JPY, respectively, as of March 31, 2018.

Takeda is exposed mainly to foreign currency risks of the US dollar and Euro. A depreciation of the JPY by 5% against the US dollar and Euro would impact profit or loss by 9,346 million JPY, 5,156 million JPY, and 12,533 million JPY as of March 31, 2016, 2017 and 2018, respectively. These amounts do not include the effects of foreign currency translation on financial instruments in the functional currency or on assets, liabilities, revenue, and expenses of foreign operations. This analysis assumes that all other variables, in particular interest rates, remain constant. The Company's exposure to foreign currency changes for all other currencies is not material.

Interest Rate Risk

Takeda's exposure to the risk of changes in market interest rates relates to the outstanding borrowings with floating interest rates. Takeda uses interest rate swaps that fix the amount of interest payments to manage interest rate risks. The following summarizes interest rate swaps for the periods ended March 31:

	JPY (millions) As of March 31		
	Notional Amount	More than One Year	Fair Value
2017	¥170,000	¥120,000	¥(2,474)
2018	300,938	300, 938	(970)

The above swaps are related to the borrowings which the Company designated as cash flow hedges.

The following represents interest rate sensitivity analysis for the periods presented. This analysis assumes that all other variables, in particular foreign currency exchange rates, remain constant.

	JPY (millions)			
	As of March 31, 2017 Interest Rates		As of March 31, 2018 Interest Rates	
	+1%	-1%	+1%	-1%
Impact on other comprehensive income (before tax effects)	¥2,653	¥(2,653)	¥16,543	¥(16,543)

There is no impact on profit because the amount of interest payments from all the outstanding borrowings with floating rates are fixed using interest rate swaps.

Price Fluctuation Risk Management

For equity instruments, the Company manages the risk of price fluctuations in the instruments by regularly reviewing share prices and financial positions of the issuers.

Market Price Sensitivity Analysis

The analysis shows that if the market price for the underlying equity instruments, the equity securities held by Takeda and investments in trusts which hold equity securities on behalf of Takeda had increased by 10%, the hypothetical impact on other comprehensive income (before tax effect) would have been 15,537 million JPY and 16,303 million JPY as of March 31, 2017 and 2018 respectively. This analysis assumes that all other variables, in particular interest rates and foreign currency exchange rates, remain constant.

Reconciliation of liabilities arising from financing activities

	JPY (millions)						
	Bonds	Long-term Loans	Short-term Loans	Finance Lease Obligations	Derivative Assets Used for Hedge of Debts	Derivative Liabilities Used for Hedge of Debts	Total
As of April 1, 2017	¥179,836	¥560,000	¥ 405,054	¥58,811	¥ —	¥ —	¥1,203,701
Cash flows from financing activities							
Net increase (decrease) in short-term loans	—	—	(403,931)	—	—	—	(403,931)
Proceeds from long-term loans	—	337,955	—	—	—	(801)	337,154
Payments of long-term loans	—	(80,000)	—	—	—	—	(80,000)
Proceeds from issuance of bonds	55,951	—	—	—	348	—	56,299
Repayments of bonds	(60,000)	—	—	—	—	—	(60,000)
Repayment of obligations under finance lease	—	—	—	(2,658)	—	—	(2,658)
Interest paid	—	—	—	(2,855)	—	—	(2,855)
Non-cash items							
Foreign exchange movement	(3,019)	(5,244)	(1,105)	(2,610)	—	—	(11,978)
Change in fair value	—	—	—	—	(528)	2,754	2,226
Others	121	44	—	2,461	—	—	2,626
As of March 31, 2018	¥172,889	¥812,755	¥ 18	¥53,149	¥(180)	¥1,953	¥1,040,584

"Others" includes increase in debts due to application of amortized cost method.

Fair Value Measurements

Financial Assets and Liabilities at Fair Value through Profit or Loss

The fair value of derivatives to which hedge accounting was not applied is measured at quoted prices or quotes obtained from financial institutions, whose significant inputs to the valuation model used are based on observable market data.

Contingent consideration, resulting from business combinations, is valued at fair value at the acquisition date as part of the business combination. When the contingent consideration meets the definition of a financial liability, it is subsequently re-measured to fair value at each reporting date. The determination of the fair value is based on discounted cash flows. The key assumptions take into consideration the probability of meeting each performance target and the discount factor. The fair value measurement of contingent considerations arising from business combinations is stated in Note 31, "Business Combinations."

Loans and Receivables

As trade receivables are settled in a short period, their carrying amounts approximate their fair values.

Available-for-Sale Financial Assets

The fair value of available-for-sale financial assets is measured at quoted prices or quotes obtained from financial institutions.

Derivative Transactions to which Hedge Accounting is applied

The fair value of derivatives to which hedge accounting is applied is measured at quotes obtained from financial institutions, whose significant inputs to the valuation model used are based on observable market data.

Other Financial Liabilities

The fair value of bonds is measured at quotes obtained from financial institutions, and the fair value of loans and finance leases is measured at the present value of future cash flows discounted using the applicable

effective interest rate on the loans with consideration of the credit risk by each group classified in a specified period.

Other current items are settled within a short period, and the coupon rates of other non-current items reflect market interest rates. Therefore, the carrying amounts of these liabilities approximate their fair values.

Fair Value Hierarchy

Level 1: Fair value measured at quoted prices in active markets

Level 2: Fair value that is calculated using an observable price other than that categorized in Level 1 directly or indirectly

Level 3: Fair value that is calculated based on valuation techniques which include input that is not based on observable market data

Fair Value of Financial Instruments Carried at Cost

The carrying amount and fair value of financial instruments that are not recorded at fair value in the consolidated statements of financial position are as follows:

	JPY (millions) As of March 31			
	2017		2018	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Bonds	¥179,836	¥182,068	¥172,889	¥172,872
Long-term loans	560,000	559,748	812,755	815,865
Finance leases	58,811	58,811	53,149	53,690

The amounts to be paid within a year are included. The fair value of bonds, long-term loans, and finance leases are classified as Level 2 in the fair value hierarchy. This table excludes financial instruments that have carrying amounts that approximates fair value as described in the discussion above.

Fair value Measurement Recognized in the Consolidated Statement of Financial Position

	JPY (millions)			
As of March 31, 2017	Level 1	Level 2	Level 3	Total
Assets:				
Financial assets at fair value through profit or loss (derivatives)	¥ —	¥2,960	¥ —	¥ 2,960
Available-for-sale financial assets	155,368	63	—	155,431
Total	¥155,368	¥3,023	¥ —	¥158,391
Liabilities:				
Financial liabilities at fair value through profit or loss (derivatives)	¥ —	¥7,419	¥ —	¥ 7,419
Derivative transactions to which hedge accounting is applied	—	2,474	—	2,474
Contingent considerations arising from business combinations	—	—	28,976	28,976
Total	¥ —	¥9,893	¥28,976	¥ 38,869

As of March 31, 2018	JPY (millions) Level 1	Level 2	Level 3	Total
Assets:				
Financial assets at fair value through profit or loss (derivatives)	¥ —	¥ 762	¥ —	¥ 762
Derivatives transactions to which hedge accounting is applied	—	2,527	—	2,527
Available-for-sale financial assets	163,030	34	—	163,064
Total	¥163,030	¥3,323	¥ —	¥166,353
Liabilities:				
Financial liabilities at fair value through profit or loss (derivatives)	¥ —	¥5,373	¥ —	¥ 5,373
Derivative transactions to which hedge accounting is applied	—	3,498	—	3,498
Contingent considerations arising from business combinations	—	—	30,569	30,569
Total	¥ —	¥8,871	¥30,569	¥ 39,440

Available-for-sale financial assets and derivatives, for which the fair value was difficult to reliably measure, are excluded from the table. The carrying amounts of such assets were 9,059 million JPY and 8,820 million JPY as of March 31, 2017 and 2018, respectively. The assets are primarily unlisted equity investments and the fair value of the investments was difficult to reliably measure as they are not traded on stock markets.

Takeda recognizes transfers between levels of the fair value hierarchy, at the end of the reporting period during which the change has occurred. There were no transfers among Level 1, Level 2, and Level 3 during each reporting period. Disclosures related to contingent considerations arising from business combinations are included in Note 31.

28. Share-based Payments

Takeda maintains certain share based compensation payment plans for the benefit of its directors and certain of its employees. Takeda recorded total compensation expense related to its share-based payment plans of 14,714 million JPY, 17,414 million JPY, and 22,172 million JPY for the years ended March 31, 2016, 2017 and 2018, respectively, in its consolidated statements of income.

Equity-settled Plans

Stock Options

Takeda had maintained a stock option plan under which it granted awards to members of the board, corporate officer, and senior management through the year ended March 31, 2014. There were no stock options granted during the years presented in these financial statements and all previously granted awards are fully vested. These awards generally vested three years after the grant date. The stock options are exercisable for 10 years after the grant date for options held by directors and 20 years for options held by corporate officers and senior management. The individual must be either a director of the Company or an employee of Takeda to exercise the options, unless the individual retired due to the expiration of their term of office, mandatory retirement or other acceptable reasons.

The total compensation expense recognized related to the stock option was 333 million JPY and, 63 million JPY during the years ended March 31, 2016 and 2017, respectively. There was no compensation expense during the year ended March 31, 2018 as all awards were fully vested.

The following table summarizes the stock option activities for the years ended March 31:

	2016		2017		2018	
	Number of options (shares)	Weighted average exercise price (JPY)	Number of options (shares)	Weighted average exercise price (JPY)	Number of options (shares)	Weighted average exercise price (JPY)
As of beginning of the year	4,618,500	¥3,875	4,258,000	¥3,920	4,020,900	¥4,026
Exercised	(360,500)	3,342	(237,100)	2,121	(617,100)	3,876
As of end of the year	4,258,000	3,920	4,020,900	4,026	3,403,800	4,054
Exercisable balance as of end of the year	3,079,000	¥3,588	4,020,900	¥4,026	3,403,800	¥4,054

The weighted-average share price at the date of exercise was 5,909 JPY, 4,939 JPY and 5,965 JPY during the year ended March 31, 2016, 2017 and 2018, respectively. The weighted-average exercise price and weighted-average remaining contractual life of the share options outstanding were 3,920 JPY and 16 years, 4,026 JPY and 15 years, and 4,054 JPY and 14 years, as of March 31, 2016, 2017 and 2018, respectively.

Stock Incentive Plans

Takeda has two stock-based incentive compensation plans for its directors and members of senior management, including the following:

Board incentive plan (BIP) – The BIP is a stock-based incentive plan for directors of the Company whereby awards are granted to the directors. Each award is settled in a single share of stock of the Company. The vesting of the awards under the BIP is one third each year over a three-year period for half of the awards and three years from the date of grant for the remainder of the awards. The settlement of the awards is based on stock price, foreign exchange rates (in countries other than Japan), and company dividends. Performance shares are also based on the achievement of certain performance criteria, which are established at the grant date, including, among others, consolidated revenue, operating free cash flow, earnings per share and targeted R&D, which are transparent and objective indicators. Takeda, through a wholly owned trust, buys shares of the Company in the market on the grant date, and uses these shares to settle the awards. The number of shares the individual receives (either through physical settlement or cash) is based on the achievement of the performance criteria and vesting of the award. The trust settles the awards through the issuance of shares to individuals in Japan. For individuals outside of Japan the trust sells the share the individual is eligible to receive and pays the cash to the individual.

Employee Stock Ownership Plan (ESOP) – The ESOP is a stock based incentive plan for senior management whereby awards are granted to the employees. Each award is settled in a single share of stock of the Company. The vesting of the awards under this plan is the same as the BIP for certain members of senior management with the remainder of the employees' awards vesting one third each year over a three-year period. The settlement of the awards is based on stock price, foreign exchange rates (in countries other than Japan), and company dividends. Performance shares, are also based on the achievement of certain performance criteria, which are established at the grant date including, among others, consolidated revenue, operating free cash flow, earnings per share and targeted R&D, which are transparent and objective indicators. Takeda, through wholly owned trust, buys shares of the Company in the market on the grant date and uses these shares to settle the awards. The number of shares the individual receives (either through physical settlement or cash) is based on the achievement of the performance criteria and vesting of the award. The trust settles the awards through the issuance of shares to individuals in Japan. For individuals outside of Japan the trust sells the share the individual is eligible to receive and pays cash to the individual.

The total compensation expense recognized related to these plans was 12,845 million JPY, 15,322 million JPY and 18,610 million JPY during the years ended March 31, 2016, 2017 and 2018, respectively.

The fair value of the awards at the grant date is as follows (in JPY):

	For the Year Ended March 31		
	2016	2017	2018
BIP:			
Fair value at grant date	¥5,870	¥4,664	¥5,709
Weighted average fair value	5,870	4,664	5,709
ESOP:			
Fair value at grant date	5,870	4,438	5,709
Weighted average fair value	5,870	4,438	5,709

The grant date fair value was calculated using the Company's share price on the grant date as it was determined to be approximately the same as the fair value of the awards.

The following table summarizes the award activity related to the stock incentive plans for the years ended March 31 (number of awards):

	2016		2017		2018	
	ESOP	BIP	ESOP	BIP	ESOP	BIP
At beginning of the year	3,003,020	235,019	4,809,442	281,154	6,471,104	414,933
Granted	3,312,561	144,688	4,328,364	192,818	3,944,938	188,695
Forfeited/expired before vesting	(484,417)	(49,489)	(849,886)	—	(602,245)	—
Settled	(1,021,722)	(49,064)	(1,816,816)	(59,039)	(2,922,035)	(170,368)
At end of the year	4,809,442	281,154	6,471,104	414,933	6,891,762	433,260
Exercisable balance at end of the year	—	—	—	—	—	—

The weighted average remaining contractual life of the outstanding awards was one year as of each year end for both the BIP and the ESOP plans.

Liability Settled Awards

Takeda has phantom stock appreciation rights (PSARs) and restricted stock units (RSUs) plans for certain of its employees. The value of these awards is linked to share price of the Company and are settled in cash. The total compensation expense recorded associated with these plans was 1,536 million JPY, 2,029 million JPY, and 3,562 million JPY during the years ended March 31, 2016, 2017 and 2018, respectively and the total liability reflected in the consolidated statements of financial position at March 31, 2017 and 2018, is 7,350 million JPY and 4,872 million JPY, respectively.

Phantom stock appreciation rights (PSARs)

The PSARs vest one third each year over a three-year period from the end of the fiscal year during which the awards were granted and can be exercised for a period of 10 years from the end of the fiscal year during which the awards were granted. The awards are settled through a cash payment to the holder based on the difference between the share price of the Company at the date of exercise, and the share price at the date of grant.

The following table summarizes the award activity related to the PSARs for the years ended March 31:

	2016		2017		2018	
	Number of PSARs	Weighted Average Exercise Price (JPY)	Number of PSARs	Weighted Average Exercise Price (JPY)	Number of PSARs	Weighted Average Exercise Price (JPY)
As of beginning of the year	12,344,335	¥5,373	10,257,155	¥5,063	9,282,080	¥5,017
Granted	—	—	—	—	—	—
Forfeited before vesting	(103,329)	5,402	—	—	—	—
Exercised	(1,974,786)	5,385	(618,494)	4,706	(4,335,961)	5,072
Forfeited/expired after vesting	(9,065)	5,964	(356,581)	5,012	(361,182)	5,505
As of end of the year	10,257,155	5,063	9,282,080	5,017	4,584,937	4,650
Exercisable balance as of end of the year	10,218,385	¥5,064	9,282,080	¥5,017	4,584,937	¥4,650

Restricted stock units (RSUs)

The RSUs vest one third each year over a three-year period from the end of the fiscal year during which the awards were granted. The RSUs are settled upon vesting based on the share price at the vesting date plus any dividends paid on shares during the vesting period. There is no exercise price payable by the holder.

The following table summarizes the award activity related to the RSUs for the years ended March 31 (number of RSUs):

	2016	2017	2018
As of the beginning of the year	2,484,391	1,220,234	448,286
Granted	378,123	255,116	254,710
Forfeited/expired before vesting	(145,667)	(148,502)	(82,388)
Settled	(1,496,613)	(878,562)	(222,129)
As of the end of the year	1,220,234	448,286	398,479
Exercisable balance as of the end of the year	658,212	—	—

The total intrinsic value of vested cash-settled share-based payments was 1,965 million JPY and 2,442 million JPY as of March 31, 2017 and 2018, respectively.

The Company applied hedge accounting to a portion of the RSUs payments during the year ended March 31, 2016.

29. Subsidiaries and Associates

The number of consolidated subsidiaries increased by three due to establishment of legal entities and decreased by 20 primarily due to divestitures including Wako Pure Chemical, Ltd. The number of associates accounted for using the equity method increased by three primarily due to establishment of new entities and decreased by seven primarily due to divestitures.

The following is a listing of the Company's consolidated subsidiaries as of March 31, 2018:

Company Name	Country	Voting Share Capital Held (%)
Takeda Pharmaceuticals International, Inc.	U.S.A.	100.0
Takeda Pharmaceuticals U.S.A., Inc.	U.S.A.	100.0
Millennium Pharmaceuticals, Inc.	U.S.A.	100.0
ARIAD Pharmaceuticals, Inc.	U.S.A.	100.0
Takeda California, Inc.	U.S.A.	100.0
Takeda Vaccines, Inc.	U.S.A.	100.0
Takeda Development Center Americas, Inc.	U.S.A.	100.0
Takeda Ventures, Inc.	U.S.A.	100.0
Takeda Europe Holdings B.V.	Netherlands	100.0
Takeda A/S	Denmark	100.0
Takeda Pharmaceuticals International AG	Switzerland	100.0
Takeda GmbH	Germany	100.0
Takeda Pharma Vertrieb GmbH & Co. KG	Germany	100.0
Takeda Italia S.p.A.	Italy	100.0
Takeda Austria GmbH	Austria	100.0
Takeda Pharma Ges.m.b.H	Austria	100.0
Takeda France S.A.S.	France	100.0
Takeda Pharma A/S	Denmark	100.0
Takeda AS	Norway	100.0
Takeda Belgium SCA/CVA	Belgium	100.0
Takeda UK Limited	United Kingdom	100.0
Takeda Oy	Finland	100.0
Takeda Pharma AG	Switzerland	100.0
Takeda Farmaceutica Espana S.A.	Spain	100.0
Takeda Nederland B.V.	Netherlands	100.0
Takeda Pharma AB	Sweden	100.0
Takeda Pharma Sp. z o.o.	Poland	100.0
Takeda Hellas S.A.	Greece	100.0
Takeda Ireland Limited	Ireland	100.0
Takeda Development Centre Europe Ltd.	United Kingdom	100.0
Takeda Canada Inc.	Canada	100.0
Takeda Pharmaceuticals Limited Liability Company	Russia	100.0

Company Name	Country	Voting Share Capital Held (%)
Takeda Yaroslavl Limited Liability Company	Russia	100.0
Takeda Ukraine LLC	Ukraine	100.0
Takeda Kazakhstan LLP	Kazakhstan	100.0
Takeda Distribuidora Ltda.	Brazil	100.0
Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda.	Brazil	100.0
Takeda Pharma Ltda.	Brazil	100.0
Takeda Mexico, S.A. de C.V.	Mexico	100.0
Takeda Pharma, S.A.	Argentina	100.0
Takeda (China) Holdings Co., Ltd.	China	100.0
Takeda Pharmaceuticals (Asia Pacific) Pte. Ltd.	Singapore	100.0
Guangdong Techpool Bio-Pharma Co., Ltd.	China	51.3
Takeda Pharmaceutical (China) Company Limited	China	100.0
Tianjin Takeda Pharmaceuticals Co., Ltd.	China	100.0
Takeda Pharmaceuticals Korea Co., Ltd.	Korea	100.0
Takeda (Thailand), Ltd.	Thailand	52.0
Takeda Pharmaceuticals Taiwan, Ltd.	Taiwan	100.0
P.T. Takeda Indonesia	Indonesia	70.0
Takeda Healthcare Philippines Inc.	Philippines	100.0
Takeda Development Center Asia, Pte. Ltd.	Singapore	100.0
Takeda Vaccines Pte. Ltd.	Singapore	100.0
Takeda (Pty.) Ltd.	South Africa	100.0
Takeda Pharmaceuticals Australia Pty. Ltd.	Australia	100.0
Takeda İlaç Sağlık Sanayi Ticaret Limited Şirketi	Turkey	100.0
Takeda Consumer Healthcare Company Limited	Japan	100.0
Nihon Pharmaceutical Co., Ltd.	Japan	87.3
Takeda Healthcare Products Co., Ltd.	Japan	100.0
Axcelead Drug Discovery Partners, Inc.	Japan	100.0
71 immaterial subsidiaries		

The following is a listing of the Company's associates accounted for using the equity method as of March 31, 2018:

Company Name	Country	Voting Share Capital Held (%)
Cerevance, LLC	U.S.A.	27.8
Teva Takeda Pharma Ltd.	Japan	49.0
Amato Pharmaceutical Products, Ltd.	Japan	30.0
12 immaterial associates		

30. Related Party Transactions

Transactions with Affiliates

Takeda has one major affiliate, Teva Takeda Pharma, to which Takeda sells products and acts as a sales agent. Total transactions with Teva Takeda Pharma for the years ended March 31, 2017 and 2018 were 15,685 million JPY and 18,166 million JPY, respectively. Balances of receivables and payables are as follows:

	JPY (millions) As of March 31	
	2017	2018
Trade receivables	¥ 5,703	¥ 4,187
Other receivables	1,427	1,507
Other payables	28,745	30,066

The terms and conditions of the related party transactions are entered into on terms consistent with third-party transactions and considering market prices. In addition, the receivables and payables are settled in cash and consistent with terms of third party settlements.

There is no outstanding balance of collateral or guarantee. Provisions for doubtful accounts are not recognized for the receivables.

Compensation for Key Management Personnel

The compensation for key management personnel is as follows:

	JPY (millions) For the years ended March 31		
	2016	2017	2018
Basic compensation and bonuses	¥1,456	¥1,478	¥1,332
Share-based payments	896	948	1,176
Retirement benefits	31	38	26
Total	¥2,383	¥2,464	¥2,534

31. Business Combinations

Acquisitions during the Year Ended March 31, 2017

ARIAD Pharmaceuticals, Inc.

On February 16, 2017, Takeda acquired ARIAD Pharmaceuticals, Inc. (hereinafter referred to as "ARIAD") through a tender offer to purchase all issued and outstanding shares of common stock in cash.

ARIAD is focused on discovering, developing and commercializing precision therapies for patients with rare cancers. The acquisition of ARIAD is a highly strategic deal as it transforms Takeda's global oncology portfolio and pipeline by expanding into solid tumors and reinforcing the existing strength in hematology. Brigatinib (US product name: ALUNBRIG) is a small molecule ALK (anaplastic lymphoma kinase) inhibitor for non-small cell lung cancer. After the acquisition, Brigatinib was granted marketing authorization by the U.S. Food and Drug Administration (FDA) in April 2017. ICLUSIG, a treatment for CML (chronic myeloid leukemia) and Philadelphia chromosome positive ALL (acute lymphoblastic leukemia), is commercialized globally (marketing rights of the product are out-licensed in some certain markets other than the US). These two targeted and innovative medicines, with cost synergies, are expected to be value drivers for Takeda's oncology business. Additionally, ARIAD has a robust early stage pipeline, and Takeda will leverage ARIAD's R&D capabilities and platform to generate immediate and long-term growth in the pharmaceuticals business.

The following represents fair value of assets acquired, liabilities assumed, purchase consideration transferred:

	JPY (millions)
	Amount
Intangible assets	¥433,047
Other assets	43,490
Deferred tax liabilities	(92,419)
Other liabilities	(38,852)
Goodwill	273,627
Net Assets Acquired	¥618,893

The consideration transferred was comprised of the following:

	JPY (millions)
	Amount
Cash	¥531,918
Debt assumed	59,155
Assumption of Share-based payment liabilities	27,820
Total	¥618,893
Reduced by:	
Cash acquired	(29,869)
Deferred consideration	(1,509)
Proceeds from cash flow hedge	(4,411)
Net consideration paid	¥583,104

Goodwill comprises excess earning power expected from the future business development. Goodwill is not expected to be deductible for tax purposes.

The fair value of the assets acquired and the liabilities assumed, as of March 31, 2017, was booked provisionally, and allocation of the purchase price was completed during the year ended March 31, 2018. The purchase price allocation above reflects the fair value, and has been updated from the provisional amounts. As a result of the adjustments to the provisional fair value, goodwill at the acquisition date decreased by 3,198 million JPY while other liabilities increased by 2,827 million JPY and intangible assets, other assets and deferred tax liabilities decreased by 2,853 million JPY, 3,114 million JPY and 11,992 million JPY, respectively.

Acquisition-related costs of 3,194 million JPY, which includes agent fee and legal fee arising from the acquisition, were expensed as incurred and recorded in selling, general and administrative expenses.

Net revenue and net loss of ARIAD during the post-acquisition period, which were recognized in the consolidated statement of income for the year ended March 31, 2017, were immaterial. The impact on Takeda's revenue and net profit of the ARIAD for the period ended March 31, 2017 assuming the acquisition date had been as of the beginning of the annual reporting period was immaterial.

In addition to the acquisition of ARIAD, Takeda acquired another business during the year for 6,040 million JPY. The aggregate net cash paid for acquisitions during the year ended March 31, 2017 was 589,144 million JPY.

Acquisitions during the Years ended March 31, 2016 and 2018

During the year ended March 31, 2016, Takeda acquired a business for 14,042 million JPY, which represents net cash consideration of 8,269 million JPY, 1,493 million JPY of contingent consideration, and 4,280 million JPY of cash and cash equivalents included in assets acquired.

During the year ended March 31, 2018, Takeda acquired a business for 28,328 million JPY, which was fully paid in cash.

Contingent Consideration

The consideration for certain acquisitions includes amounts contingent upon future events such as the achievement of development milestones and sales targets. At each reporting date, the fair value of contingent consideration is re-measured based on risk-adjusted future cash flows discounted using appropriate discount rate. The contingent consideration discussed below is the discounted royalty payable for a certain period based on future financial performance, primarily consisting of the COLCRYS business which was acquired in the acquisition of URL Pharma. Inc. in June 2012. There is no cap on the royalty payable for the COLCRYS business and the estimated future royalty payments are calculated based on forecasted financial performance.

The fair value of contingent consideration is classified as Level 3 in the fair value hierarchy. The definition of the fair value hierarchy is stated in Note 27, "Financial Instruments".

	JPY (millions) For the Year Ended March 31	
	2017	2018
As of the beginning of the year	¥64,182	¥ 28,976
Additions arising from business combinations	—	3,164
Changes in the fair value during the period:		
URL Pharma. Inc.	(8,417)	11,149
Other	(6,331)	1,635
Settled during the period:		
URL Pharma. Inc.	(7,610)	(11,475)
Other	(8,015)	(1,131)
Reclassification to other payables	(2,370)	—
Foreign currency translation differences	(2,088)	(1,243)
Other	(375)	(506)
As of the end of the year	¥28,976	¥ 30,569

	JPY (millions) As of March 31	
	2017	2018
Payment term (undiscounted)		
Within one year	¥ 9,635	¥10,620
Between one and three years	17,571	18,584
Between three and five years	3,263	4,641
More than five years	4,838	2,831

The following sensitivity analysis represents effect on the fair value of contingent consideration from changes in major assumptions:

		JPY (millions) For the Year Ended March 31	
		2017	2018
Revenue derived from the COLCRYS business	Increase by 5%	¥ 871	¥ 862
	Decrease by 5%	(872)	(862)
Discount rate	Increase by 0.5%	(229)	(257)
	Decrease by 0.5%	263	256

32. Commitments and Contingent Liabilities

Operating Lease

Takeda is the lessee under several operating leases, primarily for office and other facilities, and certain office equipment.

Future minimum lease payments by maturity under non-cancelable operating leases that have initial or remaining lease terms in excess of one year as of March 31, 2017 and 2018 are as follows:

	JPY (millions) For the Year Ended March 31	
	2017	2018
Within one year	¥11,880	¥12,053
Between one and five years	31,686	31,278
More than five years	37,471	33,720
Total	¥81,037	¥77,051

Total future minimum sublease income under non-cancellable subleases as of March 31, 2017 and 2018 were 12,036 million JPY and 34,482 million JPY, respectively.

Rent expense for operating lease contracts and sublease income recognized in profit or loss for the years ended March 31 are as follows:

	JPY (millions)		
	2016	2017	2018
Rent expense	¥11,648	¥11,758	¥21,384
Sublease income	—	(109)	(2,493)
Total	¥11,648	¥11,649	¥18,891

Purchase Commitments

The amount of contractual commitments for the acquisition of property, plant and equipment was 24,786 million JPY and 14,078 million JPY as of March 31, 2017 and 2018, respectively.

Milestone Payments

As discussed in Note 13, Takeda has certain contractual agreements related to the acquisition of intangible assets that require it to make payments of up to 364,907 million JPY and 517,017 million JPY as of March 31, 2017 and 2018, respectively. These commitments include development milestone payments in relation to pipelines under development and expected maximum commercial milestone payments in relation to launched

products. As for the pipelines under development, the possibility to meet certain conditions for commercial milestone payments is uncertain and the related commercial milestone payments were not included in the commitments.

Guarantees

The amount of contingent liabilities was 349 million JPY and 186 million JPY as of March 31, 2017 and 2018, respectively. These are all related to transactions with financial institutions and are not recognized as financial liabilities in the consolidated statement of financial position because the possibility of loss from contingent liabilities was remote.

Litigation

Takeda is involved in various legal and administrative proceedings. The most significant matters are described below.

Takeda may become involved in significant legal proceedings for which it is not possible to make a reliable estimate of the expected financial effect, if any, which may result from ultimate resolution of the proceedings. In these cases, appropriate disclosures about such cases would be included in this note, but no provision would be made for the cases.

With respect to each of the legal proceedings described below, other than those for which a provision has been made, Takeda is unable to make a reliable estimate of the expected financial effect at this stage. The Company does not believe that information about the amount sought by the plaintiffs, if that is known, would be meaningful with respect to those legal proceedings. This is due to a number of factors, including, but not limited to, the stage of proceedings, the entitlement of parties to appeal a decision and clarity as to theories of liability, damages and governing law.

Legal expenses incurred and charges related to legal claims are recorded in selling, general and administrative expenses line. Provisions are recorded, after taking appropriate legal and other specialist advice, where an outflow of resources is considered probable and a reliable estimate can be made of the likely outcome of the dispute. For certain product liability claims, Takeda will record a provision where there is sufficient history of claims made and settlements to enable management to make a reliable estimate of the provision required to cover unasserted claims. At March 31, 2018, Takeda's aggregate provision for legal and other disputes was 23,182 million JPY. The ultimate liability for legal claims may vary from the amounts provided and is dependent upon the outcome of litigation proceedings, investigations and possible settlement negotiations.

Takeda's position could change over time, and, therefore, there can be no assurance that any losses that result from the outcome of any legal proceedings will not exceed by a material amount the amount of the provisions reported in these consolidated financial statements.

Product Liability and Related Claims

Pre-clinical and clinical trials are conducted during the development of potential products to determine the safety and efficacy of products for use by humans following approval by regulatory bodies. Notwithstanding these efforts, when drugs and vaccines are introduced into the marketplace, unanticipated safety issues may become, or be claimed by some to be, evident. Takeda is currently a defendant in a number of product liability lawsuits related to its products. For the product liability lawsuits and related claims, other than those for which provision has been made, Takeda is unable to make a reliable estimate of the expected financial effect at this stage.

Actos

Takeda has been named as a defendant in lawsuits in U.S. federal and state courts in which plaintiffs allege to have developed bladder cancer or other injuries as a result of taking products containing type 2 diabetes treatment pioglitazone (U.S. brand name: Actos). Eli Lilly and Company ("Lilly"), which co-promoted Actos in the United States for a period of time, also has been named as a defendant in many of these lawsuits. Under the parties' co-promotion agreement, Takeda has agreed to defend and indemnify Lilly in the U.S. matters. Outside the U.S., lawsuits and claims have also been brought by persons claiming similar injuries.

In April 2015, Takeda reached an agreement with the lead plaintiffs' lawyers that resolved the vast majority of Actos product liability lawsuits pending against Takeda and Lilly in the U.S. The settlement covered all bladder cancer claims pending in any U.S. court as of the date of settlement. Also claimants with unfiled claims in the U.S. represented by counsel as of the date of settlement and within three days thereafter were eligible to participate. The settlement became effective when 95% of litigants and claimants opted-in. In connection with this broad settlement, Takeda has paid $2.4 billion (approximately 288 billion JPY) into a qualified settlement fund. Takeda received insurance proceeds totaling approximately 58 billion JPY under various policies covering product liability claims against Takeda. Takeda also established reserves for remaining Actos claims and lawsuits.

In addition to remaining product liability claims, the following lawsuits have been filed against Takeda by public and private third-party payors, as well as consumers, seeking damages for alleged economic losses:

A purported nation-wide class action lawsuit has been filed federal court in California – the *Painters' Fund* case – on behalf of third-party payors and consumers seeking, among other things, reimbursement of monies spent on Actos. In April 2018, the court dismissed the *Painters' Fund* case. Plaintiffs appealed.

The States of Mississippi and Louisiana have filed lawsuits against Takeda and Lilly alleging that defendants did not warn about bladder cancer and other risks of Actos. The lawsuits seek reimbursement of the cost of Actos, paid by the states on behalf of patients through programs such as Medicaid, and for medical treatment of patients allegedly injured by Actos, attorneys' fees and expenses, punitive damages and/or penalties. The court granted Takeda's motion to dismiss the Louisiana case. The decision has been appealed.

Prevacid

As of March 31, 2018, more than 1,100 product liability lawsuits involving Prevacid and/or Dexilant have been filed against Takeda in U.S. federal and state courts. The federal lawsuits are consolidated for pre-trial proceedings in a Multi-District Litigation in federal court in New Jersey. The plaintiffs allege they developed kidney injuries as a result of taking Prevacid or Dexilant, and that Takeda failed to adequately warn them of this potential danger. However, it remains unclear how many of these claimants took Takeda PPIs. Similar claims are pending against other manufacturers of drugs in the same proton pump inhibitor (PPI) class as Prevacid and Dexilant, including AstraZeneca, Proctor & Gamble, and Pfizer.

In Canada, three proposed class actions have been filed in three provinces (Quebec, Ontario and Saskatchewan). The defendants include Takeda, AstraZeneca, and several generic manufacturers. It is unclear how many new lawsuits will be filed against Takeda. At this time, a reserve is not probable or estimable.

Intellectual property

Intellectual property claims include challenges to the validity and enforceability of Takeda's patents on various products or processes as well as assertions of non-infringement of those patents. A loss in any of these cases could result in loss of patent protection for the product at issue. The consequences of any such loss could be a significant decrease in sales of that product and could materially affect future results of operations for Takeda.

Prevacid

In January 2018, Takeda received notice from Zydus that it has amended its application for a generic version of SoluTab. In response, Takeda filed a patent infringement lawsuit against Zydus and in response, Zydus filed a counterclaim asserting that Takeda's challenge of Zydus' ANDA product violates antitrust laws. Takeda believes the counterclaim is without merit.

Other generic companies have filed ANDAs for generic versions of SoluTab and may launch their products upon approval by the FDA. In June 2009, Apotex filed a lawsuit in Toronto, Canada, against Takeda and Abbott Laboratories seeking alleged damages for delayed market entry of its generic lansoprazole capsules due to a prior patent infringement lawsuit against Apotex. Previously, Abbott and Takeda filed a patent infringement lawsuit against Apotex in response to Apotex's regulatory submission to the Canadian Minister of Health seeking permission to market generic lansoprazole capsules before the expiration of various Canadian patents relating to this drug. In September 2008, Abbott and Takeda settled that patent infringement lawsuit against Apotex and Apotex was allowed to begin selling generic lansoprazole capsules in Canada on May 1, 2009. Under the terms of the settlement, Apotex retained its right to seek damages for delayed market entry caused by the lawsuit.

Pantoprazole

On January 15, 2016, Mylan filed a suit at the Federal Court against Takeda claiming damages as a result of the dismissal of Takeda´s previous PM(NOC) proceeding against Mylan. Mylan claimed damages due to being held-off the market with its generic pantoprazole magnesium product during the time period of June 27, 2013 until June 15, 2015. The parties settled the lawsuit in May 2018.

Amitiza

In March 2017, Sucampo (Takeda's licensor) received a paragraph IV certification directed to Amitiza from Amneal Pharmaceuticals, and in August 2017 received a paragraph IV certification directed to Amitiza from Teva. These parties contend that the patents listed in FDA's Orange Book for Amitiza are invalid and/or not infringed by their ANDA product. In response, Sucampo and Takeda filed patent infringement lawsuits against the parties. In June 2018, the parties settled the lawsuits. Patent litigation against other ANDA filers for Amitiza was previously settled.

Trintellix

Takeda has received notices from sixteen generic pharmaceutical companies that they have submitted ANDAs with paragraph IV certifications seeking to sell generic versions of Trintellix. To date, at least five generic companies are challenging the patents covering the compound, vortioxetine, which expire in 2026. Takeda filed patent infringement lawsuits against the ANDA filers in federal court in Delaware.

Entyvio

Roche has filed patent infringement lawsuits against Takeda in Germany, Italy and the U.K. alleging that Entyvio infringes Roche patents. Takeda is vigorously defending the lawsuits. Additionally, Takeda has filed lawsuits seeking nullification of Roche's patents in the U.K. and Germany. Takeda also filed a lawsuit against Genentech in state court in Delaware seeking a declaration that Takeda has a license to the Roche patent under the terms of a prior agreement between Takeda and Genentech.

Other

In addition to the individual patent litigation cases described above, Takeda is party to a number of cases where Takeda has received notices that companies have submitted ANDAs with paragraph IV certifications to sell generic versions of other Takeda products. These include Uloric and Alogliptin products. Takeda has filed patent infringement lawsuits against parties involved in these situations.

Sales, Marketing, and Regulation

Takeda has other litigations related to its products and its activities, the most significant of which are described below.

Antitrust

There have been purported class action lawsuits filed in federal court in New York by several end payors and wholesalers against Takeda alleging anticompetitive conduct to delay generic competition for Actos. In September 2015, the court granted defendants' motions to dismiss the antitrust claims asserted by the end payors. The end payors appealed this decision to the Federal 2nd Circuit Court of Appeals. The wholesalers' lawsuit had been stayed pending the appellate court's decision in the end payors' lawsuit. In February 2017, the appellate court reversed in part the dismissal of the end-payors' case and allowed one of plaintiffs' antitrust theories to proceed in the trial court. Specifically, the court ruled that plaintiffs sufficiently alleged that Takeda's characterizations of two patents in the FDA Orange Book were false, and that this resulted in delaying Teva's launch of generic Actos. Takeda disagrees with these allegations and believes the Orange Book listings were correct. The court, however, affirmed the trial court's dismissal of other antitrust theories. The end payors' case, along with the wholesalers' case, is proceeding in the trial court, where Takeda has filed a motion to dismiss the remaining legal theory.

Investigation of Patient Assistance Programs

In November 2016, the U.S. Department of Justice (through the U.S. Attorneys' Office in Boston) issued a subpoena to ARIAD, which was acquired by Takeda during the year ended March 31, 2017, seeking information from January 2010 to the present relating to ARIAD's donations to 501(c) (3) co-payment

foundations, financial assistance programs, and free drug programs available to Medicare beneficiaries and the relationship between these copayment foundations and specialty pharmacies, hubs or case management programs. ARIAD is cooperating in the investigation.

33. Subsequent Events

Acquisition of Shire plc

On May 8, 2018, the Company reached agreement with Shire plc ("Shire") on the terms of a recommended offer pursuant to which the Company will acquire the entire issued and to be issued ordinary shares of Shire (the "Acquisition").

Shire is a leading global biotechnology company focused on serving patients with rare diseases and other highly specialised conditions.

Under the terms of the Shire Acquisition, Shire shareholders will receive 30.33 USD in cash and either 0.839 Takeda shares or 1.678 Takeda ADSs (American Depository Shares) per Shire share. The expected aggregate consideration is approximately 46 billion GBP (at assumed exchange rate of £: ¥ of 1:151.51, approximately 6.96 trillion JPY), based on the closing price of 4,923 JPY per Takeda share and the exchange rates of £: ¥ of 1:151.51 and £: $ of 1:1.3945 on April 23, 2018 (being the day prior to the announcement that the Shire Board would, in principle, be willing to recommend the consideration proposed by the Company). Immediately following completion of the transaction, Shire shareholders are expected to hold approximately 50 percent of the combined group. The Acquisition is anticipated to complete in the first half of 2019, subject to the completion of applicable conditions including, among other things, the sanction of the Royal Court of Jersey, the approval of the shareholders of both of Shire and the Company and the receipt of regulatory clearances in the relevant jurisdictions.

In certain specific circumstances if the Acquisition does not complete, the Company will be required to pay a break fee to Shire of between 1% and 2% of the total offer price (depending on which circumstances apply, and subject to certain carve-outs) calculated on the basis set out in the announcement made by the Company pursuant to the City Code on Takeovers and Mergers in the UK on May 8, 2018.

Further, the Company has entered into a 364-Day Bridge Credit Agreement of 30.85 billion USD (the "**Bridge Credit Agreement**") to finance funds necessary for the Acquisition on May 8, 2018. The commitments under the Bridge Credit Agreement are contemplated to be reduced or refinanced. On June 8, 2018, the Company has entered into a Term Loan Credit Agreement for an aggregate principal amount of up to 7.5 billion USD to finance a portion funds necessary for the Acquisition, and upon the execution thereof, the commitments under the Bridge Credit Agreement will be reduced by up to 7.5 billion USD.

Disposal of ownership interest in Guangdong Techpool Bio-Pharma Co., Ltd

On May 21, 2018, Takeda entered into an agreement to sell its entire shareholding of 51.34% in Guangdong Techpool Bio-Pharma Co., Ltd ("Techpool"), a leader in the research, discovery and marketing of urinary protein biopharmaceuticals and production of biopharmaceuticals in critical care for approximately 280 million USD (approximately 30 billion JPY). The transaction is subject to approval from the State Administration for Market Regulation in the People's Republic of China. The shares of the subsidiary have been sold in August 2018.

Acquisition of TiGenix NV ("TiGenix")

On April 30, 2018, the Company made an all cash voluntary public takeover bid for the entire issued ordinary shares ("Ordinary Shares"), warrants ("Warrants") and American Depositary Shares ("ADSs" and together with the Ordinary Shares and the Warrants, the "Securities") of TiGenix not already owned by Takeda. On June 8, 2018, the Company acquired the Securities tendered in the first acceptance period for 470.2 million EUR. In response to the takeover bid with the Securities already owned by Takeda, Takeda acquired 90.8% of the voting rights.

TiGenix NV ("TiGenix") is a biopharmaceutical company developing novel stem cell therapies for serious medical conditions. This acquisition will expand Takeda's late stage gastroenterology (GI) pipeline with the U.S. rights to Cx601 (darvadstrocel), a suspension of allogeneic expanded adipose-derived stem cells (eASC)

under investigation for the treatment of complex perianal fistulas in patients with non-active/mildly active luminal Crohn's disease (CD). Following the 2nd Takeover bid and a squeeze-out ended in July 2018, TiGenix became a wholly owned subsidiary of Takeda.

The following represents provisional fair value of assets acquired, liabilities assumed:

	JPY (millions)
	Amount
Intangible assets	¥ 63,421
Other assets	5,794
Deferred tax liabilities	(10,128)
Other liabilities	(5,678)
Basis adjustments	(3,381)
Goodwill	19,975
Net Assets Acquired	¥ 70,003

The purchase consideration was comprised of the following:

	JPY (millions)
	Amount
Cash	¥67,319
The ordinary shares of TiGenix already owned by Takeda immediately prior to the acquisition date	2,684
Total	¥70,003

Goodwill comprises excess earning power expected from the future business development. Goodwill is not deductible for tax purposes.

The fair value primarily consisting of intangible assets, deferred tax liabilities and goodwill assumed as of the acquisition date have been recorded provisionally based on the information available as of the approval date of the consolidated financial statements. These are subject to change as the Company is in the process of reviewing further details of the basis for the fair value measurement.

Takeda entered in a forward exchange contract to hedge foreign currency risks and applied the hedge accounting to the contract. Basis adjustment represents a fair value of the hedging instrument of 3,381 million JPY that was added to the amount of goodwill at the acquisition date.

No gains or losses were recognized as a result of remeasurement of fair value of the ordinary shares of TiGenix already owned by Takeda immediately prior to the acquisition date.

Acquisition-related costs of 767 million JPY which included agent fee and due diligence costs arising from the acquisition were recorded in "Selling, general and administrative expenses" for the year ended March 31, 2019.

1. Condensed Interim Consolidated Financial Statements

(1) Condensed Interim Consolidated Statements of Income

	JPY (millions)					
		Six months period ended September 30,			Three months period ended September 30,	
	Note	2017	2018	Note	2017	2018
Revenue	4	881,416	880,611	4	433,177	430,777
Cost of sales		(242,741)	(231,341)		(121,873)	(110,751)
Selling, general and administrative expenses		(297,263)	(293,783)		(151,396)	(148,755)
Research and development expenses		(155,096)	(151,432)		(79,408)	(79,466)
Amortization and impairment losses on intangible assets associated with products		(56,885)	(48,288)		(24,395)	(24,267)
Other operating income	5	136,935	32,331		5,635	23,047
Other operating expenses	6	(32,017)	(16,142)		(22,366)	(17,499)
Operating profit		234,349	171,956		39,374	73,086
Finance income		14,116	4,411		619	2,469
Finance expenses		(15,983)	(19,618)		(6,019)	(9,109)
Share of profit of investments accounted for using the equity method		506	4,031		772	471
Profit before tax		232,988	160,780		34,746	66,917
Income tax expenses		(60,318)	(34,291)		(7,065)	(18,508)
Net profit for the period		172,670	126,489		27,681	48,409
Attributable to:						
Owners of the Company		172,816	126,668		28,027	48,426
Non-controlling interests		(146)	(179)		(346)	(17)
Net profit for the period		172,670	126,489		27,681	48,409
Earnings per share (JPY)						
Basic earnings per share	7	221.43	161.76	7	35.89	61.73
Diluted earnings per share	7	219.98	160.93	7	35.67	61.48

See accompanying notes to condensed interim consolidated financial statements.

(2) Condensed Interim Consolidated Statements of Income and Other Comprehensive Income

	JPY (millions)					
		Six months period ended September 30,			Three months period ended September 30,	
	Note	2017	2018	Note	2017	2018
Net profit for the period		172,670	126,489		27,681	48,409
Other comprehensive income:						
Items that will not be reclassified to profit or loss:						
Changes in fair value of financial assets measured at fair value through other comprehensive income		—	13,008		—	9,279
Re-measurement gain (loss) on defined benefit plans		688	(163)		10	802
		688	12,845		10	10,081
Items to be reclassified subsequently to profit or loss:						
Exchange differences on translation of foreign operations		86,421	66,680		32,618	60,718
Net changes on revaluation of available-for-sale financial assets		8,113	—		3,778	—
Cash flow hedges		1,523	1,704		724	(884)
Hedging cost		691	(152)		161	(199)
Share of other comprehensive income (loss) of investments accounted for using the equity method		36	(171)		18	(81)
		96,784	68,061		37,299	59,554
Other comprehensive income for the period, net of tax		97,472	80,906		37,309	69,635
Total comprehensive income for the period		270,142	207,395		64,990	118,044
Attributable to:						
Owners of the Company		269,943	207,742		65,142	118,148
Non-controlling interests		199	(347)		(152)	(104)
Total comprehensive income for the period		270,142	207,395		64,990	118,044

See accompanying notes to condensed interim consolidated financial statements.

(3) Condensed Interim Consolidated Statements of Financial Position

	Note	JPY (millions) As of March 31, 2018	As of September 30, 2018
ASSETS			
NON-CURRENT ASSETS:			
Property, plant and equipment		536,801	533,088
Goodwill		1,029,248	1,085,706
Intangible assets		1,014,264	1,067,172
Investments accounted for using the equity method		107,949	115,174
Other financial assets		196,436	221,210
Other non-current assets		77,977	90,522
Deferred tax assets		64,980	54,024
Total non-current assets		3,027,655	3,166,896
CURRENT ASSETS:			
Inventories		212,944	233,304
Trade and other receivables		420,247	461,436
Other financial assets		80,646	20,281
Income tax receivables		8,545	7,483
Other current assets		57,912	68,130
Cash and cash equivalents		294,522	317,080
Assets held for sale	12	3,992	229
Total current assets		1,078,808	1,107,943
Total assets		4,106,463	4,274,839

	Note	JPY (millions) As of March 31, 2018	As of September 30, 2018
LIABILITIES AND EQUITY			
LIABILITIES			
NON-CURRENT LIABILITIES:			
Bonds and loans		985,644	879,621
Other financial liabilities		91,223	79,619
Net defined benefit liabilities		87,611	88,822
Provisions		28,042	23,912
Other non-current liabilities		68,300	65,517
Deferred tax liabilities		90,725	120,995
Total non-current liabilities		1,351,545	1,258,486
CURRENT LIABILITIES:			
Bonds and loans		18	120,913
Trade and other payables		240,259	225,752
Other financial liabilities		29,613	41,310
Accrued income taxes		67,694	61,296
Provisions		132,781	144,367
Other current liabilities		263,930	250,554
Liabilities held for sale	12	3,214	—
Total current liabilities		737,509	844,192
Total liabilities		2,089,054	2,102,678
EQUITY			
Share capital		77,914	77,942
Share premium		90,740	81,777
Treasury shares		(74,373)	(57,167)
Retained earnings		1,557,307	1,648,094
Other components of equity		350,631	417,712
Other comprehensive income related to assets held for sale		(4,795)	—
Equity attributable to owners of the Company		1,997,424	2,168,358
Non-controlling interests		19,985	3,803
Total equity		2,017,409	2,172,161
Total liabilities and equity		4,106,463	4,274,839

See accompanying notes to condensed interim consolidated financial statements.

(4) Condensed Interim Consolidated Statements of Changes in Equity

Six months period ended September 30, 2017 (From April 1 to September 30, 2017)

		JPY (millions)														
		Equity attributable to owners of the Company														
						Other components of equity										
	Note	Share capital	Share premium	Treasury shares	Retained earnings	Exchange differences on translation of foreign operations	Changes in fair value of financial assets measured at fair value through other comprehensive income	Net changes on revaluation of available-for-sale financial assets	Cash flow hedges	Hedging cost	Re-measurement gain or loss on defined benefit plans	Total	Other comprehensive income related to assets held for sale	Total	Non-controlling interests	Total equity
As of April 1, 2017		65,203	74,973	(48,734)	1,511,817	221,550	—	67,980	1,472	—	—	291,002	—	1,894,261	54,704	1,948,965
Net profit for the period					172,816							—		172,816	(146)	172,670
Other comprehensive income						86,093		8,132	1,523	691	688	97,127		97,127	345	97,472
Comprehensive income for the period		—	—	—	172,816	86,093	—	8,132	1,523	691	688	97,127	—	269,943	199	270,142
Transactions with owners:																
Issuance of new shares		754	754									—		1,508		1,508
Acquisition of treasury shares				(18,742)								—		(18,742)		(18,742)
Disposal of treasury shares			0	0								—		0		0
Dividends	9				(70,956)							—		(70,956)	(2,189)	(73,145)
Changes in ownership												—		—	(32,750)	(32,750)
Transfers from other components of equity					688						(688)	(688)		—		—
Share-based compensation			8,572									—		8,572		8,572
Exercise of share-based awards			(14,758)	15,905								—		1,147		1,147
Transfers to non-financial assets												—		—		—
Total transactions with owners		754	(5,432)	(2,837)	(70,268)	—	—	—	—	—	(688)	(688)	—	(78,471)	(34,939)	(113,410)
As of September 30, 2017		65,957	69,541	(51,571)	1,614,365	307,643	—	76,112	2,995	691	—	387,441	—	2,085,733	19,964	2,105,697

See accompanying notes to condensed interim consolidated financial statements.

Six months period ended September 30, 2018 (From April 1 to September 30, 2018)

		JPY (millions)														
		Equity attributable to owners of the Company														
						Other components of equity										
	Note	Share capital	Share premium	Treasury shares	Retained earnings	Exchange differences on translation of foreign operations	Changes in fair value of financial assets measured at fair value through other comprehensive income	Net changes on revaluation of available-for-sale financial assets	Cash flow hedges	Hedging cost	Re-measurement gain or loss on defined benefit plans	Total	Other comprehensive income related to assets held for sale	Total	Non-controlling interests	Total equity
As of April 1, 2018		77,914	90,740	(74,373)	1,557,307	272,597	—	73,037	3,391	1,606	—	350,631	(4,795)	1,997,424	19,985	2,017,409
Cumulative effects of changes in accounting policies	3				15,401		84,672	(73,037)	(1,378)			10,257		25,658	(10)	25,648
Restated balance		77,914	90,740	(74,373)	1,572,708	272,597	84,672	—	2,013	1,606	—	360,888	(4,795)	2,023,082	19,975	2,043,057
Net profit for the period					126,668							—		126,668	(179)	126,489
Other comprehensive income (loss)						61,937	12,954		1,704	(152)	(164)	76,279	4,795	81,074	(168)	80,906
Comprehensive income (loss) for the period		—	—	—	126,668	61,937	12,954	—	1,704	(152)	(164)	76,279	4,795	207,742	(347)	207,395
Transactions with owners:																
Issuance of new shares		28	28									—		56		56
Acquisition of treasury shares				(1,158)								—		(1,158)		(1,158)
Disposal of treasury shares			(0)	3								—		3		3
Dividends	9				(71,188)							—		(71,188)	(168)	(71,356)
Changes in ownership					(2,126)	230						230		(1,896)	(15,657)	(17,553)
Transfers from other components of equity					22,032		(22,196)				164	(22,032)		—		—
Share-based compensation			9,384									—		9,384		9,384
Exercise of share-based awards			(18,375)	18,361								—		(14)		(14)
Transfers to non-financial assets									2,347			2,347		2,347		2,347
Total transactions with owners		28	(8,963)	17,206	(51,282)	230	(22,196)	—	2,347	—	164	(19,455)	—	(62,466)	(15,825)	(78,291)
As of September 30, 2018		77,942	81,777	(57,167)	1,648,094	334,764	75,430	—	6,064	1,454	—	417,712	—	2,168,358	3,803	2,172,161

See accompanying notes to condensed interim consolidated financial statements.

(5) Condensed Interim Consolidated Statements of Cash Flows

	JPY (millions)	
	Six months period ended September 30,	
	2017	2018
Cash flows from operating activities:		
Net profit for the period	172,670	126,489
Depreciation and amortization	93,420	77,976
(Reversal of) Impairment losses	(9,229)	690
Share-based compensation	8,572	9,384
Loss (gain) on sales and disposal of property, plant and equipment	50	(5,623)
Gain on divestment of business	(3,086)	(2,266)
Gain on sales of subsidiaries	(106,619)	(14,365)
Change in fair value of contingent consideration	6,646	(1,230)
Finance income and expenses, net	1,867	15,207
Share of gain of associates accounted for using the equity method	(506)	(4,031)
Income tax expenses	60,318	34,291
Changes in assets and liabilities:		
Increase in trade and other receivables	(35,033)	(44,721)
Increase in inventories	(3,019)	(21,485)
Decrease in trade and other payables	(7,559)	(230)
Increase (decrease) in provisions	(4,825)	1,594
Other, net	(2,778)	(35,001)
Cash generated from operations	170,889	136,679
Income taxes paid	(28,168)	(20,407)
Tax refunds and interest on tax refunds received	24,309	1,562
Net cash from operating activities	167,030	117,834
Cash flows from investing activities:		
Interest received	1,083	1,037
Dividends received	6,094	1,575
Acquisition of property, plant and equipment	(36,303)	(37,314)
Proceeds from sales of property, plant and equipment	76	6,046
Acquisition of intangible assets	(46,910)	(21,105)
Acquisition of investments	(5,787)	(10,340)
Proceeds from sales and redemption of investments	14,346	38,196
Acquisition of businesses, net of cash and cash equivalents acquired	(17,787)	(66,749)
Proceeds from sales of business, net of cash and cash equivalents divested	85,036	27,199
Proceeds from withdrawal of restricted deposits	—	71,774
Other, net	23,344	(12,461)
Net cash from (used in) investing activities	23,192	(2,142)
Cash flows from financing activities:		
Net decrease in short-term loans	(403,948)	(362)
Proceeds from long-term loans	337,154	—
Proceeds from issuance of bonds	56,299	—
Purchase of treasury shares	(18,729)	(1,158)
Interest paid	(3,587)	(4,467)
Dividends paid	(70,966)	(71,448)
Acquisition of non-controlling interests	—	(2,392)
Repayment of obligations under finance lease	(1,297)	(1,284)
Facility fees paid for loan agreements	—	(15,404)
Other, net	(3,056)	(659)
Net cash used in financing activities	(108,130)	(97,174)
Net increase in cash and cash equivalents	82,092	18,518
Cash and cash equivalents at the beginning of the year (Consolidated statements of financial position)	319,455	294,522
Cash and cash equivalents reclassified back from assets held for sale	21,797	451
Cash and cash equivalents at the beginning of the year	341,252	294,973
Effects of exchange rate changes on cash and cash equivalents	7,551	3,589
Cash and cash equivalents at the end of the period	430,895	317,080

See accompanying notes to condensed interim consolidated financial statements.

Notes to Condensed Interim Consolidated Financial Statements

1 Reporting Entity

Takeda Pharmaceutical Company Limited (the "Company") is a public company incorporated in Japan.

The Company and its subsidiaries (collectively, "Takeda") is a major global pharmaceutical group and is engaged in the research, development, manufacturing and marketing of pharmaceutical products, over-the-counter ("OTC") medicines and quasi-drug consumer products, and other healthcare products. Takeda's principal pharmaceutical products include medicines in the following therapeutic areas: gastroenterology, oncology and neuroscience.

2 Basis of Preparation

(1) Compliance

Takeda has prepared the condensed interim consolidated financial statements in accordance with IAS34 "Interim Financial Reporting" as issued by the International Accounting Standards Board ("IASB").

The condensed interim consolidated financial statements do not contain all the information required in consolidated financial statements as of the end of a fiscal year. Therefore, the condensed interim consolidated financial statements should be used with the consolidated financial statements as of and for the fiscal year ended March 31, 2018.

(2) Functional Currency and Presentation Currency

The condensed interim consolidated financial statements are presented in Japanese yen ("JPY"), which is the functional currency of the Company. All financial information presented in JPY has been rounded to the nearest million, except when otherwise indicated.

(3) Approval of Financial Statements

Takeda's condensed interim consolidated financial statements as of and for the period ended September 30, 2018 were approved on November 8, 2018 by Representative Director, President & Chief Executive Officer ("CEO") Christophe Weber and Corporate Officer & Chief Financial Officer Costa Saroukos.

(4) Use of Judgments, Estimates and Assumptions

The preparation of the condensed interim consolidated financial statements requires management to make certain judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, revenue and expenses. Actual results may differ from these estimates.

These estimates and underlying assumptions are reviewed on a continuous basis by the management. Changes in these accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

The condensed interim consolidated financial statements are prepared based on the same judgments and estimations as well as the accounting estimates and assumptions applied and described in Takeda's consolidated financial statements for the fiscal year ended March 31, 2018, except for new significant judgments and uncertainty of the estimations related to the application of IFRS 9 'Financial instruments' ("IFRS 9") and IFRS 15 'Revenue from Contracts with Customers' ("IFRS 15") , which are described in Note 3 "Significant Accounting Policies".

3 Significant Accounting Policies

Significant accounting policies adopted for the condensed interim consolidated financial statements are the same as those adopted for the consolidated financial statements of the fiscal year ended March 31, 2018 except for the policies required by IFRS 9 and IFRS 15.

Takeda calculated income tax expenses for the six months period ended September 30, 2018, based on the estimated average annual effective tax rate.

IFRS 9 'Financial instruments'

IFRS 9 was adopted by Takeda as of April 1, 2018. IFRS 9 replaces the majority of the requirements of IAS 39 'Financial Instruments: Recognition and Measurement' and covers the classification, recognition, measurement, and de-recognition of financial assets and financial liabilities, introduces a new impairment model for financial assets based on expected losses rather than incurred losses and provides a new hedge accounting model.

The principal impact of the adoption of IFRS 9 for Takeda was the re-measurement of certain available-for-sale financial instruments to fair value as of April 1, 2018. In addition, as a result of adoption, Takeda elected to designate equity instruments as financial assets measured at fair value through other comprehensive income (FVTOCI). This designation has been made on the basis of the facts and circumstances that existed at the date of initial application. Changes in the fair value of financial assets at FVTOCI are recognized in other comprehensive income, and the cumulative amount of other comprehensive income is transferred to retained earnings when the instruments are derecognized due to liquidation or sale.

The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics. The determination of the business model within which a financial asset is held has been made on the basis of the facts and circumstances that existed at the date of initial application.

The impairment of financial assets measured at amortized cost is assessed using an expected credit loss (ECL) model where previously the incurred loss model was used. Given the nature of Takeda's financial assets, there was no significant impact on the provisions for doubtful accounts or impairments upon adoption of the new standard.

The adoption of IFRS 9 has not had material impact on Takeda's financial liabilities and derivatives.

The new hedge accounting model introduced by the standard requires hedge accounting relationships to be based upon Takeda's own risk management objectives and strategy, and to apply a more qualitative and forward-looking approach to assessing hedge effectiveness. The model is to be discontinued only when the relationships no longer qualify for hedge accounting. All hedging relationships designated under IAS39 at March 31, 2018 met the criteria for hedge accounting under IFRS 9 at April 1, 2018 and are therefore regarded as continuing hedging relationships.

Takeda applied IFRS 9 retrospectively with respect to classification and measurement (including impairment) without restating previous years. These cumulative effects of initially applying IFRS 9 were recognized in equity as of the date of initial application of IFRS 9 (April 1, 2018). As a result of the adoption on the date of initial application, the opening balance of retained earnings and other components of equity increased by 14,073 million JPY and 10,257 million JPY, respectively, while other financial assets (non-current), other financial assets (current), deferred tax liabilities increased by 32,809 million JPY, 856 million JPY and 9,345 million JPY respectively, with non-controlling interests decreasing by 10 million JPY.

In addition, under IAS 39, the currency basis spread was included in "Cash Flow Hedges" under other components of equity. Under IFRS 9, this basis spread is separately accounted for and presented as "Hedging Cost" under other components of equity. Takeda retrospectively applied the accounting treatment of hedging cost and adjusted the comparative information. As of September 30, 2017 and March 31, 2018, the amounts retrospectively recorded as "Hedging Cost" and deducted from "Cash Flow Hedges" were 691 million JPY and 1,606 million JPY, respectively.

Classifications and carrying amounts of financial assets under IAS 39 and IFRS 9 as of the date of adoption were changed as presented in the table below. For investments in equity instruments, Takeda made an irrevocable election at the time of initial recognition to account for the equity instruments at FVTOCI. There were no changes to the classifications and carrying amounts of the financial liabilities.

JPY (millions)

	IAS 39	Carrying amount	IFRS 9	Carrying amount
Cash and cash equivalents	Loans and receivables	294,522	Financial assets measured at amortized cost	294,522
Derivatives	Financial assets measured at fair value through profit or loss	762	Financial assets measured at fair value through profit or loss	762
Derivative transactions to which hedge accounting is applied	Derivative transactions to which hedge accounting is applied	2,527	Derivative transactions to which hedge accounting is applied	2,527
Trade and other receivables, other financial assets	Loans and receivables	516,853	Financial assets measured at amortized cost	516,853
Equity instruments	Available-for-sale financial assets	169,814	Financial assets measured at fair value through other comprehensive income	203,276
Convertible notes	Loans and receivables	5,303	Financial assets measured at fair value through profit or loss	7,576
	Financial assets measured at fair value through profit or loss	2,070		
Total		991,851		1,025,516

The following changes were made to the carrying amount of the financial assets as of the date of adoption.

JPY (millions)

IAS 39	Carrying amount	Change in classification	Re-measurement	IFRS 9	Carrying amount
Loans and receivables	816,678	(5,303)	—	Financial assets measured at amortized cost	811,375
Financial assets measured at fair value through profit or loss	2,832	5,303	203	Financial assets measured at fair value through profit or loss	8,338
Derivative transactions to which hedge accounting is applied	2,527	—	—	Derivative transactions to which hedge accounting is applied	2,527
Available-for-sale financial assets	169,814	—	33,462	Financial assets measured at fair value through other comprehensive income	203,276
Total	991,851	—	33,665		1,025,516

Measurement of Financial Instruments

Debt Instruments:

- Amortized cost: Assets such as trade and other receivables that are held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and whose contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding are measured at amortized cost. Trade receivables are initially recognized at their invoiced amounts, including any related sales taxes less adjustments for estimated revenue deductions such as rebates, and cash discounts. Provisions for doubtful trade receivables are established using an ECL model. The provisions are based on a forward-looking ECL, which includes possible default events on the trade receivables over the entire holding period of the trade receivables. Takeda has elected to measure provisions for trade receivables and lease receivables at an amount equal to lifetime ECL. Takeda uses provision matrix to calculate ECL. These provisions represent the difference between the carrying amount of the trade receivables and the lease receivables in the consolidated statements of financial position and the estimated net collectible amount.
- FVTOCI: Assets that are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and whose contractual terms give rise

on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding are measured at FVTOCI. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to net profit or loss.

- Fair value through profit or loss (FVTPL): Assets that do not meet the criteria for amortized cost or FVTOCI are measured at FVTPL. A gain or loss on debt instruments that is measured at FVTPL is recognized in net profit or loss.

Equity Instruments:

- Equity instruments are measured at FVTPL. However, on initial recognition, Takeda made an irrevocable FVTOCI election (on an instrument-by-instrument basis) to present the subsequent changes in the fair value of equity instruments in other comprehensive income. As at the reporting date, Takeda designated all its equity instruments as financial assets at FVTOCI.

Derivatives and Hedge Accounting:

- Derivatives are measured at FVTPL unless the derivative contracts are designated as hedging instruments. Gains or losses on derivatives are recognized in net profit or loss. When the derivative contracts are designated as hedging instruments in cash flow hedging relationships, the effective portion of changes in fair value of derivatives is accumulated in other comprehensive income. The currency basis spread is accounted for and presented as "Hedging Cost" under other components of equity separately from "Cash Flow Hedges".

IFRS 15 'Revenue from Contracts with Customers'

Takeda adopted IFRS 15 on April 1, 2018. The new standard provides a single, principles-based approach to the recognition of revenue from all contracts with customers. The standard focuses on the identification of performance obligations in a contract and requires revenue to be recognized when or as those performance obligations are satisfied. The standard also has more detailed disclosure requirements.

The impacts of adoption of the new standard are summarized below:

- Takeda derives revenue from sales of pharmaceutical products as well as other services where control transfers to customers and performance obligations are satisfied either at the point in time of shipment, receipt of the products by the customer or when the services are performed.
- Takeda also recognizes royalty revenue relating to the out-licensing of intellectual property (IP), which is recognized when the underlying sales have occurred, and revenue from other services such as research and development of compounds out-licensed, which is recognized over the service period.
- Takeda's revenue also includes revenue from out-licensing and granting of IP rights and Takeda usually receives upfront payments or milestone payments for these arrangements. Revenue from the upfront payments is generally recognized when Takeda provides a right to use the IP. Revenue from the milestone payments is generally recognized at the point in time when it is highly probable that the respective milestone event criteria are met, and a significant reversal in the amount of revenue recognized will not occur.

These impacts of adoption of the new standard were immaterial. Takeda elected the modified retrospective method upon adoption of IFRS 15. This method requires the recognition of the cumulative effect of initially applying IFRS 15 in equity at the date of initial application of IFRS 15 (April 1, 2018) and Takeda did not restate the result of prior years. As a result of the adoption of IFRS 15, due to the difference in allocation of revenue to performance obligations, other non-current liabilities, other current liabilities, deferred tax assets decreased by 1,247 million JPY, 495 million JPY and 414 million JPY respectively, and opening retained earnings increased by 1,328 million JPY.

For the six months period ended September 30, 2018, the impact from adoption of IFRS 15 on the condensed interim consolidated financial statements was immaterial compared to the financial statements under IAS 18.

As the results of the adoption of IFRS 15, Takeda updated and revised the related accounting policy as follows:

Revenue on sales of Takeda products and services is recognized when a contractual promise to a customer (performance obligation) has been fulfilled by transferring control over the promised goods and services to

the customer, generally at the point in time of shipment to or receipt of the products by the customer, or when the services are performed. The amount of revenue to be recognized is based on the consideration Takeda expects to receive in exchange for its goods and services. If a contract contains more than one performance obligation, the consideration is allocated based on the standalone selling price of each performance obligation.

The consideration Takeda receives in exchange for its goods or services may be fixed or variable. Variable consideration is only recognized when it is highly probable that a significant reversal will not occur. The most common elements of variable consideration are listed below:

- Rebates and discounts granted to government agencies, wholesalers, retail pharmacies, managed healthcare organizations and other customers are estimated and recorded as a deduction from revenue at the time the related revenues are recorded. They are calculated on the basis of historical experience and the specific terms in the individual agreements.
- Cash discounts are offered to customers and are provisioned and recorded as revenue deductions at the time the related sales are recorded.
- Sales return provisions are recognized and recorded as revenue deductions when there is historical experience of Takeda agreeing to customer returns and Takeda can reasonably estimate expected future returns. In doing so, the estimated rate of return is applied, determined based on historical experience of customer returns and considering any other relevant factors. The rate is multiplied by the amounts invoiced in order to estimate expected future returns.

Takeda also generates revenue in the form of royalty payments, upfront payments, and milestone payments from the out-licensing of intellectual property (IP). Royalty revenue earned through a license is recognized when the underlying sales have occurred. Revenue from upfront payment is generally recognized when Takeda provides a right to use IP. Revenue from milestone payments is recognized at the point in time when it is highly probable that the respective milestone event criteria is met, and a significant reversal in the amount of revenue recognized will not occur.

Revenue from other services such as research and development of compounds that are out-licensed is recognized over the service period.

4 Revenue

The disaggregation of revenue by goods and services is as follows:

JPY (millions)

	Six months period ended September 30,	
	2017	2018
Sales of pharmaceutical products	838,266	855,722
Royalty and service income	43,150	24,889
Total	881,416	880,611

JPY (millions)

	Three months period ended September 30,	
	2017	2018
Sales of pharmaceutical products	420,348	418,891
Royalty and service income	12,829	11,886
Total	433,177	430,777

The disaggregation of revenue by geographic location is as follows. This disaggregation provides revenue attributable to countries or regions based on the customer location.

JPY (millions)

Six months period ended September 30,	Japan	U.S.	Europe and Canada	Russia/ CIS	Latin America	Asia	Other	Total
2017	294,987	301,784	148,938	35,111	36,063	49,189	15,344	881,416
2018	274,243	321,079	158,603	27,484	34,685	51,905	12,612	880,611

Other includes the Middle East, Oceania and Africa.

JPY (millions)

Three months period ended September 30,	Japan	U.S.	Europe and Canada	Russia/ CIS	Latin America	Asia	Other	Total
2017	134,691	153,196	75,366	18,072	19,111	24,038	8,703	433,177
2018	129,983	159,979	79,481	13,359	16,180	25,024	6,771	430,777

Other includes the Middle East, Oceania and Africa.

5 Other Operating Income

Other operating income for the six months period ended September 30, 2017 included the gain on the sale of shares of 106,337 million JPY which was due to the sale of shareholding in Wako Pure Chemical, Ltd. to FUJIFILM corporation.

Other operating income for the six months period ended September 30, 2018 included the gain on the sale of shares of 18,381 million JPY which was due to the sale of shareholding in Guangdong Techpool Bio-Pharma Co., Ltd. to Shanghai Pharmaceutical Holding Co. Ltd. and SFund International Investment Fund Management Limited.

6 Other Operating Expenses

Other operating expenses for the six months period ended September 30, 2017 included expenses from reorganizations activities, which was mainly due to reductions in the workforce and consolidation of sites and functions to improve the efficiency of its operations ("Restructuring expenses"). The amount of the Restructuring expenses was 13,723 million JPY which included R&D transformation costs, and the post-merger integration costs related to the acquisition of ARIAD Pharmaceuticals, Inc. as well as the expenses of 6,646 million JPY associated with changes in contingent considerations (*).

Other operating expenses for the six months period ended September 30, 2018 included the restructuring expenses of 14,097 JPY related to global operating expense reduction initiative and R&D transformation initiative as well as the proposed Shire acquisition. In addition, other operating expenses for the same period also included the reversal of pre-launch inventory write-offs of (7,710) million JPY due to regulatory approval and the loss of 4,016 million JPY which was due to the sale of shareholding in Multilab Indústria e Comércio de Produtos Farmacê uticos Ltda. to Novamed Fabricação de Produtos Farmacêuticos Ltda.

(*) The contingent considerations are recognized at fair value as part of the purchase price when specified future events arising from business combinations occur.

7 Earnings Per Share

The basis for calculating basic and diluted earnings per share (attributable to owners) is as follows:

	Six months period ended September 30, 2017	2018
Net profit for the period attributable to owners of the Company		
Net profit attributable to owners of the Company (million JPY)	172,816	126,668
Net profit used for calculation of earnings per share (million JPY)	172,816	126,668
Weighted average number of ordinary shares outstanding during the period (thousands of shares) [basic]	780,468	783,062
Dilutive effect (thousands of shares)	5,122	4,030
Weighted average number of ordinary shares outstanding during the period (thousands of shares) [diluted]	785,590	787,092
Earnings per share		
Basic (JPY)	221.43	161.76
Diluted (JPY)	219.98	160.93

	Three months period ended September 30, 2017	2018
Net profit for the period attributable to owners of the Company		
Net profit attributable to owners of the Company (million JPY)	28,027	48,426
Net profit used for calculation of earnings per share (million JPY)	28,027	48,426
Weighted average number of ordinary shares outstanding during the period (thousands of shares) [basic]	780,971	784,436
Dilutive effect (thousands of shares)	4,853	3,248
Weighted average number of ordinary shares outstanding during the period (thousands of shares) [diluted]	785,824	787,684
Earnings per share		
Basic (JPY)	35.89	61.73
Diluted (JPY)	35.67	61.48

8 Collaborations and Licensing Arrangements

Takeda is a party to certain collaborative and licensing arrangements. These agreements generally provide for commercialization rights to a product or products being developed by the counterparty, and, in exchange, often resulted in upfront payments upon execution of the agreement and resulting in an obligation that requires Takeda to make future development, regulatory approval, or commercial milestone payments as well as royalty payments. In some of these arrangements, Takeda and the licensee are both actively involved in the development and commercialization of the licensed product, and have exposure to risks and rewards that are dependent on its commercial success.

The significant agreements in collaboration and licensing during the six months period ended September 30, 2018 is described below.

Wave Life Sciences Ltd. ("Wave")

In February 2018, Takeda entered into an agreement with Wave to discover, develop and commercialize nucleic acid therapies for disorders of the central nervous system ("CNS") and the agreement became effective in April 2018 after the receipt of clearance under the Hart-Scott- Rodino Antitrust Improvement Act (HSR Act). Under the agreement, Wave will provide Takeda the option to co-develop and co-commercialize programs in areas of Huntington's disease (HD), amyotrophic lateral sclerosis (ALS), frontotemporal dementia (FTD) and spinocerebellar ataxia type 3 (SCA3). In addition, Takeda will have the right to license multiple preclinical programs targeting CNS disorders, including Alzheimer's disease and Parkinson's disease. The agreement required upfront payments, investment in Wave and future contingent payments such as development and commercial milestone payments. Wave will continue to independently advance its activities in neuromuscular diseases including its lead clinical program for the treatment of Duchene muscular dystrophy (DMD).

9 Dividends

Dividends Declared and Paid	Total dividends (million JPY)	Dividends per Share (JPY)	Basis Date	Effective Date
April 1, 2017 to September 30, 2017	71,133	90.00	March 31, 2017	June 29, 2017
April 1, 2018 to September 30, 2018	71,507	90.00	March 31, 2018	June 29, 2018

Dividends declared for which the effective date falls after September 30, 2018 are as follows:

Dividends Declared	Total dividends (million JPY)	Dividends per Share (JPY)	Basis Date	Effective Date
Board of Directors on October 31, 2018	71,509	90.00	September 30, 2018	December 3, 2018

10 Financial Instruments

(1) Fair Value Measurements

(i) Financial assets and liabilities measured at fair value through profit or loss

The fair value of derivatives to which hedge accounting was not applied is measured at quoted prices or quotes obtained from financial institutions, whose significant inputs to the valuation model used are based on observable market data.

The fair value of convertible notes is measured using techniques such as the option pricing model.

Contingent consideration, resulting from business combinations, is valued at fair value at the acquisition date as part of the business combination. When the contingent consideration meets the definition of a financial liability, it is subsequently re-measured to fair value at each reporting date. The determination of the fair value is based on discounted cash flows. The key assumptions taken into consideration are the probability of meeting each performance target and the discount factor. The fair value measurement of contingent considerations arising from business combinations is stated in Note11, "Business Combinations."

(ii) Financial assets measured at amortized cost

The carrying amount of financial assets measured at amortized cost approximate their fair values as these assets are settled within a short period.

(iii) Equity instruments

The fair value of listed equity instruments is measured at quoted prices or quotes obtained from financial institutions.

The fair value of unlisted equity instruments is measured using techniques such as the net asset book value method and the multiples approach. Under the multiples approach, listed companies similar to the target companies are selected, and the fair value is calculated using the stock index for those similar companies.

(iv) Derivative transactions to which hedge accounting is applied

The fair value of derivative transactions to which hedge accounting is applied is measured in the same manner as "(i) Financial assets and liabilities measured at fair value through profit or loss".

(v) Financial liabilities measured at amortized cost

The fair value of bonds is measured at quotes obtained from financial institutions, and the fair value of loans and finance leases are measured at the present value of future cash flows discounted using the applicable effective interest rate, with consideration of the credit risk by each liability group classified in a specified period.

Other current items are settled in a short period, and the coupon rates of other non-current items reflect market interest rates. Therefore, the carrying amounts of these liabilities approximate their fair values.

(2) Fair Value Hierarchy

Level 1: Fair value measured at quoted prices in active markets

Level 2: Fair value that is calculated using an observable price other than that categorized in Level 1 directly or indirectly

Level 3: Fair value that is calculated based on valuation techniques which include input that is not based on observable market data

(3) Fair Value of Financial Instruments Carried at Cost

The carrying amount and fair value of financial instruments that are not recorded at fair value in the condensed interim consolidated statements of financial position are as follows:

JPY (millions)

	As of September 30, 2018	
	Carrying amount	Fair value
Bonds	176,402	174,936
Long-term loans	823,199	824,312
Finance leases	55,264	54,836

The amounts to be paid within a year are included. The fair value of bonds, long-term loans and finance leases are classified as Level 2 in the fair value hierarchy.

This table excludes financial instruments that have carrying amounts that approximates fair value.

(4) Fair Value Measurement Recognized in the Condensed Interim Consolidated Statements of Financial Position

JPY (millions)

As of September 30, 2018	Level 1	Level 2	Level 3	Total
Assets:				
Financial assets measured at fair value through profit or loss:				
Derivatives	—	6,161	—	6,161
Convertible notes	—	—	9,128	9,128
Derivative transactions to which hedge accounting is applied	—	11,698	—	11,698
Financial assets measured at fair value through other comprehensive income:				
Equity instruments	147,403	31	44,731	192,165
Total	147,403	17,890	53,859	219,152
Liabilities:				
Financial liabilities measured at fair value through profit or loss:				
Derivatives	—	5,258	—	5,258
Contingent considerations arising from business combinations	—	—	29,762	29,762
Derivative transactions to which hedge accounting is applied	—	1,906	—	1,906
Total	—	7,164	29,762	36,926

Takeda recognizes transfers between levels of the fair value hierarchy, at the end of the reporting period during which the change has occurred. There were no transfers among Level 1, Level 2 and Level 3 for the six months period ended September 30, 2018.

Disclosures related to contingent considerations arising from business combinations are stated in Note 11, “Business Combinations”.

(5) Reconciliation of Level 3 Financial Assets

JPY (millions)

	Six months period ended September 30, 2018
Opening balance	47,789
Gain or loss:	
Net profit	148
Other comprehensive income	144
Purchases	5,791
Sales	(10)
Other	(3)
Closing balance	53,859

Gain or loss recorded in profit or loss relates to the financial assets measured at fair value through profit or loss. These gains or losses are recognized as "financial income" or "financial expenses" in the condensed interim consolidated statements of income.

Gain or loss recorded in other comprehensive income relates to the financial assets measured at fair value through other comprehensive income. These gains or losses are recognized as "Changes in fair value of financial assets measured at fair value through other comprehensive income" and "Exchange differences on translation of foreign operations" in the condensed interim consolidated statements of income and other comprehensive income.

The fair values of equity instruments are measured by Takeda's accounting and finance departments using available information as of each closing date based on Takeda's accounting policy. The results of the fair value measurement and the calculation process are reported to management as necessary.

The principle input that is not observable and used for the calculation of the fair value of equity instruments classified as Level 3 is the EBITDA rate used for the multiples approach, ranging from 7.4 times to 17.5 times. The fair value of the equity instruments increases (decreases) as the EBITDA rate increases (decreases).

11 Business Combinations

(1) Acquisitions

TiGenix NV ("TiGenix")

On April 30, 2018, Takeda made an all cash voluntary public takeover bid for the entire issued ordinary shares ("Ordinary Shares"), warrants ("Warrants") and American Depositary Shares ("ADSs" and together with the Ordinary Shares and the Warrants, the "Securities") of TiGenix not already owned by Takeda. On June 8, 2018, the Company acquired the Securities tendered in the first acceptance period for 470.2 million EUR. In response to the takeover bid with the Securities already owned by Takeda, Takeda acquired 90.8% of the voting rights.

TiGenix is a biopharmaceutical company developing novel stem cell therapies for serious medical conditions. This acquisition will expand Takeda's late stage gastroenterology (GI) pipeline with the U.S. rights to Cx601 (darvadstrocel), a suspension of allogeneic expanded adipose-derived stem cells (eASC) under investigation for the treatment of complex perianal fistulas in patients with non-active/mildly active luminal Crohn's disease (CD). Following the 2nd Takeover bid and a squeeze-out ended in July 2018, TiGenix became a wholly owned subsidiary of Takeda.

The following represents provisional fair value of assets acquired, liabilities assumed:

JPY (millions)

	Amount
Intangible assets	63,421
Other assets	5,541
Deferred tax liabilities	(10,128)
Other liabilities	(5,678)
Basis adjustments	(3,381)
Goodwill	20,228
Total	70,003

The purchase consideration was comprised of the following:

JPY (millions)

	Amount
Cash	67,319
The ordinary shares of TiGenix already owned by Takeda immediately prior to the acquisition date	2,684
Total	70,003

Goodwill comprises excess earning power expected from the future business development. Goodwill is not deductible for tax purposes.

The fair value primarily consisting of intangible assets, deferred tax liabilities and goodwill assumed as of the acquisition date have been recorded provisionally based on the information available as of September 30, 2018. These amounts are subject to change as the Company is in the process of reviewing further details of the basis for the fair value measurement. For the three months period ended September 30, 2018, goodwill at the acquisition date increased by 253 million JPY as a result of the adjustment to the provisional fair value, while other assets decreased by 253 million JPY.

Takeda entered into a forward exchange contract to hedge foreign currency risks and applied the hedge accounting to the contract. Basis adjustment represents a fair value of the hedging instrument of 3,381 million JPY that was added to the amount of goodwill at the acquisition date.

No gains or losses were recognized as a result of remeasurement of fair value of the ordinary shares of TiGenix already owned by Takeda immediately prior to the acquisition date.

Acquisition-related costs of 767 million JPY which included agent fee and due diligence costs arising from the acquisition were recorded in “Selling, general and administrative expenses”.

The revenue and the net profit of TiGenix for the post-acquisition period, which were recognized in the condensed interim consolidated statements of income for the six months period ended September 30, 2018, were immaterial.

The impact on Takeda’s revenue and net profit for the six months period ended September 30, 2018 assuming the acquisition date of TiGenix had been as of the beginning of the reporting period was immaterial.

(2) Contingent Considerations

The consideration for certain acquisitions includes amounts contingent upon future events such as the achievement of development milestones and sales targets. At each reporting date, the fair value of contingent considerations assumed in business combinations is re-measured based on risk-adjusted future cash flows discounted using appropriate discount rate. The contingent considerations discussed below are the discounted royalty payable for a certain period based on future financial performance, primarily consisting of the COLCRYS business which was acquired in the acquisition of URL Pharma. Inc. in June 2012. There is no cap on the royalty payable for the COLCRYS business and the estimated future royalty payments are calculated based on forecasted financial performance.

The fair value of contingent considerations is classified as Level 3 in the fair value hierarchy. The definition of the fair value hierarchy is stated in Note 10, “Financial Instruments”.

1) Changes in the Fair Value of Contingent Considerations

JPY (millions)

	Six months period ended September 30, 2018
As of the beginning of the period	30,569
Additions arising from business combinations	—
Changes in the fair value during the period (unrealized):	
URL Pharma. Inc.	341
Other	(92)
Settled during the period:	
URL Pharma. Inc.	(1,129)
Other	—
Reclassification to other payables	(1,774)
Foreign currency translation differences	1,934
Other	(87)
As of the end of the period	29,762

2) Sensitivity Analysis

The following sensitivity analysis represents effect on the fair value of contingent considerations from changes in major assumptions:

JPY (millions)

		As of September 30, 2018
Revenue derived from the COLCRYS business	Increase by 5%	716
	Decrease by 5%	(716)
Discount rate	Increase by 0.5%	(178)
	Decrease by 0.5%	181

12 Disposal Groups Held for Sale

The disposal groups held for sale as of March 31, 2018, consisted mainly of a group of assets, liabilities, and other comprehensive income related to Takeda's consolidated subsidiary, Multilab Indústria e Comércio de Produtos Farmacêuticos Ltda. and reclassified as held for sale. The shares of the subsidiary were sold in July 2018. Takeda entered into an agreement in May 2018 to sell its entire shareholding of 51.34% in consolidated subsidiary Guangdong Techpool Bio-Pharma Co., Ltd. and reclassified related assets and liabilities as held for sale as of June 30, 2018, and sold the shares of the subsidiary in August 2018.

13 Commitments and Contingent Liabilities

Litigation

Takeda is involved in various legal and administrative proceedings. The significant matter during the six months period ended September 30, 2018 is described below. There are no significant updates from the consolidated financial statements as of and for the year ended March 31, 2018 except for the matter below.

Amitiza

In March 2017, Sucampo Pharmaceuticals, Inc. ("Sucampo") (Takeda's licensor) received a paragraph IV certification directed to Amitiza from Amneal Pharmaceuticals, Inc. and in August 2017 received a paragraph IV certification directed to Amitiza from Teva Pharmaceutical Industries Ltd. These parties contend that the patents listed in The U.S. Food and Drug Administration's Orange Book for Amitiza are invalid and/or not infringed by their Abbreviated New Drug Application product. In response, Sucampo and Takeda filed a patent infringement lawsuit against the parties. In June 2018, patent litigation against these parties has been settled.

14 Subsequent Events

On May 8, 2018, the Company reached agreement with Shire plc ("Shire") on the terms of a recommended offer pursuant to which the Company will acquire the entire issued and to be issued ordinary shares of Shire (the "Acquisition").

The Company has entered into a 364-Day Bridge Credit Agreement of 30.85 billion USD (the "Bridge Credit Agreement") to finance funds necessary for the Acquisition on May 8, 2018. The commitments under the Bridge Credit Agreement are contemplated to be reduced or refinanced. On June 8, 2018, the Company has entered into a Term Loan Credit Agreement for an aggregate principal amount of up to 7.5 billion USD to finance a portion funds necessary for the Acquisition, and upon the execution thereof, the commitments under the Bridge Credit Agreement were reduced by up to 7.5 billion USD.

Further, on October 26, 2018, the Company has entered into a Senior Short Term Loan Facility Agreement for an aggregate principal amount of up to 500 billion JPY (the "SSTL") to finance a portion of funds necessary for the Acquisition. Upon the execution of the SSTL, the commitments under the Bridge Credit Agreement were reduced by up to 4.5 billion USD. The Company has also entered into a Subordinated Syndicated Loan Agreement for an aggregate principal amount of up to 500 billion JPY to refinance the debt to be borrowed pursuant to the SSTL.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Shire plc
St Helier, Jersey

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Shire plc and subsidiaries (the "Company") as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, changes in equity and cash flows, for each of the three years in the period ended December 31, 2017, and the related notes and the schedule listed in the Index at ITEM 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte LLP

London, United Kingdom
February 16, 2018
We have served as the Company's auditor since 2002.

SHIRE PLC
CONSOLIDATED BALANCE SHEETS
(In millions, except par value of shares)

	Notes	December 31, 2017	December 31, 2016
ASSETS			
Current assets:			
Cash and cash equivalents		$ 472.4	$ 528.8
Restricted cash		39.4	25.6
Accounts receivable, net	8	3,009.8	2,616.5
Inventories	9	3,291.5	3,562.3
Prepaid expenses and other current assets	10	795.3	806.3
Total current assets		7,608.4	7,539.5
Investments		241.1	191.6
Property, plant and equipment (PP&E), net	11	6,635.4	6,469.6
Goodwill	13	19,831.7	17,888.2
Intangible assets, net	12	33,046.1	34,697.5
Deferred tax asset	21	188.8	96.7
Other non-current assets		205.4	152.3
Total assets		$67,756.9	$67,035.4
LIABILITIES AND EQUITY			
Current liabilities:			
Accounts payable and accrued expenses	16	$ 4,184.5	$ 4,312.4
Short term borrowings and capital leases	17	2,788.7	3,068.0
Other current liabilities	18	908.8	362.9
Total current liabilities		7,882.0	7,743.3
Long term borrowings and capital leases	17	16,752.4	19,899.8
Deferred tax liability	21	4,748.2	8,322.7
Other non-current liabilities		2,197.9	2,121.6
Total liabilities		31,580.5	38,087.4
Commitments and contingencies	24		
Equity:			
Common stock of 5p par value; 1,500 shares authorized; and 917.1 shares issued and outstanding (2016: 1,500 shares authorized; and 912.2 shares issued and outstanding)	26	81.6	81.3
Additional paid-in capital		25,082.2	24,740.9
Treasury stock: 8.4 shares (2016: 9.1 shares)	26	(283.0)	(301.9)
Accumulated other comprehensive income/(loss)	20	1,375.0	(1,497.6)
Retained earnings		9,920.6	5,925.3
Total equity		36,176.4	28,948.0
Total liabilities and equity		$67,756.9	$67,035.4

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share amounts)

	Notes	Years ended December 31, 2017	2016	2015
Revenues:				
Product sales		$14,448.9	$10,885.8	$6,099.9
Royalties and other revenues		711.7	510.8	316.8
Total revenues		15,160.6	11,396.6	6,416.7
Costs and expenses:				
Cost of sales		4,700.8	3,816.5	969.0
Research and development		1,763.3	1,439.8	1,564.0
Selling, general and administrative		3,530.9	3,015.2	1,842.5
Amortization of acquired intangible assets	12	1,768.4	1,173.4	498.7
Integration and acquisition costs	5	894.5	883.9	39.8
Reorganization costs	6	47.9	121.4	97.9
Gain on sale of product rights		(0.4)	(16.5)	(14.7)
Total operating expenses		12,705.4	10,433.7	4,997.2
Operating income from continuing operations		2,455.2	962.9	1,419.5
Interest income		9.7	18.4	4.2
Interest expense		(578.9)	(469.6)	(41.6)
Other income/(expense), net		7.4	(25.6)	3.7
Total other expense, net		(561.8)	(476.8)	(33.7)
Income from continuing operations before income taxes and equity in earnings/(losses) of equity method investees		1,893.4	486.1	1,385.8
Income taxes	21	2,357.6	126.1	(46.1)
Equity in earnings/(losses) of equity method investees, net of taxes		2.5	(8.7)	(2.2)
Income from continuing operations, net of taxes		4,253.5	603.5	1,337.5
Gain/(loss) from discontinued operations, net of taxes	7	18.0	(276.1)	(34.1)
Net income		$ 4,271.5	$ 327.4	$1,303.4

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF OPERATIONS (continued)
(In millions, except per share amounts)

	Notes	Years ended December 31, 2017	2016	2015
Earnings per Ordinary Share – basic				
Earnings from continuing operations	22	$ 4.69	$ 0.78	$ 2.27
Earnings/(loss) from discontinued operations	22	0.02	(0.35)	(0.06)
Earnings per Ordinary Share – basic		$ 4.71	$ 0.43	$ 2.21
Earnings per Ordinary Share – diluted				
Earnings from continuing operations	22	$ 4.66	$ 0.77	$ 2.26
Earnings/(loss) from discontinued operations	22	0.02	(0.35)	(0.06)
Earnings per Ordinary Share – diluted		$ 4.68	$ 0.42	$ 2.20
Weighted average number of shares:				
Basic	22	906.5	770.1	590.4
Diluted	22	912.0	776.2	593.1

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	Years ended December 31,		
	2017	**2016**	**2015**
Net income	$4,271.5	$ 327.4	$1,303.4
Other comprehensive income/(loss):			
Foreign currency translation adjustments	2,785.0	(1,323.3)	(156.4)
Pension and other employee benefits (net of tax expense of $11.2 million, $8.8 million and $nil for the years ended December 31, 2017, 2016 and 2015, respectively)	32.7	(5.2)	—
Unrealized gain on available-for-sale securities (net of tax benefit of $0.1 million the years ended December 31, 2017 and 2016 and $nil for the year ended December 31, 2015)	61.3	8.3	4.1
Hedging activities (net of tax benefit of $3.1 million, tax expense of $3.3 million and $nil for the years ended December 31, 2017, 2016 and 2015, respectively)	(6.4)	6.4	—
Comprehensive income/(loss)	$7,144.1	$ (986.4)	$1,151.1

The components of Accumulated other comprehensive income/(loss) as of December 31, 2017 and December 31, 2016 are as follows:

	December 31, 2017	**December 31, 2016**
Foreign currency translation adjustments	$1,279.6	$(1,505.4)
Pension and other employee benefits, net of taxes	27.5	(5.2)
Unrealized holding gain on available-for-sale securities, net of taxes	67.9	6.6
Hedging activities, net of taxes	—	6.4
Accumulated other comprehensive income/(loss)	$1,375.0	$(1,497.6)

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
(In millions)

	Common stock number of shares	Common stock	Additional paid-in capital	Treasury stock	Accumulated other comprehensive (loss)/income	Retained earnings	Total equity
As of January 1, 2017	912.2	$81.3	$24,740.9	$(301.9)	$(1,497.6)	$5,925.3	$28,948.0
Net income	—	—	—	—	—	4,271.5	4,271.5
Other comprehensive income, net of tax	—	—	—	—	2,872.6	—	2,872.6
Shares issued under employee benefit plans and other	4.9	0.3	155.7	—	—	—	156.0
Cumulative-effect adjustment from adoption of ASU 2016-09	—	—	10.7	—	—	24.0	34.7
Share-based compensation	—	—	174.9	—	—	—	174.9
Shares released by employee benefit trust to satisfy exercise of stock options	—	—	—	18.9	—	(18.9)	—
Dividends	—	—	—	—	—	(281.3)	(281.3)
As of December 31, 2017	917.1	$81.6	$25,082.2	$(283.0)	$ 1,375.0	$9,920.6	$36,176.4

Dividends per share

During the year ended December 31, 2017, Shire plc declared and paid dividends of $0.3079 per ordinary share (equivalent to $0.9237 per ADS) totaling $281.3 million.

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
(In millions)

	Common stock number of shares	Common stock	Additional paid-in capital	Treasury stock	Accumulated other comprehensive loss	Retained earnings	Total equity
As of January 1, 2016	601.1	$58.9	$ 4,486.3	$(320.6)	$ (183.8)	$5,788.3	$ 9,829.1
Net income	—	—	—	—	—	327.4	327.4
Other comprehensive loss, net of tax	—	—	—	—	(1,313.8)	—	(1,313.8)
Shares issued under employee benefit plans	5.9	0.4	138.4	—	—	—	138.8
Shares issued for the acquisition of Baxalta	305.2	22.0	19,788.9	—	—	—	19,810.9
Share-based compensation	—	—	318.5	—	—	—	318.5
Tax benefit associated with exercise of stock options	—	—	8.8	—	—	—	8.8
Shares released by employee benefit trust to satisfy exercise of stock options	—	—	—	18.7	—	(19.1)	(0.4)
Dividends	—	—	—	—	—	(171.3)	(171.3)
As of December 31, 2016	912.2	$81.3	$24,740.9	$(301.9)	$(1,497.6)	$5,925.3	$28,948.0

Dividends per share

During the year ended December 31, 2016, Shire plc declared and paid dividends of $0.2679 per ordinary share (equivalent to $0.8037 per ADS) totaling $171.3 million.

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
(In millions)

	Common stock number of shares	Common stock	Additional paid-in capital	Treasury stock	Accumulated other comprehensive loss	Retained earnings	Total equity
As of January 1, 2015	599.1	$58.7	$4,338.0	$(345.9)	$ (31.5)	$4,643.6	$8,662.9
Net income	—	—	—	—	—	1,303.4	1,303.4
Other comprehensive loss, net of tax	—	—	—	—	(152.3)	—	(152.3)
Options exercised	2.0	0.2	16.4	—	—	—	16.6
Share-based compensation	—	—	100.3	—	—	—	100.3
Tax benefit associated with exercise of stock options	—	—	31.6	—	—	—	31.6
Shares released by employee benefit trust to satisfy exercise of stock options	—	—	—	25.3	—	(24.3)	1.0
Dividends	—	—	—	—	—	(134.4)	(134.4)
As of December 31, 2015	601.1	$58.9	$4,486.3	$(320.6)	$(183.8)	$5,788.3	$9,829.1

Dividends per share

During the year ended December 31, 2015, Shire plc declared and paid dividends of $0.233 per ordinary share (equivalent to $0.699 per ADS) totaling $134.4 million.

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Years ended December 31,		
	2017	**2016**	**2015**
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	$ 4,271.5	$ 327.4	$ 1,303.4
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	2,264.2	1,466.3	637.2
Share based compensation	174.9	318.5	100.3
Amortization of deferred financing fees	12.8	125.5	—
Expense related to the unwind of inventory fair value adjustments	747.8	1,118.0	31.1
Change in deferred taxes	(2,916.4)	(594.6)	(198.2)
Change in fair value of contingent consideration	120.7	11.1	(149.9)
Impairment of PP&E and intangible assets	289.9	101.3	643.7
Other, net	55.6	31.4	—
Changes in operating assets and liabilities:			
Increase in accounts receivable	(487.6)	(701.7)	(211.4)
Increase in sales deduction accrual	314.1	288.3	97.6
Increase in inventory	(145.1)	(255.8)	(63.2)
Decrease/(increase) in prepayments and other assets	81.1	(198.4)	37.2
(Decrease)/increase in accounts payable and other liabilities	(526.8)	621.6	109.2
Net cash provided by operating activities	4,256.7	2,658.9	2,337.0
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of PP&E	(798.8)	(648.7)	(114.7)
Purchases of businesses, net of cash acquired	—	(17,476.2)	(5,553.4)
Proceeds from sale of investments	88.6	0.9	85.7
Movements in restricted cash	(13.7)	62.8	(32.0)
Other, net	23.0	(31.0)	(5.5)
Net cash used in investing activities	(700.9)	(18,092.2)	(5,619.9)

The accompanying notes are an integral part of these Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF CASH FLOWS (continued)
(In millions)

	Years ended December 31,		
	2017	**2016**	**2015**
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from revolving line of credit, long term and short term borrowings	4,236.7	32,443.4	3,760.8
Repayment of revolving line of credit, long term and short term borrowings	(7,681.4)	(16,404.3)	(3,110.9)
Payment of dividend	(281.3)	(171.3)	(134.4)
Debt issuance costs	—	(172.3)	(24.1)
Proceeds from issuance of stock for share-based compensation arrangements	134.1	169.2	16.6
Other, net	(27.4)	(38.9)	(69.0)
Net cash (used in)/provided by financing activities	(3,619.3)	15,825.8	439.0
Effect of foreign exchange rate changes on cash and cash equivalents	7.1	0.8	(3.0)
Net (decrease)/increase in cash and cash equivalents	(56.4)	393.3	(2,846.9)
Cash and cash equivalents at beginning of period	528.8	135.5	2,982.4
Cash and cash equivalents at end of period	$ 472.4	$ 528.8	$ 135.5

Supplemental information:

	Years ended December 31,		
	2017	**2016**	**2015**
Interest paid	$ 554.2	$ 284.0	$ 20.0
Income taxes paid, net	$ 524.7	$ 431.0	$ 69.0

For stock issued as purchase consideration for the acquisition of Baxalta related to non-cash investing activities, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

The accompanying notes are an integral part of these Consolidated Financial Statements.

1. Description of Operations

Shire plc and its subsidiaries (collectively referred to as either "Shire" or the "Company") is the leading global biotechnology company focused on serving people with rare diseases.

Some of the Company's marketed products include GAMMAGARD, HYQVIA and CINRYZE for Immunology, ADVATE/ADYNOVATE, VONVENDI and FEIBA for Hematology, VYVANSE and ADDERALL XR for Neuroscience, LIALDA/MEZAVANT and PENTASA for Internal Medicine, ELAPRASE and REPLAGAL for Genetic Diseases, ONCASPAR and ONYVIDE for Oncology and XIIDRA for Ophthalmics.

The Company has grown both organically and through acquisition, completing a series of major transactions that have brought therapeutic, geographic and pipeline growth and diversification. The Company will continue to conduct its own research and development (R&D) focused on rare diseases, as well as evaluate companies, products and pipeline opportunities that offer a strategic fit and have the potential to deliver value to all of the Company's stakeholders: patients, physicians, policy makers, payers, partners, investors and employees.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying Consolidated Financial Statements include the accounts of Shire plc, all of its subsidiaries and the Income Access Share trust, after elimination of inter-company accounts and transactions. They have been prepared in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP) and U.S. Securities and Exchange Commission (SEC) regulations for annual reporting.

On June 3, 2016, the Company completed its acquisition of Baxalta for $32.4 billion, representing the fair value of purchase consideration. The Company's Consolidated Financial Statements include the results of Baxalta from the date of acquisition. For further details regarding the acquisition, refer to Note 3, Business Combinations, to the Consolidated Financial Statements set forth in this Annual Report on Form 10-K.

Use of Estimates

The preparation of Financial Statements, in conformity with U.S. GAAP and SEC regulations, requires management to make estimates, judgments and assumptions that affect the reported and disclosed amounts of assets, liabilities and equity at the date of the Consolidated Financial Statements and reported amounts of revenues and expenses during the period. On an on-going basis, the Company evaluates its estimates, judgments and methodologies. Estimates are based on historical experience, current conditions and on various other assumptions that are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities and equity and the amounts of revenues and expenses. Actual results may differ from these estimates under different assumptions or conditions.

Consolidation

The Consolidated Financial Statements reflect the financial statements of the Company and those of the Company's wholly-owned subsidiaries. For consolidated entities where the Company owns or is exposed to less than 100% of the economics, the Company records net income (loss) attributable to non-controlling interests in its Consolidated Statements of Operations equal to the percentage of the economic or ownership interest retained in such entities by the respective non-controlling parties. Intercompany balances and transactions are eliminated in consolidation.

The Company determines whether to consolidate subsidiaries based on either the variable interest entity (VIE) model or the voting interest model. The Company consolidates a VIE if it is determined that the Company is the primary beneficiary of the VIE. In determining whether the Company is the primary beneficiary of an entity, management applies a qualitative approach that determines whether the Company has both (1) the power to direct the economically significant activities of the entity and (2) the obligation to absorb losses of, or the right to receive benefits from, the entity that could potentially be significant to that entity. The Company consolidates entities that are not VIEs if it is determined that the Company holds a majority voting interest in the entity.

Consolidation of a subsidiary begins when the Company obtains control over the subsidiary and ceases when the Company loses control of the subsidiary. Intercompany balances and transactions are eliminated in consolidation.

Revenue recognition

The Company recognizes revenue when all of the following criteria are met:

- there is persuasive evidence an arrangement exists;
- delivery has occurred or services have been rendered;
- the price to the customer is fixed or determinable; and
- collectibility is reasonably assured.

Where applicable, all revenues are stated net of value added and similar taxes and trade discounts. The Company's principal revenue streams and their respective accounting treatments are discussed below:

Product sales

Revenues from Product sales are recognized when title and risk of loss have passed to the customer, which is typically upon delivery. Product sales are recorded net of applicable reserves for discounts and allowances.

Reserves for Discounts and Allowances

The Company establishes reserves for trade discounts, chargebacks, distribution service fees, Medicaid rebates, managed care rebates, incentive rebates, product returns and other governmental rebates or applicable allowances. These reserves are based on estimates of the amounts earned or to be claimed on the related sales. Management's estimates take into consideration historical experience, current contractual and statutory requirements, specific known market events and trends, industry data and forecasted customer buying and payment patterns. Actual amounts may ultimately differ from estimates. If actual results vary, management adjusts these estimates, which have an effect on earnings in the period of adjustment.

- Trade discounts are generally credits granted to wholesalers, specialty pharmacies and other customers for remitting payment on their purchases within established incentive periods and are classified as a reduction of accounts receivable.
- Chargebacks are credits or payments issued to wholesalers and distributors who provide products to qualified healthcare providers at prices lower than the list prices charged to the wholesaler or distributor. Reserves are estimated based on expected purchases by those qualified healthcare providers. Chargeback reserves are classified as a reduction of accounts receivable.
- Distribution service fees are credits or payments issued to wholesalers, distributors and specialty pharmacies for compliance with various contractually-defined inventory management practices or services provided to support patient access to a product. These fees are generally based on a percentage of gross purchases but can also be based on additional services these entities provide. Most of these costs are reflected as a reduction of gross sales; however, to the extent benefit from services can be separately identified and the fair value determined, costs are classified in Selling, general and administrative expense. Reserves are classified within accrued expenses.
- Medicaid rebates are payments to States under statutory and voluntary reimbursement arrangements. Reserves for these rebates are generally based on an estimate of expected product usage by Medicaid patients and expected rebate rates. Statutory rates are generally based on a percentage of selling price adjusted upwards for price increases in excess of published inflation indices. As a result, rebates generally increase as a percentage of the selling price over the life of the product (as prices increase). Medicaid rebate reserves are classified within accrued expenses.
- Managed care rebates are payments to third parties, primarily pharmacy benefit managers and other health insurance providers. The reserve for these rebates is based on an estimate of customer buying patterns and applicable contractual rebate rates to be earned over each period. Reserves are classified within accrued expenses.
- Incentive rebates are generally credits or payments issued to specialty pharmacies, distributors or Group Purchasing Organizations for qualified purchases of certain products. Reserves are estimated

based on the terms of each individual contract and purchase volumes and are classified within accrued expenses.

- Return credits are issued to customers for return of product damaged in shipment and, for certain products, return due to lot expiry. The majority of returns are due to expiry, and reserves are estimated based on historical returns experience. The returns reserve is classified within accrued expenses.
- Other discounts and allowances include Medicare rebates, coupon and patient co-pay assistance. Medicare rebates are payments to certain health insurance providers of Medicare Part D coverage to qualified patients. Reserve estimates are based on customer buying patterns and applicable contractual rebate rates to be earned over each period. Coupon and co-pay assistance programs provide discounts to qualified patients. Reserve estimates are based on expected claim volumes under these programs and estimated cost per claim that the Company expects to pay. Reserves for Medicare and coupon and patient co-pay programs are classified within accrued expenses.

Royalties and Other Revenue

Royalty income relating to licensed technology is recognized when the licensee sells the underlying product, with the amount of royalty income recorded based on sales information received from the relevant licensee. The Company estimates sales amounts and related royalty income based on the historical product information for any period that the sales information is not available from the relevant licensee.

Other revenue includes revenues derived from product out-licensing arrangements, which may consist of an initial up-front payment on inception of the license and subsequent milestone payments upon achievement of certain clinical and sales milestones. To the extent the license requires Shire to provide services to the licensee; up-front payments are deferred and recognized over the service period.

Business combinations

Business combinations are accounted for using the acquisition method of accounting. Under the acquisition method, assets acquired, including in-process research and development (IPR&D) projects, and liabilities assumed are recorded at their respective fair values as of the acquisition date in the Consolidated Financial Statements. The excess of the fair value of consideration transferred over the fair value of the net assets acquired is recorded as goodwill. Contingent consideration obligations incurred in connection with a business combination (including the assumption of an acquiree's liability arising from a business combination it completed prior to the acquisition) are recorded at their fair values on the acquisition date and remeasured at their fair values each subsequent reporting period until the related contingencies are resolved. The resulting changes in fair values are recorded in earnings.

Goodwill

Goodwill represents the difference between the purchase price and the fair value of the identifiable tangible and intangible net assets acquired in a business combination. Goodwill is not amortized, but instead is reviewed for impairment. Goodwill is reviewed annually, as of October 1, and whenever events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. Events or changes in circumstances which could trigger an impairment review include but are not limited to: unexpected adverse business conditions, economic factors, unanticipated technological changes or competitive activities and acts by governments and courts.

For the purpose of assessing the carrying value of goodwill for impairment, goodwill is allocated at the Company's reporting unit level. As described in Note 27, Segment Reporting, the Company operates in one operating segment which it considers to be its only reporting unit.

The Company reviews goodwill for impairment by firstly assessing qualitative factors, including comparing the market capitalization of the Company to the carrying value of its assets, to determine whether events or circumstances exist which indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, after assessing these qualitative factors, it is deemed more likely than not that the fair value of a reporting unit is less than its carrying value, a "two step" quantitative assessment is performed by comparing the carrying value of the reporting unit's net assets (including allocated goodwill) to the fair value of the reporting unit.

If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of its reporting unit, then it determines the implied fair value of its reporting unit's goodwill. If the carrying value of the reporting unit's goodwill exceeds its implied fair value, then an impairment loss equal to the difference is recorded.

Intangible Assets

Intangible assets primarily relate to commercially marketed products and IPR&D projects. Intangible assets are recorded at fair value at the time of their acquisition and are stated in the Consolidated Balance Sheets, net of accumulated amortization and impairments, if applicable.

Intangible assets related to commercially marketed products are amortized over their estimated useful lives. Remaining useful lives range from 1 year to 24 years (weighted average 19 years) and the Company amortizes its intangibles on an economic consumption method, or a straight-line basis when straight-line method approximates economic consumption method.

Milestone payments made to third parties on and subsequent to regulatory approval are capitalized as intangible assets, and amortized over the remaining useful life of the related product.

The following factors, where applicable, are considered in estimating the useful lives of intangible assets:

- expected use of the asset;
- regulatory, legal or contractual provisions, including the regulatory approval and review process, patent issues and actions by government agencies;
- the effects of obsolescence, changes in demand, competing products and other economic factors, including the stability of the market, known technological advances, development of competing drugs that are more effective clinically or economically;
- actions of competitors, suppliers, regulatory agencies or others that may eliminate current competitive advantages; and
- historical experience of renewing or extending similar arrangements.

Acquired IPR&D represents the fair value assigned to research and development assets that have not reached technological feasibility. The value assigned to acquired IPR&D is determined by estimating the costs to develop the acquired technology into commercially viable products, estimating the resulting revenue from the projects, and discounting the net cash flows to present value. The revenue and costs projections used to value acquired IPR&D are, as applicable, reduced based on the probability of success of developing a new drug. Additionally, the projections consider the relevant market sizes and growth factors, expected trends in technology, and the nature and expected timing of new product introductions by the Company and its competitors. The rates utilized to discount the net cash flows to their present value are commensurate with the stage of development of the projects and uncertainties in the economic estimates used in the projections.

Upon the acquisition of IPR&D, the Company completes an assessment of whether the acquisition constitutes the purchase of a single asset or a group of assets. The Company considers multiple factors in this assessment, including the nature of the technology acquired, the presence or absence of separate cash flows, the development process and stage of completion, quantitative significance and its rationale for entering into the transaction.

If the Company acquires a business as defined under applicable accounting standards, then the acquired IPR&D is capitalized as an intangible asset. If the Company acquires an asset or group of assets that do not meet the definition of a business, then the acquired IPR&D is expensed on its acquisition date. Future costs to develop these assets are recorded to research and development expense as they are incurred.

IPR&D projects are considered to be indefinite-lived until completion of the associated R&D efforts. If and when development is complete, which generally occurs when regulatory approval to market a product is obtained, the associated assets would be deemed finite-lived and would then be amortized based on their respective estimated useful lives at that point in time. Intangible assets related to IPR&D projects are reviewed for impairment at least annually, as of October 1st, until commercialization, after which time the IPR&D is amortized over its estimated useful life.

Impairment of Long-lived Assets

The Company evaluates the carrying value of long-lived assets, except for goodwill and indefinite lived intangible assets, whenever events or changes in circumstances indicate that the carrying amounts of the relevant assets may not be recoverable. When such a determination is made, management's estimate of undiscounted cash flows to be generated by the use and ultimate disposition of these assets is compared to the carrying value of the assets to determine whether the carrying value is recoverable. If the carrying value is deemed not to be recoverable, the amount of the impairment recognized in the Consolidated Financial Statements is determined by estimating the fair value of the relevant assets and recording an impairment loss for the amount by which the carrying value exceeds the estimated fair value.

The Company calculates the fair value using significant estimates and assumptions including but not limited to: revenues and operating profits related to the products, existing competitive activities and acts by governments and courts. Changes in these estimates and assumptions could materially affect the determination of fair value. Should the fair value of long-lived assets decline, charges for impairment may be necessary.

Fair Value Measurements

The Company has certain financial assets and liabilities recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements:

- Level 1 - Fair values are determined utilizing quoted prices (unadjusted) in active markets for identical assets or liabilities that we have the ability to access;
- Level 2 - Fair values are determined by utilizing quoted prices for similar assets and liabilities in active markets or other market observable inputs such as interest rates, yield curves and foreign currency spot rates; and
- Level 3 - Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

The majority of the Company's financial assets have been classified as Level 1 and 2. The Company's financial assets, which include cash equivalents, derivative contracts, marketable equity and debt securities, and plan assets for deferred compensation, have been initially valued at the transaction price and subsequently valued, at the end of each reporting period, utilizing third-party pricing services or other market observable data. The Company utilizes industry standard valuation models, including both income and market-based approaches and observable market inputs to determine value. These observable market inputs include reportable trades, benchmark yields, credit spreads, broker/dealer quotes, bids, offers, current spot rates and other industry and economic events.

Accounts receivable

The Company's accounts receivable arise from Product sales and represent amounts due from its customers. The Company monitors the financial performance and credit worthiness of its large customers so that it can assess and respond to changes in their credit profile. The Company provides reserves against accounts receivable for estimated losses, if any, that may result from a customer's inability to pay. Amounts determined to be uncollectible are written-off against the reserve.

Investments

The Company has certain investments in pharmaceutical and biotechnology companies whose securities are not publicly traded and where fair value is not readily available. These investments are recorded using either the cost method or the equity method of accounting, depending on its ownership percentage and other factors that suggest the Company has significant influence. Under the equity method of accounting, the Company records its investments in equity-method investees in the consolidated balance sheet under Investments and its share of the investees' earnings or losses together with other-than- temporary impairments in value under Equity in earnings/ (losses) of equity method investees, net of taxes in the Consolidated Statements of Operations. The Company monitors these investments to evaluate whether any decline in their value has occurred that would be other-than-temporary, based on the implied value of recent company financings, public market prices of comparable companies, and general market conditions.

All other equity investments, which consist of investments for which the Company does not have the ability to exercise significant influence, are accounted for under the cost method or at fair value. Investments in private companies are carried at cost, less provisions for other-than-temporary impairment in value. For investments in equity investments that have readily determinable fair values, the Company classifies its equity investments as available-for-sale and, accordingly, records these investments at their fair values with unrealized holding gains and losses included in the Consolidated Statements of Comprehensive Income, net of any related tax effect. Realized gains and losses, and declines in value of available-for-sale securities judged to be other-than-temporary, are included in Other income/(expense), net in the Consolidated Statements of Operations. The cost of securities sold is based on the specific identification method. Interest on securities classified as available-for-sale is included as Interest income in the Consolidated Statements of Operations.

Inventories

Inventories are stated at the lower of cost, computed using the first-in, first-out method, and net realizable value. The inventory costs are classified as long term when the Company expects to utilize the inventory beyond the normal operating cycle and includes these costs in Other non-current assets in the Consolidated Balance Sheets.

Capitalization of Inventory Costs

The Company capitalizes inventory costs associated with its products prior to regulatory approval, when, based on management's judgment, future commercialization is considered highly probable and the future economic benefit is expected to be realized.

Obsolescence and Unmarketable Inventory

Inventories are written down for estimated obsolescence or unmarketable inventory equal to the difference between the cost of inventory and estimated net realizable value based upon assumptions about future demand and market conditions. Amounts written down due to obsolescence and unmarketable inventory are charged to Cost of sales.

Property, plant and equipment

Property, plant and equipment are carried at cost, net of accumulated depreciation and impairment losses. Property, plant and equipment are subject to review for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. The cost of normal, recurring, or periodic repairs and maintenance activities related to property, plant and equipment are expensed as incurred. The cost for planned major maintenance activities, including the related acquisition or construction of assets, is capitalized if the repair will result in future economic benefits.

Interest costs incurred during the construction of major capital projects are capitalized until the underlying asset is ready for its intended use, at which point the interest costs are amortized as depreciation expense over the useful life of the underlying asset. The Company also capitalizes certain direct and incremental costs associated with the validation effort required for licensing by regulatory agencies of new manufacturing equipment for the production of a commercially approved drug. These costs primarily include direct labor and material and are incurred in preparing the equipment for its intended use. The validation costs are amortized over the useful life of the related equipment.

Depreciation of property, plant and equipment is calculated using the straight-line method over the estimated useful lives as follows:

Asset category	Estimated useful lives
Land	Not depreciated
Buildings and leasehold improvements	15 to 50 years
Office furniture, fittings and equipment	3 to 10 years
Machinery, equipment and other	3 to 15 years

At the time property, plant and equipment is retired or otherwise disposed of, the cost and accumulated depreciation are eliminated from the asset and accumulated depreciation accounts. The profit or loss on such disposition is reflected in operating income.

Assets Held for Sale

The Company classifies long-lived assets or disposal groups to be sold as held for sale in the period in which all of the following criteria are met:

- management, having the authority to approve the action, commits to a plan to sell the asset or disposal group;
- the asset or disposal group is available for immediate sale in its present condition;
- an active program to locate a buyer and other actions required to complete the plan to sell the asset or disposal group have been initiated;
- the sale of the asset or disposal group is probable, and transfer of the asset or disposal group is expected to qualify for recognition as a completed sale within one year, except if events or circumstances beyond our control extend the period of time required to sell the asset or disposal group beyond one year;
- the asset or disposal group is being actively marketed for sale at a price that is reasonable in relation to its current fair value; and
- actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

The Company initially measures a long-lived asset or disposal group that is classified as held for sale at the lower of its carrying value or fair value less any costs to sell. Any loss resulting from this measurement is recognized in the period in which the held-for-sale criteria are met.

The Company assesses the fair value of a long-lived asset or disposal group less any costs to sell each reporting period it remains classified as held for sale and reports any subsequent changes as an adjustment to the carrying value of the asset or disposal group, as long as the new carrying value does not exceed the carrying value of the asset at the time it was initially classified as held for sale.

Upon determining that a long-lived asset or disposal group meets the criteria to be classified as held for sale, the Company ceases depreciation.

Discontinued operations

Discontinued operations comprise those activities that were disposed of during the period or which were classified as held for sale at the end of the period, and represent a separate major line of business or geographical area that can be clearly distinguished for operational and financial reporting purposes.

Contingent consideration payable

Contingent consideration payable represents future milestones and royalties the Company may be required to pay in conjunction with various business combinations. The amounts ultimately payable by the Company are dependent upon the successful achievement of the underlying scientific or commercial event and future net sales of the relevant products over applicable term. The Company records an obligation for such contingent payments at fair value on the acquisition date. The Company assesses the probability, and estimated timing, of these milestones being achieved and the present value of forecast future net sales of the relevant products and re-measures the related contingent consideration to fair value each balance sheet date. The amount of contingent consideration which may ultimately be payable by Shire in relation to future royalties is dependent upon future net sales of the relevant products over the life of the royalty term.

The fair value of the Company's contingent consideration payable, which is considered as Level 3 within the fair value hierarchy, could significantly increase or decrease due to changes in certain assumptions which underpin the fair value measurements. Each set of assumptions and milestones is specific to the individual contingent consideration payable. The assumptions include, among other things, the probability of, and period in which, the relevant milestone event is expected to be achieved; the amount of royalties that will be payable based on forecast net sales of the relevant products; and the discount rates to be applied in calculating the present values of the relevant milestone or royalty. The Company regularly reviews these assumptions, and makes adjustments to the fair value measurements as required by facts and circumstances.

Derivative financial instruments

The Company uses derivative financial instruments to manage its exposure to foreign exchange risk to earnings relating to forecasted transactions and recognized assets and liabilities. For each derivative instrument that is designated and effective as a cash flow hedge, the gain or loss on the derivative is recorded in Accumulated Other Comprehensive Income (AOCI) and then recognized in earnings consistent with the underlying hedged item. Cash flow hedges are classified in revenues and cost of sales and primarily relate to forecasted third-party sales denominated in foreign currencies and forecasted intercompany sales denominated in foreign currencies, respectively.

In its application of hedge accounting, the Company assesses, both at inception and on a prospective basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting the changes in cash flows or fair values of the hedged items. The Company also assesses hedge effectiveness on a retrospective basis every quarter with any hedge ineffectiveness recorded to the Consolidated Statements of Operations.

The Company uses forward contracts to mitigate the effects of changes in foreign exchange relating to certain of the Company's intercompany and third-party receivables and payables. These derivative instruments generally are not formally designated as hedges and the terms of these instruments generally do not exceed three months. The fair values of these instruments are included in the Consolidated Balance Sheets in Current assets or Current liabilities, with changes in the fair value recognized in the Consolidated Statements of Operations. The cash flows relating to these instruments are presented within Net cash provided by operating activities in the Consolidated Statements of Cash Flows, unless the derivative instruments are economically hedging specific investing or financing activities.

Translation of foreign currency

The functional currency for most of the foreign subsidiaries is their local currency. For the non-U.S. subsidiaries that transact in a functional currency other than the U.S. dollar, assets and liabilities are translated at current rates of exchange at the balance sheet date. Income and expense items are translated at the average foreign exchange rates for the period. Adjustments resulting from the translation of the financial statements of the foreign operations into U.S. dollars are excluded from the determination of Net income and are recorded in AOCI, a separate component of equity. For subsidiaries where the functional currency of the assets and liabilities differ from the local currency, non-monetary assets and liabilities are translated at the rate of exchange in effect on the date assets were acquired while monetary assets and liabilities are translated at current rates of exchange as of the balance sheet date. Income and expense items are translated at the average foreign currency rates for the period. Translation adjustments of these subsidiaries are included in Other income/(expense), net.

Foreign currency exchange transaction (losses)/gains included in Consolidated Statements of Operations in the years ended December 31, 2017, 2016 and 2015 amounted to $(97.3) million, $17.7 million and $(26.5) million, respectively.

Cost of sales

Cost of sales includes the cost of purchasing finished product for sale, the cost of raw materials and costs of manufacturing those products including shipping and handling costs, depreciation and amortization of intangible assets in respect of favorable manufacturing contracts. Royalties payable to third party intellectual property owners related to the sold products are also included in Cost of sales.

Research and development (R&D) expense

Research and development expenses consist of compensation and benefits, facilities and overhead expenses, clinical trial expenses and fees paid to contract research organizations (CROs), clinical supply and manufacturing expenses and upfront fees and milestones paid to collaborators. R&D expense also includes the impairment charges related to the IPR&D intangible assets.

Research and development expenses are expensed as incurred. Payments that were made for research and development services prior to the services being rendered are recorded as Prepaid expenses and other current assets on the Consolidated Balance Sheets and are expensed as the services are provided. Management also accrues the costs of ongoing clinical trials associated with programs that have been terminated or discontinued for which there is no future economic benefit at the time the decision is made to terminate or discontinue the program.

Selling, general and administrative expenses

Selling, general and administrative expenses are primarily comprised of compensation and benefits associated with sales and marketing, finance, human resources, legal, information technology and other administrative personnel, outside marketing, advertising and legal expenses and other general and administrative costs.

Advertising costs are expensed as incurred. Advertising costs amounted to $210.3 million, $216.0 million and $56.1 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Collaborative arrangements

The Company enters into collaborative arrangements to develop and commercialize drug candidates. These collaborative arrangements often require up-front, milestone, royalty or profit share payments, or a combination of these, with payments often contingent upon the success of the related development and commercialization efforts. Collaboration agreements entered into by the Company may also include expense reimbursements or other such payments to the collaborating partner. The Company records payments received from the collaborative partners for their share of the development costs as a reduction of research and development expense.

For collaborations with commercialized products, if the Company is the principal, it records revenue and the corresponding operating costs in their respective line items in the Consolidated Statements of Operations. If the Company is not the principal, it records operating costs as a reduction of revenue.

Leased assets

The costs of operating leases are charged to operations on a straight-line basis over the lease term, even if rental payments are not made on such a basis.

Assets acquired under capital leases are included in the Consolidated Balance Sheets as property, plant and equipment and are depreciated over the shorter of the period of the lease or their useful lives. The capital element of future lease payments is recorded as a liability, while the interest element is charged to operations over the period of the lease to produce a level yield on the balance of the capital lease obligation.

Finance costs of debt

Financing costs relating to debt issued are recorded against the corresponding debt and amortized to the Consolidated Statements of Operations over the period to the earliest redemption date of the debt, using the effective interest rate method. On extinguishment of the related debt, any unamortized deferred financing costs are written off and charged to Interest expense in the Consolidated Statements of Operations.

Income taxes

The provision for income taxes includes Irish corporation tax, US federal, state, local and other foreign taxes. Income taxes are accounted for under the liability method.

Uncertain tax positions are recognized in the Consolidated Financial Statements for positions which are considered more likely than not of being sustained, based on the technical merits of the position on audit by the tax authorities. The measurement of the tax benefit recognized in the Consolidated Financial Statements is based upon the largest amount of tax benefit that, in management's judgment, is greater than 50% likely of being realized based on a cumulative probability assessment of the possible outcomes.

The Company recognizes interest and penalties relating to income taxes within Income taxes. Interest income on cash required to be deposited with the tax authorities is recognized within Interest income.

Deferred tax assets and liabilities are recognized for differences between the carrying amounts of assets and liabilities in the Consolidated Financial Statements and the tax bases of assets and liabilities that will result in future taxable or deductible amounts. The deferred tax assets and liabilities are measured using the enacted tax laws and rates applicable to the periods in which the differences are expected to affect taxable income.

Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized.

Earnings per share

Basic earnings per share is based upon net income attributable to the Company divided by the weighted average number of ordinary shares outstanding during the period. Diluted earnings per share is based upon net income attributable to the Company divided by the weighted average number of ordinary share equivalents outstanding during the period, adjusted for the dilutive effect of all potential ordinary shares equivalents that were outstanding during the year. Such potentially dilutive shares are excluded when the effect would be to increase diluted earnings per share or reduce the diluted loss per share.

Share-based compensation

The share-based compensation programs grant awards that include stock-settled share appreciation rights (SARs), stock options, performance share awards (PSAs), restricted stock units (RSUs) and performance share units (PSUs). The Company also operates a Global Employee Stock Purchase Plan, and Sharesave Plans in the UK and Ireland.

Share-based compensation represents the cost of share-based awards granted to employees. The Company measures share-based compensation cost for awards classified as equity at the grant date, based on the estimated fair value of the award. Predominantly all of the Company's awards have service and/or performance conditions and the fair values of these awards are estimated using a Black-Scholes valuation model.

For share-based compensation awards which cliff vest, the Company recognizes the cost of the relevant share-based payment award as an expense on a straight-line basis (net of estimated forfeitures) over the employee's requisite service period. For those share-based compensation awards with a graded vesting schedule, the Company recognizes the cost of the relevant share-based payment award as an expense on a straight-line basis (net of estimated forfeitures) over the requisite service period for the entire award (that is, over the requisite service period for the last separately vesting portion of the award). The share-based compensation expense is recorded in Cost of product sales, R&D, SG&A, Reorganization costs and Integration and Acquisition costs in the Consolidated Statements of Operations based on the employees' respective functions.

The Company records deferred tax assets for awards that result in deductions on the Company's income tax returns, based on the amount of compensation cost recognized and the Company's statutory tax rate in the jurisdiction in which it will receive a deduction. For the years ended December 31, 2016 and 2015, differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the Company's income tax returns were recorded in additional paid-in capital (if the tax deduction exceeds the deferred tax asset) or in the Consolidated Statements of Operations (if the deferred tax asset exceeds the tax deduction and no additional paid-in capital exists from previous awards). Following the adoption of new accounting guidance effective January 1, 2017, for the year ended December 31, 2017, differences between the deferred tax assets and the actual tax deduction reported on the Company's income tax returns were recorded in the Consolidated Statements of Operations, including if the tax deduction exceeds the deferred tax asset. The Company's share-based compensation plans are described in more detail in Note 23, Share-based Compensation Plans.

New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard setting bodies that the Company adopts as of the specified effective date. Unless otherwise discussed below, the Company does not believe that the impact of recently issued standards that are not yet effective will have a material impact on the Company's financial position or results of operations upon adoption.

Adopted during the current period

Inventory

In July 2015, the FASB issued new guidance which requires an entity to measure inventory at the lower of cost and net realizable value. Net realizable value is defined as the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. The Company adopted this standard as of January 1, 2017, which did not impact the Company's financial position or results of operations.

Share-Based Payment Accounting

In March 2016, the FASB issued Accounting Standards Update (ASU) No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. The new standard requires recognition of the income tax effects of vested or settled awards in the income statement and involves several other aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification on the Statements of Cash Flows and allows a one-time accounting policy election to account for forfeitures as they occur. The new standard was effective January 1, 2017.

The Company adopted ASU 2016-09 in the first quarter of 2017. Before adoption, excess tax benefits or deficiencies from the Company's equity awards were recorded as Additional paid-in capital in its Consolidated Balance Sheets. Upon adoption, the Company recorded any excess tax benefits or deficiencies from its equity awards in its Consolidated Statements of Operations in the reporting periods in which vesting or settlement occurs.

Amendments related to accounting for excess tax benefits have been adopted prospectively, resulting in recognition of excess tax benefits against Income taxes rather than Additional paid-in capital of $11.5 million for the twelve months ended December 31, 2017.

As a result of the adoption, the Company recorded an adjustment to Retained earnings of $39.0 million to recognize net operating loss carryforwards attributable to excess tax benefits on stock compensation that had not been previously recognized to Additional paid-in capital.

Excess tax benefits for share-based payments are now included in Net cash provided by operating activities rather than Net cash provided by financing activities. The changes have been applied prospectively in accordance with the ASU and prior periods have not been adjusted.

Upon adoption of ASU 2016-09, the Company elected to account for forfeitures in relation to service conditions as they occur. The change was applied on a modified retrospective basis with a cumulative effect adjustment to Retained earnings of $10.7 million as of January 1, 2017.

Definition of a Business

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business. This new standard clarifies the definition of a business and provides guidance to determine when an integrated set of assets and activities is not a business. The Company adopted this standard prospectively on January 1, 2017.

To be adopted in future periods

Simplifying the Test for Goodwill Impairment

In January 2017, the FASB issued ASU No. 2017-04, Intangibles - Goodwill and Other (Topic 350): Simplifying the Test of Goodwill Impairment. This new standard simplifies how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. This standard will be effective for the Company as of January 1, 2020, with early adoption permitted for annual goodwill impairment tests performed after January 1, 2017. The Company does not expect the adoption of this standard to have a material impact on its financial position and results of operations.

Revenue from Contracts with Customers

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. The new standard also requires additional qualitative and quantitative disclosures.

In August 2015, the FASB issued ASU No. 2015-14, Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date, which delayed the effective date of the new standard from January 1, 2017 to January 1, 2018.

The FASB has subsequently issued five additional ASUs amending the guidance in Topic 606, each with the same effective date and transition date of January 1, 2018. This amended guidance has been considered in the Company's overall assessment of Topic 606.

Shire will adopt this standard on January 1, 2018, using the modified retrospective transition method. The Company has identified two primary revenue streams from contracts with customers as part of its assessment: 1) product sales and 2) licensing arrangements.

The Company completed its assessment of implementing the new standard. The adoption of the new standard will not have a material impact to revenue recognition related to product revenue or licensing arrangements. The impact of the adoption will be recorded as a cumulative effect adjustment in the Consolidated Statement of Changes in Equity upon adoption on January 1, 2018.

Financial Instrument Accounting

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The new standard amends certain aspects of accounting and disclosure requirements of financial instruments, including the requirement that equity investments with readily determinable fair values be measured at fair value with changes in fair value recognized in the results of operations. This standard will be effective for the Company as of January 1, 2018. The adoption of this guidance will not have a material impact on its financial position and results of operations.

Leases

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new accounting guidance will require the recognition of all long-term lease assets and lease liabilities by lessees and sets forth new disclosure requirements for those lease assets and liabilities. The standard requires lessees to recognize right-of-use assets and lease liabilities on the balance sheet using a modified retrospective approach at the beginning of the earliest comparative period in the financial statements. This standard will be effective for the Company as of January 1, 2019. Early adoption is permitted. The Company is currently evaluating the potential impact on its financial position and results of operations of adopting this guidance.

Statement of Cash Flows

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. The new standard clarifies certain aspects of the statement of cash flows, and aims to reduce diversity in practice regarding how certain transactions are classified in the statement of cash flows. This standard will be effective for the Company as of January 1, 2018. Early adoption is permitted. The adoption of this guidance will not have a material impact on the Company's Consolidated Statements of Cash Flows.

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. The new guidance is intended to reduce diversity in the presentation of restricted cash and restricted cash equivalents in the statement. The guidance requires that restricted cash and restricted cash equivalents be included as components of total cash and cash equivalents as presented on the statement of cash flows. This standard will be effective for the Company as of January 1, 2018. The adoption of this guidance will not have a material impact on the Company's Consolidated Statements of Cash Flows.

Income Taxes

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers Other than Inventory. This standard removes the current exception in U.S. GAAP prohibiting entities from recognizing current and deferred income tax expenses or benefits related to transfer of assets, other than inventory, within the consolidated entity. The current exception to defer the recognition of any tax impact on the transfer of inventory within the consolidated entity until it is sold to a third party remains unaffected. The Company will adopt the standard effective January 1, 2018 using a modified retrospective approach with a cumulative-effect adjustment to opening retained earnings in the first quarter of 2018. The adoption of this guidance will not have a material impact on its financial position and results of operations.

Retirement Benefits Income Statement Presentation

In March 2017, the FASB issued ASU 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. The standard amends the income statement presentation of the components of net periodic benefit cost for defined benefit pension and other postretirement plans. The standard requires entities to (1) disaggregate the current-service-cost component from the other components of net benefit cost (the "other components") and present it with other current compensation costs for related employees in the income statement and (2) present the other components elsewhere in the income statement and outside of income from operations if such a subtotal is presented. The standard also requires entities to disclose the income statement lines that contain the other components if they are not presented on appropriately described separate lines. This standard will be effective for the Company as of January 1, 2018. The adoption of this guidance will not have a material impact on its financial position and results of operations.

Share-Based Payment Accounting

In May 2017, the FASB issued ASU No. 2017-09, Compensation - Stock Compensation (Topic 718): Scope Modification Accounting. The new standard clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. This standard will be effective for the Company as of January 1, 2018. Early adoption is permitted. The adoption of this guidance is not expected to have a material impact on the Company's financial position and results of operations.

Derivatives and Hedging

In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. The standard amends its hedge accounting model to enable entities to better portray the economics of their risk management activities in the financial statements. The new guidance also expands an entity's ability to hedge non-financial and financial risk components and reduces complexity in fair value hedges of interest rate risk. Additionally, it eliminates the requirement to separately measure and report hedge ineffectiveness, eases certain assessment requirements and modifies the accounting for components excluded from the assessment of hedge effectiveness. This standard will be effective for the Company as of January 1, 2019. Early adoption is permitted. The Company is currently evaluating the method of adoption and the potential impact on its financial position and results of operations of adopting this guidance.

3. Business Combinations

Acquisition of Baxalta

On June 3, 2016, Shire acquired all of the outstanding common stock of Baxalta for $18.00 per share in cash and 0.1482 Shire American Depository Shares (ADSs) per Baxalta share, or if a former Baxalta shareholder properly elected, 0.4446 Shire ordinary shares per Baxalta share.

Baxalta was a global biopharmaceutical company that focused on developing, manufacturing and commercializing therapies for orphan diseases and underserved conditions in hematology, immunology and oncology.

The purchase price consideration for the acquisition of Baxalta was finalized in the second quarter of 2017. The fair value of the purchase price consideration consisted of the following:

(In millions)	Fair value
Cash paid to shareholders	$12,366.7
Fair value of stock issued to shareholders	19,353.2
Fair value of partially vested stock options and RSUs assumed	508.8
Contingent consideration payable	165.0
Total purchase price consideration	$32,393.7

The acquisition of Baxalta was accounted for as a business combination using the acquisition method of accounting. Shire issued 305.2 million shares to former Baxalta shareholders at the date of the acquisition. For a more detailed description of the fair value of the partially vested stock options and RSUs assumed, refer to Note 23, Share-based Compensation Plans, to the Consolidated Financial Statements set forth in this Annual Report on Form 10-K.

The assets acquired and the liabilities assumed from Baxalta have been recorded at their fair value as of June 3, 2016, the date of acquisition. The Company's Consolidated Financial Statements included the results of Baxalta from the date of acquisition. The amount of Baxalta's post-acquisition revenues included in the Company's Consolidated Statements of Operations for the year ended December 31, 2016 was $4,011.6 million. After the closing of the acquisition, the Company began integrating Baxalta and as such the combined business is now sharing various research and development and selling, general and administrative functions. As a result, computing a separate measure of Baxalta's stand-alone profitability for periods after the acquisition date is not practical.

The purchase price allocation for the acquisition of Baxalta was finalized in the second quarter of 2017. The Company's allocation of the purchase price to the assets acquired and liabilities assumed as of the acquisition date, including measurement period adjustments, is outlined below.

(In millions)	Preliminary value as of acquisition date (as previously reported as of December 31, 2016)	Measurement period adjustments	Fair value
ASSETS			
Current assets:			
Cash and cash equivalents	$ 583.2	$ —	$ 583.2
Accounts receivable	1,069.7	(96.4)	973.3
Inventories	3,893.4	81.2	3,974.6
Other current assets	576.0	5.3	581.3
Total current assets	6,122.3	(9.9)	6,112.4
Property, plant and equipment	5,452.7	(46.5)	5,406.2
Investments	128.2	—	128.2
Goodwill	11,422.4	1,076.2	12,498.6
Intangible assets			
Currently marketed products	21,995.0	(830.0)	21,165.0
In-Process Research and Development (IPR&D)	730.0	(570.0)	160.0
Contract based arrangements	42.2	—	42.2
Other non-current assets	155.0	69.7	224.7
Total assets	$46,047.8	$ (310.5)	$45,737.3
LIABILITIES			
Current liabilities:			
Accounts payable and accrued expenses	$ 1,321.9	$ (2.7)	$ 1,319.2
Other current liabilities	354.4	9.0	363.4
Long term borrowings and capital leases	5,424.9	—	5,424.9
Deferred tax liability	5,445.3	(315.0)	5,130.3
Other non-current liabilities	1,103.6	2.2	1,105.8
Total liabilities	$13,650.1	$ (306.5)	$13,343.6
Fair value of identifiable assets acquired and liabilities assumed	$32,397.7	$ (4.0)	$32,393.7
Consideration			
Fair value of purchase consideration	$32,397.7	$ (4.0)	$32,393.7

The measurement period adjustments for Intangible assets reflect changes in the estimated fair value of currently marketed products and IPR&D. Changes are mainly related to finalizing the unit of account judgments and other changes in estimates including Cost of sales allocation and royalty expense. The measurement period adjustments for Inventory primarily reflect refinements in the estimated selling price of inventory. The changes in the estimated fair values primarily are to more accurately reflect market participant assumptions about facts and circumstances existing as of the acquisition date. The measurement period adjustments did not result from intervening events subsequent to the acquisition date.

As a result of measurement period adjustments related to the change in fair value of currently marketed products and inventory, a charge of $85.2 million was recognized in Cost of sales and a benefit of $23.3 million was recognized in Amortization of acquired intangible assets, respectively, in the Company's Consolidated Statements of Operations. These adjustments would have been recorded during the year ended December 31, 2016 if these adjustments had been recognized as of the acquisition date.

Intangible assets

The fair value of the identifiable intangible assets has been estimated using an income approach, which is a valuation technique that provides an estimate of the fair value of an asset based on market participant expectations of the incremental after tax cash flows an asset would generate over its remaining useful life. The useful lives for currently marketed products were determined based upon the remaining useful economic lives of the assets that are expected to contribute to future cash flows.

Currently marketed products totaling $21,165.0 million relate to intellectual property (IP) rights acquired for Baxalta's currently marketed products. The estimated useful life of the intangible assets related to currently marketed products range from 6 to 23 years (weighted average 21 years), with amortization being recorded on a straight-line basis.

IPR&D intangible assets totaling $160.0 million represent the value assigned to research and development (R&D) projects acquired. The IPR&D intangible assets are capitalized and accounted for as indefinite-lived intangible assets and will be subject to impairment testing until completion or abandonment of the projects. Upon successful completion of each project, the Company will make a separate determination of the estimated useful life of the IPR&D intangible asset and the related amortization will be recorded as an expense over the estimated useful life.

Some of the more significant assumptions inherent in the development of those asset valuations include the estimated net cash flows for each year for each asset or product (including net revenues, cost of sales, R&D costs, selling and marketing costs, working capital/asset contributory asset charges and other cash flow assumptions), the appropriate discount rate to select in order to measure the risk inherent in each future cash flow stream, the assessment of each asset's life cycle, the potential regulatory and commercial success risks, competitive trends impacting the asset and each cash flow stream as well as other factors.

The discount rate used to arrive at the present value at the acquisition date of the IPR&D intangible assets was 9.5% to reflect the internal rate of return and incremental commercial uncertainty in the cash flow projections. No assurances can be given that the underlying assumptions used to prepare the discounted cash flow analysis will not change. For these and other reasons, actual results may vary significantly from estimated results.

Goodwill

Goodwill of $12,498.6 million, which is not deductible for tax purposes, includes the expected synergies that will result from combining the operations of Baxalta with Shire, intangible assets that do not qualify for separate recognition at the time of the acquisition, the value of the assembled workforce, and impacted by establishing a deferred tax liability for the acquired identifiable intangible assets which have no tax basis.

Contingent consideration

The Company acquired certain contingent obligations classified as contingent consideration related to Baxalta's historical business combinations. Additional consideration is conditionally due upon the achievement of certain milestones related to the development, regulatory, first commercial sale and other sales milestones, which could total up to approximately $1.5 billion. The Company may also pay royalties based on certain product sales. The Company estimated the fair value of the assumed contingent consideration to be $165.0 million using a probability weighting approach that considered the possible outcomes based on assumptions related to the timing and probability of the product launch date, discount rates matched to the timing of first payment and probability of success rates and discount adjustments on the related cash flows.

Inventory

The estimated fair value of work-in-process and finished goods inventory was determined utilizing the net realizable value, based on the expected selling price of the inventory, adjusted for incremental costs to complete the manufacturing process and for direct selling efforts, as well as for a reasonable profit allowance. The estimated fair value of raw material inventory was valued at replacement cost, which is equal to the value a market participant would pay to acquire the inventory.

The fair value adjustment related to inventory is expensed based on the expected product-specific inventory utilization, which is reviewed on a periodic basis and is recorded within Cost of sales in the Company's Consolidated Statements of Operations.

Retirement plans

The Company assumed pension plans as part of the acquisition of Baxalta, including defined benefit and post-retirement benefit plans in the U.S. and foreign jurisdictions, which had a net liability balance of $610.4 million. As of June 3, 2016, the Baxalta defined benefit pension plans had assets with a fair value of $358.5 million.

Integration and acquisition costs

In the year ended December 31, 2017, the Company expensed $763.9 million relating to the acquisition and integration of Baxalta, which have been recorded within Integration and acquisition costs in the Company's Consolidated Statements of Operations. Refer to Note 5, Integration and Acquisition Costs, for further information regarding the Company's Integration and acquisition costs for the year ended December 31, 2017.

Supplemental disclosure of pro forma information

The following unaudited pro forma financial information presents the combined results of the operations of Shire and Baxalta as if the acquisition of Baxalta had occurred as of January 1, 2015. The unaudited pro forma financial information is not necessarily indicative of what the consolidated results of operations actually would have been had the respective acquisition been completed on January 1, 2015. In addition, the unaudited pro forma financial information does not purport to project the future results of operations of the combined Company.

(In millions, except per share amounts)	Year ended December 31, 2016
Revenues	$13,999.6
Net income from continuing operations	2,213.6
Per share amounts:	
Net income from continuing operations per share - basic	$ 2.87
Net income from continuing operations per share - diluted	$ 2.85

The unaudited pro forma financial information above reflects the following pro forma adjustments:

(i) an adjustment to increase net income for the year ended December 31, 2016 by $678.9 million to eliminate integration and acquisition related costs incurred by Shire and Baxalta;

(ii) an adjustment to increase net income for the year ended December 31, 2016 by $847.9 million to reflect the expense related to the unwind of inventory fair value adjustments as inventory is sold;

(iii) an adjustment to increase amortization expense for the year ended December 31, 2016 by $304.0 million related to the identifiable intangible assets acquired; and

(iv) an adjustment to decrease net income for the year ended December 31, 2016 by $42.5 million, primarily related to the additional interest expense associated with the debt incurred to partially fund the acquisition of Baxalta and the amortization of related deferred debt issuance costs.

The adjustments above are stated net of their tax effects, where applicable.

Acquisition of Dyax

On January 22, 2016, Shire acquired all of the outstanding common stock of Dyax for $37.30 per share in cash. Under the terms of the merger agreement, former Dyax shareholders may receive additional value through a non-tradable contingent value right worth $4.00 per share, payable upon U.S. Food and Drug Administration (FDA) approval of SHP643 (formerly DX-2930) in Hereditary Angioedema (HAE).

Dyax was a publicly-traded, Massachusetts-based rare disease biopharmaceutical company primarily focused on the development of plasma kallikrein (pKal) inhibitors for the treatment of HAE. Dyax's most advanced clinical program was SHP643, a Phase 3 program with the potential for improved efficacy and convenience for HAE patients. SHP643 has received Fast Track, Breakthrough Therapy, and Orphan Drug Designations by the FDA and has also received Orphan Drug status in the EU. Dyax's sole marketed product, KALBITOR, is a pKal inhibitor for the treatment of acute attacks of HAE in patients 12 years of age and older.

The acquisition of Dyax was accounted for as a business combination using the acquisition method. The acquisition-date fair value consideration was $6,330.0 million, comprising cash paid on closing of $5,934.0 million and the fair value of the contingent value right of $396.0 million (maximum payable $646.0 million). The assets acquired and the liabilities assumed from Dyax have been recorded at their fair value as of January 22, 2016, the date of acquisition. The Company's Consolidated Financial Statements include the results of Dyax as of January 22, 2016. The amount of Dyax's post-acquisition revenues included in the Company's Consolidated Statements of Operations for the year ended December 31, 2016 is $77.1 million. After the closing of the acquisition, the Company began integrating Dyax and as such the combined business is now sharing various research and development and selling, general and administrative functions. As a result, computing a separate measure of Dyax's stand-alone profitability for periods after the acquisition date is not practical.

The purchase price allocation for the acquisition of Dyax was finalized in the first quarter of 2017. The allocation of the total purchase price is outlined below.

(In millions)	**Fair value**
ASSETS	
Current assets:	
Cash and cash equivalents	$ 241.2
Accounts receivable	22.5
Inventories	20.2
Other current assets	8.1
Total current assets	292.0
Property, plant and equipment	5.8
Goodwill	2,702.1
Intangible assets	
Currently marketed projects	135.0
IPR&D	4,100.0
Contract based royalty arrangements	425.0
Other non-current assets	28.6
Total assets	$7,688.5
LIABILITIES	
Current liabilities:	
Accounts payable and accrued expenses	$ 30.0
Other current liabilities	1.7
Deferred tax liability	1,325.4
Other non-current liabilities	1.4
Total liabilities	$1,358.5
Fair value of identifiable assets acquired and liabilities assumed	$6,330.0
Consideration	
Fair value of purchase consideration	$6,330.0

Currently marketed products

Currently marketed products totaling $135.0 million relate to intellectual property rights acquired for KALBITOR. The fair value of the currently marketed product has been estimated using an income approach, based on the present value of incremental after tax cash flows attributable to KALBITOR.

The estimated useful life of the KALBITOR intangible asset is 18 years, with amortization being recorded on a straight-line basis.

IPR&D

The IPR&D asset of $4,100.0 million relates to Dyax's clinical program SHP643, a Phase 3 program with the potential for improved efficacy and convenience for HAE patients. The IPR&D intangible asset is capitalized and accounted for as indefinite-lived intangible assets and will be subject to impairment testing until completion or abandonment of the projects. The fair value of this IPR&D asset was estimated based on an

income approach, using the present value of incremental after tax cash flows expected to be generated by this development project. The estimated cash flows have been probability adjusted to take into account the development stage of completion and the remaining risks and uncertainties surrounding the future development and commercialization.

The estimated probability adjusted after tax cash flows used to estimate the fair value of intangible assets have been discounted at 9%.

Royalty rights

Intangible assets totaling $425.0 million relate to royalty rights arising from licensing agreements of a portfolio of product candidates. This portfolio includes two approved products, marketed by Eli Lilly & Company, and various development-stage products. Multiple product candidates with other pharmaceutical companies are in various stages of clinical development for which the Company is eligible to receive future royalties and/or milestone payments.

The fair value of these royalty rights has been estimated using an income approach, based on the present value of incremental after-tax cash flows attributable to each royalty right.

The estimated useful lives of these royalty rights range from seven to nine years (weighted average eight years), with amortization being recorded on a straight-line basis.

Goodwill

Goodwill of $2,702.1 million, which is not deductible for tax purposes, includes the expected synergies that will result from combining the operations of Dyax with Shire; intangible assets that do not qualify for separate recognition at the time of the acquisition; the value of the assembled workforce; and impacted by establishing a deferred tax liability for the acquired identifiable intangible assets which have no tax basis.

Supplemental disclosure of pro forma information

The following unaudited pro forma financial information presents the combined results of the operations of Shire and Dyax as if the acquisitions of Dyax had occurred as of January 1, 2015. The unaudited pro forma financial information is not necessarily indicative of what the consolidated results of operations actually would have been had the respective acquisition been completed at the date indicated. In addition, the unaudited pro forma financial information does not purport to project the future results of operations of the combined Company.

(In millions, except per share amounts)	Year ended December 31, 2016
Revenues	$11,402.5
Net income from continuing operations	792.2
Per share amounts:	
Net income from continuing operations per share - basic	$ 1.03
Net income from continuing operations per share - diluted	$ 1.02

The unaudited pro forma financial information above reflects the following pro forma adjustments:

(i) an adjustment to increase net income for the year ended December 31, 2016 by $111.1 million to eliminate acquisition related costs incurred by Shire and Dyax and

(ii) an adjustment to increase amortization expense for the year ended December 31, 2016 by $1.3 million related to the identifiable intangible assets acquired.

The adjustments above are stated net of their tax effects, where applicable.

4. Collaborative and Other Licensing Arrangements

The Company is party to certain collaborative and licensing arrangements. In some of these arrangements, Shire and the licensee are both actively involved in the development and commercialization of the licensed product and have exposure to risks and rewards dependent on its commercial success.

Out-licensing arrangements

The Company has entered into various licensing arrangements where it has licensed certain product or intellectual property rights for consideration such as up-front payments, development milestones, sales milestones and/or royalty payments. Under the terms of these licensing arrangements, the Company may receive development milestone payments up to an aggregate amount of $10.3 million and sales milestones up to an aggregate amount of $91.0 million. The receipt of these substantive milestones is uncertain and contingent on the achievement of certain development milestones or the achievement of a specified level of annual net sales by the licensee. During the years ended 2017 and 2016, the Company received cash related to up-front and milestone payments of $9.1 million and $10.5 million, respectively. During the years ended 2017, 2016 and 2015, the Company recognized milestone income of $82.5 million, $17.4 million and $8.9 million, respectively, in other revenues, and $34.6 million, $63.0 million and $51.0 million, respectively, in product sales for shipment of product to the relevant licensee.

Collaboration and in-licensing arrangements

The Company is party to various collaborative and in-licensing arrangements. These agreements generally provide for commercialization rights to a product or products being developed by the counterparty, and in exchange often resulted in an upfront payment upon execution of the agreement and an obligation that the Company make future development, regulatory approval or commercial milestone payments as well as royalty payments. Under the terms of these licensing arrangements, the Company made an initial $47.5 million, $110.0 million and $nil upfront license payment and milestone payments during the years ended 2017, 2016 and 2015, respectively, which were included in Research and development expense in the Company's Consolidated Statements of Operations. As of the December 31, 2017, the Company had the potential to make future payments related to option fees and development, regulatory and commercialization milestones totaling up to $5.5 billion, excluding potential future royalty payments.

The following is a description of the Company's significant collaboration agreements, including those that were acquired by the Company. The acquisition-date fair value of the collaboration agreements acquired from Baxalta was included in the IPR&D.

Rani Therapeutics LLC

In December 2017, Shire entered into a collaboration agreement with Rani Therapeutics, LLC (Rani) to conduct research on the use of the RANI PILL technology for oral delivery of Factor VIII (FVIII) therapy for patients with hemophilia A. The collaboration agreement grants Shire an exclusive option to negotiate a license to develop and commercialize the technology for delivery of FVIII therapy following completion of feasibility studies. Shire also made an equity investment in Rani.

Novimmune S.A.

In July 2017, Shire entered into a licensing agreement with Novimmune S.A. (Novimmune). The license grants Shire exclusive worldwide rights to develop and commercialize a bi-specific antibody in pre-clinical development for the treatment of hemophilia A and hemophilia A patients with inhibitors. Under the terms of the agreement, Shire will develop, and if approved, commercialize the product. Shire made an initial upfront license payment. Novimmune will be entitled to receive additional potential milestone payments based on clinical, regulatory and commercial milestones and single-digit royalties.

Parion Sciences Inc.

In May 2017, Shire entered into an agreement to license the exclusive worldwide rights to SHP659 (formerly known as P-321) from Parion Sciences Inc. (Parion). SHP659 is a Phase 2 investigational epithelial sodium channel inhibitor for the potential treatment of dry eye disease in adults. Under the terms of the agreement, Shire will develop, and if approved, commercialize this compound. Shire made an initial upfront license payment. Parion will be entitled to receive additional potential milestone payments based on clinical, regulatory and commercial milestones and Parion has the option to co-fund through additional stages of development in exchange for enhanced tiered low double-digit royalties. In addition, Parion has the option to co-fund commercialization activities and participate in the financial outcome from those activities.

Pfizer Inc.

In July 2016, the Company licensed the global rights to all indications for SHP647 from Pfizer Inc. (Pfizer) SHP647 is an investigational biologic being evaluated for the treatment of moderate-to-severe

inflammatory bowel disease. Under the terms of the agreement, Pfizer received an upfront payment and eligible to receive milestone payments based on clinical, regulatory and commercialization milestones and low double-digit royalties on any potential sales if the product is approved.

Precision BioSciences Inc.

In June 2016, the Company acquired a strategic immuno-oncology collaboration with Precision BioSciences Inc. (Precision). The Company acquired the collaboration through the acquisition of Baxalta. Together, Shire and Precision will develop chimeric antigen receptor (CAR) T cell therapies for up to six unique targets. On a product-by-product basis, following successful completion of early-stage research activities up to and including Phase 2 clinical trials, Shire will have exclusive option rights to complete late-stage development and worldwide commercialization. Precision is responsible for development costs for each target prior to option exercise. Precision also has the right to participate in the development and commercialization of any licensed products resulting from the collaboration through a 50/50 co-development and co-promotion option in the United States. Precision is eligible to receive option fees and milestone payments based on development, regulatory and commercialization milestones, in addition to future royalty payments.

Symphogen

In June 2016, the Company acquired a research, option and commercial agreement with Symphogen. The Company acquired the agreement through the acquisition of Baxalta. Under the terms of the agreement, Shire and Symphogen plan to develop checkpoint inhibitor therapies for up to six unique targets. On a product-by-product basis, following successful completion of early-stage research activities up to and including Phase 1 clinical trials, Shire will have exclusive option rights to complete late-stage development and worldwide commercialization. Symphogen is responsible for development costs for each target prior to such option exercise. Symphogen is eligible to receive milestone payments based on development, regulatory and commercialization milestones achieved after option exercise for all six proteins and future royalty payments.

Ipsen Bioscience Inc.

In June 2016, the Company acquired an exclusive license agreement with Ipsen Bioscience Inc.'s predecessor, Merrimack Pharmaceuticals, Inc. (Merrimack) relating to the development and commercialization of ONIVYDE (nanoliposomal irinotecan injection) (nal-IRI). The Company acquired the agreement through the acquisition of Baxalta. The arrangement includes all potential indications for nal-IRI across all markets with the exception of the U.S. and Taiwan. The first indication being pursued is for the treatment of patients with metastatic pancreatic cancer who were previously treated with gemcitabine-based therapy. Ipsen is eligible to receive milestone payments related to development, regulatory and commercialization milestones.

5. Integration and Acquisition Costs

For the year ended December 31, 2017, Shire recorded Integration and acquisition costs of $894.5 million, primarily due to the acquisition and integration of Baxalta. A charge of $120.7 million relating to the change in fair value of contingent consideration payable is included in these costs.

The Company entered its second phase of integration activities during 2017. The costs associated with this phase primarily related to headcount reduction as the Company advanced and completed certain activities related to exiting transition services agreements (TSA) with Baxter, integrating legal entities and rationalization of the Company's manufacturing facilities. For further details on existing agreements with Baxter, refer to Note 28, Agreements and Transactions with Baxter, of these Consolidated Financial Statements. The Company also drove savings through the continued prioritization of its research and development programs and continued consolidation of its commercial operations. The integration of Baxalta is estimated to be completed by mid to late 2019.

The Baxalta integration and acquisition costs include $211.6 million of employee severance and acceleration of stock compensation, $140.3 million of third-party professional fees, $89.9 million of expenses associated with facility consolidations and $231.7 million of asset impairments for the year ended December 31, 2017. The Company expects the majority of these expenses, except for certain costs related to facility consolidations, to be paid within 12 months from the date the related expenses were incurred.

The following table summarizes the type and amount of cost recorded and the related reserve for the years ended December 31, 2017 and 2016:

(In millions)	Severance and employee benefits	Lease terminations	Total
As of January 1, 2016	$ —	$ —	$ —
Amount charged to integration costs	267.3	—	267.3
Paid/utilized	(193.3)	—	(193.3)
As of December 31, 2016	$ 74.0	$ —	$ 74.0
Amount charged to integration costs	175.2	72.7	247.9
Paid/utilized	(176.3)	(16.1)	(192.4)
As of December 31, 2017	$ 72.9	$ 56.6	$ 129.5

For the year ended December 31, 2016, Shire recorded Integration and acquisition costs of $883.9 million primarily related to the acquisition and integration of Dyax and Baxalta. These costs primarily consist of $463.4 million of employee severance and acceleration of stock compensation, $378.7 million of third-party professional fees, $58.1 million of contract terminations and a credit of $11.1 million relating to the change in fair value of contingent consideration.

For the year ended December 31, 2015, Shire recorded net integration and acquisition costs of $39.8 million. The net integration and acquisition costs principally comprises costs related to the acquisition and integration of NPS Pharma, Viropharma, Dyax and Baxalta of $189.7 million, offset by a net credit relating to the change in the fair value of contingent consideration liabilities of $149.9 million. This net credit principally relates to the acquisition of Lumena, reflecting the agreement in the third quarter of 2015 to settle all future contingent milestones payable to former Lumena shareholders for a one-time cash payment of $90.0 million and the acquisition of Lotus Tissue Repair, Inc. reflecting a lower probability of success for the SHP608 asset (for the treatment of Dystrophic Epidermolysis Bullosa (DEB)) as a result of certain preclinical toxicity findings.

6. Reorganization Costs

The Company incurred Reorganization costs totaling $47.9 million during the year ended December 31, 2017. The costs primarily related to the planned closure of certain facilities and associated costs of $28.1 million and employee termination and other costs of $10.6 million. As of December 31, 2017, cash payments associated with these costs were not significant. Other restructuring charges recorded, which were not significant, during the year ended December 31, 2017 relate to professional and consulting fees.

The Company incurred reorganization costs totaling $121.4 million during the year ended December 31, 2016. The costs primarily related to the planned closure of certain manufacturing facilities and associated asset impairments of $77.4 million and employee termination and other costs of $16.2 million. As of December 31, 2016, cash payments associated with these costs were not significant. Other restructuring charges recorded, which were not significant for the year ended December 31, 2016, relate to the closure of other offices and the related employee relocation.

In October 2014, the Company announced its plans to relocate positions to Lexington, Massachusetts from its Chesterbrook, Pennsylvania site and establish Lexington as the Company's U.S. operational headquarters in continuation of the One Shire efficiency program. During 2015, the Company incurred reorganization costs totaling $97.9 million, primarily related to employee involuntary termination benefits and other reorganization costs primarily related to the Company's One Shire business reorganization. The One Shire reorganization was substantially completed as of December 31, 2015.

7. Results of Discontinued Operations

Following the divestment of the Company's DERMAGRAFT business in January 2014, the operating results associated with the DERMAGRAFT business have been classified as discontinued operations in the Company's Consolidated Statements of Operations for all periods presented.

During the year ended December 31, 2017, the Company recorded a gain of $18.0 million (net of tax of $8.9 million), primarily related to legal contingencies related to the divested DERMAGRAFT business and the release of escrow to Shire.

In January 2017, Shire entered into a final settlement agreement with the Department of Justice (DOJ) in the amount of $350.0 million, plus interest which was accrued in 2016 and paid during 2017.

After the civil settlement with the DOJ was finalized, Shire and Advanced BioHealing Inc.'s (ABH) equity holders entered into a settlement agreement and ABH's equity holders released the $37.5 million escrow to Shire. Shire released the claims against ABH equity holders upon receiving the entire amount held in escrow.

During the year ended December 31, 2016, the Company recorded a loss of $276.1 million (net of tax benefit of $98.8 million), primarily related to legal contingencies related to the divested DERMAGRAFT business.

During the year ended December 31, 2015, the Company recorded a loss from discontinued operations of $34.1 million (net of tax benefit of $18.9 million), primarily relating to a change in estimate in relation to reserves for onerous leases retained by the Company.

8. Accounts Receivable, Net

Accounts receivable as of December 31, 2017 of $3,009.8 million (December 31, 2016: $2,616.5 million), are stated at the invoiced amount and net of reserve for discounts and doubtful accounts of $271.5 million (December 31, 2016: $169.6 million).

Reserve for discounts and doubtful accounts:

(In millions)	2017	2016	2015
As of January 1,	$ 169.6	$ 55.8	$ 48.5
Provision charged to operations	1,408.1	838.1	424.2
Payments/credits	(1,306.2)	(724.3)	(416.9)
As of December 31,	$ 271.5	$ 169.6	$ 55.8

As of December 31, 2017, accounts receivable included $106.6 million (December 31, 2016: $102.2 million) related to royalties receivable.

9. Inventories

Inventories are stated at the lower of cost and net realizable value. Inventories comprise:

(In millions)	December 31, 2017	December 31, 2016
Finished goods	$ 926.1	$1,380.0
Work-in-progress	1,574.0	1,491.0
Raw materials	791.4	691.3
	$3,291.5	$3,562.3

For a more detailed description of inventories acquired, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

10. Prepaid Expenses and Other Current Assets

Components of prepaid expenses and other current assets are summarized as follows:

(In millions)	December 31, 2017	December 31, 2016
Prepaid expenses	$242.6	$183.9
Income tax receivable	179.9	237.5
Value added taxes receivable	59.8	40.3
Other current assets	313.0	344.6
	$795.3	$806.3

11. Property, Plant and Equipment, Net

Property, plant and equipment are recorded at historical cost, net of accumulated depreciation. Components of Property, plant and equipment, net are summarized as follows:

(In millions)	December 31, 2017	December 31, 2016
Land	$ 332.3	$ 337.9
Buildings and leasehold improvements	1,940.7	1,915.4
Machinery, equipment and other	3,106.3	2,547.2
Assets under construction	2,568.2	2,632.5
Total property, plant and equipment at cost	7,947.5	7,433.0
Less: Accumulated depreciation	(1,312.1)	(963.4)
Property, plant and equipment, net	$ 6,635.4	$6,469.6

Depreciation expense for the years ended December 31, 2017, 2016 and 2015 was $495.8 million, $292.9 million and $138.5 million, respectively.

During 2017, the Company determined it would divest certain facilities as part of its integration efforts. As of December 31, 2017, the Company classified $19.2 million of assets as held for sale, which were reported in Prepaid expenses and other current assets. The $19.2 million of held for sale assets was net of $27.7 million of impairment charges recorded during 2017 and consisted primarily of property, plant and equipment. The impairment charges were reported in Integration and acquisition costs.

The Company also completed the sales of certain assets during 2017 that were previously classified as held for sale for total cash proceeds of $34.6 million. Prior to the sales, the Company recorded held for sale impairment charges of $44.1 million on those assets in 2017, which were also reported in Integration and acquisition costs.

12. Intangible assets

The following table summarizes the Company's intangible assets:

(In millions)	Currently marketed products	IPR&D	Other intangible assets	Total
December 31, 2017				
Gross acquired intangible assets	$31,973.5	$5,113.9	$ 835.9	$37,923.3
Accumulated amortization	(4,549.2)	—	(328.0)	(4,877.2)
Intangible assets, net	$27,424.3	$5,113.9	$ 507.9	$33,046.1
December 31, 2016				
Gross acquired intangible assets	$31,217.5	$5,746.6	$ 842.2	$37,806.3
Accumulated amortization	(2,908.6)	—	(200.2)	(3,108.8)
Intangible assets, net	$28,308.9	$5,746.6	$ 642.0	$34,697.5

Other intangible assets are comprised primarily of royalty rights and other contract rights associated with Baxalta, Dyax and NPS.

The change in the net book value of intangible assets for the years ended December 31, 2017 and 2016 is shown in the table below:

(In millions)	2017	2016
As of January 1,	$34,697.5	$ 9,173.3
Acquisitions	(1,385.0)	27,462.8
Amortization charged	(1,768.4)	(1,173.4)
Impairment charges	(20.0)	(8.9)
Foreign currency translation	1,522.0	(756.3)
As of December 31,	$33,046.1	$34,697.5

The decrease in Intangible assets, net during the year ended December 31, 2017 relates to the measurement period adjustments of the acquisition of Baxalta and amortization of intangible assets. For a more detailed description of measurement period adjustments, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

In connection with the acquisition of Baxalta, the Company acquired IP rights related to currently marketed products of $21,165.0 million, IPR&D assets of $160.0 million and other contract rights of $42.2 million. For a more detailed description of this acquisition, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

In connection with the acquisition of Dyax on January 22, 2016, the Company acquired IP rights related to currently marketed products of $135.0 million, IPR&D assets of $4,100.0 million and royalty rights of $425.0 million. For a more detailed description of this acquisition, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

Estimated amortization expense can be affected by various factors including future acquisitions, disposals of product rights, regulatory approval and subsequent amortization of acquired IPR&D projects, foreign exchange movements and the technological advancement and regulatory approval of competitor products. The estimated future amortization of acquired intangible assets for the next five years is expected to be as follows:

(In millions)	Anticipated future amortization
2018	$1,891.6
2019	1,668.4
2020	1,570.3
2021	1,536.7
2022	1,511.0

13. Goodwill

The following table provides a roll-forward of the Goodwill balance:

(In millions)	2017	2016
As of January 1,	$17,888.2	$ 4,147.8
Acquisitions	1,076.2	14,124.5
Foreign currency translation and other	867.3	(384.1)
As of December 31,	$19,831.7	$17,888.2

The increase in Goodwill during the year ended December 31, 2017 related to the measurement period adjustments of the acquisition of Baxalta. For a more detailed description of measurement period adjustments, refer to Note 3, Business Combinations, to these Consolidated Financial Statements.

14. Fair Value Measurement

Assets and liabilities that are measured at fair value on a recurring basis

As of December 31, 2017 and December 31, 2016, the following financial assets and liabilities are measured at fair value on a recurring basis using quoted prices in active markets for identical assets (Level 1); significant other observable inputs (Level 2); and significant unobservable inputs (Level 3).

	Fair value			
(In millions)	Total	Level 1	Level 2	Level 3
As of December 31, 2017				
Financial assets:				
Marketable equity securities	$ 89.7	$89.7	$ —	$ —
Marketable debt securities	17.9	3.8	14.1	—
Derivative instruments	17.9	—	17.9	—
Total assets	$ 125.5	$93.5	$32.0	$ —
Financial liabilities:				
Joint venture net written option	$ 40.0	$ —	$ —	$ 40.0
Derivative instruments	14.2	—	14.2	—
Contingent consideration payable	1,168.2	—	—	1,168.2
Total liabilities	$1,222.4	$ —	$14.2	$1,208.2

	Fair value			
(In millions)	Total	Level 1	Level 2	Level 3
As of December 31, 2016				
Financial assets:				
Marketable equity securities	$ 65.8	$65.8	$ —	$ —
Marketable debt securities	15.5	3.6	11.9	—
Derivative instruments	18.0	—	18.0	—
Total assets	$ 99.3	$69.4	$29.9	$ —
Financial liabilities:				
Derivative instruments	$ 8.3	$ —	$ 8.3	$ —
Contingent consideration payable	1,058.0	—	—	1,058.0
Total liabilities	$1,066.3	$ —	$ 8.3	$1,058.0

Marketable equity and debt securities are included within Investments in the Consolidated Balance Sheets. Contingent consideration payable is included within Other current liabilities and Other non-current liabilities in the Consolidated Balance Sheets. For information regarding the Company's derivative arrangements, refer to Note 15, Financial Instruments, to these Consolidated Financial Statements.

Certain estimates and judgments were required to develop the fair value amounts. The estimated fair value amounts shown above are not necessarily indicative of the amounts that the Company would realize upon disposition, nor do they indicate the Company's intent or ability to dispose of the financial instrument.

The following methods and assumptions were used to estimate the fair value of each material class of financial instrument:

- Marketable equity securities: the fair values of marketable equity securities are estimated based on quoted market prices for those investments.
- Marketable debt securities: the fair values of debt securities are obtained from pricing services or broker/dealers who either use quoted prices in an active market or proprietary pricing applications, which include observable market information for like or same securities.
- Derivative instruments: the fair values of the swap and forward foreign exchange contracts have been determined using the month-end interest rate and foreign exchange rates, respectively.
- Joint venture net written option and contingent consideration payable: the fair value of the contingent consideration payable has been estimated using the income approach (using a probability weighted discounted cash flow method).

There were no changes in valuation techniques or inputs utilized or transfers between fair value measurement levels during the years ended December 31, 2017 and 2016.

Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

Contingent consideration payable

(In millions)	2017	2016
Balance as of January 1,	$1,058.0	$ 475.9
Acquisitions	(4.0)	565.4
Change in fair value included in earnings	120.7	11.1
Other	(6.5)	5.6
Balance as of December 31,	$1,168.2	$1,058.0

In 2017, the increase in contingent consideration payable was primarily related to the Company's change in fair value of contingent consideration resulting from positive topline data for SHP643. In 2016, the increase in contingent consideration payable was related to the Company's acquisition of Dyax and Baxalta. Other contingent consideration payable primarily relates to foreign currency adjustments.

Of the $1,168.2 million of contingent consideration payable as of December 31, 2017, $626.8 million is recorded within Other current liabilities and $541.4 million is recorded within Other non-current liabilities in the Company's Consolidated Balance Sheets.

Joint venture net written option

In March 2017, Shire executed option agreements related to a joint venture that provides Shire with a call option on the partner's investment in joint venture equity and the partner with a put option on its investment in joint venture equity. The Company had a liability of $40.0 million for the net written option based on the estimated fair value of these options as of December 31, 2017 and the Company re-measures the instrument to fair value through the Consolidated Statements of Operations.

Quantitative Information about Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

Financial liabilities:

As of December 31, 2017	Fair value as of the measurement date			
(In millions, except %)	Fair value	Valuation technique	Significant unobservable inputs	Range
Contingent consideration payable	$1,168.2	Income approach (probability weighted discounted cash flow)	• Cumulative probability of milestones being achieved	• 21.9 to 90%
			• Assumed market participant discount rate	• 1.8 to 8.7%
			• Periods in which milestones are expected to be achieved	• 2018 to 2040
			• Forecast quarterly royalties payable on net sales of relevant products	• $0.1 to $6.5 million

Contingent consideration payable represents future milestones and royalties the Company may be required to pay in conjunction with various business combinations and license agreements. The fair value of the

Company's contingent consideration payable could significantly increase or decrease due to changes in certain assumptions which underpin the fair value measurements. Each set of assumptions is specific to the individual contingent consideration payable.

Financial liabilities:

As of December 31, 2017	Fair value as of the measurement date			
(In millions, except %)	Fair value	Valuation technique	Significant unobservable inputs	Range
Joint venture net written option	$40.0	Income approach (probability weighted discounted cash flow)	• Cash flow scenario probability weighting	• 0 to 80%
			• Assumed market participant discount rate	• 16%

Financial assets and liabilities that are disclosed at fair value

The carrying amounts and estimated fair values as of December 31, 2017 and December 31, 2016 of the Company's financial assets and liabilities that are not measured at fair value on a recurring basis are as follows:

	December 31, 2017		December 31, 2016	
(In millions)	Carrying amount	Fair value	Carrying amount	Fair value
Financial liabilities:				
SAIIDAC notes	$12,050.2	$11,913.7	$12,039.2	$11,633.8
Baxalta notes	5,057.7	5,229.9	5,063.6	5,066.5
Capital lease obligation	349.2	349.2	353.6	353.6

The estimated fair values of long-term debt were based upon recent observable market prices and are considered Level 2 in the fair value hierarchy. The estimated fair value of capital lease obligations is based on Level 2 inputs.

The carrying amounts of other financial assets and liabilities approximate their estimated fair value due to their short-term nature, such as liquidity and maturity of these amounts, or because there have been no significant changes since the asset or liability was last re-measured to fair value on a non-recurring basis.

15. Financial Instruments

Foreign Currency Contracts

Due to the global nature of its operations, portions of the Company's revenues and operating expenses are recorded in currencies other than the U.S. dollar. The value of revenues and operating expenses measured in U.S. dollars is therefore subject to changes in foreign currency exchange rates. The main trading currencies of the Company are the U.S. dollar, Euro, British pound sterling, Swiss franc, Canadian dollar and Japanese yen.

Transactional exposure arises where transactions occur in currencies different to the functional currency of the relevant subsidiary. It is the Company's policy that these exposures are minimized to the extent practicable by denominating transactions in the subsidiary's functional currency. Where significant exposures remain, the Company uses foreign exchange contracts (spot, forward and swap contracts) to manage the exposure for balance sheet assets and liabilities that are denominated in currencies different to the functional currency of the relevant subsidiary.

The Company has master netting agreements with a number of counterparties to these foreign exchange contracts and on the occurrence of specified events, the Company has the ability to terminate contracts and settle them with a net payment by one party to the other. The Company has elected to present derivative assets and derivative liabilities on a gross basis in the Consolidated Balance Sheet. The Company does not have credit risk related contingent features or collateral linked to the derivatives.

Designated Foreign Currency Derivatives

Certain foreign currency forward contracts were designated as cash flow hedges and accordingly, to the extent effective, any unrealized gains or losses on these foreign currency forward contracts were reported in AOCI. Realized gains and losses for the effective portion of such contracts were recognized in revenue or cost of sales when the sale of product in the currency being hedged was recognized. To the extent ineffective, hedge transaction gains and losses were reported in Other income/(expense), net.

The Company did not have any designated foreign currency contracts as of December 31, 2017. As of December 31, 2016, the Company had designated foreign currency forward contracts with a total notional value of $78.7 million with a maximum duration of six months; the fair value of these contracts was a net asset of $4.2 million.

Undesignated Foreign Currency Derivatives

The Company uses forward contracts to mitigate the foreign currency risk related to certain balance sheet positions, including intercompany and third-party receivables and payables. The Company has not elected hedge accounting for these derivative instruments as the duration of these contracts is typically three months or less. The changes in fair value of these derivatives are reported in earnings.

The table below presents the notional amount, maximum duration and fair value for the undesignated foreign currency derivatives:

(In millions, except duration)	December 31, 2017	December 31, 2016
Notional amount	$ 1,672.3	$ 1,309.1
Maximum duration (in months)	3 months	3 months
Fair value - net asset	$ 11.4	$ 6.7

The Company considers the impact of its and its counterparties' credit risk on the fair value of the contracts as well as the ability of each party to execute its contractual obligations. As of December 31, 2017, credit risk did not materially change the fair value of the Company's foreign currency contracts.

Interest Rate Contracts

The Company is exposed to the risk that its earnings and cash flows could be adversely impacted by fluctuations in benchmark interest rates relating to its debt obligations on which interest is set at floating rates. The Company's policy is to manage this risk to an acceptable level. The Company is principally exposed to interest rate risk on any borrowings under the Company's various debt facilities and on part of the senior notes assumed in connection with the acquisition of Baxalta. Interest on each of these debt obligations is set at floating rates, to the extent utilized. Shire's exposure under these facilities is to changes in U.S. dollar interest rates. For further details related to interest rates on the Company's various debt facilities, refer to Note 17, Borrowings and Capital Leases, to these Consolidated Financial Statements.

Designated Interest Rate Derivatives

As of December 31, 2017, interest rate swap contracts designated as fair value hedges were outstanding. The effective portion of the changes in the fair value of interest rate swap contracts are recorded as a component of the underlying Baxalta Notes with the ineffective portion recorded in Interest expense. Any net interest payments made or received on the interest rate swap contracts are recognized as a component of Interest expense in the Consolidated Statements of Operations.

The table below presents the notional amount, maturity and fair value for the designated interest rate derivatives:

(In millions, except maturity)	December 31, 2017	December 31, 2016
Notional amount	$ 1,000.0	$ 1,000.0
Maturity	June 2020 and June 2025	June 2020 and June 2025
Fair value - net liability	$ (7.7)	$ (1.2)

For the years ended December 31, 2017 and 2016, the Company recognized losses of $4.3 million and $6.0 million, respectively, as ineffectiveness related to these contracts as a component of Interest expense.

Summary of Derivatives

The following tables summarize the income statement locations and gains and losses on the Company's designated and undesignated derivative instruments:

(In millions)	Gain/(loss) recognized in OCI		Income Statement location	Gain reclassified from AOCI into income	
Years ended December 31,	2017	2016		2017	2016
Designated derivative instruments					
Cash flow hedges					
Foreign exchange contracts	$(0.9)	$14.6	Cost of sales	$ 8.8	$ 4.9

(In millions)	Income Statement location	Gain/(loss) recognized in income	
Years ended December 31,		2017	2016
Fair value hedges			
Interest rate contracts, net	Interest expense	$ (4.3)	$ (6.0)
Undesignated derivative instruments			
Foreign exchange contracts	Other income/(expense), net	84.8	(40.2)
Interest rate swap contracts	Interest expense	—	(3.2)

Summary of Derivatives

The following table presents the classification and estimated fair value of derivative instruments:

	Asset position			Liability position		
		Fair value			Fair value	
(In millions)	Balance Sheet location	December 31, 2017	December 31, 2016	Balance Sheet location	December 31, 2017	December 31, 2016
Designated derivative Instruments						
Foreign exchange contracts	Prepaid expenses and other current assets	$ —	$ 4.3	Other current liabilities	$ —	$ 0.1
Interest rate contracts	Long term borrowings	—	0.1	Long term borrowings	7.7	1.3
		$ —	$ 4.4		$ 7.7	$ 1.4
Undesignated derivative instruments						
Foreign exchange contracts	Prepaid expenses and other current assets	$17.9	$13.6	Other current liabilities	$ 6.5	$ 6.9
Total derivative fair value		$17.9	$18.0		$14.2	$ 8.3
Potential effect of rights to offset		(2.7)	(1.7)		(2.7)	(1.7)
Net derivative		$15.2	$16.3		$11.5	$ 6.6

16. Accounts Payable and Accrued Expenses

Components of Accounts payable and accrued expenses are summarized as follows:

(In millions)	December 31, 2017	December 31, 2016
Accounts payable and accrued purchases	$ 914.6	$ 911.9
Accrued employee compensation and benefits payable	571.4	574.8
Accrued rebates	1,612.7	1,431.3
Accrued sales returns	175.7	118.4
Other accrued expenses	910.1	1,276.0
	$4,184.5	$4,312.4

17. Borrowings and Capital Leases

(In millions)	December 31, 2017	December 31, 2016
Short term borrowings:		
Baxalta notes	$ 748.8	$ —
Borrowings under the Revolving Credit Facilities Agreement	810.0	450.0
Borrowings under the November 2015 Facilities Agreement	1,196.3	2,594.8
Capital leases	7.5	6.4
Other borrowings	26.1	16.8
	$ 2,788.7	$ 3,068.0
Long term borrowings:		
SAIIDAC notes	$12,050.2	$12,039.2
Baxalta notes	4,308.9	5,063.6
Borrowings under the November 2015 Facilities Agreement	—	2,391.8
Capital leases	341.7	347.2
Other borrowings	51.6	58.0
	$16,752.4	$19,899.8
Total borrowings and capital leases	$19,541.1	$22,967.8

For a more detailed description of the Company's financing agreements, refer below.

The future payments related to short and long term borrowings and capital lease obligations, on maturities, as of December 31, 2017 are as follows:

(In millions)	
2018	$ 2,804.7
2019	3,349.4
2020	1,040.9
2021	3,329.0
2022	519.5
Thereafter	8,591.9
Total obligations	19,635.4
Less: Debt issuance cost and discount	(94.3)
Total debt obligations	$19,541.1

SAIIDAC Notes

On September 23, 2016, Shire Acquisitions Investments Ireland Designated Activity Company (SAIIDAC), a wholly owned subsidiary of Shire plc, issued unsecured senior notes with a total aggregate principal value of $12.1 billion (SAIIDAC Notes), guaranteed by Shire plc and, as of December 1, 2016, by Baxalta. Below is a summary of the SAIIDAC Notes as of December 31, 2017:

(In millions, except %)	Aggregate amount	Coupon rate	Effective interest rate in 2017	Carrying amount as of December 31, 2017
Fixed-rate notes due 2019	$ 3,300.0	1.900%	2.05%	$ 3,291.9
Fixed-rate notes due 2021	3,300.0	2.400%	2.53%	3,286.4
Fixed-rate notes due 2023	2,500.0	2.875%	2.97%	2,489.5
Fixed-rate notes due 2026	3,000.0	3.200%	3.30%	2,982.4
	$12,100.0			$12,050.2

As of December 31, 2017, there was $49.8 million of debt issuance costs and discount recorded as a reduction of the carrying amount of debt. These costs will be amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity.

Baxalta Notes

Shire plc guaranteed senior notes issued by Baxalta with a total aggregate principal amount of $5.0 billion in connection with the acquisition of Baxalta (Baxalta Notes). Below is a summary of the Baxalta Notes as of December 31, 2017:

(In millions, except %)	Aggregate principal	Coupon rate	Effective interest rate in 2017	Carrying amount as of December 31, 2017
		LIBOR plus		
Variable-rate notes due 2018	$ 375.0	0.78%	2.60%	$ 373.9
Fixed-rate notes due 2018	375.0	2.000%	2.00%	374.9
Fixed-rate notes due 2020	1,000.0	2.875%	2.80%	1,001.3
Fixed-rate notes due 2022	500.0	3.600%	3.30%	506.8
Fixed-rate notes due 2025	1,750.0	4.000%	3.90%	1,770.2
Fixed-rate notes due 2045	1,000.0	5.250%	5.10%	1,030.6
Total assumed Senior Notes	$5,000.0			$5,057.7

The effective interest rates above exclude the effect of any related interest rate swaps. The book values above include any premiums and adjustments related to hedging instruments. For further details related to the interest rate derivative contracts, please see Note 15, Financial Instruments, to these Consolidated Financial Statements.

Revolving Credit Facilities Agreement

On December 12, 2014, Shire entered into a $2.1 billion revolving credit facilities agreement (RCF) with a number of financial institutions. As of December 31, 2017, the Company utilized $810.0 million of the RCF. The RCF, which terminates on December 12, 2021, may be used for financing the general corporate purposes of Shire. The RCF incorporates a $250.0 million U.S. dollar and Euro swingline facility operating as a sub-limit thereof.

Term Loan Facilities Agreements

November 2015 Facilities Agreement

On November 2, 2015, Shire entered into a $5.6 billion facilities agreement (November 2015 Facilities Agreement), which is comprised of three amortizing credit facilities. The total amount outstanding under the November 2015 Facilities Agreement was $1.2 billion as of December 31, 2017. During the year ended December 31, 2017, the Company made $0.4 billion of advance repayments under November 2015 Facility A and $2.2 billion of scheduled and advance repayments under November 2015 Facility B. Both November 2015

Facility A and November 2015 Facility B were fully repaid during the year ended December 31, 2017. The Company also made $1.2 billion of advance repayments under November 2015 Facility C; consequently, the amount outstanding under November 2015 Facility C was $1.2 billion as of December 31, 2017 maturing on November 2, 2018.

Short-term uncommitted lines of credit (Credit lines)

Shire has access to various Credit lines from a number of banks which are available to be utilized from time to time to provide short-term cash management flexibility. These Credit lines can be withdrawn by the banks at any time. The Credit lines are not relied upon for core liquidity. As of December 31, 2017, these Credit lines were not utilized.

Capital Lease Obligations

The capital leases are primarily related to office and manufacturing facilities. As of December 31, 2017, the total capital lease obligations, including current portions, were $349.2 million.

18. Other Current Liabilities

Components of Other current liabilities are summarized as follows:

(In millions)	December 31, 2017	December 31, 2016
Income taxes payable	$ 65.1	$ 46.2
Value added taxes	30.4	17.6
Contingent consideration payable	626.8	65.1
Other current liabilities	186.5	234.0
	$908.8	$362.9

19. Retirement and Other Benefit Programs

The Company sponsors various pension and other post-employment benefit (OPEB) plans in the U.S. and other countries.

Reconciliation of Pension and OPEB Plan Obligations and Funded Status

The following provides information about projected benefit obligations, plan assets, the funded status and weighted-average assumptions of the OPEB and pension plans:

(In millions)	December 31, 2017			December 31, 2016		
	U.S. pensions	International pensions	OPEB (U.S.)	U.S. pensions	International pensions	OPEB (U.S.)
Benefit obligations						
Beginning of period	$ 384.1	$ 581.4	$ 25.0	$ —	$ —	$ —
Assumption of benefit obligations	—	—	—	441.6	503.8	23.5
Service cost	14.6	39.4	1.5	13.0	18.6	0.8
Interest cost	15.6	4.9	1.0	11.1	3.2	0.6
Participant contributions	—	8.9	—	—	3.2	—
Actuarial loss/(gain)	34.4	(22.9)	(1.2)	(10.6)	(29.8)	0.1
Benefit payments	(5.1)	(19.8)	(0.2)	(1.6)	(9.1)	—
Plan amendments	—	—	(9.0)	—	—	—
Settlements	—	(10.4)	—	—	(3.2)	—
Curtailments	—	(4.0)	—	(73.4)	—	—
Foreign exchange	—	45.4	—	—	(18.3)	—
Other	—	(5.0)	—	4.0	113.0	—
End of Period	$ 443.6	$ 617.9	$ 17.1	$ 384.1	$ 581.4	$ 25.0
Fair value of plan assets						
Beginning of period	$ 228.4	$ 197.9	$ —	$ —	$ —	$ —
Assumption of plan assets	—	—	—	218.0	140.5	—
Actual return on plan assets	35.4	12.3	—	8.3	2.0	—
Employer contributions	0.9	32.2	0.2	0.4	12.3	—
Participant contributions	—	8.9	—	—	3.2	—
Benefit payments	(5.0)	(19.8)	(0.2)	(1.6)	(9.1)	—
Settlements	—	(10.4)	—	—	(3.2)	—
Foreign exchange	—	11.9	—	—	(3.8)	—
Other	—	4.2	—	3.3	56.0	—
End of Period	259.7	237.2	—	228.4	197.9	—
Funded status	$(183.9)	$(380.7)	$(17.1)	$(155.7)	$(383.5)	$(25.0)

Amounts recognized in the Consolidated Balance Sheets

(In millions)	December 31, 2017			December 31, 2016		
	U.S. pensions	International pensions	OPEB (U.S.)	U.S. pensions	International pensions	OPEB (U.S.)
Other current liabilities	$ (0.8)	$ (15.7)	$ (0.4)	$ (0.6)	$ (8.8)	$ (0.2)
Other non-current liabilities	(183.1)	(365.0)	(16.7)	(155.1)	(374.7)	(24.8)
Net liability recognized	$(183.9)	$(380.7)	$(17.1)	$(155.7)	$(383.5)	$(25.0)

The majority of the Company's pension and OPEB plans were assumed with the acquisition of Baxalta on June 3, 2016.

The Company amended the OPEB and adopted a plan freeze effective December 31, 2017. According to the amendment, employees who have not met certain criteria, may not qualify as an eligible retiree regardless of such employee's age or service at the employee's date of termination. As a result, a prior service credit was recorded during the year ended December 31, 2017.

On December 31, 2016, the Company amended the U.S. pension plan which eliminated the estimate of future compensation levels beyond December 31, 2017, the effective date. As a result, a curtailment gain of $69.4 million was recorded during 2016.

For the year ended December 31, 2016, Other primarily represents the recognition of additional defined benefit plan in Switzerland.

Accumulated Benefit Obligation Information

The pension obligation represents the projected benefit obligation (PBO) as of December 31, 2017 and 2016. The PBO incorporates assumptions relating to future compensation levels. The accumulated benefit obligation (ABO) is the same as the PBO except that it does not include assumptions relating to future compensation levels. The ABO as of December 31, 2017 for the U.S. pension plans was $443.6 million (December 31, 2016: $373.2 million). The ABO as of December 31, 2017 for the International pension plans was $494.2 million (December 31, 2016: $457.9 million).

The funded status figures and ABO disclosed above reflect all of the Company's pension plans. The following ABO and plan asset information includes only those individual plans that have an ABO in excess of plan assets.

(In millions)	December 31, 2017	December 31, 2016
US		
ABO	$443.6	$373.2
Fair value of plan assets	259.7	228.4
International		
ABO	469.0	437.5
Fair value of plan assets	209.6	176.2

Expected Net Pension and OPEB Plan Payments for the Next 10 Years

(In millions)	U.S. pensions	International pensions	OPEB (U.S.)
2018	$ 6.0	$ 28.1	$0.4
2019	7.7	20.7	0.5
2020	9.2	22.2	0.6
2021	10.7	24.3	0.8
2022	12.2	25.4	0.9
2023 through 2027	84.3	134.8	6.8

The expected net benefit payments reflect the Company's share of the total net benefits expected to be paid from the plans' assets (for funded plans) or from the Company's assets (for unfunded plans) as of December 31, 2017. The federal subsidies relating to the Medicare Prescription Drug, Improvement and Modernization Act are not expected to be significant.

Amounts Recognized in AOCI

The pension and OPEB plans' gains or losses not yet recognized in net periodic benefit cost are recognized in AOCI and amortized from AOCI to net periodic benefit cost in the future. The following is a summary of the pre-tax net gain/(losses) recorded in AOCI:

	December 31, 2017			December 31, 2016		
(In millions)	U.S. pensions	International pensions	OPEB (U.S.)	U.S. pensions	International pensions	OPEB (U.S.)
(Loss)/gain arising during the year	$(14.9)	$41.2	$10.1	$ 83.4	$(10.3)	$ 0.1
Reclassification of gain to income statement	—	(1.3)	—	(69.4)	—	—
Pension and other employee benefit (loss)/gain, pre-tax	$(14.9)	$39.9	$10.1	$ 14.0	$(10.3)	$ 0.1

Refer to Note 20, Accumulated Other Comprehensive Income/(Loss), for the net of tax balances included in AOCI as of December 31, 2017 and 2016. The Company does not expect to amortize a significant amount of AOCI to net periodic benefit cost in 2018.

In 2016, the reclassification of gain to the income statement represents the recognition of the curtailment gain associated with the U.S. pension plans as further described above.

Net Periodic Benefit Cost

The net periodic benefit cost is as follows:

(In millions)	December 31, 2017 U.S. pensions	December 31, 2017 International pensions	December 31, 2017 OPEB (U.S.)	December 31, 2016 U.S. pensions	December 31, 2016 International pensions	December 31, 2016 OPEB (U.S.)
Net periodic benefit cost						
Service cost	$ 14.6	$39.4	$ 1.5	$ 13.0	$18.6	$ 0.8
Interest cost	15.6	4.9	1.0	11.1	3.2	0.6
Expected return on plan assets	(15.9)	(7.4)	—	(8.9)	(3.9)	—
Curtailment and other	—	1.9	—	(69.4)	20.0	—
Net periodic benefit cost	$ 14.3	$38.8	$ 2.5	$(54.2)	$37.9	$ 1.4

In 2016, the net periodic benefit cost is from June 3, 2016, the date the Company assumed the obligations from Baxalta, through December 31, 2016.

In 2016 Curtailments and other relates to the recognition of a curtailment gain of $69.4 million associated with the U.S. pension plans as described above and a loss of $20.0 million for the recognition of a defined benefit plan in Switzerland.

Weighted-Average Assumptions Used in Determining Benefit Obligations at the Measurement Date

The following weighted-average assumptions were used in calculating measurement of benefit obligations:

	December 31, 2017 U.S. pensions	December 31, 2017 International pensions	December 31, 2017 OPEB (U.S.)	December 31, 2016 U.S. pensions	December 31, 2016 International pensions	December 31, 2016 OPEB (U.S.)
Discount rate	3.7%	1.0%	3.5%	4.2%	1.0%	4.3%
Rate of compensation increase	n/a	3.0%	n/a	3.8%	2.9%	n/a
Health care cost trend rate	n/a	n/a	6.0%	n/a	n/a	6.3%
Rate decreased to	n/a	n/a	5.0%	n/a	n/a	5.0%
by the year ended	n/a	n/a	2022	n/a	n/a	2022

Weighted-Average Assumptions Used in Determining Net Periodic Benefit Cost

The following weighted-average assumptions were used in determining net periodic benefit cost:

	December 31, 2017 U.S. pensions	December 31, 2017 International pensions	December 31, 2017 OPEB (U.S.)	December 31, 2016 U.S. pensions	December 31, 2016 International pensions	December 31, 2016 OPEB (U.S.)
Discount rate	4.2%	1.0%	4.2%	4.1%	1.0%	4.2%
Expected return on plan assets	7.0%	3.4%	n/a	7.0%	4.5%	n/a
Rate of compensation increase	3.8%	3.0%	n/a	3.8%	3.2%	n/a
Health care cost trend rate	n/a	n/a	6.0%	n/a	n/a	6.5%
Rate decreased to	n/a	n/a	5.0%	n/a	n/a	5.0%
by the year end	n/a	n/a	2022	n/a	n/a	2022

The Company establishes the expected return on plan assets assumption based primarily on a review of historical compound average asset returns, both Company-specific and the broad market (and considering the Company's asset allocations), an analysis of current market and economic information and future expectations.

The effect of a one-percent change in the assumed healthcare cost trend rate would not have a significant impact on the OPEB plan benefit obligation as of December 31, 2017 or the plan's service and interest cost during 2017.

Pension Plan Assets

A committee of members of senior management is responsible for supervising, monitoring and evaluating the invested assets of the Company's funded pension plans. The committee abides by policies and

procedures relating to investment goals, targeted asset allocations, risk management practices, allowable and prohibited investment holdings, diversification, use of derivatives, the relationship between plan assets and benefit obligations, and other relevant factors and considerations. In the United States, Goldman Sachs Asset Management acts as an outsourced chief investment officer (oCIO) to perform the day-to-day management of pension assets.

The policies and procedures include the following:

- Ability to pay all benefits when due;
- Targeted long-term performance expectations relative to applicable market indices, such as Standard & Poor's, Russell, MSCI EAFE, and other indices;
- Targeted asset allocation percentage ranges (summarized below), and periodic reviews of these allocations;
- Specified investment holding and transaction prohibitions (for example, private placements or other restricted securities, securities that are not traded in a sufficiently active market, short sales, certain derivatives, commodities and margin transactions);
- Specified portfolio percentage limits on foreign holdings; and
- Periodic monitoring of oCIO performance and adherence to policies.

Plan assets are invested using a total return investment approach whereby a mix of equity securities, debt securities and other investments are used to preserve asset values, diversify risk and exceed the planned benchmark investment return. Investment strategies and asset allocations are based on consideration of plan liabilities, the plans' funded status and other factors, such as the plans' demographics and liability durations. Investment performance is reviewed on a quarterly basis and asset allocations are reviewed at least annually.

Plan assets are managed in a balanced equity and fixed income portfolio. The target allocations for plan assets are 75% in an equity portfolio and 25% in a fixed income portfolio. The policy includes an allocation range based on each individual investment type within the major portfolios that allows for a variance from the target allocations of approximately 5%. The equity portfolio may include common stock of U.S. and international companies, common/collective trust funds, mutual funds, hedge funds and real asset investments. The fixed income portfolio may include cash, money market funds with an original maturity of three months or less, U.S. and foreign government and governmental agency issues, common/collective trust funds, corporate bonds, municipal securities, derivative contracts and asset-backed securities.

While the committee provides oversight over plan assets for U.S. and international plans, the summary above is specific to the plans in the U.S. The plan assets for international plans are managed and allocated by the entities in each country, with input and oversight provided by the committee.

The following pension assets are recorded at fair value on a recurring basis using quoted prices in active markets for identical assets (Level 1); significant other observable inputs (Level 2); and significant unobservable inputs (Level 3). Investments that are measured at fair value using the net asset value per share or its equivalent as a practical expedient are not classified in the fair value hierarchy. The fair value amounts presented in this table is intended to permit reconciliation of the fair value hierarchy and the fair value of plan assets.

U.S. pension plan assets

(In millions)	Fair value Level 1	Level 2	Level 3	Total
As of December 31, 2017				
Assets				
Equity				
Mutual fund	$17.9	$—	$—	$ 17.9
Total investments at fair value	$17.9	$—	$—	$ 17.9
Fixed income				
Cash equivalents				6.2
Collective trust funds				52.4
Mutual fund				12.7
Equity				
Collective trust funds				116.6
Mutual funds				42.0
Hedge fund				11.9
Fair value of pension plan assets				$259.7

U.S. pension plan assets

(In millions)	Fair value Level 1	Level 2	Level 3	Total
As of December 31, 2016				
Assets				
Equity				
Mutual fund	$16.5	$—	$—	$ 16.5
Total investments at fair value	$16.5	$—	$—	$ 16.5
Fixed Income				
Cash equivalent				5.7
Collective trust funds				46.4
Mutual fund				11.4
Equity				
Collective trust funds				100.4
Mutual funds				36.9
Hedge fund				11.1
Fair value of pension plan assets				$228.4

International pension plan assets

(In millions)	Fair value Level 1	Level 2	Level 3	Total
As of December 31, 2017				
Assets				
Fixed income				
Cash and cash equivalents	$ 3.8	$ —	$—	$ 3.8
Government agency issues	1.7	—	—	1.7
Corporate bonds	14.4	—	—	14.4
Mutual funds	32.4	—	—	32.4
Equity				
Common stock - large cap	24.3	—	—	24.3
Mutual funds	50.3	—	—	50.3
Real estate funds	14.3	6.4	—	20.7
Other holdings	—	89.6	—	89.6
Fair value of pension plan assets	$141.2	$96.0	$—	$237.2

International pension plan assets

(In millions)	Fair value Level 1	Level 2	Level 3	Total
As of December 31, 2016				
Assets				
Fixed income				
Cash and cash equivalents	$ 6.2	$ —	$—	$ 6.2
Government agency issues	0.6	—	—	0.6
Corporate bonds	21.1	—	—	21.1
Mutual funds	24.4	—	—	24.4
Equity				
Common Stock:				
Large cap	19.9	—	—	19.9
Mid cap	1.6	—	—	1.6
Total common stock	21.5	—	—	21.5
Mutual funds	40.6	—	—	40.6
Real estate funds	8.4	3.7	—	12.1
Other holdings	—	71.4	—	71.4
Fair value of pension plan assets	$122.8	$75.1	$—	$197.9

The assets and liabilities of the Company's pension plans are valued using the following valuation methods:

Investment category	Valuation methodology
Cash and cash equivalents	These largely consist of a short-term investment fund, U.S. dollars and foreign currency. The fair value of the short-term investment fund is based on the net asset value
Government agency issues	Values are based on quoted prices in an active market
Corporate bonds	Values are based on the valuation date in an active market
Common stock	Values are based on the closing prices on the valuation date in an active market
Mutual funds	Values are based on the net asset value of the units held in the respective fund which are obtained from active markets or as reported by the fund managers
Collective trust funds and hedge funds	Values are based on the net asset value of the units held at year end
Real estate funds	The value of these assets are either determined by the net asset value of the units held in the respective fund which are obtained from active markets or based on the net asset value of the underlying assets of the fund provided by the fund manager
Other holdings	These primarily consist of insurance contracts whose value is based on the underlying assets and other holdings valued primarily based on reputable pricing vendors that typically use pricing matrices or models

Expected Pension and OPEB Plan Funding

The Company's funding policy for its pension plans is to contribute amounts sufficient to meet legal funding requirements, plus any additional amounts that the Company may determine to be appropriate considering the funded status of the plans, tax deductibility, the cash flows generated by the Company, and other factors. Volatility in the global financial markets could have an unfavorable impact on future funding requirements.

The Company had no obligation to fund its principal plans in the U.S. for the year ended December 31, 2017 and did not make any voluntary contributions for the year ended December 31, 2017 and 2016. The Company is expected to make cash contributions of at least $13.0 million during 2018. During 2017 and 2016, the Company contributed to its international plans $20.6 million and $7.1 million, respectively and expects to make cash contributions of at least $18.6 million during 2018. Cash outflows related to OPEB plan were less than $1.0 million during the year ended December 31, 2017 and the Company expects to have less than $1.0 million cash outflows during 2018.

The Company continually reassesses the amount and timing of any discretionary contributions, which could be significant in any period.

The table below details the funded status percentage of the Company's pension plans as of December 31, 2017 and 2016 including certain plans that are unfunded in accordance with the guidelines of the Company's funding policy outlined above.

	As of December 31, 2017				
	United States		International		
(In millions, except %)	Qualified plan	Nonqualified plan	Funded plans	Unfunded plans	Total
Fair value of plan assets	$259.7	n/a	$237.2	n/a	$ 496.9
PBO	412.1	31.5	430.8	187.1	1,061.5
Funded status percentage	63%	n/a	55%	n/a	47%

	As of December 31, 2016				
	United States		International		
(In millions, except %)	Qualified plan	Nonqualified plan	Funded plans	Unfunded plans	Total
Fair value of plan assets	$228.4	n/a	$197.9	n/a	$ 426.3
PBO	352.8	31.3	413.7	167.7	965.5
Funded status percentage	65%	n/a	48%	n/a	44%

U.S. Defined Contribution Plans

In addition to benefits provided under the pension and OPEB plans described above, the Company provides benefits under defined contribution plans. The Company's most significant defined contribution plans are in the United States. The Company recognized expenses related to U.S. defined contribution plans of $60.0 million, $68.1 million and $38.9 million during 2017, 2016 and 2015, respectively.

20. Accumulated Other Comprehensive Income/(Loss)

The changes in Accumulated other comprehensive income/(loss) (AOCI), net of their related tax effects, for the year ended December 31, 2017 are as follows:

(In millions)	Foreign currency translation adjustment	Pension and other employee benefits	Unrealized holding gain/(loss) on available-for-sale securities	Hedging activities	Accumulated other comprehensive (loss)/income
As of January 1, 2017	$(1,505.4)	$ (5.2)	$ 6.6	$ 6.4	$(1,497.6)
Current period change:					
Other comprehensive income/(loss) before reclassifications	2,785.0	33.4	75.2	(0.6)	2,893.0
Amounts reclassified from AOCI	—	(0.7)	(13.9)	(5.8)	(20.4)
Net current period other comprehensive income/ (loss)	2,785.0	32.7	61.3	(6.4)	2,872.6
As of December 31, 2017	$ 1,279.6	$27.5	$ 67.9	$—	$ 1,375.0

The following is a summary of the amounts reclassified from AOCI to net income during the year ended December 31, 2017.

(In millions)	Amounts reclassified from AOCI 2017	Location of impact in Statements of Operations
Pension and other employee benefits		
Amortization of actuarial loss	$ (1.8)	Net periodic benefit cost
Curtailment gain	3.1	Cost of sales
	1.3	Total before tax
	(0.6)	Tax expense
	0.7	Net of tax
Available-for-sale securities		
Gain on available-for-sale securities	13.9	Other (expense)/income, net
	13.9	Total before tax
	—	Tax expense
	13.9	Net of Tax
Hedging activities		
Foreign exchange contracts	8.8	Cost of sales
	8.8	Total before tax
	(3.0)	Tax expense
	5.8	Net of tax
Total reclassifications for the period	$20.4	Total net of tax

The changes in Accumulated other comprehensive income/(loss) (AOCI), net of their related tax effects, for the year ended December 31, 2016 are as follows:

(In millions)	Foreign currency translation adjustment	Pension and other employee benefits	Unrealized holding loss on available-for-sale securities	Hedging activities	Accumulated other comprehensive loss
As of January 1, 2016	$ (182.1)	$ —	$(1.7)	$—	$ (183.8)
Current period change:					
Other comprehensive (loss)/income before reclassifications	(1,323.3)	38.3	8.3	9.9	(1,266.8)
Amounts reclassified from AOCI	—	(43.5)	—	(3.5)	(47.0)
Net current period other comprehensive (loss)/ income	(1,323.3)	(5.2)	8.3	6.4	(1,313.8)
As of December 31, 2016	$(1,505.4)	$ (5.2)	$ 6.6	$ 6.4	$(1,497.6)

The following is a summary of the amounts reclassified from AOCI to net income during the year ended December 31, 2016.

(In millions)	Amounts reclassified from AOCI 2016	Location of impact in Statements of Operations
Pension and employee benefits		
Curtailment gain	$ 69.4	Integration and acquisition costs
	69.4	Total before tax
	(25.9)	Tax expense
	43.5	Net of tax
Losses on hedging activities		
Foreign exchange contracts	4.9	Cost of sales
	4.9	Total before tax
	(1.4)	Tax expense
	3.5	Net of tax
Total reclassifications for the period	$ 47.0	Total net of tax

21. Taxation

The components of pre-tax income from continuing operations are as follows:

(In millions)	Years ended December 31, 2017	2016	2015
Ireland	$ 350.8	$214.3	$ (11.4)
United States	625.2	(75.3)	975.8
Rest of the world	917.4	347.1	421.4
	$1,893.4	$486.1	$1,385.8

The provision for income taxes on continuing operations by location of the taxing jurisdiction for the years ended December 31, 2017, 2016 and 2015 consisted of the following:

(In millions)	Years ended December 31, 2017	2016	2015
Current income taxes:			
Ireland	$ 46.6	$ 5.2	$ 0.8
U.S. federal tax	373.8	318.6	191.7
U.S. state and local taxes	55.8	30.2	17.3
Rest of the world	90.4	68.9	17.8
Total current taxes	566.6	422.9	227.6
Deferred taxes:			
Ireland	22.3	18.2	(38.8)
U.S. federal tax	(3,050.3)	(433.8)	(151.2)
U.S. state and local taxes	260.1	(74.1)	(1.7)
Rest of the world	(156.3)	(59.3)	10.2
Total deferred taxes	(2,924.2)	(549.0)	(181.5)
Total income taxes	$(2,357.6)	$(126.1)	$ 46.1

On December 22, 2017, President Trump signed the Tax Cuts and Jobs Act (Tax Act) into legislation. We have recorded a tax benefit of $2.5 billion, related to the remeasurement of deferred tax assets and liabilities offset by a tax expense of $90.0 million relating to the impact of the transition tax on the deemed repatriation of foreign income. Due to enactment late in the Company's annual reporting period, the Company was unable to obtain all of the requisite information and perform computations for all consequences of the Tax Act. In addition, it is expected that significant guidance will be issued that may change how the Company has computed the provisional amounts included in its annual financial statements for the year ended December 31, 2017. The Company will continue to assess the impact of the Tax Act during the measurement period and will record any adjustments to its provisional estimates as needed during 2018.

The Company determines the amount of income tax expense or benefit allocable to continuing operations using the incremental approach. The amount of income tax attributed to discontinued operations is disclosed in Note 7, Results of Discontinued Operations, in these Consolidated Financial Statements.

The reconciliation of income from continuing operations before income taxes and equity in earnings/(losses) of equity method investees at the statutory tax rate to the provision for income taxes is shown in the table below:

	Years ended December 31,		
	2017	2016	2015
Income from continuing operations before income taxes and equity in (losses)/earnings of equity method investees (in millions)	$1,893.4	$486.1	$1,385.8
Statutory tax rate (1)	25.0%	25.0%	25.0%
U.S. R&D credit	(6.6)%	(25.9)%	(7.7)%
Intra-group items (2)	(13.5)%	(44.4)%	(18.6)%
Other permanent items	2.5%	4.5%	1.1%
U.S. Domestic Manufacturing Deduction	(1.4)%	(4.0)%	(1.6)%
Acquisition Related Costs	— %	8.5%	1.1%
Irish Treasury Operations	(4.1)%	(8.6)%	0.6%
Change in valuation allowance	(0.5)%	7.9%	1.0%
Difference in taxation rates (3)	3.6%	13.0%	7.3%
Change in provisions for uncertain tax positions	(2.7)%	(1.5)%	(0.4)%
Prior year adjustment	(0.1)%	1.0%	(1.6)%
Change in fair value of contingent consideration	— %	3.7%	(3.8)%
Change in tax rates	(1.2)%	(5.1)%	0.9%
US Tax Reform	(130.3)%	— %	— %
US Transition Tax	4.8%	— %	— %
Provision for income taxes on continuing operations	(124.5)%	(25.9)%	3.3%

(1) In addition to being subject to the Irish corporation tax rate of 25.0% in 2017, the Company is also subject to income tax in other territories in which the Company operates, including: Canada (15.0%); France (33.3%); Germany (15.0%); Italy (24.0%); Japan (23.4%); Luxembourg (19.0%); the Netherlands (25.0%); Belgium (33.99%); Singapore (17.00%); Spain (25.0%); Sweden (22.0%); Switzerland (8.5%); United Kingdom (19.3%) and the U.S. (35.0%). The rates quoted represent the statutory federal income tax rates in each territory, and do not include any state taxes or equivalents or surtaxes or other taxes charged in individual territories, and do not purport to represent the effective tax rate for the Company in each territory.

(2) Intra-group items principally relate to the effect of intra-territory eliminations, the pre-tax effect of which has been eliminated in arriving at the Company's consolidated income from continuing operations before income taxes, noncontrolling interests, and equity in earnings/(losses) of equity method investees. The Company's intra-group items primarily arise from its acquisition of third parties that result in income and expense being received and taxed in different jurisdictions at various tax rates.

(3) The expense from the difference in taxation rates reflects the impact of the higher income tax rates in the United States offset by the impact of lower foreign jurisdiction income tax rates.

As detailed in the income tax rate reconciliation above, the Company's effective tax rate differs from the Irish statutory rate each year due to foreign taxes that are different than the Irish statutory rate and certain operations that are subject to tax incentives. In addition, the effective tax rate can be impacted each period by certain discrete factors and events, which, in 2017, included items related to U.S. tax reform.

Provisions for uncertain tax positions

The Company files income tax returns in the Republic of Ireland, the U.S. (both federal and state) and various other jurisdictions (see footnote 1 to the table above for major jurisdictions). With few exceptions, the Company is no longer subject to income tax examinations by tax authorities for years before 2013. Tax authorities in various jurisdictions are in the process of auditing the Company's tax returns for fiscal periods primarily after 2012, with the earliest being 2007; these tax audits cover primarily transfer pricing, but may include other areas.

While tax audits remain open, the Company also considers it reasonably possible that issues may be raised by tax authorities resulting in increases to the balance of unrecognized tax benefits, however, an estimate of such an increase cannot be made.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

(In millions)	2017	2016	2015
Balance as of January 1	$ 236.3	$216.3	$207.8
Increases based on tax positions related to the current year	132.6	34.3	27.0
Decreases based on tax positions taken in the current year	(128.5)	—	—
Increases for tax positions taken in prior years	3.1	0.5	3.9
Decreases for tax positions taken in prior years	(43.7)	(17.8)	(30.6)
Acquisition related items	(1.8)	29.5	17.9
Decreases resulting from settlements with the taxing authorities	—	(24.4)	(1.2)
Decreases as a result of expiration of the statute of limitations	(8.2)	(2.4)	(4.4)
Foreign currency translation adjustments (1)	0.7	0.3	(4.1)
Balance as of December 31 (2)	$ 190.5	$236.3	$216.3

(1) Foreign currency translation adjustments are recognized within Other Comprehensive Income.
(2) As of December 31, 2017, approximately $185.0 million (2016: $227.0 million, 2015: $207.0 million) of which would affect the effective rate if recognized.

There is no requirement to record any reserves or other contingencies related to the receipt of the break fee from AbbVie in 2014. The relevant tax return was submitted on September 23, 2015.

The Company does not anticipate any material changes in the next 12 months to the total amount of unrecognized tax benefits recorded as of December 31, 2017. As of the balance sheet date, the Company believes that its reserves for uncertain tax positions are adequate to cover the resolution of these audits. However, the resolution of these audits could have a significant impact on the financial statements if the settlement differs from the amount reserved.

The Company recognizes interest and penalties accrued related to unrecognized tax positions within income taxes. During the years ended December 31, 2017, 2016 and 2015, the Company recognized a charge/(credit) to income taxes of ($14.2 million), $4.2 million and $0.8 million in interest and penalties and the Company had a liability of $16.5 million, $30.8 million and $26.5 million for the payment of interest and penalties accrued as of December 31, 2017, 2016 and 2015, respectively.

Deferred taxes

The significant components of deferred tax assets and liabilities and their balance sheet classifications, as of December 31, are as follows:

(In millions)	December 31, 2017	December 31, 2016
Deferred tax assets:		
Deferred revenue	$ 3.5	$ 16.8
Inventory & warranty provisions	64.2	88.7
Losses carried forward (including tax credits)	1,687.1	1,907.3
Provisions for sales deductions and doubtful accounts	119.4	191.6
Intangible assets	50.3	79.7
Share-based compensation	93.3	137.5
Excess of tax value over book value of assets	11.5	14.2
Accruals and provisions	249.4	448.6
Other	26.2	78.5
Gross deferred tax assets	2,304.9	2,962.9
Less: valuation allowance	(635.7)	(569.4)
	1,669.2	2,393.5
Deferred tax liabilities:		
Intangible assets	(5,501.2)	(9,073.4)
Excess of book value over tax value in inventory	(9.6)	(150.3)
Excess of book value over tax value of assets and investments	(650.0)	(1,304.2)
Other	(67.8)	(91.6)
Net deferred tax liabilities	(4,559.4)	(8,226.0)
Balance sheet classifications:		
Deferred tax assets - non-current	188.8	96.7
Deferred tax liabilities - non-current	(4,748.2)	(8,322.7)
	$(4,559.4)	$(8,226.0)

As of December 31, 2017, the Company had a valuation allowance of $635.7 million (2016: $569.4 million; 2015: $416.1 million) to reduce its deferred tax assets to estimated realizable value. These valuation allowances related primarily to operating losses, capital losses, and tax-credit carry-forwards in Switzerland (2017: $200.0 million; 2016: $176.8 million; 2015: $131.5 million); U.S. (2017: $148.9 million; 2016: $155.1 million; 2015: $125.9 million); Ireland (2017: $22.3 million; 2016: $22.4 million; 2015: $22.2 million); and other foreign tax jurisdictions (2017: $264.5 million; 2016: $215.1 million; 2015: $136.5 million).

Management is required to exercise judgment in determining whether deferred tax assets will more likely than not be realized. A valuation allowance is established where there is an expectation that on the balance of probabilities management considers it is more likely than not that the relevant deferred tax assets will not be realized. In assessing the need for a valuation allowance, management weighs all available positive and negative evidence including cumulative losses in recent years, projections of future taxable income, carry forward and carry back potential under relevant tax law, expiration period of tax attributes, taxable temporary differences, and prudent and feasible tax-planning strategies.

The net increase in valuation allowances of $66.3 million includes (i) increases of $81.4 million relating to operating losses in various jurisdictions for which management considers that there is insufficient positive evidence related to the factors described above to overcome negative evidence, such as cumulative losses and expiration periods and therefore it is more likely than not that the relevant deferred tax assets will not be realized in full, and (ii) decreases of $15.1 million primarily related to U.S. state tax losses, which based on the assessment of factors described above now provides sufficient positive evidence to support the losses are more likely than not to be realized.

As of December 31, 2017, based upon a consideration of the factors described above management believes it is more likely than not that the Company will realize the benefits of these deductible differences, net of the valuation allowances. However, the amount of the deferred tax asset considered realizable could be adjusted in the future if these factors are revised in future periods.

The approximate tax effect of NOLs, capital losses and tax credit carry-forwards as of December 31, are as follows:

(In millions)	2017	2016
U.S. federal tax	$ 489.6	$ 687.1
U.S. state tax	140.3	170.7
Republic of Ireland	29.4	45.1
Foreign tax jurisdictions	723.8	614.9
R&D and other tax credits	303.9	389.5
	$1,687.0	$1,907.3

The approximate gross value of net operating losses (NOLs) and capital losses at December 31, 2017 is $11,137.5 million (2016: $10,843.1 million). The tax effected NOLs, capital losses and tax credit carry-forwards shown above have the following expiration dates:

(In millions)	December 31, 2017
Within 1 year	$ 1.4
Within 1 to 2 years	34.4
Within 2 to 3 years	18.4
Within 3 to 4 years	44.3
Within 4 to 5 years	50.1
Within 5 to 6 years	31.8
After 6 years	919.5
Indefinitely	587.1

The Company does not provide for deferred taxes on the excess of the financial reporting over the tax basis of investments in foreign subsidiaries that are essentially permanent in duration. As of December 31, 2017, that excess totaled $14.4 billion (2016: $16.6 billion). On December 22, 2017, President Trump signed tax reform legislation (HR 1) which includes a broad range of tax reform proposals affecting businesses, including the payment of a one-time tax or "toll charge" on previously unremitted earnings of certain non-US subsidiaries. Accordingly, the Company will no longer assert that any of the earnings that will be taxed as part of the toll charge are indefinitely reinvested (approximately $7.6 billion).

22. Earnings Per Share

The following table reconciles net income and loss and the weighted average ordinary shares outstanding for basic and diluted earnings per share (EPS) for the periods presented:

	Years ended December 31,		
(In millions)	2017	2016	2015
Income from continuing operations, net of taxes	$4,253.5	$ 603.5	$1,337.5
Gain/(loss) from discontinued operations, net of taxes	18.0	(276.1)	(34.1)
Numerator for basic and diluted earnings per share	$4,271.5	$ 327.4	$1,303.4
Weighted average number of shares:			
Basic	906.5	770.1	590.4
Effect of dilutive shares:			
Share-based awards to employees	5.5	6.1	2.7
Diluted	912.0	776.2	593.1
Earnings per Ordinary Share – basic			
Earnings from continuing operations	4.69	0.78	2.27
Earnings/(loss) from discontinued operations	0.02	(0.35)	(0.06)
Earnings per Ordinary Share – basic	4.71	0.43	2.21
Earnings per Ordinary Share – diluted			
Earnings from continuing operations	4.66	0.77	2.26
Earnings/(loss) from discontinued operations	0.02	(0.35)	(0.06)
Earnings per Ordinary Share – diluted	4.68	0.42	2.20

Weighted average number of basic shares excludes shares purchased by the Employee Benefit Trust and those under the shares buy-back program, which are both presented by Shire as treasury stock. Share-based awards to employees are calculated using the treasury method.

The share equivalents not included in the calculation of the diluted weighted average number of shares are shown below:

	Years ended December 31,		
(Number of shares in millions)	2017	2016	2015
Share-based awards to employees	15.2	4.1	3.4

Certain stock options have been excluded from the calculation of diluted EPS for the years ended December 31, 2017, 2016 and 2015 because either their exercise prices exceeded Shire's average share price during the calculation period, the required performance conditions were not satisfied as of the balance sheet date or their inclusion would have been antidilutive.

23. Share-based Compensation Plans

Total share-based compensation recorded by the Company during the years ended December 31, 2017, 2016 and 2015 by line item is as follows:

	Years ended December 31,		
(In millions)	2017	2016	2015
Cost of sales	$ 35.6	$ 23.3	$ 7.6
Research and development	27.3	46.9	28.6
Selling, general and administrative	97.2	67.1	37.4
Integration and acquisition costs	14.8	181.2	—
Reorganization costs	—	—	26.7
Total	174.9	318.5	100.3
Less tax	(43.4)	(85.3)	(28.4)
	$131.5	$233.2	$ 71.9

During the year ended December 31, 2017, the Company incurred total expense of $61.6 million (2016: $223.1 million, 2015: $nil) related to replacement awards held by Baxalta employees as further described below. This includes integration related expenses of $14.8 million during the year ended December 31, 2017 (2016: $171.0 million, 2015: $nil), primarily due to the acceleration of unrecognized expense associated with certain employees impacted by the integration.

There were no capitalized share-based compensation costs as of December 31, 2017, 2016 and 2015.

As of December 31, 2017, $218.3 million (2016: $244.2 million, 2015: $115.3 million) of total unrecognized compensation cost relating to non-vested awards is expected to be recognized over a period of three years.

Share-based compensation plans

Prior to February 28, 2015, the Company granted stock-settled share appreciation rights (SARs) and performance share awards (PSAs) over ordinary shares and ADSs to Executive Directors and employees under the Shire Portfolio Share Plan (PSP) (Parts A and B). The SARs and PSAs granted under the PSP (Parts A and B) to Executive Directors are exercisable subject to performance and service criteria. Substantially all SARs and PSAs granted to employees are exercisable subject only to service criteria.

The principal terms and conditions of SARs and PSAs under the PSP (Parts A and B) are as follows: (i) the contractual life of SARs is seven years, (ii) the vesting period of SARs and PSAs granted to employees below the level of Executive Vice President allows for graded vesting over three years, and (iii) awards granted to the level of Executive Director and Executive Vice President cliff vest after three years, of which awards to the level of Executive Director contain performance conditions based on growth in Non-GAAP adjusted return on invested capital (Adjusted ROIC) and Non-GAAP earnings before interest, taxation, depreciation and

amortization (Non-GAAP EBITDA). In 2014, the Company granted PSAs under the PSP to employees at Executive Vice President level and to a select group of senior employees, which are exercisable subject to performance and service criteria. These PSAs cliff vested after three years and contain performance conditions as explained above.

Since February 28, 2015, the Company has granted awards under the Shire Long Term Incentive Plan 2015 (LTIP). Under the LTIP, the Company grants stock-settled share appreciation rights (SARs), restricted stock units (RSUs) and performance share units (PSUs) over ordinary shares and ADSs to Executive Directors and employees. The PSUs granted under the LTIP and SARs granted to Executive Directors are exercisable subject to performance and service criteria. RSUs granted under the LTIP and SARs granted to all other employees are exercisable subject only to service criteria.

The principal terms and conditions of SARs, RSUs and PSUs granted under the LTIP are as follows: (i) the contractual life of SARs is seven years, (ii) the vesting period of SARs and RSUs granted to employees below the level of Executive Vice President allows for graded vesting, and (iii) all SARs granted to Executive Directors and employees at Executive Vice President level and all PSUs granted cliff vest after three years and, with the exception of SARs granted to employees at Executive Vice President level, contain performance conditions based on Product sales and Non-GAAP EBITDA targets; a Non-GAAP Adjusted ROIC underpin is also used at the end of the three year performance period to assess the underlying performance of the Company before determining the final vesting levels for awards with performance conditions. In addition, a further two year holding period will apply to all awards granted to Executive Directors post vesting.

The Company also operates a Global Employee Stock Purchase Plan and UK/Irish Sharesave Plans.

Replacement Awards Issued to Baxalta Employees

In connection with the acquisition of Baxalta and pursuant to the merger agreement associated with the acquisition, outstanding Baxalta equity awards held by Baxalta employees or employees of Baxter were cancelled and exchanged for Shire equity awards. The outstanding Baxalta equity awards consisted primarily of stock options and RSUs and hence were replaced with Shire's stock options and RSUs. The replacement Shire awards generally have the same terms and conditions (including vesting) as the former Baxalta awards for which they were exchanged.

The value of the replacement share-based awards granted was designed to generally preserve both the intrinsic value and the fair value of the award immediately prior to the acquisition. Following the acquisition, the Company records share-based compensation expense associated with the acquisition-date fair value of acquired Baxalta employees' replacement options and RSUs that is attributable to post-acquisition service requirements, as well as share-based compensation expense for post-acquisition service requirements associated with certain remaining unvested Baxter share-based awards held by the acquired Baxalta employees. The portions of the acquisition-date fair values of the awards that are attributable to post-combination service are recognized over the remaining service period of the awards.

The following awards were outstanding as of December 31, 2017:

	Compensation type	Number of awards	Expiration period from date of issue	Vesting period
Stock-settled SARs	SARs	15,693,527	7 years	3 years graded vesting and/or 3 years cliff vesting subject to performance criteria for Executive Directors only
UK/Irish Sharesave Plans	Stock options	184,647	6 months after vesting	3 or 5 years
Global Employee Stock Purchase Plan	Stock options	315,646	On vesting date	1 to 5 years
Baxalta Replacement Options	Stock options	9,425,001	10 years	3 years graded vesting
Stock-settled SARs and stock options		25,618,821		
RSUs, PSUs and PSAs	RSUs, PSUs and PSAs	3,258,380	3 years	3 years graded vesting, 3 years cliff vesting subject to performance criteria for Executive Directors and certain senior employees only
Baxalta Replacement RSUs	RSU	701,340	3 years	3 years graded vesting
RSUs/PSUs and PSAs		3,959,720		

Stock-settled SARs and stock options

SARs under LTIP and PSP (Part A)

Stock-settled share appreciation rights (SARs) granted to Executive Directors are exercisable subject to service and performance criteria.

In respect of any award made to Executive Directors under the LTIP, performance criteria are based on Product sales and Non-GAAP EBITDA targets, with a Non-GAAP Adjusted ROIC underpin. In respect of any award made to Executive Directors under the PSP (Part A), performance criteria are based on growth in Non-GAAP Adjusted ROIC and Non-GAAP EBITDA. These performance measures are an important measure of the Company's ability to meet the strategic objective to grow value for all of its stakeholders.

Awards granted to employees below Executive Director level are not subject to performance conditions and are only subject to service conditions.

Once awards have vested, participants will have until the seventh anniversary of the date of grant to exercise their awards.

UK/Irish Sharesave Plans (Sharesave Plans)

Options granted under the Sharesave Plans are granted with an exercise price equal to 80% and 75% of the mid-market price on the day before invitations are issued to UK and Ireland employees, respectively. Employees may enter into three or five year savings contracts. No performance conditions apply.

Shire Global Employee Stock Purchase Plan (Stock Purchase Plan)

Under the Stock Purchase Plan, options are granted with an exercise price equal to 85% of the fair market value of a share on the day before the enrollment date (the first day of the offering period) or the day before the exercise date (the last day of the offering period), whichever is the lower. Employees agree to save for a period up to 12 months. No performance conditions apply.

Baxalta Replacement Options

The replacement stock options were issued consistent with the vesting conditions of the replaced award (as explained above). Replacement stock options had contractual terms of 10 years from the initial grant date. The majority of stock options outstanding vested in one-third increments over a three year period, although certain awards cliff vest or have longer or shorter service periods. The fair value on the acquisition date attributable to post-combination service, adjusted for estimated forfeitures, is recognized as expense on a straight-line basis over the remaining vesting period.

A summary of the status of the Company's SARs and stock options including replacement awards as of December 31, 2017 and of the related activity during the period then ended is presented below:

Year ended December 31, 2017	Weighted average exercise price £	Number of shares	Intrinsic value (In millions) £
Outstanding as of beginning of period	38.98	21,869,833	
Granted	45.11	9,865,956	
Exercised	34.99	(3,312,318)	
Forfeited	44.00	(2,804,650)	
Outstanding as of end of period	39.75	25,618,821	31.4
Exercisable as of end of period	35.11	13,329,159	29.3

Excluded from the table above are replacement stock options issued to Baxter employees as part of the acquisition of Baxalta. The Company issued 8.8 million stock options to Baxter employees on June 3, 2016, out of which 6.2 million and 6.2 million were outstanding and exercisable, respectively, as of December 31, 2017.

The weighted average grant date fair value of SARs and stock options granted in the year ended December 31, 2017 was £9.72 (2016: £8.25; 2015: £10.36).

SARs and stock options including Baxalta Replacement Options, outstanding as of December 31, 2017 have the following characteristics:

Number of awards outstanding	Exercise prices £	Weighted Average remaining contractual term (Years)	Weighted average exercise price of awards outstanding £	Number of awards exercisable	Weighted average exercise price of awards exercisable £
2,373,820	9.27-28.00	2.4	24.47	2,367,984	24.48
9,537,750	28.01-40.00	6.3	33.64	8,010,506	33.30
13,707,251	40.01-70.48	5.5	46.65	2,950,669	48.55
25,618,821				13,329,159	

RSUs, PSUs and PSAs

RSUs and PSUs under LTIP and PSAs under PSP (Part B)

PSUs and PSAs granted to Executive Directors and employees at Executive Vice President level are exercisable subject to certain performance and service criteria.

RSUs and PSAs granted to all other employees are not subject to performance criteria and are only subject to service conditions.

The performance criteria for PSUs granted under the LTIP is based on Product sales and Non-GAAP EBITDA targets, typically with a Non-GAAP Adjusted ROIC underpin. The performance criteria for PSAs under the PSP (Part B) is based on growth in Non-GAAP Adjusted ROIC and Non-GAAP EBITDA.

Baxalta Replacement RSUs

The replacement RSUs were issued consistent with the vesting conditions of the replaced award (as explained above) and generally continue to vest in one-third increments over a three-year period. The fair value on the acquisition date attributable to post-combination service, adjusted for estimated forfeitures, is recognized as expense on a straight-line basis over the remaining vesting period.

A summary of the status of the Company's RSUs, PSUs and PSAs as of December 31, 2017 and of the related activity during the period then ended is presented below:

RSUs, PSUs and PSAs	Number of shares	Weighted average grant date fair value £	Weighted average remaining life
Outstanding as of beginning of period	3,976,657	41.31	
Granted	2,520,239	45.38	
Exercised	(1,779,205)	43.23	
Forfeited	(757,971)	44.99	
Outstanding as of end of period	3,959,720	42.33	4.9
Exercisable as of end of period	—	—	N/A

Excluded from the table above are replacement RSUs issued to Baxter employees as part of the acquisition of Baxalta. The Company issued 0.5 million RSUs to Baxter employees on June 3, 2016, out of which $nil were outstanding as of December 31, 2017.

Exercises of share-based awards

The total intrinsic values of share-based awards exercised, including those held by Baxter employees, for the years ended December 31, 2017, 2016 and 2015 were $147.1 million, $214.6 million and $198.8 million, respectively. The total cash received as a result of share option exercises for the period ended December 31, 2017, 2016 and 2015 was approximately $134.1 million, $169.2 million and $16.6 million, respectively. In connection with these exercises, the tax benefit credited to additional paid-in capital for the years ended December 31, 2017, 2016 and 2015 was $nil, $8.8 million and $31.6 million, respectively. With the adoption of a new accounting standard on accounting for stock-based compensation, effective January 1, 2017, excess tax benefits were recognized as a component of income tax expense rather than Additional paid-in capital.

The Company will settle future awards with either newly listed ordinary shares or with shares held in the EBT. The number of shares that the EBT will purchase in 2018 is dependent on the number of awards granted and exercised during the year and Shire plc's share price. As of December 31, 2017, the EBT held 0.5 million ordinary shares and 0.2 million ADSs.

Valuation methodologies

The Company estimates the fair value of its share-based awards using a Black-Scholes valuation model. Key input assumptions used to estimate the fair value of share-based awards include the grant price of the award, the expected stock-based award term, volatility of the Company's share price, the risk-free rate and the Company's dividend yield. The Company believes that the valuation technique and the approach utilized to develop the underlying assumptions are appropriate in estimating the fair values of Shire's stock-based awards. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made by the Company.

The fair value of share awards granted was estimated using the following assumptions:

	Years ended December 31,		
	2017	2016	2015
Risk-free interest rate	0.4-1.9%	0.29-1.6%	0.6-1.8%
Expected dividend yield	0.3-0.6%	0.3-0.5%	0.2-0.4%
Expected life	1-3.88 years	1-4 years	1-4 years
Volatility	25-29%	26-29%	23-26%
Forfeiture rate	0%	5-7%	5-7%

The following assumptions were used to value share-based awards:

- risk-free interest rate - for awards granted over ADSs, the U.S. Federal Reserve treasury constant maturities rate with a term consistent with the expected life of the award is used. For awards granted over ordinary shares, the yield on UK government bonds with a term consistent with the expected life of the award is used;

- expected dividend yield - measured as the average annualized dividend estimated to be paid by the Company over the expected life of the award as a percentage of the share price at the grant date;
- expected life - estimated based on the contractual term of the awards and the effects of employees' expected exercise and post-vesting employment termination behavior;
- expected volatility - measured using historical daily price changes of the Company's share price over the respective expected life of the share-based awards at the date of the award; and
- forfeiture rate - estimated using historical trends of the number of awards forfeited prior to vesting. Upon the 2017 adoption of a new rule on accounting for stock-based compensation, the Company elected to account for forfeitures in relation to service conditions as they occur. As such, the estimated forfeiture rate was 0% starting in 2017.

24. Commitments and Contingencies

Leases

Future minimum lease payments under operating leases as of December 31, 2017 are presented below:

(In millions)	Operating leases
2018	$ 188.5
2019	164.8
2020	155.2
2021	146.6
2022	128.8
Thereafter	795.8
	$1,579.7

The Company leases land, facilities, motor vehicles and certain equipment under operating leases expiring through 2032. Lease and rental expense amounted to $167.6 million, $100.8 million and $40.7 million for the year ended December 31, 2017, 2016 and 2015, respectively, which is predominately included in Cost of sales and SG&A expenses in the Company's Consolidated Statement of Operations.

Letters of credit and guarantees

As of December 31, 2017 and December 31, 2016, the Company had irrevocable standby letters of credit and guarantees with various banks and insurance companies totaling $224.8 million and $139.7 million (being the contractual amounts), respectively, providing security for the Company's performance of various obligations. These obligations are primarily in respect of the recoverability of insurance claims, lease obligations and supply commitments.

Commitments

Clinical testing

As of December 31, 2017, the Company had committed to pay approximately $1,409.9 million (December 31, 2016: $1,037.4 million) to contract vendors for administering and executing clinical trials. The timing of these payments is dependent upon actual services performed by the organizations as determined by patient enrollment levels and related activities.

Contract manufacturing

As of December 31, 2017, the Company had committed to pay approximately $467.2 million (December 31, 2016: $528.9 million) in respect of contract manufacturing. The Company expects to pay $216.5 million of these commitments in 2018.

Other purchasing commitments

As of December 31, 2017, the Company had committed to pay approximately $1,692.5 million (December 31, 2016: $1,745.4 million) for future purchases of goods and services, predominantly relating to active pharmaceutical ingredients sourcing. The Company expects to pay $960.0 million of these commitments in 2018.

Investment commitments

As of December 31, 2017, the Company had outstanding commitments to purchase common stock and interests in companies and partnerships, respectively, for amounts totaling $48.9 million (December 31, 2016: $76.4 million) which may all be payable in 2018, depending on the timing of capital calls. The investment commitments include additional funding to certain variable interest entities (VIEs) for which Shire is not the primary beneficiary.

Capital commitments

As of December 31, 2017, the Company had committed to spend $328.2 million (December 31, 2016: $100.5 million) on capital projects.

Baxter related tax indemnification

Baxter International Inc. (Baxter) and Baxalta entered into a tax matters agreement, effective on the date of Baxalta's separation from Baxter, which employs a direct tracing approach, or where direct tracing approach is not feasible, an allocation methodology, to determine which company is liable for pre-separation income tax items for U.S. federal, state and foreign jurisdictions. With respect to tax liabilities that are directly traceable or allocated to Baxalta but for which Baxalta was not the primary obligor, Baxalta recorded a tax indemnification amount that would be due to Baxter upon Baxter discharging the associated tax liability to the taxing authority.

25. Legal and Other Proceedings

The Company expenses legal costs when incurred.

The Company recognizes loss contingency provisions for probable losses when management is able to reasonably estimate the loss. When the estimated loss lies within a range, the Company records a loss contingency provision based on its best estimate of the probable loss. If no particular amount within that range is a better estimate than any other amount, the minimum amount is recorded. Estimates of losses may be developed before the ultimate loss is known, and are therefore refined each accounting period as additional information becomes known. An outcome that deviates from the Company's estimate may result in an additional expense or release in a future accounting period. As of December 31, 2017, provision for litigation losses, insurance claims and other disputes totaled $76.2 million (December 31, 2016: $415.0 million).

The Company's principal pending legal and other proceedings are disclosed below. The outcomes of these proceedings are not always predictable and can be affected by various factors. For those legal and other proceedings for which it is considered at least reasonably possible that a loss has been incurred, the Company discloses the possible loss or range of possible loss in excess of the recorded loss contingency provision, if any, where such excess is both material and estimable.

MYDAYIS

On October 12, 2017, Shire was notified that Teva Pharmaceuticals USA, Inc. had submitted an abbreviated new drug application (ANDA) to the FDA seeking permission to market a generic version of MYDAYIS. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the District of Delaware against Teva Pharmaceuticals USA, Inc., Actavis Laboratories, Inc. and Teva Pharmaceutical Industries Limited (collectively the "Teva entities"). No dates for a Markman hearing or trial have been set.

Petitions to institute inter partes reviews (IPRs) against US Patent numbers 8,846,100 and 9,173,857 were filed by KVK Tech. Both of these patents are listed in the Orange Book as covering MYDAYIS and are among the patents-in-suit in the infringement action brought against the Teva entities as noted above. A decision on whether to institute the IPRs is expected on or before July 10, 2018. If one or both IPRs are instituted, a decision on the merits is expected on or before July 10, 2019.

LIALDA

In May 2010, Shire was notified that Zydus Pharmaceuticals USA, Inc. (Zydus) had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the District of Delaware against Zydus

and Cadila Healthcare Limited, doing business as Zydus Cadila. A Markman hearing took place on January 29, 2015 and a Markman ruling was issued on July 28, 2015. A trial took place between March 28, 2016 and April 1, 2016. On September 16, 2016 the court issued its ruling finding that the proposed generic product would not infringe the asserted claims. Shire appealed the ruling to the Court of Appeals for the Federal Circuit (CAFC). On May 9, 2017, the CAFC affirmed the ruling of the district court. Zydus' ANDA has been approved and the generic product is now available in the U.S.

In February 2012, Shire was notified that Osmotica Pharmaceutical Corporation (Osmotica) had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the Northern District of Georgia against Osmotica. A Markman hearing took place on August 22, 2013 and a Markman ruling was issued on September 25, 2014. The court issued an Order on February 27, 2015 in which all dates in the scheduling order were stayed. Osmotica's ANDA was withdrawn as of March 31, 2017 and the case was dismissed.

In March 2012, Shire was notified that Watson Laboratories Inc.-Florida had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the Southern District of Florida against Watson Laboratories Inc.-Florida and Watson Pharmaceuticals, Inc., Watson Pharma, Inc. and Watson Laboratories, Inc. (collectively, "Watson") were subsequently added as defendants. A trial took place in April 2013 and on May 9, 2013 the trial court issued a decision finding that the proposed generic product infringes the patent-in-suit and that the patent is not invalid. Watson appealed the trial court's ruling to the CAFC and a hearing took place on December 2, 2013. The ruling of the CAFC was issued on March 28, 2014 overruling the trial court on the interpretation of two claim terms and remanding the case for further proceedings. Shire petitioned the Supreme Court for a writ of certiorari which was granted on January 26, 2015. The Supreme Court also vacated the CAFC decision and remanded the case to the CAFC for further consideration in light of the Supreme Court's recent decision in Teva v. Sandoz. On June 3, 2015, the CAFC reaffirmed their previous decision to reverse the District Court's claims construction and remanded the case to the U.S. District Court for the Southern District of Florida. A trial was held on January 25-27, 2016. A ruling was issued on March 28, 2016 upholding the validity of the patent and finding that Watson's proposed ANDA product infringes the patent-in-suit. Watson appealed the ruling to the CAFC and oral argument took place on October 5, 2016. The CAFC issued a ruling on February 10, 2017 reversing the trial court's ruling of infringement and remanding the case to the lower court for entry of a ruling of non-infringement. On May 18, 2017, the lower court entered judgment of non-infringement.

In April 2012, Shire was notified that Mylan had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the Middle District of Florida against Mylan. A Markman hearing took place on December 22, 2014. A Markman ruling was issued on March 23, 2015. Following a four-day bench trial in September 2016 in the U.S. District Court for the Middle District of Florida, the court handed down a ruling that Mylan's proposed generic version of LIALDA infringes claims 1 and 3 of the Orange Book listed patent for LIALDA. In connection with this finding of infringement, the court also entered an injunction prohibiting Mylan from making, using, selling, offering for sale and/or importing their proposed ANDA product before the expiration of the patent (June 8, 2020) and requiring that the approval date for their ANDA be on or after the expiration of the patent. On June 14, 2017, the U.S. District Court for the Middle District of Florida granted Mylan's Motion for Reconsideration and entered judgment of non-infringement. Shire filed an appeal with the Court of Appeals of the Federal Circuit on July 7, 2017. No date for oral argument has been set.

In March 2015, Shire was notified that Amneal had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45 day period, Shire filed a lawsuit in the U.S. District Court for the District of New Jersey against Amneal, Amneal Pharmaceuticals of New York, LLC and Amneal Pharmaceuticals Co. India Pvt. Ltd. A Markman hearing took place on July 25, 2016. A Markman ruling was issued on August 2, 2016. No trial date has been set.

In September 2015, Shire was notified that Lupin Ltd. had submitted an ANDA under the Hatch-Waxman Act seeking permission to market a generic version of LIALDA. Within the requisite 45 day period, Shire filed a lawsuit in the U.S. District Court for the District of Maryland against Lupin Ltd., Lupin Pharmaceuticals Inc., Lupin Inc. and Lupin Atlantis Holdings SA. A Markman hearing originally scheduled to take place on November 10, 2016, was cancelled and has not yet been rescheduled. No trial date has been set.

VANCOCIN

On April 6, 2012, ViroPharma Incorporated (ViroPharma) received a notification that the United States Federal Trade Commission (FTC) was conducting an investigation into whether ViroPharma had engaged in unfair methods of competition with respect to VANCOCIN which Shire acquired in January 2014. Following the divestiture of VANCOCIN in August 2014, Shire retained certain liabilities including any potential liabilities related to the VANCOCIN citizen petition.

On August 3, 2012, and September 8, 2014, ViroPharma and Shire respectively received Civil Investigative Demands from the FTC requesting additional information related to this matter. Shire has fully cooperated with the FTC's investigation.

On February 7, 2017, the FTC filed a Complaint against Shire alleging that ViroPharma engaged in conduct in violation of U.S. antitrust laws arising from a citizen petition ViroPharma filed in 2006 related to Food & Drug Administration's policy for evaluating bioequivalence for generic versions of VANCOCIN. The complaint seeks equitable relief, including an injunction and disgorgement. The Company filed a motion to dismiss on April 10, 2017.

At this time, Shire is unable to predict the outcome or duration of this case.

ELAPRASE

On September 24, 2014, Shire's Brazilian affiliate, Shire Farmaceutica Brasil Ltda, was served with a lawsuit brought by the State of Sao Paulo and in which the Brazilian Public Attorney's office has intervened alleging that Shire is obligated to provide certain medical care including ELAPRASE for an indefinite period at no cost to patients who participated in ELAPRASE clinical trials in Brazil, and seeking recoupment to the Brazilian government for amounts paid on behalf of these patients to date, and moral damages associated with these claims.

On May 6, 2016, the trial court judge ruled on the case and dismissed all the claims under the class action, which was appealed. On February 20, 2017, the Court of Appeals in Sao Paulo issued the final decision on merit in favor of Shire and dismissed all the claims under the class action. On July 12, 2017, the Public Prosecutor filed an appeal addressed to the Supreme Court. During the last quarter of 2017, the State of Sao Paulo filed appeals addressed to the Superior Court of Justice and to the Supreme Court.

26. Shareholders' Equity

Authorized common stock

The authorized stock of Shire plc as of December 31, 2017, was 1,500,000,000 ordinary shares and 2 subscriber ordinary shares.

Dividends

Under Jersey law, Shire plc is entitled to fund payments of dividends from any source (other than a capital redemption reserve or nominal capital account) subject to the Directors authorizing the distribution making a solvency statement in the prescribed statutory form. As of December 31, 2017, Shire plc's distributable reserves were approximately $4.2 billion.

Treasury stock

The Company records the purchase of its own shares by the EBT and under the share buy-back program as a reduction of shareholders' equity based on the price paid for the shares. As of December 31, 2017, the EBT held 0.5 million in ordinary shares (2016: 0.5 million; 2015: 0.6 million) and 0.2 million ADSs (2016: 0.2 million; 2015: 0.2 million) and shares held under the share buy-back program were 7.4 million ordinary shares (2016: 8.0 million; 2015: 8.5 million). During the years ended December 31, 2017 and 2016 the Company did not purchase any shares either through the EBT or under any share buy-back program.

Income Access Share Arrangements

Shire has put into place income access share arrangements which enable ordinary shareholders, other than ADS holders, to choose whether they receive their dividends from Shire plc, a company tax resident in the Republic of Ireland, or from Shire Biopharmaceuticals Holdings (Old Shire), a Shire group company tax resident in the UK.

Old Shire has issued one income access share to the Income Access Trust (IAS Trust), which is held by the trustee of the IAS Trust (Trustee). The mechanics of the arrangements are as follows:

(i) If a dividend is announced or declared by Shire plc on its ordinary shares, an amount is paid by Old Shire by way of a dividend on the income access share to the Trustee, and such amount is paid by the Trustee to ordinary shareholders who have elected to receive dividends under these arrangements. The dividend which would otherwise be payable by Shire plc to its ordinary shareholders will be reduced by an amount equal to the amount paid to its ordinary shareholders by the Trustee.

(ii) If the dividend paid on the income access share and on-paid by the Trustee to ordinary shareholders is less than the total amount of the dividend announced or declared by Shire plc on its ordinary shares, Shire plc will be obliged to pay a dividend on the relevant ordinary shares equivalent to the amount of the shortfall. In such a case, any dividend paid on the ordinary shares will generally be subject to Irish withholding tax at the rate of 20.0% or such lower rate as may be applicable under exemptions from withholding tax contained in Irish law.

(iii) An ordinary shareholder is entitled to make an income access share election such that he/she will receive his/her dividends (which would otherwise be payable by Shire plc) under these arrangements from Old Shire. This can be done by submitting an IAS arrangement election form containing information on the participating shareholders pursuant to Shire plc's Articles of Association.

The ADS Depositary has made an election on behalf of all holders of ADSs such that they will receive dividends from Old Shire under the income access share arrangements. Dividends paid by Old Shire under the income access share arrangements will not, under current legislation, be subject to any UK or Irish withholding taxes. If a holder of ADSs does not wish to receive dividends from Old Shire under the income access share arrangements, he/she must withdraw his/her ordinary shares from the ADS program prior to the dividend record date set by the ADS Depositary and request delivery of the Shire plc ordinary shares. This will enable him/her to receive dividends from Shire plc.

It is the expectation, although there can be no certainty, that Old Shire will distribute dividends on the income access share to the Trustee for the benefit of all ordinary shareholders who make an income access share election in an amount equal to what would have been such ordinary shareholders' entitlement to dividends from Shire plc in the absence of the income access share election. If any dividend paid on the income access share and or paid to the ordinary shareholders is less than such ordinary shareholders' entitlement to dividends from Shire plc in the absence of the income access share election, the dividend on the income access share will be allocated pro rata among the ordinary shareholders and Shire plc will pay the balance to these ordinary shareholders by way of dividend. In such circumstances, there will be no grossing up by Shire plc in respect of, and Old Shire and Shire plc will not compensate those ordinary shareholders for, any adverse consequences including any Irish withholding tax consequences.

Shire will be able to suspend or terminate these arrangements at any time, in which case the full Shire plc dividend will be paid directly by Shire plc to those ordinary shareholders (including the Depositary) who have made an income access share election. In such circumstances, there will be no grossing up by Shire plc in respect of, and Old Shire and Shire plc will not compensate those ordinary shareholders for, any adverse consequences including any Irish withholding tax consequences.

In the year ended December 31, 2017, Old Shire paid dividends totaling $245.6 million (2016: $150.6 million; 2015: $127.7 million) on the income access share to the Trustee in an amount equal to the dividend ordinary shareholders would have received from Shire plc.

27. Segment Reporting

Shire comprises one operating and reportable segment engaged in the research, development, licensing, manufacturing, marketing, distribution and sale of innovative specialist medicines to meet significant unmet patient needs. This is consistent with how the financial information is viewed for the purposes of evaluating performance, allocating resources, and planning and forecasting future periods and how the operations are managed by the Executive Committee (Shire's chief operating decision maker).

This segment is supported by several key functions: a Pipeline Committee, an In-Line Committee, a Technical Operations group and a Corporate group. The Pipeline Committee consists of R&D and Corporate

Development and is responsible for prioritizing the activities towards progressing and acquiring development programs across a variety of therapeutic areas. The Technical Operations group is responsible for the Company's global supply chain. The In-line Committee focuses on commercializing marketed products and support of the development of the Company's pipeline candidates. The business is also supported by a simplified, centralized corporate function group. None of these functional groups meets all of the criteria to be considered an individual operating segment.

Geographic information

Revenues (based on the geographic location from which the sale originated):

	Years ended December 31,		
(In millions)	2017	2016	2015
Ireland	$ 55.5	$ 41.6	$ 14.1
United States	9,642.1	7,666.9	4,659.2
Rest of the world	5,463.0	3,688.1	1,743.4
Total revenues	$15,160.6	$11,396.6	$6,416.7

Long-lived assets comprise all non-current assets, (excluding goodwill and intangible assets, deferred contingent consideration assets, deferred tax assets, investments and financial instruments) based on their relevant geographic location.

	Years ended December 31,	
(In millions)	2017	2016
Ireland	$ 94.0	$ 41.2
United States	4,603.0	6,449.4
Austria	737.3	—
Rest of the world	1,314.3	84.0
Total	$6,748.6	$6,574.6

Material customers

In the periods set out below, certain customers accounted for greater than 10% of the Company's Product sales:

	Years ended December 31,					
	2017	2017	2016	2016	2015	2015
(in millions, except %)		% Product sales		% Product sales		% Product sales
AmerisourceBergen Corp	$1,408.1	10	$1,695.3	16	$1,048.3	17
McKesson Corp.	1,333.1	9	1,336.7	12	1,044.1	17
Cardinal Health Inc.	1,079.2	7	1,052.2	10	796.9	13

Amounts outstanding in respect of these material customers were as follows:

	December 31,	
(In millions)	2017	2016
AmerisourceBergen Corp	$469.9	$427.2
McKesson Corp.	512.4	312.9
Cardinal Health Inc.	325.3	278.4

In the periods set out below, Revenues by franchise were as follows. In 2017, Immunology includes HAE from Genetic Diseases; prior year amounts have been reclassified to conform with current year presentation.

(In millions)	Years ended December 31, 2017	2016	2015
Product sales by franchise			
IMMUNOGLOBULIN THERAPIES	$ 2,236.6	$ 1,143.9	$ —
HEREDITARY ANGIOEDEMA	1,429.6	1,310.9	1,062.7
BIO THERAPEUTICS	704.1	372.2	—
Immunology	4,370.3	2,827.0	1,062.7
HEMOPHILIA	2,957.3	1,789.0	—
INHIBITOR THERAPIES	828.3	451.8	—
Hematology	3,785.6	2,240.8	—
VYVANSE	2,161.1	2,013.9	1,722.2
ADDERALL XR	348.0	363.8	362.8
MYDAYIS	21.6	—	—
Other Neuroscience	133.4	112.8	115.4
Neuroscience	2,664.1	2,490.5	2,200.4
LIALDA/MEZAVANT	569.4	792.1	684.4
GATTEX/REVESTIVE	335.5	219.4	141.7
PENTASA	313.2	309.4	305.8
NATPARA/NATPAR	147.4	85.3	24.4
Other Internal Medicine	304.8	349.3	344.3
Internal Medicine	1,670.3	1,755.5	1,500.6
ELAPRASE	615.7	589.0	552.6
REPLAGAL	472.1	452.4	441.2
VPRIV	349.9	345.7	342.4
Genetic Diseases	1,437.7	1,387.1	1,336.2
Oncology	261.7	130.5	—
Ophthalmics	259.2	54.4	—
Total Product sales	14,448.9	10,885.8	6,099.9
Royalties and other revenues			
Royalties	448.4	382.6	300.5
Other revenues	263.3	128.2	16.3
Total royalties and other revenues	711.7	510.8	316.8
Total revenues	$15,160.6	$11,396.6	$6,416.7

28. Agreements and Transactions with Baxter

In connection with Baxalta's separation from Baxter on July 1, 2015, Baxalta and Baxter entered into several separation-related agreements that provided a framework for Baxalta's relationship with Baxter after the separation. These agreements, among others, included a manufacturing and supply agreement, a transition services agreement and a tax matters agreement.

Under the terms of the manufacturing and supply agreement, the Company manufactures certain products and materials and sells them to Baxter at an agreed-upon price reflecting the Company's cost plus a mark-up for certain products and materials. The Company reported revenues associated with the manufacturing and supply agreement with Baxter during the year ended December 31, 2017 and 2016 of approximately $137.3 million and $81.0 million, respectively. The 2016 reported revenues were for the period from June 3, 2016 acquisition date through December 31, 2016.

Under the terms of the transition services agreement, the Company and Baxter provide various services to each other on an interim, transitional basis. The services provided by Baxter to the Company include certain finance, information technology, human resources, quality, supply chain and other administrative services and

functions, and are generally provided on a cost-plus basis. Certain of these services extend through June 30, 2018. The Company reported Selling, general and administrative expenses associated with the transition services agreement with Baxter during the year ended December 31, 2017 and 2016 of approximately $52.3 million and $54.0 million, respectively. The 2016 reported expenses were for the period from June 3, 2016 acquisition date through December 31, 2016.

For a certain portion of Baxalta's non U.S. operations, the legal transfer of net assets from Baxter had not occurred by the June 3, 2016 acquisition date due to the time required to transfer marketing authorizations and other regulatory requirements in each of these countries. Under the terms of the international commercial operations agreement with Baxter, the Company is responsible for the business activities conducted by Baxter on its behalf, and is subject to the risks and entitled to the benefits generated by these operations and assets. As a result, the related assets and liabilities and results of operations are reported in the Company's Consolidated Financial Statements following the acquisition of Baxalta. The majority of these operations were transferred to the Company on December 31, 2016. Net sales related to these operations for the year ended December 31, 2017 were $nil (2016: $101.0 million). The outstanding balance of the assets and liabilities related to these operations was $nil as of December 31, 2017. As of December 31, 2016 the assets and liabilities of these operations consisted of $11.0 million of inventories, which were reported in Inventories on the Consolidated Balance Sheet, other assets of $50.0 million, which were reported as Prepaid expenses and other current assets, and liabilities of $3.0 million, which were reported in Other current liabilities.

The tax matters agreement governs Baxter and Baxalta's and now the Company's respective rights, responsibilities and obligations after the distribution with respect to taxes for any tax period ending on or before the distribution date, as well as tax periods beginning before and ending after the distribution date. In addition, the tax matters agreement addresses the allocation of liability for taxes that were incurred as a result of restructuring activities undertaken to effectuate the distribution and provides for Baxalta to indemnify Baxter against any tax liabilities resulting from Baxalta's action or inaction that causes the merger-related transactions to be taxable. Net tax-related indemnification liabilities as of December 31, 2017 associated with the tax matters agreement with Baxter are discussed in Note 24, Commitments and Contingencies, of these Consolidated Financial Statements.

As of December 31, 2017, the Company had total amounts due from or to Baxter of $103.1 million (2016: $189.0 million) reported in Prepaid expenses and other current assets, $63.2 million (2016: $72.0 million) reported in Other current liabilities and $59.6 million (2016: $92.0 million) reported in Other non-current liabilities.

29. Subsequent Events

On January 25, 2018, Shire entered into a licensing agreement with AB Biosciences Inc (AB Biosciences). The license grants Shire exclusive worldwide rights to develop and commercialize a recombinant immunoglobulin product candidate. Under the terms of the agreement, AB Biosciences will grant Shire an exclusive, worldwide license to its intellectual property relating to its pan receptor interacting molecule program. AB Biosciences will receive an upfront license fee payment and is eligible to receive contingent research, development, and commercialization milestones as well as royalty payments.

On January 8, 2018, Shire announced that the first stage of its strategic review of its Neuroscience business was completed. The Board concluded that the Neuroscience business warrants additional focus and investment and that there is a strong business rationale for creating two distinct businesses within Shire: a Rare Disease business and a Neuroscience business. The Company expects to report the operational performance metrics of each business separately beginning with the first quarter of 2018.

30. Guarantor Financial Information

On June 3, 2016, Shire plc provided full and unconditional, joint and several guarantees of the floating rate senior notes due 2018, 2.0% senior notes due 2018, 2.875% senior notes due 2020, 3.6% senior notes due 2022, 4.0% senior notes due 2025 and 5.25% senior notes due 2045 (collectively, "Baxalta Notes"), of Baxalta Inc., a 100% owned subsidiary of the Company. Amounts related to Baxalta Inc. and its subsidiaries are included in the condensed consolidating financial information for periods subsequent to June 3, 2016, the date of Baxalta Inc.'s acquisition.

On September 23, 2016, Shire plc provided full and unconditional, joint and several guarantees of the 1.90% senior notes due 2019, 2.40% senior notes due 2021, 2.875% senior notes due 2023 and 3.20% senior notes due 2026, of SAIIDAC (collectively, "SAIIDAC Notes"), a 100% owned subsidiary of the Company.

On December 1, 2016, Baxalta Inc., a wholly-owned subsidiary of Shire plc, became a guarantor to the SAIIDAC Notes. Accordingly, both Baxalta Inc. and Shire plc are now co-guarantors of the SAIIDAC Notes.

In accordance with the requirements of SEC Regulation S-X Rule 3-10 "Financial Statements of Guarantors and Issuers of Guaranteed Securities Registered or Being Registered", the following tables present Condensed Consolidating Financial Statements of the two separate guarantee structures of the Baxalta Notes and SAIIDAC Notes, for:

- Shire plc - Parent Guarantor;
- SAIIDAC Subsidiary Issuer - issuer subsidiary of the SAIIDAC Notes; (a)
- Baxalta Inc. - issuer subsidiary of the Baxalta Notes and guarantor subsidiary of the SAIIDAC Notes; (b)
- Non-Guarantor Non-Issuer Subsidiaries - presents all other subsidiaries of the Parent Guarantor on a combined basis, none of which guarantee the Baxalta Notes or SAIIDAC Notes; (c)
- Non-Guarantor Subsidiaries of Baxalta Notes - presents combined Non-Guarantor Non-Issuer Subsidiaries, including SAIIDAC, under the guarantee structure where Baxalta Inc. is the subsidiary issuer (a+c); and
- Eliminations - primarily relate to eliminations of investments in subsidiaries and intercompany balances and transactions.

The Condensed Consolidating Financial Statements present investments in subsidiaries using the equity method of accounting.

Condensed Consolidating Balance Sheets
(In millions)

As of December 31, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
ASSETS							
Current assets:							
Cash and cash equivalents	$ —	$ —	$ 0.5	$ 471.9	$ 471.9	$ —	$ 472.4
Restricted cash	—	—	—	39.4	39.4	—	39.4
Accounts receivable, net	—	—	—	3,009.8	3,009.8	—	3,009.8
Inventories	—	—	—	3,291.5	3,291.5	—	3,291.5
Prepaid expenses and other current assets	—	1.6	95.2	698.5	700.1	—	795.3
Intercompany receivables	—	120.2	—	4,682.3	4,802.5	(4,802.5)	—
Short term intercompany loan receivable	—	2,006.3	—	—	2,006.3	(2,006.3)	—
Total current assets	—	2,128.1	95.7	12,193.4	14,321.5	(6,808.8)	7,608.4
Investments	43,204.3	—	38,924.6	13,059.4	13,059.4	(94,947.2)	241.1
Property, plant and equipment (PP&E), net	—	—	7.6	6,627.8	6,627.8	—	6,635.4
Goodwill	—	—	—	19,831.7	19,831.7	—	19,831.7
Intangible assets, net	—	—	—	33,046.1	33,046.1	—	33,046.1
Deferred tax asset	—	—	304.1	188.8	188.8	(304.1)	188.8
Long term intercompany loan receivable	—	12,050.2	1,609.3	—	12,050.2	(13,659.5)	—
Other non-current assets	—	2.8	—	202.6	205.4	—	205.4
Total assets	$ 43,204.3	$ 14,181.1	$ 40,941.3	$ 85,149.8	$ 99,330.9	$ (115,719.6)	$ 67,756.9
LIABILITIES AND EQUITY							
Current liabilities:							
Accounts payable and accrued expenses	$ 0.2	$ 85.9	$ 18.1	$ 4,080.3	$ 4,166.2	$ —	$ 4,184.5
Short term borrowings and capital leases	—	2,006.3	748.8	33.6	2,039.9	—	2,788.7
Intercompany payables	3,585.3	—	1,217.2	—	—	(4,802.5)	—
Short term intercompany loan payable	—	—	—	2,006.3	2,006.3	(2,006.3)	—
Other current liabilities	573.5	—	10.7	324.6	324.6	—	908.8
Total current liabilities	4,159.0	2,092.2	1,994.8	6,444.8	8,537.0	(6,808.8)	7,882.0
Long term borrowings and capital leases	—	12,050.2	4,308.9	393.3	12,443.5	—	16,752.4
Deferred tax liability	—	—	—	5,052.3	5,052.3	(304.1)	4,748.2
Long term intercompany loan payable	2,868.9	—	—	10,790.6	10,790.6	(13,659.5)	—
Other non-current liabilities	—	—	70.0	2,127.9	2,127.9	—	2,197.9
Total liabilities	7,027.9	14,142.4	6,373.7	24,808.9	38,951.3	(20,772.4)	31,580.5
Total equity	36,176.4	38.7	34,567.6	60,340.9	60,379.6	(94,947.2)	36,176.4
Total liabilities and equity	$ 43,204.3	$ 14,181.1	$ 40,941.3	$ 85,149.8	$ 99,330.9	$ (115,719.6)	$ 67,756.9

Condensed Consolidating Balance Sheets
(In millions)

As of December 31, 2016	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
ASSETS							
Current assets:							
Cash and cash equivalents	$ —	$ —	$ 41.7	$ 487.1	$ 487.1	$ —	$ 528.8
Restricted cash	—	—	—	25.6	25.6	—	25.6
Accounts receivable, net	—	—	—	2,616.5	2,616.5	—	2,616.5
Inventories	—	—	—	3,562.3	3,562.3	—	3,562.3
Prepaid expenses and other current assets	1.8	—	97.1	707.4	707.4	—	806.3
Intercompany receivables	—	120.5	—	5,154.4	5,274.9	(5,274.9)	—
Short term intercompany loan receivable	—	2,594.8	—	—	2,594.8	(2,594.8)	—
Total current assets	1.8	2,715.3	138.8	12,553.3	15,268.6	(7,869.7)	7,539.5
Investments	35,656.1	—	34,644.2	12,571.8	12,571.8	(82,680.5)	191.6
Property, plant and equipment (PP&E), net	—	—	27.4	6,442.2	6,442.2	—	6,469.6
Goodwill	—	—	—	17,888.2	17,888.2	—	17,888.2
Intangible assets, net	—	—	—	34,697.5	34,697.5	—	34,697.5
Deferred tax asset	—	—	273.0	96.7	96.7	(273.0)	96.7
Long term intercompany loan receivable	—	14,431.0	480.7	—	14,431.0	(14,911.7)	—
Other non-current assets	3.9	—	33.8	114.6	114.6	—	152.3
Total assets	$35,661.8	$17,146.3	$35,597.9	$84,364.3	$101,510.6	$(105,734.9)	$67,035.4
LIABILITIES AND EQUITY							
Current liabilities:							
Accounts payable and accrued expenses	$ 1.3	$ 85.7	$ 20.0	$ 4,205.4	$ 4,291.1	$ —	$ 4,312.4
Short term borrowings and capital leases	450.0	2,594.8	—	23.2	2,618.0	—	3,068.0
Intercompany payables	5,247.1	—	27.8	—	—	(5,274.9)	—
Short term intercompany loan payable	—	—	—	2,594.8	2,594.8	(2,594.8)	—
Other current liabilities	—	—	64.6	298.3	298.3	—	362.9
Total current liabilities	5,698.4	2,680.5	112.4	7,121.7	9,802.2	(7,869.7)	7,743.3
Long term borrowings and capital leases	—	14,431.0	5,063.6	405.2	14,836.2	—	19,899.8
Deferred tax liability	—	—	—	8,595.7	8,595.7	(273.0)	8,322.7
Long term intercompany loan payable	610.1	—	—	14,301.6	14,301.6	(14,911.7)	—
Other non-current liabilities	405.3	—	61.8	1,654.5	1,654.5	—	2,121.6
Total liabilities	6,713.8	17,111.5	5,237.8	32,078.7	49,190.2	(23,054.4)	38,087.4
Total equity	28,948.0	34.8	30,360.1	52,285.6	52,320.4	(82,680.5)	28,948.0
Total liabilities and equity	$35,661.8	$17,146.3	$35,597.9	$84,364.3	$101,510.6	$(105,734.9)	$67,035.4

Condensed Consolidating Statements of Operations

(In millions)

Year ended December 31, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$—	$ —	$14,448.9	$14,448.9	$ —	$14,448.9
Royalties and other revenues	—	—	—	711.7	711.7	—	711.7
Total revenues	—	—	—	15,160.6	15,160.6	—	15,160.6
Costs and expenses:							
Cost of sales	—	—	—	4,700.8	4,700.8	—	4,700.8
Research and development	—	—	—	1,763.3	1,763.3	—	1,763.3
Selling, general and administrative	5.8	—	13.6	3,511.5	3,511.5	—	3,530.9
Amortization of acquired intangible assets	—	—	2.2	1,766.2	1,766.2	—	1,768.4
Integration and acquisition costs	168.2	—	110.6	615.7	615.7	—	894.5
Reorganization costs	—	—	—	47.9	47.9	—	47.9
Gain on sale of product rights	—	—	—	(0.4)	(0.4)	—	(0.4)
Total operating expenses	174.0	—	126.4	12,405.0	12,405.0	—	12,705.4
Operating income/(loss) from continuing operations	(174.0)	—	(126.4)	2,755.6	2,755.6	—	2,455.2
Interest income/(expense), net	(145.8)	3.6	(91.4)	(335.6)	(332.0)	—	(569.2)
Other income/(expense), net	2.2	—	4.4	0.8	0.8	—	7.4
Total other income/ (expense), net	(143.6)	3.6	(87.0)	(334.8)	(331.2)	—	(561.8)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(317.6)	3.6	(213.4)	2,420.8	2,424.4	—	1,893.4
Income taxes	3.5	(0.9)	7.5	2,347.5	2,346.6	—	2,357.6
Equity in earnings/(losses) of equity method investees, net of taxes	4,585.6	—	1,572.8	2.5	2.5	(6,158.4)	2.5
Income/(loss) from continuing operations, net of taxes	4,271.5	2.7	1,366.9	4,770.8	4,773.5	(6,158.4)	4,253.5
Gain from discontinued operations, net of taxes	—	—	—	18.0	18.0	—	18.0
Net income/(loss)	4,271.5	2.7	1,366.9	4,788.8	4,791.5	(6,158.4)	4,271.5
Comprehensive income/ (loss)	$7,144.1	$ 2.7	$3,963.5	$ 7,655.6	$ 7,658.3	$(11,621.8)	$ 7,144.1

Condensed Consolidating Statements of Operations
(In millions)

Year ended December 31, 2016	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$ —	$ —	$10,885.8	$10,885.8	$ —	$10,885.8
Royalties and other revenues	—	—	—	510.8	510.8	—	510.8
Total revenues	—	—	—	11,396.6	11,396.6	—	11,396.6
Costs and expenses:							
Cost of sales	—	—	—	3,816.5	3,816.5	—	3,816.5
Research and development	—	—	0.4	1,439.4	1,439.4	—	1,439.8
Selling, general and administrative	59.8	—	29.4	2,926.0	2,926.0	—	3,015.2
Amortization of acquired intangible assets	—	—	—	1,173.4	1,173.4	—	1,173.4
Integration and acquisition costs	—	—	302.0	581.9	581.9	—	883.9
Reorganization costs	—	—	—	121.4	121.4	—	121.4
Gain on sale of product rights	—	—	—	(16.5)	(16.5)	—	(16.5)
Total operating expenses	59.8	—	331.8	10,042.1	10,042.1	—	10,433.7
Operating income/(loss) from continuing operations	(59.8)	—	(331.8)	1,354.5	1,354.5	—	962.9
Interest income/(expense), net	(100.6)	36.5	(45.1)	(342.0)	(305.5)	—	(451.2)
Other income/(expense), net	0.9	—	2.7	(29.2)	(29.2)	—	(25.6)
Total other income/(expense), net	(99.7)	36.5	(42.4)	(371.2)	(334.7)	—	(476.8)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(159.5)	36.5	(374.2)	983.3	1,019.8	—	486.1
Income taxes	4.3	(9.1)	88.9	42.0	32.9	—	126.1
Equity in earnings/(losses) of equity method investees, net of taxes	482.6	—	(657.5)	(8.7)	(8.7)	174.9	(8.7)
Income/(loss) from continuing operations, net of taxes	327.4	27.4	(942.8)	1,016.6	1,044.0	174.9	603.5
Loss from discontinued operations, net of taxes	—	—	—	(276.1)	(276.1)	—	(276.1)
Net income/(loss)	327.4	27.4	(942.8)	740.5	767.9	174.9	327.4
Comprehensive income/(loss)	$(986.4)	$27.4	$(2,148.9)	$ (572.9)	$ (545.5)	$2,694.4	$ (986.4)

Condensed Consolidating Statements of Operations
(In millions)

Year ended December 31, 2015	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$—	$—	$6,099.9	$6,099.9	$ —	$6,099.9
Royalties and other revenues	—	—	—	316.8	316.8	—	316.8
Total revenues	—	—	—	6,416.7	6,416.7	—	6,416.7
Costs and expenses:							
Cost of sales	—	—	—	969.0	969.0	—	969.0
Research and development	—	—	—	1,564.0	1,564.0	—	1,564.0
Selling, general and administrative	24.9	—	—	1,816.2	1,816.2	1.4	1,842.5
Amortization of acquired intangible assets	—	—	—	498.7	498.7	—	498.7
Integration and acquisition costs		—	—	39.8	39.8	—	39.8
Reorganization costs	—	—	—	97.9	97.9	—	97.9
Gain on sale of product rights	—	—	—	(14.7)	(14.7)	—	(14.7)
Total operating expenses	24.9	—	—	4,970.9	4,970.9	1.4	4,997.2
Operating income/(loss) from continuing operations	(24.9)	—	—	1,445.8	1,445.8	(1.4)	1,419.5
Interest income/(expense), net	(63.6)	(1.7)	—	27.9	26.2	—	(37.4)
Other income/(expense), net	0.9	—	—	2.8	2.8	—	3.7
Total other income/(expense), net	(62.7)	(1.7)	—	30.7	29.0	—	(33.7)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(87.6)	(1.7)	—	1,476.5	1,474.8	(1.4)	1,385.8
Income taxes	2.9	—	—	(49.0)	(49.0)	—	(46.1)
Equity in earnings/(losses) of equity method investees, net of taxes	1,388.1	—	—	(2.2)	(2.2)	(1,388.1)	(2.2)
Income/(loss) from continuing operations, net of taxes	1,303.4	(1.7)	—	1,425.3	1,423.6	(1,389.5)	1,337.5
Loss from discontinued operations, net of taxes	—	—	—	(34.1)	(34.1)	—	(34.1)
Net income/(loss)	1,303.4	(1.7)	—	1,391.2	1,389.5	(1,389.5)	1,303.4
Comprehensive income/(loss)	$1,151.1	$(1.7)	$—	$1,238.9	$1,237.2	$(1,237.2)	$1,151.1

Condensed Consolidating Statements of Cash Flows

(In millions)

Year ended December 31, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
CASH FLOWS FROM OPERATING ACTIVITIES:							
Net cash provided by/(used in) operating activities	$ —	$ 6.6	$ (13.1)	$ 4,263.2	$ 4,269.8	$ —	$ 4,256.7
CASH FLOWS FROM INVESTING ACTIVITIES:							
Transactions with subsidiaries	(10,349.3)	(2,670.2)	(5,604.9)	(21,427.5)	(24,097.7)	40,051.9	—
Purchases of PP&E	—	—	—	(798.8)	(798.8)	—	(798.8)
Proceeds/(payment) from sale of investments	—	—	(9.7)	98.3	98.3	—	88.6
Movements in restricted cash	—	—	—	(13.7)	(13.7)	—	(13.7)
Other, net	—	—	—	23.0	23.0	—	23.0
Net cash provided by/(used in) investing activities	(10,349.3)	(2,670.2)	(5,614.6)	(22,118.7)	(24,788.9)	40,051.9	(700.9)
CASH FLOWS FROM FINANCING ACTIVITIES:							
Proceeds from revolving line of credit, long term and short term borrowings	2,110.0	1,610.0	—	516.7	2,126.7	—	4,236.7
Repayment of revolving line of credit, long term and short term borrowings	(2,560.0)	(4,600.0)	—	(521.4)	(5,121.4)	—	(7,681.4)
Proceeds from intercompany borrowings	10,801.5	5,653.6	5,582.6	18,014.2	23,667.8	(40,051.9)	—
Payment of dividend	(35.8)	—	—	(245.5)	(245.5)	—	(281.3)
Proceeds from issuance of stock for share-based compensation	33.6	—	4.8	95.7	95.7	—	134.1
Other, net	—	—	(0.9)	(26.5)	(26.5)	—	(27.4)
Net cash provided by/(used in) financing activities	10,349.3	2,663.6	5,586.5	17,833.2	20,496.8	(40,051.9)	(3,619.3)
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	—	7.1	7.1	—	7.1
Net decrease in cash and cash equivalents	—	—	(41.2)	(15.2)	(15.2)	—	(56.4)
Cash and cash equivalents at beginning of period	—	—	41.7	487.1	487.1	—	528.8
Cash and cash equivalents at end of period	$ —	$ —	$ 0.5	$ 471.9	$ 471.9	$ —	$ 472.4

Condensed Consolidating Statements of Cash Flows
(In millions)

Year ended December 31, 2016	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
CASH FLOWS FROM OPERATING ACTIVITIES:							
Net cash provided by/(used in) operating activities	$ (136.9)	$ 232.8	$ (51.0)	$ 2,614.0	$ 2,846.8	$ —	$ 2,658.9
CASH FLOWS FROM INVESTING ACTIVITIES:							
Transactions with subsidiaries	(2,890.0)	(18,228.8)	(480.7)	(4,707.3)	(22,936.1)	26,306.8	—
Purchases of PP&E	—	—	(11.1)	(637.6)	(637.6)	—	(648.7)
Purchases of businesses, net of cash acquired	—	—	—	(17,476.2)	(17,476.2)	—	(17,476.2)
Proceeds from sale of investments	—	—	—	0.9	0.9	—	0.9
Movements in restricted cash	—	—	—	62.8	62.8	—	62.8
Other, net	—	—	—	(31.0)	(31.0)	—	(31.0)
Net cash provided by/(used in) investing activities	(2,890.0)	(18,228.8)	(491.8)	(22,788.4)	(41,017.2)	26,306.8	(18,092.2)
CASH FLOWS FROM FINANCING ACTIVITIES:							
Proceeds from revolving line of credit, long term and short term borrowings	2,355.0	30,079.9	—	8.5	30,088.4	—	32,443.4
Repayment of revolving line of credit, long term and short term borrowings	(3,405.0)	(13,009.2)	—	9.9	(12,999.3)	—	(16,404.3)
Proceeds from intercompany borrowings	4,077.8	1,097.6	521.9	20,609.5	21,707.1	(26,306.8)	—
Payment of dividend	(20.7)	—	—	(150.6)	(150.6)	—	(171.3)
Debt issuance costs	—	(172.3)	—	—	(172.3)	—	(172.3)
Proceeds from issuance of stock for share-based compensation	19.8	—	132.9	16.5	16.5	—	169.2
Other, net	—	—	(70.3)	31.4	31.4	—	(38.9)
Net cash provided by/(used in) financing activities	3,026.9	17,996.0	584.5	20,525.2	38,521.2	(26,306.8)	15,825.8
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	—	0.8	0.8	—	0.8
Net decrease in cash and cash equivalents	—	—	41.7	351.6	351.6	—	393.3
Cash and cash equivalents at beginning of period	—	—	—	135.5	135.5	—	135.5
Cash and cash equivalents at end of period	$ —	$ —	$ 41.7	$ 487.1	$ 487.1	$ —	$ 528.8

Condensed Consolidating Statements of Cash Flows
(In millions)

Year ended December 31, 2015	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
CASH FLOWS FROM OPERATING ACTIVITIES:							
Net cash provided by/(used in) operating activities	$ (133.5)	$—	$—	$ 2,470.5	$ 2,470.5	$ —	$ 2,337.0
CASH FLOWS FROM INVESTING ACTIVITIES:							
Transactions with subsidiaries	(3,570.0)	—	—	(3,048.2)	(3,048.2)	6,618.2	—
Purchases of PP&E	—	—	—	(114.7)	(114.7)	—	(114.7)
Purchases of businesses, net of cash acquired	—	—	—	(5,553.4)	(5,553.4)	—	(5,553.4)
Proceeds from sale of investments	—	—	—	85.7	85.7	—	85.7
Movements in restricted cash	—	—	—	(32.0)	(32.0)	—	(32.0)
Other, net	—	—	—	(5.5)	(5.5)	—	(5.5)
Net cash provided by/(used in) investing activities	(3,570.0)	—	—	(8,668.1)	(8,668.1)	6,618.2	(5,619.9)
CASH FLOWS FROM FINANCING ACTIVITIES:							
Proceeds from revolving line of credit, long term and short term borrowings	3,760.0	—	—	0.8	0.8	—	3,760.8
Repayment of revolving line of credit, long term and short term borrowings	(3,110.0)	—	—	(0.9)	(0.9)	—	(3,110.9)
Proceeds from intercompany borrowings	3,048.2	—	—	3,570.0	3,570.0	(6,618.2)	—
Payment of dividend	(6.8)	—	—	(127.6)	(127.6)	—	(134.4)
Debt issuance costs	(4.5)	—	—	(19.6)	(19.6)	—	(24.1)
Proceeds from issuance of stock for share-based compensation	16.6	—	—	—	—	—	16.6
Other, net	—	—	—	(69.0)	(69.0)	—	(69.0)
Net cash provided by/(used in) financing activities	3,703.5	—	—	3,353.7	3,353.7	(6,618.2)	439.0
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	—	(3.0)	(3.0)	—	(3.0)
Net decrease in cash and cash equivalents	—	—	—	(2,846.9)	(2,846.9)	—	(2,846.9)
Cash and cash equivalents at beginning of period	—	—	—	2,982.4	2,982.4	—	2,982.4
Cash and cash equivalents at end of period	$ —	$—	$—	$ 135.5	$ 135.5	$ —	$ 135.5

Quarterly results of operations (Unaudited)

The following table presents summarized unaudited quarterly results for the years to December 31, 2017 and 2016:

2017	Q1	Q2	Q3	Q4
(In millions, except per share data)				
Total revenues	$3,572.3	$3,745.8	$3,697.6	$4,144.9
Cost of product sales	1,327.0	1,108.9	1,001.4	1,263.5
Income from continuing operations, net of taxes	354.8	241.5	551.2	3,106.0
Gain/(loss) from discontinued operations, net of taxes	20.2	(1.2)	(0.4)	(0.6)
Net income	375.0	240.3	550.8	3,105.4
Earnings per ordinary share - basic				
Earnings from continuing operations	$ 0.39	$ 0.27	$ 0.61	$ 3.42
Gain from discontinued operations	0.02	—	—	—
Earnings per share - basic	$ 0.41	$ 0.27	$ 0.61	$ 3.42
Earnings per ordinary share - diluted				
Earnings from continuing operations	$ 0.39	$ 0.26	$ 0.60	$ 3.41
Gain from discontinued operations	0.02	—	—	—
Earnings per share - diluted	$ 0.41	$ 0.26	$ 0.60	$ 3.41

2016	Q1	Q2	Q3	Q4
(In millions, except per share data)				
Total revenues	$1,709.3	$2,429.1	$3,452.1	$3,806.1
Cost of product sales	248.6	778.1	1,736.2	1,053.6
Income/(loss) from continuing operations, net of taxes	409.5	86.6	(368.5)	475.9
Gain/(loss) from discontinued operations, net of taxes	9.5	(248.7)	(18.3)	(18.6)
Net income/(loss)	419.0	(162.1)	(386.8)	457.3
Earnings per ordinary share - basic				
Earnings/(loss) from continuing operations	$ 0.69	$ 0.12	$ (0.41)	$ 0.53
Gain/(loss) from discontinued operations	0.02	(0.36)	(0.02)	(0.02)
Earnings/(loss) per share - basic	$ 0.71	$ (0.24)	$ (0.43)	$ 0.51
Earnings per ordinary share - diluted				
Earnings/(loss) from continuing operations	$ 0.69	$ 0.12	$ (0.41)	$ 0.52
Earnings/(loss) from discontinued operations	0.02	(0.36)	(0.02)	(0.02)
Earnings/(loss) per share - diluted	$ 0.71	$ (0.24)	$ (0.43)	$ 0.50

SHIRE PLC
CONSOLIDATED BALANCE SHEETS
(Unaudited, in millions, except par value of shares)

	September 30, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 193.2	$ 472.4
Restricted cash	39.9	39.4
Accounts receivable, net	3,207.4	3,009.8
Inventories	3,458.7	3,291.5
Other current assets	900.1	795.3
Total current assets	7,799.3	7,608.4
Investments	470.7	241.1
Property, plant and equipment (PP&E), net	6,453.0	6,635.4
Goodwill	19,095.0	19,831.7
Intangible assets, net	29,625.4	33,046.1
Deferred tax asset	151.2	188.8
Other non-current assets	171.3	205.4
Total assets	$63,765.9	$67,756.9
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 4,025.1	$ 4,184.5
Short term borrowings and capital leases	4,248.7	2,788.7
Other current liabilities	237.8	908.8
Total current liabilities	8,511.6	7,882.0
Long term borrowings and capital leases	11,098.0	16,752.4
Deferred tax liability	4,571.2	4,748.2
Other non-current liabilities	2,294.9	2,197.9
Total liabilities	26,475.7	31,580.5
Commitments and contingencies		
Equity:		
Common stock of 5p par value; 1,500 shares authorized; and 922.1 shares issued and outstanding (2017: 1,500 shares authorized; and 917.1 shares issued and outstanding)	81.9	81.6
Additional paid-in capital	25,390.2	25,082.2
Treasury stock: 7.5 shares (2017: 8.4 shares)	(260.7)	(283.0)
Accumulated other comprehensive income	626.4	1,375.0
Retained earnings	11,452.4	9,920.6
Total equity	37,290.2	36,176.4
Total liabilities and equity	$63,765.9	$67,756.9

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in millions, except per share amounts)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Revenues:				
Product sales	$3,752.8	$3,533.8	$11,198.5	$10,537.9
Royalties and other revenues	118.9	163.8	358.4	477.8
Total revenues	3,871.7	3,697.6	11,556.9	11,015.7
Costs and expenses:				
Cost of sales	1,157.6	1,001.4	3,398.3	3,437.3
Research and development	407.2	402.8	1,240.0	1,324.5
Selling, general and administrative	836.8	859.7	2,549.3	2,647.7
Amortization of acquired intangible assets	433.7	482.4	1,375.3	1,280.5
Integration and acquisition costs	93.0	237.0	512.0	696.7
Reorganization costs	254.8	5.4	268.9	24.5
(Gain)/loss on sale of Oncology and product rights	(267.2)	0.3	(267.2)	(0.4)
Total operating expenses	2,915.9	2,989.0	9,076.6	9,410.8
Operating income from continuing operations	955.8	708.6	2,480.3	1,604.9
Interest income	1.3	1.5	4.8	5.7
Interest expense	(125.2)	(141.8)	(378.1)	(425.4)
Other (expense)/income, net	(96.1)	(0.2)	(43.9)	6.8
Total other expense, net	(220.0)	(140.5)	(417.2)	(412.9)
Income from continuing operations before income taxes and equity in earnings of equity method investees	735.8	568.1	2,063.1	1,192.0
Income taxes	(203.3)	(13.5)	(371.0)	(44.6)
Equity in earnings/(losses) of equity method investees, net of taxes	4.7	(3.4)	11.2	0.1
Income from continuing operations, net of taxes	537.2	551.2	1,703.3	1,147.5
(Loss)/gain from discontinued operations, net of taxes	—	(0.4)	—	18.6
Net income	$ 537.2	$ 550.8	$ 1,703.3	$ 1,166.1

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF OPERATIONS (continued)
(Unaudited, in millions, except per share amounts)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Earnings per Ordinary Share – basic				
Earnings from continuing operations	$ 0.59	$ 0.61	$ 1.87	$ 1.27
Earnings from discontinued operations	—	—	—	0.02
Earnings per Ordinary Share – basic	$ 0.59	$ 0.61	$ 1.87	$ 1.29
Earnings per Ordinary Share – diluted				
Earnings from continuing operations	$ 0.58	$ 0.60	$ 1.86	$ 1.26
Earnings from discontinued operations	—	—	—	0.02
Earnings per Ordinary Share – diluted	$ 0.58	$ 0.60	$ 1.86	$ 1.28
Weighted average number of shares:				
Basic	914.0	907.2	912.0	905.9
Diluted	921.1	911.6	916.9	912.1

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited, in millions)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Net income	$ 537.2	$ 550.8	$1,703.3	$1,166.1
Other comprehensive income:				
Foreign currency translation adjustments	(100.7)	744.6	(679.2)	2,441.1
Pension and other employee benefits (net of tax expense of $nil for the three and nine months ended September 30, 2018 and $nil and $0.9 for the three and nine months ended September 30, 2017, respectively)	(0.5)	0.4	(1.5)	11.0
Unrealized gain on available-for-sale securities (net of tax expense of $nil for the three and nine months ended September 30, 2018 and $5.5 and $7.2 for the three and nine months ended September 30, 2017, respectively)	—	23.8	(67.9)	20.3
Hedging activities (net of tax benefit of $nil for the three and nine months ended September 30, 2018 and $nil and $3.2 for the three and nine months ended September 30, 2017, respectively)	—	0.2	—	(5.7)
Comprehensive income	$ 436.0	$1,319.8	$ 954.7	$3,632.8

The components of Accumulated other comprehensive income as of September 30, 2018 and December 31, 2017 are as follows:

	September 30, 2018	December 31, 2017
Foreign currency translation adjustments	$600.4	$1,279.6
Pension and other employee benefits, net of taxes	26.0	27.5
Unrealized holding gain on available-for-sale securities, net of taxes	—	67.9
Accumulated other comprehensive income	$626.4	$1,375.0

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
(Unaudited, in millions)

	Common stock number of shares	Common stock	Additional paid-in capital	Treasury stock	Accumulated other comprehensive income	Retained earnings	Total equity
As of January 1, 2018	917.1	$81.6	$25,082.2	$(283.0)	$1,375.0	$ 9,920.6	$36,176.4
Net income	—	—	—	—	—	1,703.3	1,703.3
Other comprehensive loss, net of tax	—	—	—	—	(748.6)	—	(748.6)
Shares issued under employee benefit plans and other	5.0	0.3	172.3	—	—	—	172.6
Cumulative-effect adjustment from adoption of ASU 2014-09, Revenue from Contracts with Customers	—	—	—	—	—	52.0	52.0
Cumulative-effect adjustment from adoption of ASU 2016-01, Financial Instruments – Overall	—	—	—	—	—	67.9	67.9
Cumulative-effect adjustment from adoption of ASU 2016-16, Income Taxes	—	—	—	—	—	7.5	7.5
Share-based compensation	—	—	135.7	—	—	—	135.7
Shares released by employee benefit trust to satisfy exercise of stock options	—	—	—	22.3	—	(22.3)	—
Dividends	—	—	—	—	—	(276.6)	(276.6)
As of September 30, 2018	922.1	$81.9	$25,390.2	$(260.7)	$ 626.4	$11,452.4	$37,290.2

Dividends per share

During the nine months ended September 30, 2018, Shire plc declared and paid dividends of $0.2979 U.S. per ordinary share (equivalent of $0.8937 U.S. per ADS) totaling $276.6 million. During the nine months ended September 30, 2017, Shire plc declared and paid dividends of $0.257 U.S. per ordinary share (equivalent to $0.771 U.S. per ADS) totaling $234.7 million.

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

SHIRE PLC
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in millions)

	Nine months ended September 30,	
	2018	**2017**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 1,703.3	$ 1,166.1
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	1,808.1	1,644.0
Share based compensation	135.7	159.7
Expense related to the unwind of inventory fair value adjustments	40.9	688.7
Change in deferred taxes	14.2	(392.4)
Change in fair value of contingent consideration	100.4	144.3
Impairment of PP&E and intangible assets	169.5	167.6
Gain on sale of Oncology franchise	(267.2)	—
Other, net	(7.2)	99.2
Changes in operating assets and liabilities:		
Increase in accounts receivable	(362.0)	(301.5)
(Decrease)/increase in sales deduction accrual	(22.6)	94.0
Increase in inventory	(305.4)	(245.2)
Decrease in prepayments and other assets	44.6	70.4
Decrease in accounts payable and other liabilities	(244.8)	(557.8)
Net cash provided by operating activities	2,807.5	2,737.1
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sale of Oncology franchise	2,412.2	—
Purchases of PP&E	(564.6)	(565.5)
Acquisition of business, net of cash acquired	(104.7)	—
Proceeds from sale of investments	31.8	48.1
Other, net	(97.9)	34.8
Net cash provided by/(used in) investing activities	1,676.8	(482.6)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from revolving line of credit, long term and short term borrowings	3,735.3	3,261.6
Repayment of revolving line of credit, long term and short term borrowings	(7,969.0)	(5,664.5)
Payment of contingent consideration	(396.0)	—
Payment of dividend	(276.6)	(234.7)
Proceeds from issuance of stock for share-based compensation arrangements	180.8	92.2
Other, net	(25.6)	(26.2)
Net cash used in financing activities	(4,751.1)	(2,571.6)
Effect of foreign exchange rate changes on cash and cash equivalents	(11.9)	6.2
Net decrease in cash, cash equivalents, and restricted cash	(278.7)	(310.9)
Cash, cash equivalents, and restricted cash at beginning of period	511.8	554.5
Cash, cash equivalents, and restricted cash at end of period	$ 233.1	$ 243.6
Supplemental information:		
Interest paid	$ 427.1	$ 434.9
Income taxes paid, net	$ 528.4	$ 308.0
Cash, cash equivalents, and restricted cash information:		
Cash and cash equivalents	$ 193.2	$ 209.3
Restricted cash	39.9	34.3
Cash, cash equivalents, and restricted cash at end of period	$ 233.1	$ 243.6

The accompanying notes are an integral part of these Unaudited Consolidated Financial Statements.

1. Description of Operations

Shire plc and its subsidiaries (collectively referred to as either "Shire" or the "Company") is the leading global biotechnology company focused on serving people with rare diseases.

Some of the Company's marketed products include GAMMAGARD, HYQVIA, and CINRYZE for Immunology, ADVATE/ADYNOVATE, VONVENDI, and FEIBA for Hematology, ELAPRASE and REPLAGAL for Genetic Diseases, VYVANSE, ADDERALL XR, and MYDAYIS for Neuroscience, GATTEX/ REVESTIVE and NATPARA/NATPAR for Internal Medicine, and XIIDRA for Ophthalmics.

The Company has grown both organically and through acquisition, completing a series of major transactions that have brought therapeutic, geographic, and pipeline growth and diversification. The Company will continue to conduct its own research and development (R&D) focused on rare diseases, as well as evaluate companies, products and pipeline opportunities that offer a strategic fit and have the potential to deliver value to all of the Company's stakeholders: patients, physicians, policy makers, payers, partners, investors, and employees.

On August 31, 2018, Shire completed the sale of its Oncology franchise to Servier S.A.S. (Servier) for $2.4 billion.

On May 8, 2018, the boards of Takeda Pharmaceutical Company Limited (Takeda) and Shire announced that they have reached agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire (the "Acquisition"). Shire shareholders will be entitled to receive $30.33 in cash for each Shire ordinary share and either 0.839 of a new share in Takeda (as proposed to be issued in connection with the Acquisition) (each a "New Takeda Share") or 1.678 ADSs in Takeda (one ADS equals 0.5 New Takeda Share).

2. Summary of Significant Accounting Policies

Basis of Presentation

These interim financial statements of Shire plc and its subsidiaries are unaudited. They have been prepared in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP).

The Consolidated Balance Sheet as of December 31, 2017 was derived from the Audited Consolidated Financial Statements as of that date.

These interim Unaudited Consolidated Financial Statements should be read in conjunction with the Consolidated Financial Statements and accompanying notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017, as filed with the SEC on February 20, 2018.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted from these interim financial statements. However, these interim financial statements include all adjustments, consisting of normal recurring adjustments, which are, in the opinion of management, necessary to fairly state the results of the interim period and the Company believes that the disclosures are adequate to make the information presented not misleading. Interim results are not necessarily indicative of results to be expected for the full year.

Use of Estimates

The preparation of Financial Statements, in conformity with U.S. GAAP and SEC regulations, requires management to make estimates, judgments, and assumptions that affect the reported and disclosed amounts of assets, liabilities, and equity at the date of the Unaudited Consolidated Financial Statements and reported amounts of revenues and expenses during the period. On an on-going basis, the Company evaluates its estimates, judgments, and methodologies. Estimates are based on historical experience, current conditions, and on various other assumptions that are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, and equity and the amounts of revenues and expenses. Actual results may differ from these estimates under different assumptions or conditions.

New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard setting bodies that the Company adopts as of the specified effective date. Unless otherwise discussed below, the Company does not believe that the impact of recently issued standards that are not yet effective will have a material impact on the Company's financial position or results of operations upon adoption.

Adopted during the current period

Revenue from Contracts with Customers

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). The FASB subsequently issued several additional ASUs amending the guidance and deferred effective date to January 1, 2018. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements, and financial instruments. Under this accounting standard, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. The Company adopted this new standard on January 1, 2018, using the modified retrospective transition method. Under this method, the Company recognized the cumulative-effect of initially applying the standard as an adjustment to the opening balance of retained earnings. As a result, the Company recorded a cumulative-effect adjustment to increase Retained earnings by $52.0 million, net of tax of $15.6 million. The modified retrospective transition method was applied only to the contracts that were not completed as of the adoption date.

For a complete discussion of accounting for revenue with customers, refer to Note 3, Revenue Recognition, to these Unaudited Consolidated Financial Statements.

Impact of adoption

As a result of adopting the new accounting for revenue with customers on January 1, 2018, the following financial statement line items as of and for the three and nine months ended September 30, 2018 were affected. The following tables provide the amounts as reported in these Unaudited Consolidated Financial Statements and as if the previous accounting guidance was in effect.

Unaudited Consolidated Balance Sheets

	As of September 30, 2018	
(In millions)	As reported	Before Adoption of Topic 606
Other current assets	$ 900.1	$ 844.5
Other current liabilities	237.8	238.8
Other non-current liabilities	2,294.9	2,296.9
Retained earnings	11,452.4	11,414.5

Unaudited Consolidated Statements of Operations

	Three months ended September 30, 2018		Nine months ended September 30, 2018	
(In millions, except per share)	As reported	Before Adoption of Topic 606	As reported	Before Adoption of Topic 606
Product sales	$3,752.8	$3,741.5	$11,198.5	$11,162.5
Royalties and other revenues	118.9	128.0	358.4	412.7
Net income	537.2	535.5	1,703.3	1,717.4
Net income per share applicable to common shareholders – basic	0.59	0.59	1.87	1.88
Net income per share applicable to common shareholders – diluted	0.58	0.58	1.86	1.87

Unaudited Consolidated Statements of Cash Flows

(In millions)	Nine months ended September 30, 2018	
	As reported	Before Adoption of Topic 606
Net income	$1,703.3	$1,717.4
Adjustments to reconcile net income to net cash provided by operating activities:		
Decrease in prepayments and other assets	44.6	100.2
Decrease in accounts payable and other liabilities	(244.8)	(241.8)

Financial Instrument Accounting

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The new standard amends certain aspects of accounting and disclosure requirements of financial instruments, including the requirement that equity investments with readily determinable fair values be measured at fair value with changes in fair value recognized in the results of operations. The new standard was effective January 1, 2018. The Company adopted ASU No. 2016-01 in the first quarter of 2018. As a result of the adoption, the Company recorded a cumulative-effect adjustment to Retained earnings of $67.9 million to reclassify unrealized gains from available-for-sale equity securities previously recognized in the Other comprehensive income.

Statement of Cash Flows

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. The new standard clarifies certain aspects of the statement of cash flows, and aims to reduce diversity in practice regarding how certain transactions are classified in the statement of cash flows. This standard was effective January 1, 2018. The Company adopted ASU No. 2016-15 in the first quarter of 2018. The adoption of this guidance did not have a material impact on the Company's financial position and results of operations.

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. The new guidance is intended to reduce diversity in the presentation of restricted cash and restricted cash equivalents in the statement of cash flows. The guidance requires that restricted cash and restricted cash equivalents be included as components of total cash and cash equivalents as presented on the statement of cash flows. This standard was effective January 1, 2018. The Company adopted ASU No. 2016-18 in the first quarter of 2018 and amended the presentation of its statements of cash flows for the nine months ended September 30, 2018 and 2017 accordingly. The adoption of this guidance did not have a material impact on the Company's financial position and results of operations.

Income Taxes

In October 2016, the FASB issued ASU No. 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers Other than Inventory. This standard removes the current exception in U.S. GAAP prohibiting entities from recognizing current and deferred income tax expenses or benefits related to transfer of assets, other than inventory, within the consolidated entity. The current exception to defer the recognition of any tax impact on the transfer of inventory within the consolidated entity until it is sold to a third party remains unaffected. The standard was effective January 1, 2018. The Company adopted the new standard in the first quarter of 2018 using a modified retrospective approach with a cumulative-effect adjustment to opening retained earnings. The adoption of this guidance did not have a material impact on the Company's financial position and results of operations.

Retirement Benefits Income Statement Presentation

In March 2017, the FASB issued ASU 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. The standard amends the income statement presentation of the components of net periodic benefit cost for defined benefit pension and other postretirement plans. The standard requires entities to (1) disaggregate the current-service-cost component from the other components of net benefit cost (the "other components") and present it

with other current compensation costs for related employees in the income statement and (2) present the other components elsewhere in the income statement and outside of income from operations if such a subtotal is presented. It also requires entities to disclose the income statement lines that contain the other components if they are not presented on appropriately described separate lines. The standard was effective January 1, 2018. The Company adopted ASU No. 2017-07 in the first quarter of 2018. Adoption of this standard did not have a material impact on the Company's financial position and results of operations.

Share-Based Payment Accounting

In May 2017, the FASB issued ASU No. 2017-09, Compensation - Stock Compensation (Topic 718): Scope Modification Accounting. The new standard clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. This standard was effective January 1, 2018. The Company adopted ASU No. 2017-09 in the first quarter of 2018. Adoption of this standard did not have a material impact on the Company's financial position and results of operations.

Simplifying the Test for Goodwill Impairment

In January 2017, the FASB issued ASU No. 2017-04, Intangibles - Goodwill and Other (Topic 350): Simplifying the Test of Goodwill Impairment. This new standard simplifies how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The Company adopted ASU No. 2017-04 in the first quarter of 2018. Adoption of this standard did not have a material impact on the Company's financial position and results of operations.

To be adopted in future periods

Leases

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new accounting guidance will require the recognition of all long-term lease assets and lease liabilities by lessees and sets forth new disclosure requirements for those lease assets and liabilities. The standard requires lessees to recognize right-of-use assets and lease liabilities on the balance sheet using a modified retrospective approach at the beginning of the earliest comparative period in the financial statements. This standard will be effective for the Company on January 1, 2019. Early adoption is permitted. The Company is currently evaluating the potential impact on its financial position and results of operations of adopting this guidance. The Company expects the adoption of this new standard may have a material impact on total assets and total liabilities within the Company's Consolidated Balance Sheets, with no material impact to its Consolidated Statements of Operations.

Derivatives and Hedging

In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. The standard amends its hedge accounting model to enable entities to better portray the economics of their risk management activities in the financial statements. The new guidance also expands an entity's ability to hedge non-financial and financial risk components and reduces complexity in fair value hedges of interest rate risk. Additionally, it eliminates the requirement to separately measure and report hedge ineffectiveness, eases certain assessment requirements and modifies the accounting for components excluded from the assessment of hedge effectiveness. This standard will be effective for the Company on January 1, 2019. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Financial Statements.

Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement. The new standard eliminates, adds and modifies certain disclosure requirements for fair value measurement as part of its disclosure framework project. The amount and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy will no longer be required to be disclosed, but public companies will be required to disclose the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. This standard will be effective for the Company on January 1, 2020. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Financial Statements.

Retirement Benefits - Defined Benefit Plans

In August 2018, the FASB issued ASU No. 2018-14, Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans. The new standard changes the disclosure requirements for employers that sponsor defined benefit pension and/or other postretirement benefits plans. The guidance eliminates requirements for certain disclosures that are no longer considered cost beneficial and requires new ones that the FASB considers pertinent. This standard will be effective for the Company on January 1, 2020. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Financial Statements.

Intangibles - Goodwill and Other Internal - Use Software

In August 2018, the FASB issued ASU No. 2018-15, Intangibles - Goodwill and Other Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. The new standard aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This standard will be effective for the Company on January 1, 2020. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Financial Statements.

3. Revenue Recognition

Product Revenue, Net

The Company sells its products to major pharmaceutical wholesalers, distributors, and retail pharmacy chains (collectively, its "Customers"). These Customers subsequently resell the Company's products to healthcare providers and patients. In addition to distribution agreements with Customers, the Company enters into arrangements with healthcare providers and payors that provide for government-mandated and/or privately-negotiated rebates, chargebacks, and discounts with respect to the purchase of the Company's products.

Revenues from Product sales are recognized when the Customer obtains control, typically upon delivery. When the terms of the contract include customer acceptance provisions, the Company defers revenue recognition until the customer has accepted the goods, unless the acceptance provision relates only to objective specifications which the Company can determine will be met upon shipment. Customer acceptance provisions include temperature checks, government inspections, and other quality control tests. Shipping and handling and fulfillment costs are accrued for when the related revenue is recognized. Taxes collected from Customers relating to product sales and remitted to governmental authorities are excluded from revenues.

Estimates of Variable Consideration

Revenues from Product sales are recorded at the net sales price (transaction price), which includes estimates of variable consideration for reserves related to statutory rebates to State Medicaid and other government agencies; Medicare Part D rebates; commercial rebates and fees to Managed Care Organizations (MCOs), Group Purchasing Organizations (GPOs), distributors, and specialty pharmacies; product returns; sales discounts (including trade discounts); distribution service fees; wholesaler chargebacks; and allowances for coupon and patient assistance programs relating to the Company's sales of its products.

These reserves are based on estimates of the amounts earned or to be claimed on the related sales. Management's estimates take into consideration historical experience, current contractual and statutory requirements, specific known market events and trends, industry data, and forecasted customer buying and payment patterns. Overall, these reserves reflect the Company's best estimates of the amount of consideration to which it is entitled based on the terms of the contract. The amount of variable consideration included in the net sales price is limited to the amount that is probable not to result in a significant reversal in the amount of the cumulative revenue recognized in a future period. If actual results vary, the Company may adjust these estimates, which could have an effect on earnings in the period of adjustment.

- Trade discounts are generally credits granted to wholesalers, specialty pharmacies, and other customers for remitting payment on their purchases within established incentive periods and are classified as a reduction of accounts receivable, offset by revenue in the same period that the related revenue is recognized.

- Chargebacks are credits or payments issued to wholesalers and other distributors who provide products to qualified healthcare providers at prices lower than the list prices charged to the wholesalers or other distributors. Reserves are estimated based on expected purchases by those qualified healthcare providers. Chargeback reserves are classified as a reduction of accounts receivable in the same period that the related revenue is recognized.
- Distribution service fees are credits or payments issued to wholesalers, distributors, and specialty pharmacies for compliance with various contractually-defined inventory management practices or services provided to support patient access to a product. These fees are generally based on a percentage of gross purchases but can also be based on additional services these entities provide. Most of these costs are reflected as a reduction of gross sales; however, to the extent benefit from services can be separately identified and the fair value determined, costs are classified as Selling, general and administrative expenses. Distribution service fees reserves are estimated based on the terms of each individual contract and are classified within accrued expenses.
- Medicaid rebates are payments to States under statutory and voluntary reimbursement arrangements. Reserves for these rebates are generally based on an estimate of expected product usage by Medicaid patients and expected rebate rates. Statutory rates are generally based on a percentage of selling price adjusted upwards for price increases in excess of published inflation indices. As a result, rebates generally increase as a percentage of the selling price over the life of the product (as prices increase). Medicaid rebate reserves are estimated based on individual product purchase volumes and are classified within accrued expenses.
- Managed care rebates are payments to third parties, primarily pharmacy benefit managers, and other health insurance providers. The reserve for these rebates is based on an estimate of customer buying patterns and applicable contractual rebate rates to be earned over each period. Managed care rebates reserves are estimated based on the terms of each individual contract and purchase volumes and are classified within accrued expenses.
- Incentive rebates are generally credits or payments issued to specialty pharmacies, distributors, or Group Purchasing Organizations for qualified purchases of certain products. Incentive rebate reserves are estimated based on the terms of each individual contract and purchase volumes and are classified within accrued expenses.
- Other discounts and allowances include Medicare rebates, coupon, and patient co-pay assistance. Medicare rebates are payments to health insurance providers of Medicare Part D coverage to qualified patients. Reserve estimates are based on customer buying patterns and applicable contractual rebate rates to be earned over each period. Coupon and co-pay assistance programs provide discounts to qualified patients. Reserve estimates are based on expected claim volumes under these programs and estimated cost per claim that the Company expects to pay. Reserves for Medicare and coupon and patient co-pay programs are classified within accrued expenses.

Product Returns: The Company typically accepts customer product returns in the following circumstances: (a) expiration of shelf life on certain products; (b) product damaged while in the Company's possession; (c) under sales terms that allow for unconditional return (guaranteed sales); or (d) following product recalls or product withdrawals. Generally, returns for expired product are accepted three months before and up to one year after the expiration date of the related product and the related product is destroyed after it is returned. Depending on the product and the Company's return policy with respect to that product, the Company may either refund the sales price paid by the customer by issuance of a credit, or exchange the returned product with replacement inventory. The Company typically does not provide cash refunds. The Company estimates the proportion of recorded revenue that will result in a return by considering relevant factors, including but not limited to:

- historical returns experience;
- the duration of time taken for products to be returned;
- the estimated level of inventory in the distribution channel;
- product recalls and discontinuances;
- the shelf life of products;
- the launch of new drugs or new formulations; and
- the loss of patent protection, exclusivity or new competition.

The estimation process for product returns involves, in each case, a number of interrelating assumptions, which vary for each combination of product and customer. The Company estimates the amount of its product sales that may be returned by its Customers and records this estimate as a reduction of revenue from Product sales in the period the related revenue is recognized.

Royalties and other revenues

The Company enters into agreements, where it licenses certain rights to its products to customers. The terms of these arrangements typically include payment to the Company of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; payments for manufacturing supply services the Company provides; and royalties on net sales of licensed products. Each of these payments is recognized as Royalties and other revenues.

As part of the accounting for these arrangements, the Company must develop estimates that require judgment to determine the stand-alone selling price for each performance obligation, identified in the contract. Performance obligations are promises in a contract to transfer a distinct good or service to the customer. The Company uses key assumptions to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement rates for personnel costs, discount rates and probabilities of technical, regulatory and commercial success.

Licenses of intellectual property: If the license to the Company's intellectual property is distinct from the other performance obligations identified in the arrangement, the Company recognizes revenues from non-refundable, up-front fees when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. If the performance obligation is satisfied over time, the Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition. Measures of progress for revenue recognition vary depending on the nature of the performance obligation.

Milestone Payments: At the inception of each arrangement that includes milestone payments, the Company evaluates the recognition of milestone payments. Typically, milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are included in the transaction price upon achievement of the milestone. Milestone payments included in transaction price are recognized when or as the performance obligations are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the license is transferred.

The Company receives payments from its customers based on billing schedules established in each contract, which vary across Shire's locations, but generally range between 30 to 90 days. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional. The Company does not assess whether a contract has a significant financing component if the expectation is that customer will pay for the product or services in one year or less of receiving those products or services.

The following table presents changes in the Company's contract assets and liabilities during the nine months ended September 30, 2018:

(In millions)	As of January 1, 2018	Increase, net	As of September 30, 2018
Contract assets:			
Unbilled receivables	$42.7	$12.9	$55.6
Contract liabilities:			
Deferred revenue	—	7.4	7.4

Contract assets consist of unbilled receivables typically resulting from sales under contracts when revenue recognized exceeds the amount billed to the customer. The contract assets are included in Other current assets in these Unaudited Consolidated Balance Sheets. Contract liabilities consist of advance payments from customers for future performance obligations. Contract liabilities are included in Other current liabilities in these Unaudited Consolidated Balance Sheets.

4. Acquisition

In September 2018, Shire acquired 100 percent of the voting equity interests in a source plasma collection company. The acquisition is expected to increase Shire's access to plasma in the longer term and add to its European plasma collection network, complementing existing core capabilities in plasma supply, and manufacturing.

The total cash consideration for the acquisition was $107.8 million (CHF 105.0 million). Shire recorded the purchase price as goodwill, intangible assets, and other assets. The $96.3 million goodwill is not deductible for tax purposes.

5. Dispositions and Assets Held for Sale

On August 31, 2018, the Company completed the sale of its Oncology franchise to Servier. Under the terms of the agreement, Servier acquired Shire's Oncology franchise for a net consideration of $2.4 billion, in cash. The Company recognized $267.2 million as a gain, which is recorded within Total operating expenses in the Company's Unaudited Consolidated Statements of Operations.

The assets and liabilities of the Oncology franchise were as follows:

(In millions)	As of August 31, 2018
Intangible Assets	$1,628.3
Goodwill	565.1
Other	25.6
Current Assets	$2,219.0
Current Liabilities	$ 116.4

During the nine months ended September 30, 2018, the Company determined it would divest certain facilities as part of its integration efforts. As of September 30, 2018, the Company classified $115.4 million of assets as held for sale and included within Other current assets in these Unaudited Consolidated Financial Statements. The $115.4 million of held for sale assets consisted primarily of property, plant and equipment and was net of $145.4 million of impairment charges recorded during the nine months ended September 30, 2018. The impairment charges were reported within Integration and acquisition costs in these Unaudited Consolidated Financial Statements.

6. Collaborative and Other Licensing Arrangements

The Company is party to certain collaborative and licensing arrangements. In some of these arrangements, Shire and the licensee are both actively involved in the development and commercialization of the licensed product and have exposure to risks and rewards dependent on its commercial success.

On January 25, 2018, Shire entered into a licensing agreement with AB Biosciences Inc. (AB Biosciences). The license grants Shire exclusive worldwide rights to develop and commercialize a recombinant immunoglobulin product candidate. Under the terms of the agreement, AB Biosciences will grant Shire an exclusive, worldwide license to its intellectual property relating to its pan receptor interacting molecule program. The Company paid $10.0 million upfront license fee and AB Biosciences is eligible to receive contingent research, development, and commercialization milestone payments up to $282.5 million as well as tiered royalty payments.

7. Integration and Acquisition Costs

For the three and nine months ended September 30, 2018, Shire recorded Integration and acquisition costs of $93.0 million and $512.0 million, respectively. These costs relate to the continued integration of Baxalta

Inc. (Baxalta), which was acquired in June 2016, Takeda's proposed acquisition of Shire, and the change in fair value of contingent consideration, primarily related to TAKHZYRO (lanadelumab-flyo), which was acquired from Dyax in 2016.

The Company continues its activities to integrate Baxalta. The costs associated with the integration are primarily related to facility consolidation and professional consulting fees. The Company also drove savings through the continued re-prioritization of its research and development programs and consolidation of its commercial operations. For the three and nine months ended September 30, 2018, these costs include $8.0 million and $151.4 million, respectively, of asset impairments, $12.4 million and $55.5 million, respectively, of third-party professional fees, $4.4 million and $19.2 million, respectively, of expenses associated with facility consolidations, and $5.7 million and $20.7 million, respectively, of employee severance and acceleration of stock compensation. The Company expects the majority of these expenses, except for certain costs related to facility consolidations, to be paid within 12 months from the date the related expenses were incurred. The integration of Baxalta is estimated to be completed by mid to late 2019.

The following table summarizes the reserve for the Baxalta integration costs for certain types of activities during the nine months ended September 30, 2018:

(In millions)	Severance and employee benefits	Lease terminations	Total
As of January 1,	$ 72.9	$ 56.6	$129.5
Amount charged to integration costs	9.2	2.3	11.5
Paid/utilized	(41.0)	(19.9)	(60.9)
As of September 30,	$ 41.1	$ 39.0	$ 80.1

On May 8, 2018, the Boards of Takeda and Shire announced that they had reached an agreement on the terms of a recommended offer pursuant to which Takeda will acquire the entire issued and to be issued ordinary share capital of Shire. The closing of the acquisition is expected in the first half of 2019, subject to shareholder approval of both companies as well as the receipt of regulatory approvals. For the three and nine months ended September 30, 2018, costs associated with this proposed offer include $8.0 million and $72.0 million, respectively, of third-party professional fees and $36.4 million and $40.4 million, respectively, of employee incentives. The Company expects the majority of these expenses to be paid within 12 months from the date the related expenses were incurred.

In the three and nine months ended September 30, 2018, $54.5 million and $100.4 million, respectively, are included in Integration and acquisition costs relating to the change in fair value of contingent consideration payable mainly related to TAKHZYRO.

For the three and nine months ended September 30, 2017, Shire recorded Integration and acquisition costs of $237.0 million and $696.7 million, respectively, primarily related to the acquisition and integration of Baxalta and Dyax. In the three and nine months ended September 30, 2017, a credit of $3.4 million and a charge of $144.3 million, respectively, is included in Integration and acquisition costs due to the change in fair value of contingent consideration payable mainly related to TAKHZYRO. For the three and nine months ended September 30, 2017, the Baxalta Integration and acquisition costs include $60.2 million and $177.4 million, respectively, of employee severance and acceleration of stock compensation, $28.4 million and $114.0 million, respectively, of third-party professional fees, and $29.7 million and $71.4 million, respectively, of expenses associated with facility consolidations and $114.1 million and $147.8 million, respectively, of asset impairments.

8. Reorganization Costs

For the three and nine months ended September 30, 2018, Shire recorded Reorganization costs of $254.8 million and $268.9 million, respectively. These costs include $249.2 million and $256.7 million, respectively, of expenses mainly related to the closure of certain of its Cambridge office facilities and $5.6 million and $12.2 million, respectively, of asset impairment, employee severance, professional fees, and consulting fees. For the three and nine months ended September 30, 2018, cash payments associated with these costs were not significant.

For the three and nine months ended September 30, 2017, Shire recorded Reorganization costs of $5.4 million and $24.5 million, respectively. These costs include $nil and $10.8 million, respectively, of expenses related to the closure of certain office facilities and $5.4 million and $13.7 million, respectively, of employee severance, professional fees, and consulting fees.

9. Results of Discontinued Operations

Following the divestment of the Company's DERMAGRAFT business in January 2014, the operating results associated with the DERMAGRAFT business have been classified as discontinued operations in the Company's Unaudited Consolidated Statements of Operations for all periods presented.

In January 2017, Shire entered into a final settlement agreement with the Department of Justice (DOJ) in the amount of $350.0 million, plus interest which was accrued in 2016 and paid during 2017.

After the civil settlement with the DOJ was finalized, Shire and Advanced BioHealing Inc.'s (ABH) equity holders entered into a settlement agreement and ABH's equity holders released the $37.5 million escrow to Shire. Shire released its claims against ABH equity holders upon receiving the entire amount held in escrow.

For the three and nine months ended September 30, 2017, the Company recorded a loss of $0.4 million (net of immaterial tax benefit) and gain of $18.6 million (net of tax expense of $10.9 million), respectively, primarily related to legal contingencies related to the divested DERMAGRAFT business and the release of escrow to Shire, respectively.

10. Accounts Receivable, Net

Accounts receivable as of September 30, 2018 of $3,207.4 million (December 31, 2017: $3,009.8 million), are stated at the invoiced amount and net of reserve for discounts and doubtful accounts of $331.4 million (December 31, 2017: $271.5 million).

Reserve for discounts and doubtful accounts consists of the following:

(In millions)	2018	2017
As of January 1,	$ 271.5	$ 169.6
Provision charged to operations	1,884.2	1,074.1
Payments/credits	(1,824.3)	(1,000.0)
As of September 30,	$ 331.4	$ 243.7

Reserve for discounts and doubtful accounts increased for the nine months ended September 30, 2018 compared to the corresponding period in 2017, primarily due to increased usage of biological distributors, higher invoice price to those distributors, and the resulting increase in chargebacks for the distribution of Shire's Hematology and Immunology products.

As of September 30, 2018, Accounts receivable included $44.1 million (December 31, 2017: $106.6 million) related to royalties receivable.

11. Inventories

Inventories are stated at the lower of cost and net realizable value. The components of Inventories are as follows:

(In millions)	September 30, 2018	December 31, 2017
Finished goods	$ 959.7	$ 926.1
Work-in-progress	1,671.6	1,574.0
Raw materials	827.4	791.4
	$3,458.7	$3,291.5

12. Property, Plant and Equipment, Net

Property, plant and equipment are recorded at historical cost, net of accumulated depreciation. Components of Property, plant and equipment, net are summarized as follows:

(In millions)	September 30, 2018	December 31, 2017
Land	$ 296.2	$ 332.3
Buildings and leasehold improvements	2,975.1	1,940.7
Machinery, equipment and other	3,942.5	3,106.3
Assets under construction	759.4	2,568.2
Total property, plant and equipment at cost	7,973.2	7,947.5
Less: Accumulated depreciation	(1,520.2)	(1,312.1)
Property, plant and equipment, net	$ 6,453.0	$ 6,635.4

Depreciation expense for the three and nine months ended September 30, 2018 was $156.8 million and $432.8 million, respectively, and for the three and nine months ended September 30, 2017 was $119.9 million and $363.5 million, respectively.

In the second quarter of 2018, the FDA approved a new plasma manufacturing facility near Covington, Georgia. Following the approval, $1,840.5 million of assets were reclassified from Asset under construction to Buildings and leasehold improvements and Machinery, equipment and other assets classes.

13. Intangible assets

The following table summarizes the Company's Intangible assets:

(In millions)	Currently marketed products	IPR&D	Other intangible assets	Total
September 30, 2018				
Gross acquired intangible assets	$33,767.4	$1,012.7	$ 830.8	$35,610.9
Accumulated amortization	(5,561.2)	—	(424.3)	(5,985.5)
Intangible assets, net	$28,206.2	$1,012.7	$ 406.5	$29,625.4
December 31, 2017				
Gross acquired intangible assets	$31,973.5	$5,113.9	$ 835.9	$37,923.3
Accumulated amortization	(4,549.2)	—	(328.0)	(4,877.2)
Intangible assets, net	$27,424.3	$5,113.9	$ 507.9	$33,046.1

During the third quarter of 2018, the U.S. Food and Drug Administration (FDA) approved TAKHZYRO injection, for prophylaxis to prevent attacks of HAE in patients 12 years of age and older. Following the approval, the Company reclassified the TAKHZRO intangible asset from IPR&D to Currently marketed products and started amortizing the asset.

Other intangible assets are comprised primarily of royalty rights and other contract rights associated with Baxalta, Dyax Corp. (Dyax), and NPS Pharmaceuticals Inc.

Activities in the net book value of intangible assets for the nine months ended September 30, 2018 and 2017 are as follows:

(In millions)	2018	2017
As of January 1,	$33,046.1	$34,697.5
Sale of Oncology franchise	(1,598.5)	—
Measurement period adjustments	—	(1,397.0)
Amortization charged	(1,375.3)	(1,280.5)
Foreign currency translation	(314.2)	1,350.3
Contribution to JV	(163.7)	—
Impairment	(10.0)	(20.0)
Other	35.9	—
Acquisition	5.1	—
As of September 30,	$29,625.4	$33,350.3

Measurement period adjustments included in the nine months ended September 30, 2017 related to the acquisition of Baxalta.

For further details regarding the sale of the Oncology franchise, refer to Note 5, Dispositions and Assets Held for Sale.

During the nine months ended September 30, 2018, the Company contributed distributions rights for certain products to a joint venture formed by the Company. Upon the contribution, the net carrying value ($163.7 million) related to those products was recorded within Investments in these Unaudited Consolidated Balance Sheets.

The Company reviews its amortized intangible assets for impairment whenever events or circumstances suggest that their carrying value may not be recoverable. Unamortized intangible assets are reviewed for impairment annually or whenever events or circumstances suggest that their carrying value may not be recoverable.

Estimated amortization expense can be affected by various factors including future acquisitions, disposals of product rights, regulatory approval and subsequent amortization of acquired IPR&D projects, foreign exchange movements, and the technological advancement and regulatory approval of competitor products. The estimated future amortization of acquired intangible assets for the next five years is expected to be as follows:

(In millions)	Anticipated future amortization
2018 (remaining three months)	$ 444.4
2019	1,808.0
2020	1,730.7
2021	1,710.9
2022	1,679.3
2023	1,627.3

14. Goodwill

The following table provides a roll-forward of the Goodwill balance for the nine months ended September 30, 2018 and 2017:

(In millions)	2018	2017
As of January 1,	$19,831.7	$17,888.2
Acquisitions	96.3	1,076.2
Sale of Oncology franchise	(565.1)	—
Foreign currency translation and other	(267.9)	754.0
September 30,	$19,095.0	$19,718.4

For further details regarding acquisitions during the nine months ended September 30, 2018, refer to Note 4, Acquisition.

The increase in Goodwill during the nine months ended September 30, 2017 related to measurement period adjustments of the acquisition of Baxalta.

15. Fair Value Measurement

Assets and liabilities that are measured at fair value on a recurring basis

The following financial assets and liabilities are measured at fair value on a recurring basis using quoted prices in active markets for identical assets (Level 1); significant other observable inputs (Level 2); and significant unobservable inputs (Level 3):

		Fair value		
(In millions)	Total	Level 1	Level 2	Level 3
As of September 30, 2018				
Financial assets:				
Marketable equity securities	$ 161.0	$161.0	$ —	$ —
Marketable debt securities	17.0	3.6	13.4	—
Derivative instruments	13.9	—	13.9	—
Total assets	$ 191.9	$164.6	$27.3	$ —
Financial liabilities:				
Joint venture net written option	$ 48.0	$ —	$ —	$ 48.0
Derivative instruments	30.8	—	30.8	—
Contingent consideration payable	616.2	—	—	616.2
Total liabilities	$ 695.0	$ —	$30.8	$ 664.2

		Fair value		
(In millions)	Total	Level 1	Level 2	Level 3
As of December 31, 2017				
Financial assets:				
Marketable equity securities	$ 89.7	$ 89.7	$ —	$ —
Marketable debt securities	17.9	3.8	14.1	—
Derivative instruments	17.9	—	17.9	—
Total assets	$ 125.5	$ 93.5	$32.0	$ —
Financial liabilities:				
Joint venture net written option	$ 40.0	$ —	$ —	$ 40.0
Derivative instruments	14.2	—	14.2	—
Contingent consideration payable	1,168.2	—	—	1,168.2
Total liabilities	$1,222.4	$ —	$14.2	$1,208.2

Marketable equity and debt securities are included within Investments in these Unaudited Consolidated Balance Sheets. Contingent consideration payable is included within Other current liabilities and Other non-current liabilities in these Unaudited Consolidated Balance Sheets. For information regarding the Company's derivative arrangements, refer to Note 16, Financial Instruments, to these Unaudited Consolidated Financial Statements.

Certain estimates and judgments were required to develop the fair value amounts. The estimated fair value amounts shown above are not necessarily indicative of the amounts that the Company would realize upon disposition, nor do they indicate the Company's intent or ability to dispose of the financial instrument.

The following methods and assumptions were used to estimate the fair value of each material class of financial instrument:

- Marketable equity securities: the fair values of marketable equity securities are estimated based on quoted market prices for those investments.

- Marketable debt securities: the fair values of debt securities are obtained from pricing services or broker/dealers who either use quoted prices in an active market or proprietary pricing applications, which include observable market information for like or same securities.
- Derivative instruments: the fair values of the swap and forward foreign exchange contracts have been determined using the month-end interest rate and foreign exchange rates, respectively.
- Joint venture net written option and contingent consideration payable: the fair values have been estimated using the income approach (using a probability weighted discounted cash flow method).

There were no changes in valuation techniques or inputs utilized or transfers between fair value measurement levels during the three and nine months ended September 30, 2018 and 2017.

Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

Contingent consideration payable

(In millions)	2018	2017
Balance as of January 1,	$1,168.2	$1,058.0
Acquisitions	—	(4.0)
Payments	(647.1)	—
Change in fair value included in earnings	100.4	144.3
Other	(5.3)	(11.4)
Balance as of September 30,	$ 616.2	$1,186.9

Of the $616.2 million of contingent consideration payable as of September 30, 2018, $82.3 million is recorded within Other current liabilities and $533.9 million is recorded within Other non-current liabilities in these Unaudited Consolidated Balance Sheets.

The decrease in contingent consideration payable during the nine months ended September 30, 2018 is related to payments of contingent consideration following the approval of TAKHZYRO acquired from Dyax in 2016.

Joint venture net written option

In March 2017, Shire executed option agreements related to a joint venture that provides Shire with a call option on the partner's investment in joint venture equity and the partner with a put option on its investment in joint venture equity. The Company had a liability of $48.0 million for the net written option based on the estimated fair value of these options as of September 30, 2018 and the Company re-measures the instrument to fair value through the Unaudited Consolidated Statements of Operations.

Quantitative Information about Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

Financial liabilities:

As of September 30, 2018	Fair value as of the measurement date			
(In millions, except %)	Fair value	Valuation technique	Significant unobservable inputs	Range
Contingent consideration payable	$616.2	Income approach (probability weighted discounted cash flow)	• Cumulative probability of milestones being achieved	• 10.5 to 90%
			• Assumed market participant discount rate	• 3.2 to 9.2%
			• Periods in which milestones are expected to be achieved	• 2018 to 2040
			• Forecast quarterly royalties payable on net sales of relevant products	• $0.1 to $16.0 million

Contingent consideration payable represents future milestones and royalties the Company may be required to pay in conjunction with various business combinations and license agreements. The fair value of the Company's contingent consideration payable could significantly increase or decrease due to changes in certain assumptions which underpin the fair value measurements. Each set of assumptions is specific to the individual contingent consideration payable.

Financial liabilities:

As of September 30, 2018	Fair value as of the measurement date			
(In millions, except %)	Fair value	Valuation technique	Significant unobservable inputs	Range
Joint venture net written option	$48.0	Income approach (probability weighted discounted cash flow)	• Cash flow scenario probability weighting	• 100%
			• Assumed market participant discount rate	• 14%

Financial assets and liabilities that are disclosed at fair value

The carrying amounts and estimated fair values of the Company's financial assets and liabilities that are not measured at fair value on a recurring basis are as follows:

	September 30, 2018		December 31, 2017	
(In millions)	Carrying amount	Fair value	Carrying amount	Fair value
Financial liabilities:				
SAIIDAC notes	$12,058.9	$11,604.7	$12,050.2	$11,913.7
Baxalta notes	1,939.9	1,951.3	5,057.7	5,229.9
Capital lease obligation	366.8	366.8	349.2	349.2

The estimated fair values of long-term debt were based upon recent observable market prices and are considered Level 2 in the fair value hierarchy. The estimated fair value of capital lease obligations is based on Level 2 inputs.

The carrying amounts of other financial assets and liabilities approximate their estimated fair value due to their short-term nature, such as liquidity and maturity of these amounts, or because there have been no significant changes since the asset or liability was last re-measured to fair value on a non-recurring basis. For more details on the carrying amount and fair value of Baxalta notes, refer to Note 17, Borrowings and Capital Leases.

16. Financial Instruments

Foreign Currency Contracts

Due to the global nature of its operations, portions of the Company's revenues and operating expenses are recorded in currencies other than the U.S. dollar. The value of revenues and operating expenses measured in U.S. dollars is therefore subject to changes in foreign currency exchange rates. The main trading currencies of the Company are the U.S. dollar, Euro, British pound sterling, Swiss franc, Canadian dollar, and Japanese yen.

Transactional exposure arises where transactions occur in currencies different to the functional currency of the relevant subsidiary. It is the Company's policy that these exposures are minimized to the extent practicable by denominating transactions in the subsidiary's functional currency. Where significant exposures remain, the Company uses foreign exchange contracts (spot, forward, and swap contracts) to manage the exposure for balance sheet assets and liabilities that are denominated in currencies different to the functional currency of the relevant subsidiary.

The Company has master netting agreements with a number of counterparties to these foreign exchange contracts and on the occurrence of specified events, the Company has the ability to terminate contracts and settle them with a net payment by one party to the other. The Company has elected to present derivative assets and derivative liabilities on a gross basis in the Unaudited Consolidated Balance Sheets. The Company does not have credit risk related contingent features or collateral linked to the derivatives.

Undesignated Foreign Currency Derivatives

The Company uses forward and option contracts to mitigate the foreign currency risk related to certain balance sheet positions, including intercompany and third-party receivables and payables. The Company has not elected hedge accounting for these derivative instruments. The changes in fair value of these derivatives are reported in earnings.

The table below presents the notional amount, maximum duration, and fair value for the undesignated foreign currency derivatives:

(In millions, except duration)	September 30, 2018	December 31, 2017
Notional amount	$ 2,192.4	$ 1,672.3
Maximum duration	11 months	3 months
Fair value - net (liability)/asset	$ (1.3)	$ 11.4

The Company considers the impact of its and its counterparties' credit risk on the fair value of the contracts as well as the ability of each party to execute its contractual obligations. As of September 30, 2018, credit risk did not materially change the fair value of the Company's foreign currency contracts.

Interest Rate - Contracts

The Company is exposed to the risk that its earnings and cash flows could be adversely impacted by fluctuations in benchmark interest rates relating to its debt obligations on which interest is set at floating rates. The Company's policy is to manage this risk to an acceptable level. The Company is principally exposed to interest rate risk on any borrowings under the Company's various debt facilities. Interest on these facilities is set at floating rates, to the extent utilized. Shire's exposure under these facilities is to changes in U.S. dollar interest rates. For further details related to interest rates on the Company's various debt facilities, refer to Note 17, Borrowings and Capital Leases, to these Unaudited Consolidated Financial Statements.

Designated Interest Rate Derivatives

The Company has elected hedge accounting for interest rate swap contracts designated as fair value hedges. The effective portion of the changes in the fair value of interest rate swap contracts are recorded as a

component of the underlying Baxalta Notes with the ineffective portion recorded in Interest expense. Any net interest payments made or received on the interest rate swap contracts are recognized as a component of Interest expense in the Unaudited Consolidated Statements of Operations.

The table below presents the notional amount, maturity, and fair value for the designated interest rate derivatives:

(In millions, except maturity)	September 30, 2018	December 31, 2017
Notional amount	$ 431.0	$ 1,000.0
Maturity	June 2020 and June 2025	June 2020 and June 2025
Fair value - net liability	$ (15.6)	$ (7.7)

In conjunction with the debt tender offer and extinguishment of debt as more fully described in Note 17, Shire terminated $569.0 million of its interest swaps for a loss of $9.3 million, which is reported in Other (expense)/income, net in the Unaudited Consolidated Statements of Operations.

Summary of Derivatives

The following tables summarize the effect of the derivative instruments in the Company's Unaudited Consolidated Statements of Operations for the three and nine months ended September 30, 2018 and 2017.

Designated Foreign exchange contracts

	Loss recognized in OCI			Gain reclassified from AOCI into income	
(In millions)	2018	2017	Location	2018	2017
Cash flow hedges					
Three months ended September 30,					
Foreign exchange contracts	$—	$(0.2)	Cost of sales	$—	$0.3
Nine months ended September 30,					
Foreign exchange contracts	$—	$(0.9)	Cost of sales	$—	$8.6

Undesignated foreign exchange contracts

		Gain/(loss) recognized in income	
(In millions)	Location	2018	2017
Three months ended September 30,			
Foreign exchange contracts	Other (expense)/income, net	$ 4.7	$36.7
Nine months ended September 30,			
Foreign exchange contracts	Other (expense)/income, net	$(28.6)	$57.4

Designated Interest Rate Derivatives

		Loss recognized in income	
(In millions)	Location	2018	2017
Fair value hedges			
Three months ended September 30,			
Interest rate contracts, net	Interest expense	$(1.0)	$(1.1)
Nine months ended September 30,			
Interest rate contracts, net	Interest expense	$(4.9)	$(2.5)

Summary of Derivatives

The following table presents the classification and estimated fair value of derivative instruments on the Company's Unaudited Consolidated Balance Sheets:

	Asset position			Liability position		
		Fair value			Fair value	
(In millions)	Location	September 30, 2018	December 31, 2017	Location	September 30, 2018	December 31, 2017
Undesignated derivative instruments						
Foreign exchange contracts	Other current assets	$13.9	$17.9	Other current liabilities	$15.2	$ 6.5
		$13.9	$17.9		$15.2	$ 6.5
Designated derivative Instruments						
Interest rate contracts	Long term borrowings	$ —	$ —	Long term borrowings	$15.6	$ 7.7
		$ —	$ —		$15.6	$ 7.7
Total derivative fair value		$13.9	$17.9		$30.8	$14.2
Potential effect of rights to offset		(8.3)	(2.7)		(8.3)	(2.7)
Net derivative		$ 5.6	$15.2		$22.5	$11.5

17. Borrowings and Capital Leases

(In millions)	September 30, 2018	December 31, 2017
Short term borrowings and capital leases:		
SAIIDAC Notes	$ 3,295.3	$ —
Baxalta Notes	—	748.8
Borrowings under the Revolving Credit Facilities Agreement	915.0	810.0
Borrowings under the November 2015 Facilities Agreement	—	1,196.3
Capital leases	9.5	7.5
Other borrowings	28.9	26.1
	$ 4,248.7	$ 2,788.7
Long term borrowings and capital leases:		
SAIIDAC Notes	$ 8,763.6	$12,050.2
Baxalta Notes	1,939.9	4,308.9
Capital leases	357.3	341.7
Other borrowings	37.2	51.6
	$11,098.0	$16,752.4
Total borrowings and capital leases	$15,346.7	$19,541.1

For a more detailed description of the Company's financing agreements, refer below and to Note 17, Borrowings and Capital Leases, of Shire's Annual Report on Form 10-K for the year ended December 31, 2017.

Debt Tender Offer

On September 11, 2018, Shire purchased an aggregate of $2.3 billion in principal amount of Baxalta Notes from existing holders consisting of its 2.875% Notes due June 2020, 3.600% Notes due June 2022, 4.000% Notes due June 2025 and 5.250% Notes due June 2045 pursuant to a debt tender offer. Shire paid approximately $2.4 billion, including accrued and unpaid interest and tender premium, to purchase such notes. As a result of the debt tender offer, the Company recognized a loss on extinguishment of debt in the third quarter of 2018 of $40.6 million, which is included in Other (expense)/income, net within the Unaudited Consolidated Statements of Operations.

SAIIDAC Notes

On September 23, 2016, Shire Acquisitions Investments Ireland Designated Activity Company (SAIIDAC), a wholly owned subsidiary of Shire plc, issued unsecured senior notes with a total aggregate principal value of $12.1 billion (SAIIDAC Notes), guaranteed by Shire plc and, as of December 1, 2016, by Baxalta. Below is a summary of the SAIIDAC Notes as of September 30, 2018:

(In millions, except %)	Aggregate amount	Coupon rate	Carrying amount as of September 30, 2018
Fixed-rate notes due 2019	$ 3,300.0	1.900%	$ 3,295.3
Fixed-rate notes due 2021	3,300.0	2.400%	3,289.0
Fixed-rate notes due 2023	2,500.0	2.875%	2,490.8
Fixed-rate notes due 2026	3,000.0	3.200%	2,983.8
	$12,100.0		$12,058.9

As of September 30, 2018, there were $41.1 million of debt issuance costs and discounts recorded as a reduction of the carrying amount of debt. These costs will be amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity.

Baxalta Notes

Shire plc guaranteed senior notes issued by Baxalta in connection with the acquisition of Baxalta (Baxalta Notes). Following repayment of the $375.0 million floating-rate notes and the $375.0 million fixed-rate notes due in June 2018 and the subsequent $2.3 billion bond tender offer on September 11, 2018, the remaining Baxalta Notes as of September 30, 2018 are shown below:

(In millions, except %)	Aggregate principal	Coupon rate	Carrying amount as of September 30, 2018
Fixed-rate notes due 2020	$ 404.5	2.875%	$ 403.0
Fixed-rate notes due 2022	219.4	3.600%	221.9
Fixed-rate notes due 2025	800.5	4.000%	799.7
Fixed-rate notes due 2045	500.4	5.250%	515.3
Total assumed Senior Notes	$1,924.8		$1,939.9

The book values above include any premiums, discounts, and adjustments related to hedging instruments. For further details related to the interest rate derivative contracts, please see Note 16, Financial Instruments, to these Unaudited Consolidated Financial Statements.

Revolving Credit Facilities Agreement

On December 12, 2014, Shire entered into a $2.1 billion revolving credit facilities agreement (RCF) with a number of financial institutions. As of September 30, 2018, the Company utilized $915.0 million of the RCF. The RCF, which terminates on December 12, 2021, may be used for financing the general corporate purposes of Shire. The RCF incorporates a $250.0 million U.S. dollar and Euro swingline facility operating as a sub-limit thereof.

Term Loan Facilities Agreements

November 2015 Facilities Agreement

On November 2, 2015, Shire entered into a $5.6 billion facilities agreement (November 2015 Facilities Agreement), which comprised of three amortizing credit facilities with ultimate maturity on November 2, 2018. As of September 30, 2018, there were no amounts outstanding under the November 2015 Facilities Agreement as it was fully repaid and canceled on September 28, 2018.

Short-term uncommitted lines of credit (Credit lines)

Shire has access to various Credit lines from a number of banks which are available to be utilized from time to time to provide short-term cash management flexibility. These Credit lines can be withdrawn by the

banks at any time. The Credit lines are not relied upon for core liquidity. As of September 30, 2018, these lines of credit were not utilized.

Capital Lease Obligations

The capital leases are primarily related to office and manufacturing facilities. As of September 30, 2018, the total capital lease obligations, including current portions, were $366.8 million.

18. Retirement and Other Benefit Programs

The Company sponsors various pension and other post-employment benefit (OPEB) plans in the U.S. and other countries. Net periodic benefit cost for the three and nine months ended September 30, 2018 and 2017 is as follows:

	Three months ended September 30,					
	2018			2017		
(In millions)	U.S. pensions	International pensions	OPEB (U.S.)	U.S. pensions	International pensions	OPEB (U.S.)
Net periodic benefit cost						
Service cost	$—	$ 9.5	$—	$ 3.7	$ 9.4	$ 0.4
Interest cost	3.9	1.3	0.1	3.9	1.2	0.3
Expected return on plan assets	(4.3)	(2.0)	—	(4.0)	(1.8)	—
Amortization of net prior service cost	—	—	(0.2)	—	—	—
Amortization of actuarial (gain)/loss	—	(0.3)	—	—	0.4	—
Net periodic benefit cost	$(0.4)	$ 8.5	$(0.1)	$ 3.6	$ 9.2	$ 0.7

	Nine months ended September 30,					
	2018			2017		
(In millions)	U.S. pensions	International pensions	OPEB (U.S.)	U.S. pensions	International pensions	OPEB (U.S.)
Net periodic benefit cost						
Service cost	$ —	$28.5	$—	$ 11.1	$28.2	$ 1.2
Interest cost	11.7	3.9	0.3	11.7	3.6	0.9
Expected return on plan assets	(12.9)	(6.0)	—	(12.0)	(5.4)	—
Amortization of net prior service cost	—	—	(0.6)	—	—	—
Amortization of actuarial (gain)/loss	—	(0.9)	—	—	1.3	—
Net periodic benefit cost	$ (1.2)	$25.5	$(0.3)	$ 10.8	$27.7	$ 2.1

The components of net periodic benefit cost other than the service cost component are included in the line item Other (expense)/income, net in these Unaudited Consolidated Statements of Operations.

19. Accumulated Other Comprehensive Income/(Loss)

The changes in Accumulated other comprehensive income/(loss) (AOCI), net of their related tax effects, for the nine months ended September 30, 2018 and 2017 are as follows:

(In millions)	Foreign currency translation adjustment	Pension and other employee benefits	Unrealized holding gain/(loss) on available-for-sale debt securities	Accumulated other comprehensive income/(loss)
As of January 1, 2018	$1,279.6	$27.5	$ 67.9	$1,375.0
Current period change:				
Other comprehensive loss before reclassifications	(679.2)	—	—	(679.2)
Amounts reclassified from AOCI	—	(1.5)	(67.9)	(69.4)
Net current period other comprehensive loss	(679.2)	(1.5)	(67.9)	(748.6)
As of September 30, 2018	$ 600.4	$26.0	$ —	$ 626.4

On January 1, 2018, the Company adopted a new standard related to accounting for investments in equity securities. Upon adoption, the Company reclassified unrealized holding gain on available-for-sale equity

securities totaling $67.9 million to Retained earnings. For further information, refer to Note 2, Summary of Significant Accounting Policies, to these Unaudited Consolidated Financial Statements.

(In millions)	Foreign currency translation adjustment	Pension and other employee benefits	Unrealized holding loss on available-for-sale securities	Hedging activities	Accumulated other comprehensive (loss)/income
As of January 1, 2017	$(1,505.4)	$ (5.2)	$ 6.6	$ 6.4	$(1,497.6)
Current period change:					
Other comprehensive income before reclassifications	2,441.1	9.7	24.7	0.5	2,476.0
Amounts reclassified from AOCI	—	1.3	(4.4)	(6.2)	(9.3)
Net current period other comprehensive income/ (loss)	2,441.1	11.0	20.3	(5.7)	2,466.7
As of September 30, 2017	$ 935.7	$ 5.8	$26.9	$ 0.7	$ 969.1

Reclassifications from AOCI to net income during the three and nine months ended September 30, 2018 and 2017 were not material.

20. Taxation

For the three and nine months ended September 30, 2018, the effective tax rate on income from continuing operations was 28% (2017: 2%) and 18% (2017:4%), respectively.

The effective tax rate for the three and nine months ended September 30, 2018 has been affected by certain provisions of the U.S. Tax Cuts and Jobs Act (Tax Act) passed in December, 2017, which reduces the U.S. federal corporate income tax rate from 35% to 21% along with anti-deferral provisions related to non-U.S. operations, new limitations on certain deductions required under the Tax Act, and reductions in the quantum of and tax benefit associated with U.S. integration costs over the prior year.

The Company continued to assess the financial statement impact of the applicable provisions of the Tax Act upon enactment during the three and nine months ended September 30, 2018 and based on these assessments, income tax expense increased by $60.0 million and $37.9 million during these periods, respectively. The increase in tax expense recorded during the three and nine months ended September 30, 2018 was due to i) an adjustment to the U.S. deferred tax balances recorded as of December 31, 2017 related to the corporate income tax rate reduction of a $15.0 million tax expense and $7.1 million tax benefit, respectively; and ii) an increase to income tax expense of $45.0 million related to the repatriation toll charge. The change in the toll charge was partially driven by an adjustment of $31.0 million related to the tax rates applied to certain drivers of the provisional repatriation toll charge in 2017, as well as the finalization of inputs to the calculation of the repatriation toll charge and the refinement of the Company's computation for the various guidance and regulations issued during 2018. The changes to its original tax reform impacts increased the effective tax rate for the three and nine months ended September 30, 2018 by 8% and 2%, respectively.

It is expected that additional interpretive guidance will be issued during the measurement period that may change how the Company has computed the provisional amounts for the year ended December 31, 2017. The Company will continue to assess the impact of the Tax Act during the measurement period and will record any adjustments to its provisional estimates as needed during the remainder of the measurement period and continues to assert that all amounts recorded and disclosed to date remain provisional.

The effective tax rate for the three and nine months ended September 30, 2017 was affected by the combined impact of the relative quantum of the profit before tax for the period by jurisdiction as well as significant acquisition and integration costs. Additionally, certain discrete tax adjustments were recorded during the year, which contributed to the low effective rate, including a tax benefit associated with the filing of the US tax returns and reversal of prior period income tax reserves.

21. Earnings Per Share

The following table reconciles net income and the weighted average ordinary shares outstanding for basic and diluted earnings per share (EPS) for the periods presented:

(In millions)	Three months ended September 30, 2018	Three months ended September 30, 2017	Nine months ended September 30, 2018	Nine months ended September 30, 2017
Income from continuing operations, net of taxes	$537.2	$551.2	$1,703.3	$1,147.5
(Loss)/Gain from discontinued operations, net of taxes	—	(0.4)	—	18.6
Numerator for basic and diluted earnings per share	$537.2	$550.8	$1,703.3	$1,166.1
Weighted average number of shares:				
Basic	914.0	907.2	912.0	905.9
Effect of dilutive shares:				
Share-based awards to employees	7.1	4.4	4.9	6.2
Diluted	921.1	911.6	916.9	912.1

Weighted average number of basic shares excludes shares purchased by the Employee Benefit Trust and those under the shares buy-back program, which are both presented by Shire as treasury stock. Share-based awards to employees are calculated using the treasury method.

The share equivalents not included in the calculation of the diluted weighted average number of shares are shown below:

(Number of shares in millions)	Three months ended September 30, 2018	Three months ended September 30, 2017	Nine months ended September 30, 2018	Nine months ended September 30, 2017
Share-based awards to employees	10.0	16.2	13.4	14.8

Certain stock options have been excluded from the calculation of diluted EPS for three and nine months ended September 30, 2018 and 2017 because either their exercise prices exceeded Shire's average share price during the calculation period, the required performance conditions were not satisfied as of the balance sheet date or their inclusion would have been antidilutive.

22. Share-based Compensation Plans

Total share-based compensation recorded by the Company during the three and nine months ended September 30, 2018 and 2017 by line item is as follows:

(In millions)	Three months ended September 30, 2018	Three months ended September 30, 2017	Nine months ended September 30, 2018	Nine months ended September 30, 2017
Cost of sales	$ 6.3	$ 17.4	$ 21.2	$ 30.1
Research and development	10.0	3.2	35.5	22.9
Selling, general and administrative	29.5	30.9	75.2	94.1
Integration and acquisition costs	3.0	1.8	3.8	12.6
Total	48.8	53.3	135.7	159.7
Less tax	(7.8)	(13.3)	(22.2)	(42.9)
	$41.0	$ 40.0	$113.5	$116.8

For further details on existing share-based compensation plans, refer to Note 23, Share-based Compensation Plans, of Shire's Annual Report on Form 10-K for the year ended December 31, 2017.

The Company amended the mix of performance share units to include market condition, based on relative total shareholder return, commencing with the 2018 annual grant.

During the nine months ended September 30, 2018, the Company made equity compensation grants to employees consisting of 10.8 million stock-settled share appreciation rights (SARs), 3.0 million restricted stock units (RSUs), and 0.9 million performance share units (PSUs) equivalent in ordinary shares.

23. Commitments and Contingencies

Leases

The Company leases land, facilities, motor vehicles, and certain equipment under operating leases expiring through 2045. For the three and nine months ended September 30, 2018 lease and rental expense amounted to $49.4 million and $136.9 million (2017: $41.7 million and $126.7 million, respectively), which is predominately included within Cost of sales and SG&A expenses in these Unaudited Consolidated Statement of Operations.

Letters of credit and guarantees

As of September 30, 2018 and December 31, 2017, the Company had irrevocable standby letters of credit and guarantees with various banks and insurance companies totaling $249.5 million and $224.8 million (being the contractual amounts), respectively, providing security for the Company's performance of various obligations. These obligations are primarily in respect of the recoverability of insurance claims, lease obligations, and supply commitments.

Commitments

Clinical testing

As of September 30, 2018, the Company had committed to pay approximately $1,451.3 million (December 31, 2017: $1,409.9 million) to contract vendors for administering and executing clinical trials. The timing of these payments is dependent upon actual services performed by the organizations as determined by patient enrollment levels and related activities.

Contract manufacturing

As of September 30, 2018, the Company had committed to pay approximately $910.8 million (December 31, 2017: $467.2 million) in respect of contract manufacturing. The Company expects to pay $169.5 million of these commitments in 2018.

Other purchasing commitments

As of September 30, 2018, the Company had committed to pay approximately $1,363.0 million (December 31, 2017: $1,692.5 million) for future purchases of goods and services, predominantly relating to active pharmaceutical ingredients sourcing. The Company expects to pay $839.4 million of these commitments in 2018.

Investment commitments

As of September 30, 2018, the Company had outstanding commitments to purchase common stock and interests in companies and partnerships, respectively, for amounts totaling $48.0 million (December 31, 2017: $48.9 million), which may all be payable during 2018, depending on the timing of capital calls. The investment commitments include additional funding to certain variable interest entities (VIEs) for which Shire is not the primary beneficiary.

Capital commitments

As of September 30, 2018, the Company had committed to spend $348.8 million (December 31, 2017: $328.2 million) on capital projects.

Baxter related tax indemnification

Baxter International Inc. (Baxter) and Baxalta entered into a tax matters agreement, effective on the date of Baxalta's separation from Baxter, which employs a direct tracing approach, or where direct tracing approach is not feasible, an allocation methodology, to determine which company is liable for pre-separation income tax items for U.S. federal, state, and foreign jurisdictions. With respect to tax liabilities that are directly traceable or allocated to Baxalta but for which Baxalta was not the primary obligor, Baxalta recorded a tax indemnification amount that would be due to Baxter upon Baxter discharging the associated tax liability to the taxing authority.

24. Legal and Other Proceedings

The Company expenses legal costs when incurred.

The Company recognizes loss contingency provisions for probable losses when management is able to reasonably estimate the loss. When the estimated loss lies within a range, the Company records a loss contingency provision based on its best estimate of the probable loss. If no particular amount within that range is a better estimate than any other amount, the minimum amount is recorded. Estimates of losses may be developed before the ultimate loss is known, and are therefore refined each accounting period as additional information becomes known. An outcome that deviates from the Company's estimate may result in an additional expense or release in a future accounting period. As of September 30, 2018, provision for litigation losses, insurance claims, and other disputes totaled $82.0 million (December 31, 2017: $76.2 million).

The Company's principal pending legal and other proceedings are disclosed below. The outcomes of these proceedings are not always predictable and can be affected by various factors. For those legal and other proceedings for which it is considered at least reasonably possible that a loss has been incurred, the Company discloses the possible loss or range of possible loss in excess of the recorded loss contingency provision, if any, where such excess is both material and estimable.

MYDAYIS

On October 12, 2017, Shire was notified that Teva Pharmaceuticals USA, Inc. had submitted an abbreviated new drug application (ANDA) to the FDA seeking permission to market a generic version of MYDAYIS. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the District of Delaware against Teva Pharmaceuticals USA, Inc., Actavis Laboratories, Inc. and Teva Pharmaceutical Industries Limited (collectively the "Teva entities"). A Markman hearing is scheduled to take place on January 23, 2019. A trial is scheduled to take place beginning on December 9, 2019.

On March 8, 2018, Shire was notified that Impax Laboratories, Inc. (Impax) had submitted an ANDA to the FDA seeking permission to market a generic version of MYDAYIS. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the District of Delaware against Impax. A Markman hearing is scheduled to take place on January 23, 2019. A trial is scheduled to take place beginning on December 9, 2019.

On April 19, 2018, Shire was notified that SpecGX LLC (SpecGX) had submitted an ANDA to the FDA seeking permission to market a generic version of MYDAYIS. Within the requisite 45-day period, Shire filed a lawsuit in the U.S. District Court for the District of Delaware against SpecGx. No dates for a Markman hearing or trial have been set.

Petitions to institute inter partes reviews (IPRs) against U.S. Patent numbers 8,846,100 and 9,173,857 were filed by KVK Tech in January 2018 and the petitions were granted in July 2018. Both of these patents are listed in the Orange Book as covering MYDAYIS and are among the patents-in-suit in the infringement action brought against the Teva entities and Impax as noted above. A decision on the merits is expected on or before July 10, 2019.

VANCOCIN

On April 6, 2012, ViroPharma Incorporated (ViroPharma) received a notification that the United States Federal Trade Commission (FTC) was conducting an investigation into whether ViroPharma had engaged in unfair methods of competition with respect to VANCOCIN, which Shire acquired in January 2014. Following the divestiture of VANCOCIN in August 2014, Shire retained certain liabilities including any potential liabilities related to the VANCOCIN citizen petition.

On August 3, 2012, and September 8, 2014, ViroPharma and Shire respectively received Civil Investigative Demands from the FTC requesting additional information related to this matter. Shire has fully cooperated with the FTC's investigation.

On February 7, 2017, the FTC filed a Complaint against Shire alleging that ViroPharma engaged in conduct in violation of U.S. antitrust laws arising from a citizen petition ViroPharma filed in 2006 related to Food & Drug Administration's policy for evaluating bioequivalence for generic versions of VANCOCIN. The complaint seeks equitable relief, including an injunction and disgorgement. The Company filed a motion to

dismiss on April 10, 2017. On March 20, 2018, the court granted the Company's motion. On April 11, 2018, the FTC filed a Notice of Appeal. The FTC's appeal is still pending.

At this time, Shire is unable to predict the outcome or duration of this case.

ELAPRASE

In 2014, Shire's Brazilian affiliate, Shire Farmaceutica Brasil Ltda, was served with a lawsuit brought by the State of Sao Paulo and in which the Brazilian Public Attorney's office has intervened alleging that Shire is obligated to provide certain medical care including ELAPRASE for an indefinite period at no cost to patients who participated in ELAPRASE clinical trials in Brazil, and seeking recoupment to the Brazilian government for amounts paid on behalf of these patients to date, and moral damages associated with these claims.

On May 6, 2016, the trial court judge ruled on the case and dismissed all the claims under the class action, which was appealed. On February 20, 2017, the Court of Appeals in Sao Paulo issued the final decision on merit in favor of Shire and dismissed all the claims under the class action. On July 12, 2017, the Public Prosecutor filed an appeal addressed to the Supreme Court. During the last quarter of 2017, the State of Sao Paulo filed appeals addressed to the Superior Court of Justice and to the Supreme Court.

25. Segment Reporting

In the first quarter of 2018, the Company announced a change to its internal structure to create two distinct business segments within Shire: a Rare Disease division and a Neuroscience division. The change was based on the Board's conclusion that the Neuroscience business warranted additional focus and investment and that there was a strong business rationale for creating the two divisions.

In the second quarter of 2018, the Company returned to a single segment approach to managing its business. This decision was precipitated by the Shire Board's acceptance of Takeda's offer to acquire the Company and reflects the Company's focus on the performance of the entire business as it operates in this current environment. This step was taken to more closely align with how the financial information is viewed by the Executive Committee (Shire's chief operating decision maker) for the purposes of making resource allocation decisions and assessing the performance of the business. Additionally, in the second quarter of 2018, the Company introduced a new product franchise called Established Brands to capture revenue for its non-promoted products that are facing or could face generic competition, such as LIALDA and PENTASA. Comparative financial information for 2017 was retrospectively restated herein.

In the periods set out below, U.S. and International Product sales by franchise were as follows:

(In millions)	Three months ended September 30, 2018 U.S. Sales	International Sales	**Total Sales**	September 30, 2017 U.S. Sales	International Sales	**Total Sales**
Product sales by franchise						
IMMUNOGLOBULIN THERAPIES	$ 530.7	$ 125.2	**$ 655.9**	$ 486.6	$ 118.5	**$ 605.1**
HEREDITARY ANGIOEDEMA	291.3	37.7	**329.0**	235.8	32.6	**268.4**
BIO THERAPEUTICS	91.9	120.4	**212.3**	86.3	110.3	**196.6**
Immunology	913.9	283.3	**1,197.2**	808.7	261.4	**1,070.1**
HEMOPHILIA	386.6	349.3	**735.9**	357.5	367.8	**725.3**
INHIBITOR THERAPIES	44.7	124.4	**169.1**	70.6	120.1	**190.7**
Hematology	431.3	473.7	**905.0**	428.1	487.9	**916.0**
VYVANSE	528.5	66.5	**595.0**	476.8	61.6	**538.4**
ADDERALL XR	71.5	4.8	**76.3**	99.4	6.6	**106.0**
MYDAYIS	19.3	—	**19.3**	10.2	—	**10.2**
Other Neuroscience[1]	0.9	40.2	**41.1**	6.7	29.8	**36.5**
Neuroscience	620.2	111.5	**731.7**	593.1	98.0	**691.1**
ELAPRASE	41.7	128.9	**170.6**	41.4	111.5	**152.9**
REPLAGAL	—	123.0	**123.0**	—	117.2	**117.2**
VPRIV	39.0	48.8	**87.8**	37.5	52.1	**89.6**
Genetic Diseases	80.7	300.7	**381.4**	78.9	280.8	**359.7**
LIALDA/MEZAVANT	88.9	30.2	**119.1**	61.4	25.3	**86.7**
PENTASA	65.7	—	**65.7**	72.1	—	**72.1**
Other Established Brands[2]	10.7	21.0	**31.7**	11.4	20.3	**31.7**
Established Brands	165.3	51.2	**216.5**	144.9	45.6	**190.5**
GATTEX/REVESTIVE	82.2	14.9	**97.1**	72.6	12.3	**84.9**
NATPARA/NATPAR	47.8	3.2	**51.0**	39.1	—	**39.1**
Other Internal Medicine[3]	0.1	28.9	**29.0**	0.6	35.9	**36.5**
Internal Medicine	130.1	47.0	**177.1**	112.3	48.2	**160.5**
Ophthalmics	92.1	1.3	**93.4**	77.4	—	**77.4**
Oncology[4]	33.4	17.1	**50.5**	47.2	21.3	**68.5**
Total product sales	$2,467.0	$1,285.8	**$3,752.8**	$2,290.6	$1,243.2	**$3,533.8**

(1) Other Neuroscience includes INTUNIV, EQUASYM, and BUCCOLAM.
(2) Other Established Brands includes FOSRENOL and CARBATROL.
(3) Other Internal Medicine includes AGRYLIN, PLENADREN, and RESOLOR.
(4) Results include the Oncology franchise until the date of its sale on August 31, 2018.

In the periods set out below, Royalties and other revenues were as follows:

(In millions)	Three months ended September 30, 2018	Three months ended September 30, 2017
Royalties	$ 45.1	$111.4
Other revenues	73.8	52.4
Royalties and other revenues	$118.9	$163.8

(In millions)	Nine months ended September 30, 2018 U.S. Sales	International Sales	**Total Sales**	September 30, 2017 U.S. Sales	International Sales	**Total Sales**
Product sales by franchise						
IMMUNOGLOBULIN THERAPIES	$1,409.6	$ 416.3	**$ 1,825.9**	$1,299.9	$ 314.0	**$ 1,613.9**
HEREDITARY ANGIOEDEMA	949.9	113.1	**1,063.0**	878.9	89.5	**968.4**
BIO THERAPEUTICS	254.8	328.9	**583.7**	231.9	314.8	**546.7**
Immunology	2,614.3	858.3	**3,472.6**	2,410.7	718.3	**3,129.0**
HEMOPHILIA	1,152.6	1,072.8	**2,225.4**	1,082.1	1,037.5	**2,119.6**
INHIBITOR THERAPIES	160.5	422.7	**583.2**	217.4	414.5	**631.9**
Hematology	1,313.1	1,495.5	**2,808.6**	1,299.5	1,452.0	**2,751.5**
VYVANSE	1,572.3	207.5	**1,779.8**	1,445.4	174.9	**1,620.3**
ADDERALL XR	219.4	12.7	**232.1**	225.9	16.4	**242.3**
MYDAYIS	40.4	—	**40.4**	25.9	—	**25.9**
Other Neuroscience[1]	6.0	111.8	**117.8**	13.5	77.8	**91.3**
Neuroscience	1,838.1	332.0	**2,170.1**	1,710.7	269.1	**1,979.8**
ELAPRASE	126.6	338.9	**465.5**	119.4	335.1	**454.5**
REPLAGAL	—	372.8	**372.8**	—	349.0	**349.0**
VPRIV	113.9	153.4	**267.3**	110.3	147.0	**257.3**
Genetic Diseases	240.5	865.1	**1,105.6**	229.7	831.1	**1,060.8**
LIALDA/MEZAVANT	194.8	92.2	**287.0**	402.0	67.6	**469.6**
PENTASA	215.6	—	**215.6**	224.5	—	**224.5**
Other Established Brands[2]	43.8	62.1	**105.9**	67.0	55.3	**122.3**
Established Brands	454.2	154.3	**608.5**	693.5	122.9	**816.4**
GATTEX/REVESTIVE	280.2	46.6	**326.8**	193.3	35.9	**229.2**
NATPARA/NATPAR	153.5	7.3	**160.8**	103.2	0.1	**103.3**
Other Internal Medicine[3]	0.8	100.5	**101.3**	1.3	103.9	**105.2**
Internal Medicine	434.5	154.4	**588.9**	297.8	139.9	**437.7**
Ophthalmics	252.9	2.9	**255.8**	173.4	—	**173.4**
Oncology[4]	124.8	63.6	**188.4**	135.3	54.0	**189.3**
Total product sales	$7,272.4	$3,926.1	**$11,198.5**	$6,950.6	$3,587.3	**$10,537.9**

(1) Other Neuroscience includes INTUNIV, EQUASYM, and BUCCOLAM.
(2) Other Established Brands includes FOSRENOL and CARBATROL.
(3) Other Internal Medicine includes AGRYLIN, PLENADREN, and RESOLOR.
(4) Results include the Oncology franchise until the date of its sale on August 31, 2018.

In the periods set out below, Royalties and other revenues were as follows:

(In millions)	Nine months ended September 30, 2018	Nine months ended September 30, 2017
Royalties	$175.4	$329.7
Other revenues	183.0	148.1
Royalties and other revenues	$358.4	$477.8

26. Agreements and Transactions with Baxter

In connection with Baxalta's separation from Baxter on July 1, 2015, Baxalta and Baxter entered into several separation-related agreements that provided a framework for Baxalta's relationship with Baxter after the separation. These agreements, among others, included a manufacturing and supply agreement, a transition services agreement and a tax matters agreement. For further details on existing agreements with Baxter, refer to Note 28, Agreements and Transactions with Baxter, of Shire's Annual Report on Form 10-K for the year ended December 31, 2017.

During the three and nine months ended September 30, 2018, the Company reported revenues associated with the manufacturing and supply agreement with Baxter of approximately $57.6 million and $142.6 million, respectively (2017: $35.8 million and $106.5 million, respectively) and Selling, general and administrative expense associated with the transition services agreement with Baxter of approximately $0.3 million and $10.2 million, respectively and (2017: $9.8 million and $43.5 million, respectively). Net tax-related indemnification liabilities as of September 30, 2018, associated with the tax matters agreement with Baxter are discussed in Note 23, Commitments and Contingencies, of these Unaudited Consolidated Financial Statements.

27. Guarantor Financial Information

On June 3, 2016, Shire plc provided full and unconditional, joint and several guarantees of the floating rate senior notes due 2018, 2.000% senior notes due 2018 (repaid upon maturity in June 2018), 2.875% senior notes due 2020, 3.600% senior notes due 2022, 4.000% senior notes due 2025, and 5.250% senior notes due 2045 (collectively, "Baxalta Notes"), of Baxalta Inc., a 100% owned subsidiary of the Company. Amounts related to Baxalta Inc. and its subsidiaries are included in the condensed consolidating financial information for periods subsequent to June 3, 2016, the date of Baxalta Inc.'s acquisition.

On September 23, 2016, Shire plc provided full and unconditional, joint and several guarantees of the 1.900% senior notes due 2019, 2.400% senior notes due 2021, 2.875% senior notes due 2023, and 3.200% senior notes due 2026, of SAIIDAC (collectively, "SAIIDAC Notes"), a 100% owned subsidiary of the Company.

On December 1, 2016, Baxalta Inc. became a guarantor to the SAIIDAC Notes. Accordingly, both Baxalta Inc. and Shire plc are now co-guarantors of the SAIIDAC Notes.

On September 11, 2018, Shire purchased an aggregate of $2.3 billion in principal amount of Baxalta Notes. For further information, refer to Note 17, Borrowings and Capital Leases, to these unaudited Consolidated Financial Statements.

In accordance with the requirements of SEC Regulation S-X Rule 3-10 "Financial Statements of Guarantors and Issuers of Guaranteed Securities Registered or Being Registered", the following tables present Unaudited Condensed Consolidating Financial Statements of the two separate guarantee structures of the Baxalta Notes and SAIIDAC Notes, for:

- Shire plc - Parent Guarantor;
- SAIIDAC Subsidiary Issuer - issuer subsidiary of the SAIIDAC Notes; (a)
- Baxalta Inc. - issuer subsidiary of the Baxalta Notes and guarantor subsidiary of the SAIIDAC Notes; (b)
- Non-Guarantor Non-Issuer Subsidiaries - presents all other subsidiaries of the Parent Guarantor on a combined basis, none of which guarantee the Baxalta Notes or SAIIDAC Notes; (c)
- Non-Guarantor Subsidiaries of Baxalta Notes - presents combined Non-Guarantor Non-Issuer Subsidiaries, including SAIIDAC, under the guarantee structure where Baxalta Inc. is the subsidiary issuer (a+c); and
- Eliminations - primarily relate to eliminations of investments in subsidiaries and intercompany balances and transactions.

The Unaudited Condensed Consolidating Financial Statements present investments in subsidiaries using the equity method of accounting.

Condensed Consolidating Balance Sheets
(Unaudited, In millions)

As of September 30, 2018	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
ASSETS							
Current assets:							
Cash and cash equivalents	$ —	$ —	$ —	$ 193.2	$ 193.2	$ —	$ 193.2
Restricted cash	—	—	—	39.9	39.9	—	39.9
Accounts receivable, net	—	—	—	3,207.4	3,207.4	—	3,207.4
Inventories	—	—	—	3,458.7	3,458.7	—	3,458.7
Other current assets	—	1.5	81.2	817.4	818.9	—	900.1
Intercompany receivables	—	41.0	—	7,811.8	7,852.8	(7,852.8)	—
Short term intercompany loan receivable	—	4,210.3	—	—	4,210.3	(4,210.3)	—
Total current assets	—	4,252.8	81.2	15,528.4	19,781.2	(12,063.1)	7,799.3
Non-current assets:							
Investments	44,695.6	—	38,547.8	13,312.3	13,312.3	(96,085.0)	470.7
Property, plant and equipment (PP&E), net	—	—	4.6	6,448.4	6,448.4	—	6,453.0
Goodwill	—	—	—	19,095.0	19,095.0	—	19,095.0
Intangible assets, net	—	—	—	29,625.4	29,625.4	—	29,625.4
Deferred tax asset	—	—	304.1	151.2	151.2	(304.1)	151.2
Long term intercompany loan receivable	—	8,763.6	3,507.0	—	8,763.6	(12,270.6)	—
Other non-current assets	—	1.9	—	169.4	171.3	—	171.3
Total assets	$44,695.6	$13,018.3	$42,444.7	$84,330.1	$97,348.4	$(120,722.8)	$63,765.9
LIABILITIES AND EQUITY							
Current liabilities:							
Accounts payable and accrued expenses	$ 6.4	$ 8.0	$ 33.6	$ 3,977.1	$ 3,985.1	$ —	$ 4,025.1
Short term borrowings and capital leases	—	4,210.3	—	38.4	4,248.7	—	4,248.7
Intercompany payables	3,612.5	—	4,240.3	—	—	(7,852.8)	—
Short term intercompany loan payable	—	—	—	4,210.3	4,210.3	(4,210.3)	—
Other current liabilities	—	—	3.8	234.0	234.0	—	237.8
Total current liabilities	3,618.9	4,218.3	4,277.7	8,459.8	12,678.1	(12,063.1)	8,511.6
Long term borrowings and capital leases	—	8,763.6	1,939.9	394.5	9,158.1	—	11,098.0
Deferred tax liability	—	—	—	4,875.3	4,875.3	(304.1)	4,571.2
Long term intercompany loan payable	3,786.5	—	—	8,484.1	8,484.1	(12,270.6)	—
Other non-current liabilities	—	—	60.3	2,234.6	2,234.6	—	2,294.9
Total liabilities	7,405.4	12,981.9	6,277.9	24,448.3	37,430.2	(24,637.8)	26,475.7
Total equity	37,290.2	36.4	36,166.8	59,881.8	59,918.2	(96,085.0)	37,290.2
Total liabilities and equity	$44,695.6	$13,018.3	$42,444.7	$84,330.1	$97,348.4	$(120,722.8)	$63,765.9

Condensed Consolidating Balance Sheets

(Unaudited, In millions)

As of December 31, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
ASSETS							
Current assets:							
Cash and cash equivalents	$ —	$ —	$ 0.5	$ 471.9	$ 471.9	$ —	$ 472.4
Restricted cash	—	—	—	39.4	39.4	—	39.4
Accounts receivable, net	—	—	—	3,009.8	3,009.8	—	3,009.8
Inventories	—	—	—	3,291.5	3,291.5	—	3,291.5
Other current assets	—	1.6	95.2	698.5	700.1	—	795.3
Intercompany receivables	—	120.2	—	4,682.3	4,802.5	(4,802.5)	—
Short term intercompany loan receivable	—	2,006.3	—	—	2,006.3	(2,006.3)	—
Total current assets	—	2,128.1	95.7	12,193.4	14,321.5	(6,808.8)	7,608.4
Non-current assets:							
Investments	43,204.3	—	38,924.6	13,059.4	13,059.4	(94,947.2)	241.1
Property, plant and equipment (PP&E), net	—	—	7.6	6,627.8	6,627.8	—	6,635.4
Goodwill	—	—	—	19,831.7	19,831.7	—	19,831.7
Intangible assets, net	—	—	—	33,046.1	33,046.1	—	33,046.1
Deferred tax asset	—	—	304.1	188.8	188.8	(304.1)	188.8
Long term intercompany loan receivable	—	12,050.2	1,609.3	—	12,050.2	(13,659.5)	—
Other non-current assets	—	2.8	—	202.6	205.4	—	205.4
Total assets	$43,204.3	$14,181.1	$40,941.3	$85,149.8	$99,330.9	$(115,719.6)	$67,756.9
LIABILITIES AND EQUITY							
Current liabilities:							
Accounts payable and accrued expenses	$ 0.2	$ 85.9	$ 18.1	$ 4,080.3	$ 4,166.2	$ —	$ 4,184.5
Short term borrowings and capital leases	—	2,006.3	748.8	33.6	2,039.9	—	2,788.7
Intercompany payables	3,585.3	—	1,217.2	—	—	(4,802.5)	—
Short term intercompany loan payable	—	—	—	2,006.3	2,006.3	(2,006.3)	—
Other current liabilities	573.5	—	10.7	324.6	324.6	—	908.8
Total current liabilities	4,159.0	2,092.2	1,994.8	6,444.8	8,537.0	(6,808.8)	7,882.0
Long term borrowings and capital leases	—	12,050.2	4,308.9	393.3	12,443.5	—	16,752.4
Deferred tax liability	—	—	—	5,052.3	5,052.3	(304.1)	4,748.2
Long term intercompany loan payable	2,868.9	—	—	10,790.6	10,790.6	(13,659.5)	—
Other non-current liabilities	—	—	70.0	2,127.9	2,127.9	—	2,197.9
Total liabilities	7,027.9	14,142.4	6,373.7	24,808.9	38,951.3	(20,772.4)	31,580.5
Total equity	36,176.4	38.7	34,567.6	60,340.9	60,379.6	(94,947.2)	36,176.4
Total liabilities and equity	$43,204.3	$14,181.1	$40,941.3	$85,149.8	$99,330.9	$(115,719.6)	$67,756.9

Condensed Consolidating Statements of Operations

(Unaudited, In millions)

Three months ended September 30, 2018	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$—	$ —	$3,752.8	$3,752.8	$ —	$3,752.8
Royalties and other revenues	—	—	—	118.9	118.9	—	118.9
Total revenues	—	—	—	3,871.7	3,871.7	—	3,871.7
Costs and expenses:							
Cost of sales	—	—	—	1,157.6	1,157.6	—	1,157.6
Research and development	—	—	—	407.2	407.2	—	407.2
Selling, general and administrative	(14.5)	—	—	851.3	851.3	—	836.8
Amortization of acquired intangible assets	—	—	—	433.7	433.7	—	433.7
Integration and acquisition costs	45.0	—	5.3	42.7	42.7	—	93.0
Reorganization costs	—	—	—	254.8	254.8	—	254.8
Gain on sale of Oncology franchise and product rights	—	—	—	(267.2)	(267.2)	—	(267.2)
Total operating expenses	30.5	—	5.3	2,880.1	2,880.1	—	2,915.9
Operating income/(loss) from continuing operations	(30.5)	—	(5.3)	991.6	991.6	—	955.8
Interest income/(expense), net	(43.7)	5.6	(37.1)	(48.7)	(43.1)	—	(123.9)
Other income/(expense), net	0.2	—	(24.8)	(71.5)	(71.5)	—	(96.1)
Total other income/ (expense), net	(43.5)	5.6	(61.9)	(120.2)	(114.6)	—	(220.0)
Income/(loss) from continuing operations before income taxes and equity in earnings/ (losses) of equity method investees	(74.0)	5.6	(67.2)	871.4	877.0	—	735.8
Income taxes	0.2	(2.4)	15.2	(216.3)	(218.7)	—	(203.3)
Equity in earnings/(losses) of equity method investees, net of taxes	611.0	—	(74.2)	4.7	4.7	(536.8)	4.7
Income/(loss) from continuing operations, net of taxes	537.2	3.2	(126.2)	659.8	663.0	(536.8)	537.2
Net income/(loss)	537.2	3.2	(126.2)	659.8	663.0	(536.8)	537.2
Comprehensive income/ (loss)	$436.0	$ 3.2	$(220.3)	$ 558.6	$ 561.8	$(341.5)	$ 436.0

Condensed Consolidating Statements of Operations

(Unaudited, In millions)

Nine months ended September 30, 2018	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$ —	$ —	$ 11,198.5	$ 11,198.5	$ —	$ 11,198.5
Royalties and other revenues	—	—	—	358.4	358.4	—	358.4
Total revenues	—	—	—	11,556.9	11,556.9	—	11,556.9
Costs and expenses:							
Cost of sales	—	—	—	3,398.3	3,398.3	—	3,398.3
Research and development	—	—	—	1,240.0	1,240.0	—	1,240.0
Selling, general and administrative	76.4	—	7.2	2,465.7	2,465.7	—	2,549.3
Amortization of acquired intangible assets	—	—	—	1,375.3	1,375.3	—	1,375.3
Integration and acquisition costs	142.7	—	7.4	361.9	361.9	—	512.0
Reorganization costs	—	—	—	268.9	268.9	—	268.9
Gain on sale of Oncology franchise and product rights	—	—	—	(267.2)	(267.2)	—	(267.2)
Total operating expenses	219.1	—	14.6	8,842.9	8,842.9	—	9,076.6
Operating income/(loss) from continuing operations	(219.1)	—	(14.6)	2,714.0	2,714.0	—	2,480.3
Interest income/(expense), net	(110.4)	(2.2)	(91.6)	(169.1)	(171.3)	—	(373.3)
Other income/(expense), net	—	—	(23.9)	(20.0)	(20.0)	—	(43.9)
Total other income/ (expense), net	(110.4)	(2.2)	(115.5)	(189.1)	(191.3)	—	(417.2)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(329.5)	(2.2)	(130.1)	2,524.9	2,522.7	—	2,063.1
Income taxes	17.4	0.6	28.4	(417.4)	(416.8)	—	(371.0)
Equity in earnings/(losses) of equity method investees, net of taxes	2,015.4	—	243.2	11.2	11.2	(2,258.6)	11.2
Income/(loss) from continuing operations, net of taxes	1,703.3	(1.6)	141.5	2,118.7	2,117.1	(2,258.6)	1,703.3
Net income/(loss)	1,703.3	(1.6)	141.5	2,118.7	2,117.1	(2,258.6)	1,703.3
Comprehensive income/ (loss)	$ 954.7	$ (1.6)	$ (538.7)	$ 1,370.1	$ 1,368.5	$ (829.8)	$ 954.7

Condensed Consolidating Statements of Operations

(Unaudited, In millions)

Three months ended September 30, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$—	$ —	$3,533.8	$3,533.8	$ —	$3,533.8
Royalties and other revenues	—	—	—	163.8	163.8	—	163.8
Total revenues	—	—	—	3,697.6	3,697.6	—	3,697.6
Costs and expenses:							
Cost of sales	—	—	—	1,001.4	1,001.4	—	1,001.4
Research and development	—	—	—	402.8	402.8	—	402.8
Selling, general and administrative	6.1	—	4.0	849.6	849.6	—	859.7
Amortization of acquired intangible assets	—	—	—	482.4	482.4	—	482.4
Integration and acquisition costs	—	—	9.2	227.8	227.8	—	237.0
Reorganization costs	—	—	—	5.4	5.4	—	5.4
Loss on sale of product rights	—	—	—	0.3	0.3	—	0.3
Total operating expenses	6.1	—	13.2	2,969.7	2,969.7	—	2,989.0
Operating income/(loss) from continuing operations	(6.1)	—	(13.2)	727.9	727.9	—	708.6
Interest income/(expense), net	(48.0)	3.0	(23.6)	(71.7)	(68.7)	—	(140.3)
Other income/(expense), net	—	—	4.4	(4.6)	(4.6)	—	(0.2)
Total other income/ (expense), net	(48.0)	3.0	(19.2)	(76.3)	(73.3)	—	(140.5)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(54.1)	3.0	(32.4)	651.6	654.6	—	568.1
Income taxes	0.9	0.6	(8.9)	(6.1)	(5.5)	—	(13.5)
Equity in earnings/(losses) of equity method investees, net of taxes	604.0	—	(79.8)	(3.3)	(3.3)	(524.3)	(3.4)
Income/(loss) from continuing operations, net of taxes	550.8	3.6	(121.1)	642.2	645.8	(524.3)	551.2
Loss from discontinued operations, net of taxes	—	—	—	(0.4)	(0.4)	—	(0.4)
Net income/(loss)	550.8	3.6	(121.1)	641.8	645.4	(524.3)	550.8
Comprehensive income/ (loss)	$1,319.8	$ 3.6	$ 581.0	$1,411.2	$1,414.8	$(1,995.8)	$1,319.8

Condensed Consolidating Statements of Operations

(Unaudited, In millions)

Nine months ended September 30, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
Revenues:							
Product sales	$ —	$ —	$ —	$10,537.9	$10,537.9	$ —	$10,537.9
Royalties and other revenues	—	—	—	477.8	477.8	—	477.8
Total revenues	—	—	—	11,015.7	11,015.7	—	11,015.7
Costs and expenses:							
Cost of sales	—	—	—	3,437.3	3,437.3	—	3,437.3
Research and development	—	—	—	1,324.5	1,324.5	—	1,324.5
Selling, general and administrative	24.2	—	15.3	2,608.2	2,608.2	—	2,647.7
Amortization of acquired intangible assets	—	—	—	1,280.5	1,280.5	—	1,280.5
Integration and acquisition costs	164.7	—	52.3	479.7	479.7	—	696.7
Reorganization costs	—	—	—	24.5	24.5	—	24.5
Loss on sale of product rights	—	—	—	(0.4)	(0.4)	—	(0.4)
Total operating expenses	188.9	—	67.6	9,154.3	9,154.3	—	9,410.8
Operating income/(loss) from continuing operations	(188.9)	—	(67.6)	1,861.4	1,861.4	—	1,604.9
Interest income/(expense), net	(109.1)	14.5	(66.5)	(258.6)	(244.1)	—	(419.7)
Other income/(expense), net	1.8	—	4.3	0.7	0.7	—	6.8
Total other income/ (expense), net	(107.3)	14.5	(62.2)	(257.9)	(243.4)	—	(412.9)
Income/(loss) from continuing operations before income taxes and equity in earnings/(losses) of equity method investees	(296.2)	14.5	(129.8)	1,603.5	1,618.0	—	1,192.0
Income taxes	1.7	(3.6)	(45.0)	2.3	(1.3)	—	(44.6)
Equity in earnings/(losses) of equity method investees, net of taxes	1,460.6	—	(119.7)	0.1	0.1	(1,340.9)	0.1
Income/(loss) from continuing operations, net of taxes	1,166.1	10.9	(294.5)	1,605.9	1,616.8	(1,340.9)	1,147.5
Gain from discontinued operations, net of taxes	—	—	—	18.6	18.6	—	18.6
Net income/(loss)	1,166.1	10.9	(294.5)	1,624.5	1,635.4	(1,340.9)	1,166.1
Comprehensive income/ (loss)	$3,632.8	$10.9	$2,031.5	$ 4,088.2	$ 4,099.1	$(6,130.6)	$ 3,632.8

Condensed Consolidating Statements of Cash Flows

(Unaudited, In millions)

Nine months ended September 30, 2018	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
CASH FLOWS FROM OPERATING ACTIVITIES:							
Net cash provided by/(used in) operating activities	$(251.2)	$ (17.4)	$ 264.2	$ 2,811.9	$ 2,794.5	$ —	$ 2,807.5
CASH FLOWS FROM INVESTING ACTIVITIES:							
Transactions with subsidiaries	(228.0)	(16,010.0)	(11,268.3)	(32,187.9)	(48,197.9)	59,694.2	—
Proceeds from sale of Oncology franchise	—	—	—	2,412.2	2,412.2	—	2,412.2
Purchases of PP&E	—	—	—	(564.6)	(564.6)	—	(564.6)
Acquisition of business, net of cash acquired	—	—	—	(104.7)	(104.7)	—	(104.7)
Proceeds from sale of investments	—	—	—	31.8	31.8	—	31.8
Other, net	—	—	—	(97.9)	(97.9)	—	(97.9)
Net cash provided by/(used in) investing activities	(228.0)	(16,010.0)	(11,268.3)	(30,511.1)	(46,521.1)	59,694.2	1,676.8
CASH FLOWS FROM FINANCING ACTIVITIES:							
Proceeds from revolving line of credit, long term and short term borrowings	—	2,685.0	—	1,050.3	3,735.3	—	3,735.3
Repayment of revolving line of credit, long term and short term borrowings	—	(3,780.0)	(3,129.5)	(1,059.5)	(4,839.5)	—	(7,969.0)
Proceeds from/(to) intercompany borrowings	923.5	17,122.4	14,142.0	27,506.3	44,628.7	(59,694.2)	—
Contingent consideration payment	(396.0)	—	—	—	—	—	(396.0)
Payment of dividend	(48.6)	—	—	(228.0)	(228.0)	—	(276.6)
Proceeds from issuance of stock for share-based compensation arrangements	0.3	—	9.1	171.4	171.4	—	180.8
Other, net	—	—	(18.0)	(7.6)	(7.6)	—	(25.6)
Net cash provided by/(used in) financing activities	479.2	16,027.4	11,003.6	27,432.9	43,460.3	(59,694.2)	(4,751.1)
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	—	(11.9)	(11.9)	—	(11.9)
Net decrease in cash, cash equivalents and restricted cash	—	—	(0.5)	(278.2)	(278.2)	—	(278.7)
Cash, cash equivalents and restricted cash at beginning of period	—	—	0.5	511.3	511.3	—	511.8
Cash, cash equivalents and restricted cash at end of period	$ —	$ —	$ —	$ 233.1	$ 233.1	$ —	$ 233.1

Condensed Consolidating Statements of Cash Flows
(Unaudited, In millions)

Nine months ended September 30, 2017	Shire plc (Parent Guarantor)	SAIIDAC (SAIIDAC Notes Subsidiary Issuer)	Baxalta Inc. (Baxalta Notes Subsidiary Issuer and SAIIDAC Notes Subsidiary Guarantor)	Non-Guarantor Non-Issuer Subsidiaries	Non-Guarantor Subsidiaries of Baxalta Notes	Eliminations	Consolidated
CASH FLOWS FROM OPERATING ACTIVITIES:							
Net cash provided by/(used in) operating activities	$ (102.9)	$ (62.9)	$ 0.6	$ 2,902.3	$ 2,839.4	$ —	$ 2,737.1
CASH FLOWS FROM INVESTING ACTIVITIES:							
Transactions with subsidiaries	(1,339.3)	(262.9)	(659.3)	(4,209.1)	(4,472.0)	6,470.6	—
Purchases of PP&E	—	—	—	(565.5)	(565.5)	—	(565.5)
Proceeds/(payments) from sale of investments	—	—	(9.8)	57.9	57.9	—	48.1
Other, net	—	—	—	34.8	34.8	—	34.8
Net cash provided by/(used in) investing activities	(1,339.3)	(262.9)	(669.1)	(4,681.9)	(4,944.8)	6,470.6	(482.6)
CASH FLOWS FROM FINANCING ACTIVITIES:							
Proceeds from revolving line of credit, long term and short term borrowings	2,110.0	1,150.0	—	1.6	1,151.6	—	3,261.6
Repayment of revolving line of credit, long term and short term borrowings	(2,560.0)	(3,100.0)	—	(4.5)	(3,104.5)	—	(5,664.5)
Proceeds from/(to) intercompany borrowings	1,919.6	2,275.8	623.9	1,651.3	3,927.1	(6,470.6)	—
Payment of dividend	(27.6)	—	—	(207.1)	(207.1)	—	(234.7)
Proceeds from issuance of stock for share-based compensation arrangements	0.2	—	4.6	87.4	87.4	—	92.2
Other, net	—	—	(0.8)	(25.4)	(25.4)	—	(26.2)
Net cash provided by/(used in) financing activities	1,442.2	325.8	627.7	1,503.3	1,829.1	(6,470.6)	(2,571.6)
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	—	6.2	6.2	—	6.2
Net decrease in cash and cash equivalents and restricted cash	—	—	(40.8)	(270.1)	(270.1)	—	(310.9)
Cash, cash equivalents, and restricted cash at beginning of period	—	—	41.7	512.8	512.8	—	554.5
Cash, cash equivalents, and restricted cash at end of period	$ —	$ —	$ 0.9	$ 242.7	$ 242.7	$ —	$ 243.6

UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL DATA

On May 8, 2018, Takeda and Shire signed a Co-operation Agreement and announced an offer to acquire all of the issued and to-be-issued share capital of Shire. The unaudited pro forma condensed combined financial data set forth below gives effect to the following:

- the Shire Acquisition, which is expected to close in the first half of 2019, the actual date of close to be determined (the "Closing");
- the financing obtained by Takeda to fund the cash portion of the acquisition consideration; and
- the issuance of shares of Takeda to shareholders of Shire (collectively, the "Transactions").

The final purchase price will vary based on the exchange rate at the date of the Closing and the Takeda share price on that date. The terms and conditions of the financing that will be used to fund the acquisition, including the amount of debt we actually incur, have not been finally determined and are subject to change.

The unaudited pro forma condensed combined statement of financial position gives effect to these transactions as if they occurred on March 31, 2018 and the unaudited pro forma condensed combined statements of income give effect to these transactions as if they occurred as of April 1, 2017. The unaudited pro forma condensed combined financial information has been prepared by management in accordance with the regulations of the SEC and is not necessarily indicative of what the combined company's financial position or results of operations actually would have been had the Shire Acquisition been completed as of the dates indicated. In addition, the unaudited pro forma condensed combined financial statements do not purport to project the future financial position or results of operations of the combined entity. There were no material transactions between Shire and Takeda during the period presented in the unaudited pro forma condensed combined financial statements that would need to be eliminated.

The unaudited pro forma condensed combined financial statements have been prepared using the acquisition method of accounting under IFRS, with Takeda being the accounting acquirer. The pro forma adjustments are preliminary and based on currently available information. The pro forma adjustments have been made solely for the purpose of preparing these unaudited pro forma condensed combined financial statements. Differences between these preliminary estimates and the final acquisition accounting will likely occur, and these differences could be material. The differences, if any, could have a material impact on the accompanying unaudited pro forma condensed combined financial statements and Takeda's future results of operations and financial position.

In addition, the unaudited pro forma condensed combined financial statements do not reflect any cost savings, operating synergies, or revenue enhancements that the combined company may achieve as a result of the Shire Acquisition; the costs to integrate the operations of Shire or the costs necessary to achieve these cost savings, operating synergies, and revenue enhancements.

The unaudited pro forma condensed combined financial information gives pro forma effect to events that are directly attributable to the Shire Acquisition, are factually supportable, and with respect to the unaudited pro forma condensed combined statements of operations, are expected to have a continuing impact on the combined results. The unaudited pro forma condensed combined statement of income excludes ¥24,760 million of non-recurring costs expected to be incurred in connection with the acquisition and the impact of any incremental cost of sales related to the recognition of Shire's inventory at fair value of ¥406,798 million, which is expected to be recorded within the first year after Closing.

All financial data included in the unaudited condensed combined financial information is presented in millions of Japanese yen and has been prepared on the basis of IFRS and Takeda's accounting policies. For the purpose of the pro forma condensed combined financial information, Shire's historical financial information as of and for the year ended December 31, 2017, has been conformed from U.S. GAAP to IFRS and Takeda's accounting policies for material accounting policy differences based on information available to Takeda.

The unaudited pro forma condensed combined financial information set forth below should be read in conjunction with the audited consolidated financial statements and the related notes of Takeda and Shire included in this offering circular. Amounts shown in the tables below have been rounded to the nearest indicated digit unless otherwise specified. As a result, the sum of the components may not equal the total amount reported due to rounding.

UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF FINANCIAL POSITION
AS OF MARCH 31, 2018
(millions of JPY)

	Takeda	Shire (A)	Pro forma Adjustments	Note	Pro forma
ASSETS					
Noncurrent assets:					
Property, plant, and equipment	536,801	749,012	37,479	(B)	1,323,292
Goodwill	1,029,248	2,238,458	787,977	(B)(ii)(c)	4,055,683
Intangible assets	1,014,264	3,744,677	1,798,695	(B)(ii)(a)	6,557,636
Deferred tax asset	64,980	35,611	882	(E)	101,473
Other	382,362	50,340	—		432,702
Total non-current assets	3,027,655	6,818,098	2,625,033		12,470,786
Current assets:					
Inventories	212,944	371,571	451,998	(B)	1,036,513
Trade and other receivables	420,247	394,864	—		815,111
Cash and cash equivalents	294,522	57,677	124,715	(C)	476,914
Other current assets	151,095	51,479	—		202,574
Total current assets	1,078,808	875,591	576,713		2,531,112
Total assets	4,106,463	7,693,689	3,201,746		15,001,898
LIABILITIES					
Noncurrent liabilities:					
Bonds and loans	985,644	1,858,972	—		2,844,616
Net defined benefit liabilities	87,611	66,056	—		153,667
Deferred tax liabilities	90,725	535,912	581,156	(B)(ii)(b)	1,207,793
Other	187,565	215,366	—		402,931
Total non-current liabilities	1,351,545	2,676,306	581,156		4,609,007
Current liabilities:					
Bonds and loan	18	313,948	3,303,378	(D)	3,617,344
Trade and other payables	240,259	71,752	—		312,011
Provisions	132,781	234,402	—		367,183
Other	364,451	296,958	114,391	(B)	775,800
Total current liabilities	737,509	917,060	3,417,769		5,072,338
Total liabilities	2,089,054	3,593,366	3,998,925		9,681,345
EQUITY					
Share capital	77,914	9,255	1,669,509	(E)	1,756,678
Share premium	90,740	2,827,075	(1,177,935)	(E)	1,739,880
Treasury shares	(74,373)	(31,942)	31,942	(E)	(74,373)
Retained earnings	1,557,307	1,140,737	(1,165,497)	(E)	1,532,547
Other components of equity	345,836	155,198	(155,198)	(E)	345,836
Equity attributable to owners of the Company	1,997,424	4,100,323	(797,179)		5,300,568
Noncontrolling interests	19,985	—	—		19,985
Total equity	2,017,409	4,100,323	(797,179)		5,320,553
TOTAL LIABILITIES AND EQUITY	4,106,463	7,693,689	3,201,746		15,001,898

UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF INCOME
FOR THE YEAR ENDED MARCH 31, 2018
(millions of JPY except share and per share data)

	Takeda	Shire (a)	Pro forma Adjustments	Note	Pro forma
Revenue	1,770,531	1,703,475	—		3,474,006
Cost of sales	(495,921)	(529,114)	(1,352)	(F)	(1,026,387)
Selling, general, and administrative expense	(628,106)	(393,241)	(844)	(F)	(1,022,191)
Research and development expense	(325,441)	(184,046)	(231)	(F)	(509,718)
Amortization and impairment losses on intangible assets associated with products	(122,131)	(198,651)	(331,542)	(G)	(652,324)
Other operating income (expense), net	42,857	(99,072)	1,510	(I)	(54,705)
Operating profit	241,789	299,351	(332,459)		208,681
Finance income (expense), net	7,615	(65,799)	(98,579)	(H)	(156,763)
Share of profit (loss) of investments accounted for using the equity method	(32,199)	337	—		(31,862)
Profit before tax	217,205	233,889	(431,038)		20,056
Income tax (expense) / benefit	(30,497)	278,821	107,760	(J)	356,084
Net profit for the year, before discontinued operations	186,708	512,710	(323,278)		376,140
Gain / (loss) from discontinued operations	—	2,023	—		2,023
Net profit for the year	186,708	514,733	(323,278)		378,163
Attributable to:					
Owners of the Company	186,886				376,318
Non-controlling interest	(178)				(178)
Profit from continuing operations	186,708				376,140
Earnings per share (JPY):					
Basic	239.35				243.58
Diluted	237.56				242.66
Weighted average shares outstanding (in millions):					
Basic	780.8				1,544.9
Diluted	786.7				1,550.8

NOTES TO THE UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL DATA

Basis of Preparation

The unaudited pro forma condensed combined statement of financial position as of March 31, 2018 and the unaudited pro forma condensed combined statements of income for the year ended March 31, 2018, reflect adjustments that are: (i) directly attributable to the Transactions; (ii) factually supportable; and (iii) with respect to the pro forma condensed combined statement of income, expected to have a continuing impact on the combined results following the consummation of the Transactions.

The unaudited pro forma condensed combined statement of financial position has been prepared by combining Takeda's statement of financial position as of March 31, 2018, and Shire's balance sheet as of December 31, 2017 and applying the pro forma adjustments described below. The unaudited pro forma condensed combined statement of income has been prepared by combining Takeda's statement of income for the year ended March 31, 2018 and Shire's for the year ended December 31, 2017 and applying the pro forma adjustments described below. Management has elected to combine the historical financial information based on the respective fiscal year end of each company. The historical Shire balance sheet and income statement have not been updated for any significant events that may have occurred between December 31, 2017 and March 31, 2018. In addition, the historical financial information of Shire has been prepared based on U.S. GAAP, which has been converted to IFRS and Takeda's accounting policies. The pro forma condensed combined statement of financial position has been prepared assuming the Closing occurred on March 31, 2018, and the pro forma condensed combined statement of income has been prepared assuming the Closing occurred on April 1, 2017.

The pro forma adjustments for the Transactions are made on the basis that it is a business combination that is accounted for under the acquisition method of accounting in accordance with IFRS 3, Business Combinations. Accordingly, Takeda has estimated the fair value of Shire's assets acquired and liabilities assumed and conformed Shire's accounting policies to its own for material policy differences and based on available information.

The unaudited pro forma condensed combined financial statements have been prepared based upon currently available information and assumptions deemed appropriate by Takeda management and for informational purposes only and should be read in conjunction with Takeda's and Shire's financial statements. The preparation of these unaudited pro forma condensed combined financial statements requires management to make estimates and assumptions deemed appropriate. The unaudited pro forma condensed combined financial statements are not intended to represent, or be indicative of, the actual financial position and results of operations that would have occurred if the Transactions described below had been affected on the dates indicated, nor are they indicative of Takeda's future results.

Pro forma adjustments

(A) The historical financial statements of Shire were prepared in accordance with U.S. GAAP and prepared in US dollars. The historical financial information of Shire presented in the pro forma condensed combined financial information has been conformed from Shire's historical financial information to IFRS and Takeda's accounting policies for material accounting policy differences based on information available at the time of preparation and converted to Japanese Yen. A reconciliation of the historical financial information of Shire to Shire's financial information based on IFRS and the foreign currency rates used to convert the historical financial statements to Japanese yen are presented in Note K.

Based upon the available information, Takeda is not aware of any additional accounting policy differences that would have a material impact on the unaudited pro forma condensed combined financial information and that have not been reflected in the conversion shown in Note K. Takeda will review Shire's accounting policies subsequent to the Closing in more detail. As a result of that review, Takeda may identify differences between the accounting policies of the two companies that, when conformed, could have a material impact on the unaudited pro forma condensed combined financial information.

(B) Reflects the preliminary purchase price allocation among assets acquired and liabilities assumed as set forth below (in millions of JPY):

	Amount
Estimated purchase price:	
Cash	3,099,271
Takeda shares	3,357,528
Total (i)	6,456,799
Preliminary estimate of assets acquired and liabilities assumed (ii)	
Net assets of Shire at December 31, 2017	4,100,323
Less: Cash for estimated transaction expenses (note C)	(24,126)
Less: Historical goodwill	(2,238,458)
Less: Historical intangible assets	(3,744,677)
Adjusted net book value of liabilities assumed	(1,906,938)
Increase inventory to fair value	451,998
IPR&D at fair value	280,535
Other identifiable intangible assets at fair value	5,262,837
Increase property, plant, and equipment to fair value	37,479
Deferred tax impact of fair value adjustments (ii)(b)	(581,156)
Cash settled share-based award liability (iii)	(114,391)
Preliminary allocation to goodwill	3,026,435

(i) The aggregate preliminary purchase price is calculated as follows (in millions of JPY except per share data):

	Amount
Calculation of estimated cash consideration (a):	
Number of Shire shares to be purchased	910,746,641
Cash consideration per share ($30.33 per share) in ¥ (a)	3,403
Estimated cash paid for shares and vested share-settled awards (b)	3,099,271
Calculation of estimated fair value of shares issued as consideration:	
Shire shares outstanding	910,746,641
Conversion ratio (as per agreement)	0.839
Estimated Takeda shares to be issued	764,116,432
Fair value per share based on Takeda share price	4,394
Estimated fair value of shares issued as consideration (c)	3,357,528

(a) Cash consideration per share was converted to JPY at US$1.00 to ¥112.214 as of October 12, 2018.

(b) The number of shares to be purchased represents the outstanding shares of Shire at March 31, 2018, and the estimated number of vested share-settled awards to be treated as shares in the acquisition.

Cash consideration for shares was estimated based on 910,670,167 Shire shares outstanding, expected to be purchased as of March 31, 2018.

Cash consideration for vested Shire share settled awards was estimated based on 76,474 Shire share award units. This represents the share awards expected to be vested at the Closing and are expected to be settled the same as Shire's ordinary outstanding shares.

The total cash consideration will vary based on the USD to JPY exchange rate on the date of the Shire Acquisition. From May 8, 2018, the date on which Takeda's initial offer was made public, to October 12, 2018, the foreign currency exchange rate from USD to JPY ranged from ¥108.729 to ¥114.101 per US$1.00, or a range of approximately 5%. A 5% weakening of the Japanese Yen to US dollar would increase the cash amount by ¥155,738 million, and a 5% strengthening of the Japanese yen to the US dollar would decrease the cash amount by ¥154,827 million.

(c) The estimated fair value of shares issued was calculated based on the outstanding shares and share awards at March 31, 2018, multiplied by the exchange ratio of 0.839, and Takeda's closing share price as of October 12, 2018, of ¥4,394 per share.

The fair value of the consideration settled in shares is subject to change based on movements in Takeda's share price. From the date on which Takeda's initial offer was made public on May 8, 2018 to October 12, 2018, Takeda's closing share price has ranged from ¥4,203 to ¥4,899, or a range of approximately 17%. A 20% decrease in Takeda's share price would reduce the value of the shares issued by ¥671,506 million, and a 20% increase in Takeda's share price would increase the value of the shares to be issued by ¥671,506 million.

As noted above, the final consideration transferred is contingent upon the share price of Takeda shares on the Closing date and the foreign currency exchange rate on the date of acquisition. A difference in any of these factors from the amount assumed herein will result in a change in the purchase price and, as a consequence, a change in goodwill is recognized.

(ii) The preliminary estimates are based on the data available to Takeda and may change upon completion of the final purchase price allocation. Any change in the estimated fair value of the assets and liabilities acquired will have a corresponding impact on the amount of the goodwill. In addition, a change in the amount of property, plant, and equipment and other identifiable intangible assets will have a direct impact on the amount of amortization and depreciation recorded against income in future periods. The impact of any changes in the purchase price allocation may have a material impact on the amounts presented in this pro forma condensed combined financial information and in future periods.

(a) The pro forma adjustment for intangible assets is calculated as follows (in millions of JPY):

	Amount
Fair value of IPR&D	280,535
Fair value of other intangible assets	5,262,837
Less: Historical intangible assets	(3,744,677)
Pro forma adjustment	1,798,695

(b) The estimated tax impact is based on assumed tax rate of 25%, which represents Takeda's 2017 estimated global blended statutory tax rate applicable to the fair value step-ups.

(c) The acquired assets and liabilities assumed are reflected at their preliminarily estimated fair values with the excess consideration recorded as goodwill. The pro forma adjustment for goodwill is calculated as follows (in millions of JPY):

	Amount
Preliminary allocation to goodwill	3,026,435
Less: Historical goodwill	(2,238,458)
Pro forma adjustment	787,977

(iii) Reflects the fair value of Shire share-based awards that Shire intends to cash settle upon the change in control. The total cash consideration related to these awards is based on an assumed number of units of 16,135,116 at ¥7,090 (Takeda Offer Price) per share. The amount that will be ultimately payable will be based on the higher of (i) the Shire stock price during the 30 days prior to Closing and (ii) the Takeda Offer Price per share at Closing. The payment is expected to be made after the Closing. The final amount payable is contingent upon, Shire's stock price, the share price of Takeda shares on the Closing date and the foreign currency exchange rate on the date of acquisition. A difference in any of these factors from the amount assumed herein will change the cash-settle award liability and goodwill by the same amount.

(C) Reflects the impact on cash and cash equivalents of the Transactions calculated as follows (in millions of JPY):

	Amount
Net proceeds from borrowings (Note D)	3,333,405
Estimated Takeda transaction costs (Note E)	(55,266)
Estimated Shire transaction costs (i)	(24,126)
Debt issuance costs (Note D)	(30,027)
Cash consideration for the Shire Acquisition	(3,099,271)
Pro forma adjustment	124,715

(i) This represents estimated transaction costs expected to be paid by Shire at close, which will reduce cash acquired by Takeda.

(D) Reflects the borrowings to be entered into in connection with the Shire Acquisition (in millions of JPY):

	Amount
Bridge financing (i)	415,192
Term loan (ii)	841,605
SSTL (iii)	500,000
Euro Notes and USD Notes (iv)(v)	1,576,608
Total (vi)	3,333,405
Less: Estimated debt issuance costs	30,027
Pro forma adjustment	3,303,378

(i) Bridge financing. On May 8, 2018, Takeda entered into the Bridge Credit Agreement, with aggregate commitments of $30.85 billion. Takeda expects to fully replace this bridge financing facility prior to the Closing with other borrowings. The bridge financing has been reduced by the term loan and the SSTL and will be further reduced by the Euro Notes and the USD Notes. The pro forma balance sheet reflects borrowings under the bridge financing for the portion that has not been replaced by other financing or from the Euro Notes and the USD Notes.

(ii) Term loan. This represents the term loan agreement entered into by Takeda on June 8, 2018.

(iii) SSTL. This represents the short term facility agreement entered into on October 26, 2018, that has an aggregate commitment of ¥500.0 billion.

(iv) and (v) Takeda expects, subject to market conditions, to complete an offering of senior notes comprised of Euro Notes and USD Notes. The pro forma financial information is based on assumed total proceeds of USD 14.050 billion with 57% of the notes as Euro Notes and 43% as USD Notes. The actual mix of Euro Notes and USD Notes may differ from this assumption.

(vi) The total proceeds have been based on the assumed foreign currency composition of USD and Euro debt assuming total proceeds of USD 14.050 billion and a foreign currency exchange rate of USD to JPY of ¥112.214 per US$1.00.

In addition to the above, on October 26, 2018, Takeda entered into a Subordinated Loan Agreement (the "Subordinated Loan") with aggregate commitments of ¥500.0 billion. Takeda is not required to draw upon the Subordinated Loan. However, if Takeda choses to draw on all or a part of the Subordinated Loan, the proceeds will be used to refinance all or a part of any indebtedness incurred pursuant to the SSTL described above.

(E) Represents the elimination of Shire's historical equity and the impact of the Transactions on equity calculated as follows (in millions of JPY):

	Share Capital	Share Premium	Treasury Shares	Retained Earnings	Other Components of Equity	Total
Eliminate Shire equity	(9,255)	(2,827,075)	31,942	(1,140,737)	(155,198)	(4,100,323)
Issuance of shares (i)	1,678,764	1,678,764	—	—	—	3,357,528
Transaction costs (ii)	—	(29,624)	—	(24,760)	—	(54,384)
Total pro forma adjustment	1,669,509	(1,177,935)	31,942	(1,165,497)	(155,198)	(797,179)

(i) Represents impact of the shares issued to finance a portion of the purchase price. This is based on an assumed share price at the date of acquisition of ¥4,394 and the issuance of 764,116,432 shares. As noted above, the number of shares and the value of the shares will be based on the share price at Closing and may differ from these amounts.

(ii) Represents the impact on retained earnings of the transaction costs to be paid by Takeda that will be recorded at the time of the acquisition, net of the associated tax benefit related to the tax deduction of these costs. These costs include ¥24,760 million that will be expensed in future periods and ¥29,624 million related to registration of equity that will be recorded directly to equity. The tax benefit is based on the estimated tax-deductible portion of transaction expenses and an assumed tax rate of 25%, which represents Takeda's 2017 estimated blended global statutory tax rate, and is shown as a pro forma adjustment to deferred tax asset. These transaction costs are excluded from the pro forma condensed combined statement of income, as they are non-recurring in nature.

(F) Represents the incremental depreciation expense based on the preliminary fair value of property, plant, and equipment and an estimated remaining useful life of 15 years calculated as follows (in millions of JPY):

Asset category	Fair value adjustment	Estimated useful life	Pro forma adjustment
Land	1,077	Indefinite	n/a
Buildings and structures	8,603	15 years	574
Machinery and vehicles	27,799	15 years	1,853
Total	37,479		2,427

If the weighted-average estimated useful life of depreciable assets were to increase by one year, pro forma depreciation expense would decrease by ¥3,099 million or increase by ¥3,541 million if the weighted-average estimated useful lives were to decrease by one year. If the estimated fair value of estimated depreciable assets were to change by 10%, pro forma annual depreciation expense would increase or decrease by ¥4,958 million.

(G) Reflects the incremental amortization expense resulting from the recognition of other identifiable intangible assets. The proforma adjustment is based on recognition of amortizable intangible assets of ¥5,543,372 million (Note B) and estimated weighted-average life of 5-18 years. If the fair value was to change by 10%, it would result in a ¥53,024 million impact on amortization expense. If the estimated useful life of amortizable intangible assets were to increase by one year, pro forma annual amortization expense would decrease by ¥58,496 million and would increase by ¥79,946 million if the estimated useful lives were to decrease by one year.

(H) Reflects the incremental interest expense related to the financing of the acquisition described in Note (D) calculated as follows (in millions JPY):

	Amount	Term	Weighted average Interest Rate	Pro forma interest expense
Bridge financing (i)	415,192	1 year	3.41%	14,137
Term loan (ii)	841,605	5 years	2.34%	19,701
SSTL (iii)	500,000	0.5 year	0.23%	566
Euro Notes (iv)(v)	904,424	2-12 years	1.54%	13,901
USD Notes (iv)(v)	672,184	2-5 years	4.06%	27,286
Estimated debt issuance costs (vi)	(30,027)			22,988
Pro forma adjustment (vii)	3,303,378			98,579

(i) The interest is based on the assumption that 100% of the financing is in USD. The interest under the agreement is based on LIBOR plus a margin.

(ii) The interest assumes that 53.3% of the financing is in USD and 46.7% is in Euro. The interest under the agreement is based on LIBOR or EURIBOR plus a margin.

(iii) The SSTL is denominated in JPY and the interest under the agreement is based on TIBOR plus a margin.

(iv) and (v) Represents the interest expense associated with the issuance of senior notes. This is based on the assumed amount of Euro Notes and USD Notes as described above.

The Euro Notes are expected to be comprised of fixed and variable rate borrowings. We have assumed that the Euro Notes are 25% variable rate borrowings and 75% fixed rate borrowings, with an estimated weighted average interest rate of 1.5%. If the interest rate on the Euro Notes were to increase or decrease by 0.125% the pro forma interest expense would change by JPY 1,131 million.

The USD Notes are comprised of fixed and variable rate borrowings. We have assumed that the USD Notes are 25% variable rate borrowings and 75% fixed rate borrowings, with an estimated weighted average interest rate of 4.1%. If the interest rate on the USD Notes were to increase or decrease by 0.125% the pro forma interest expense would change by JPY 840 million. The total interest expense will also be impacted by a change in the mix of notes between Euro Notes and USD Notes.

(vi) The debt issuance costs are amortized over the life the associated borrowings and the amortization expense is included in interest expense. We have assumed a weighted average term of 2.4 years.

(vii) The actual terms and conditions of the Financing, including the amount of debt we actually incur, the currency of the borrowings, the interest rate, and the form of the borrowings (as noted in Note D), have not been finally determined and are subject to change.

(I) Reflects the elimination of non-recurring transaction costs incurred during the year ended March 31, 2018 that are directly related to the Shire Acquisition and are reflected in Takeda's historical statement of income.

(J) Reflects the tax impact of the pro forma adjustments based on assumed rate of 25%, which represents Takeda's 2017 estimated global blended statutory tax rate.

(K) The following is a reconciliation of Shire's historical financial information from U.S. GAAP to IFRS and Takeda's accounting policies (amounts in millions of JPY unless otherwise noted):

UNAUDITED SHIRE CONDENSED BALANCE SHEET IFRS CONVERSION
AS OF DECEMBER 31, 2017

	Historical Shire (USD)(i)	Historical Shire (JPY)(ii)	IFRS conversion adjustments(iii)	Note	Classification adjustments(iii)	Note	Historical Shire IFRS conversion (JPY)
ASSETS							
Noncurrent assets:							
Property, plant, and equipment	6,636	749,012	—		—		749,012
Goodwill	19,832	2,238,458	—		—		2,238,458
Intangible assets	33,046	3,729,935	14,742	a.	—		3,744,677
Deferred tax assets	189	21,333	22,055	b.	—		35,611
			(7,777)	c.			
Other	446	50,340	—		—		50,340
Total noncurrent assets	60,149	6,789,078	29,020		—		6,818,098
Current assets:							
Inventories	3,292	371,571	—		—		371,571
Trade and other receivables	3,010	339,742	—		27,411	f.	394,864
			—		27,711	k.	
Cash and cash equivalents	511	57,677	—		—		57,677
Other current assets	795	89,732	(10,542)	b.	(27,711)	k.	51,479
Total current assets	7,608	858,722	(10,542)		27,411		875,591
Total assets	67,757	7,647,800	18,478		27,411		7,693,689

UNAUDITED SHIRE CONDENSED BALANCE SHEET IFRS CONVERSION
AS OF DECEMBER 31, 2017 (continued)

	Historical Shire (USD)(i)	Historical Shire (JPY)(ii)	IFRS conversion adjustments(iii)	Note	Classification adjustments(iii)	Note	Historical Shire IFRS conversion (JPY)
LIABILITIES							
Noncurrent liabilities:							
Bonds and loans	16,752	1,890,815	—		(38,565)	k.	1,858,972
					6,722	k.	
Net defined benefit liabilities	—	—	—		66,056		66,056
Deferred tax liabilities	4,748	535,912	—		—		535,912
Other	2,198	248,090	1,489	d.	38,565	k.	215,366
					(6,722)	k.	
					(66,056)	k.	
Total noncurrent liabilities	23,698	2,674,817	1,489		—		2,676,306
Current liabilities:							
Bonds and loan	2,789	314,797	—		(849)	k.	313,948
Trade and other payables	4,184	472,252	—		(193,509)	k.	71,752
					(206,991)	g.	
Provisions	—	—	—		27,411	f.	234,402
					206,991	g.	
Other	909	102,600	—		193,509	k.	296,958
					849	k.	
Total current liabilities	7,882	889,649	—		27,411		917,060
Total liabilities	31,580	3,564,466	1,489		27,411		3,593,366
EQUITY							
Share capital	82	9,255	—		—		9,255
Share premium	25,082	2,831,030	3,822	e.	—		2,827,075
			(7,777)	c.			
Treasury shares	(283)	(31,942)	—		—		(31,942)
Retained earnings	9,921	1,119,793	(3,822)	e.	—		1,140,737
			14,742	a.	—		
			(1,489)	d.	—		
			11,513	b.			
Other components of equity	1,375	155,198	—		—		155,198
Equity attributable to owners of the Company	36,177	4,083,334	16,989		—		4,100,323
Noncontrolling interests	—	—	—		—		—
Total equity	36,177	4,083,334	16,989		—		4,100,323
TOTAL LIABILITIES AND EQUITY	67,757	7,647,800	18,478		27,411		7,693,689

UNAUDITED SHIRE CONDENSED STATEMENT OF INCOME IFRS CONVERSION
FOR THE YEAR ENDED DECEMBER 31, 2017

	Historical Shire (USD)(i)	Historical Shire (JPY)(ii)	IFRS conversion adjustments(iii)	Note	Classification adjustments(iii)	Note	Historical Shire IFRS conversion (JPY)
Revenue	15,161	1,703,475	—		—		1,703,475
Cost of sales	(4,701)	(528,200)	(778)	e.	(136)	h.	(529,114)
Selling, general, and administrative expense	(3,531)	(396,740)	(2,124)	e.	136	h.	(393,241)
			(197)	d.	5,684	i.	
Research and development expense	(1,763)	(198,089)	(597)	e.	(102)	j.	(184,046)
			14,742	a.	—		
Amortization and impairment losses on intangible assets associated with products	(1,768)	(198,651)	—		—		(198,651)
Other operating income (expense), net (iv)	(943)	(105,954)	(323)	e.	(5,684)	i.	(99,072)
			11,528	l.	1,361	k.	—
Operating profit	2,455	275,841	22,251		1,259		299,351
Finance income (expense), net (v)	(562)	(63,146)	(1,292)	d.	(1,361)	k.	(65,799)
Share of profit (loss) of investments accounted for using the equity method	3	337	—		—		337
Profit before tax	1,896	213,032	20,959		(102)		233,889
Income tax (expense) / benefit	2,358	264,943	14,124	b.	102	j.	278,821
			(348)	c.			
Net profit for the year, before discontinued operations	4,254	477,975	34,735		—		512,710
Gain / (loss) from discontinued operations	18	2,023	—		—		2,023
Net profit for the year	4,272	479,998	34,735		—		514,733

(i) Represents the historical balance of Shire at December 31, 2017, and the income statement for the year ended December 31, 2017.

(ii) The historical USD balance sheet and income statement of Shire are converted to JPY based on a USD to JPY exchange rate of ¥112.871 per $1.00 for the balance sheet and ¥112.359 per US$1.00 for the income statement. For the balance sheet, the spot rate at December 31, 2017 of ¥112.871 per US$1.00 was used. For the income statement, the average rate for the prior twelve months of ¥112.354 per US$1.00 was used.

(iii) A summary of the differences between U.S. GAAP and Takeda's accounting policies is as follows:

a. Reflect adjustment to eliminate expense recorded by Shire for collaboration payments related to products that are not yet commercialized and to recognize IPR&D based on Takeda's accounting policy.

b. Reflect adjustments to record a deferred tax asset and reclassify prepaid taxes to tax expense on intercompany inventory transfers under IFRS reporting requirements and to record the cumulative effect on retained earnings.

c. Reflect adjustments to record the deferred tax asset and tax expense for stock-based compensation under IFRS reporting requirements.

d. Reflects adjustments to net periodic benefit costs and net defined benefit obligation due to the measurement differences between U.S. GAAP and Takeda accounting policies. These measurement differences relate to the removal of expected return on plan assets and inclusion of interest income on plan assets.

e. Reflect stock compensation expense based on graded vesting under IFRS. Under U.S GAAP Shire elected to record the expense on a straight-line basis.

f. Reclassify Shire's chargeback and sales discounts reserve from trade and other receivables to provisions.

g. Reclassify accrued rebates, accrued managed care, accrued Medicare and Medicaid reserves, accrued sales returns, litigation reserves, and other accruals from trade and other payables to current provisions.

h. Reclassify freight insurance expenses from selling, general, and administrative expenses to cost of sales.
i. Reclassify charitable donations from selling, general, and administrative expense to other operating expenses.
j. Reclassify research and development investment tax credits from research and development to income tax expenses.
k. Reclassify assets and liabilities to align the Shire classification to the Takeda classification.
l. Reflect adjustment to decrease restructuring expenses in 2017 as this expense would have been recorded in an earlier period under IFRS. There is no corresponding adjustment to the balance sheet as the cumulative retained earnings impact does not change.

(iv) Other operating expenses includes integration and acquisition costs, reorganization costs, and gain on sale of product rights.

(v) Finance income / (expense), net includes interest income, interest expense, and other income/ (expense), net.

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Takeda Pharmaceutical Company Limited

€● ●% Senior Notes due 2020
€● Senior Floating Rate Notes due 2020
€● ●% Senior Notes due 2022
€● Senior Floating Rate Notes due 2022
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