Independent auditor's report to the members of Shire plc

Opinion on financial statements of Shire plc

In our opinion the consolidated financial statements of Shire plc and subsidiaries (together the "Group"):

- **give a true and fair view of the state of Shire plc and subsidiaries' affairs (together the Group) as at December 31, 2016 and of the Group's profit for the year then ended;**
- **have been properly prepared in accordance with accounting principles generally accepted in the United States of America; and**
- **have been properly prepared in accordance with the requirements of the Companies (Jersey) Law 1991.**

The financial statements that we have audited comprise:

- the consolidated balance sheet;
- the consolidated statement of income;
- the consolidated statement of comprehensive income;
- the consolidated statement of changes in equity;
- the consolidated statement of cash flows; and
- the related notes 1 to 31.

The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law and accounting principles generally accepted in the United States of America.

Summary of our audit approach

Key risks	The key risks that we identified in the current year were: • The business combination with Baxalta Inc. and in particular the key judgements made by management in the valuation of currently marketed product intangible assets; • The business combination with Dyax Corp. and in particular the key judgements made by management in the valuation of the SHP-643 asset; and • Management's estimation of rebates against revenue as a result of contractual and regulatory requirements for certain products in the United States. Within this report, any new risks are identified with ⌃ and any risks which are the same as the prior year are identified with ›.
Materiality	The materiality that we used in the current year was $150 million, determined as 6 percent of adjusted pre-tax profit.
Scoping	We identified three components, being North American Financial Operations (NAFO), UK Financial Operations (UKFO) and Baxalta which has a number of sub-components which we have scoped based on the relative size of the Baxalta Group. This assessment focused our group audit scope primarily on the U.S., UK, Irish, Swiss and Austrian entities. In addition we identified certain companies to perform an audit of specified account balances where considered significant. Together with the Group functions these locations represent the principal operations and account for 96 percent of the Group's total assets and 86 percent of the Group's revenue.
Significant changes in our approach	Following the acquisition of Baxalta Inc. the group audit scope was extended to cover the most significant entities within this new component. As a consequence of the acquisition, our materiality was increased in the current year. The significant risks included in our audit report reflect the acquisitions made by the Group during the year, with two new reported risks. The risk associated with gross-to-net revenue in the U.S. is consistent with that of the prior year.

Going concern and the Directors' assessment of the principal risks that would threaten the solvency or liquidity of the Group

We have reviewed the Directors' statement regarding the appropriateness of the going concern basis of accounting contained within the Directors' statement on the longer-term viability of the Group contained within the Corporate Governance Report on page 70.

We are required to state whether we have anything material to add or draw attention to in relation to:

- the Directors' confirmation on page 118 that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity;
- the disclosures on pages 54 to 65 that describe those risks and explain how they are being managed or mitigated;
- the Directors' statement in the Corporate Governance Report about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them and their identification of any material uncertainties to the Group's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements; and
- the Directors' explanation on page 75 as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We confirm that we have nothing material to add or draw attention to in respect of these matters.

We agreed with the Directors' adoption of the going concern basis of accounting and we did not identify any such material uncertainties. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's ability to continue as a going concern.

Independence

We are required to comply with the Financial Reporting Council's Ethical Standards for Auditors and confirm that we are independent of the Group and we have fulfilled our other ethical responsibilities in accordance with those standards.

We confirm that we are independent of the Group and we have fulfilled our other ethical responsibilities in accordance with those standards. We also confirm we have not provided any of the prohibited non-audit services referred to in those standards.

Our assessment of risks of material misstatement

The assessed risks of material misstatement described below are those that had the greatest effect on our audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

The prior year reported risk related to the NPS acquisition has not been separately reported on in the current year given the accounting for the acquisition completed in 2015 and there have been no significant changes in 2016. The risk related to revenue recognition reported in the prior year has also been removed on the basis that it is not considered a significant risk in 2016.

Risk description	How the scope of our audit responded to the risk
Baxalta business combination — valuation of acquired CMP intangible assets	
The Directors' determination of the purchase price allocation for the acquisition of Baxalta is included at Note 4 and the critical accounting policy and estimate in relation to acquired intangible assets is set out at Note 3. We identified a risk that the allocation of the purchase price to currently marketed product (CMP) intangible assets acquired as part of the Baxalta business combination is not appropriate. In particular there is risk that management has not determined appropriate assumptions for the impact that launches of competing products may have on future revenues from existing products. We consider this to be a significant risk due to the size of the CMP intangible assets balance (preliminary valuation of $22.0 billion) in addition to the complexity and subjectivity of judgements.	In order to assess the valuation of the acquired CMP intangible assets, as part of the allocation of the purchase price, we have performed the following specific procedures: • independently assessed the design and implementation and tested operating effectiveness of the Group's relevant financial controls; • assessed the competence and independence of management's valuation expert, and used our own internal valuation experts to consider and challenge the appropriateness of valuation methodologies used and the accuracy of calculations; and • considered and challenged the Directors' underlying judgements in light of existing internal evidence, market analyst expectations, publicly available competitor information and external market studies.
Valuation of acquired intangible assets affecting the acquisition accounting for Dyax	
The Directors' determination of the purchase price allocation for the acquisition of Dyax is included at Note 4 and the critical accounting policy and estimate in relation to acquired intangible assets is set out at Note 3. We identified a risk that the allocation of the purchase price to acquired assets and liabilities in relation to the Dyax business combination, in particular the valuation of the SHP-643 intangible asset, is not appropriate. In particular there is risk that management has not determined appropriate assumptions for prevalence, efficacy, probability of clinical success ("POS") and U.S. price rises. This has been highlighted as a significant risk due to its size (SHP-643 has been valued at $4.1 billion) and the complexity and subjectivity of judgements.	In order to assess the valuation of the acquired Dyax intangible assets, as part of the allocation of the purchase price, we have performed the following specific procedures: • independently assessed the design and implementation and tested operating effectiveness of the Group's relevant financial controls; • assessed the competence of management's market expert and undertook a series of interviews with them to understand the scope and output of their work; • obtained the forecast models prepared by management's market expert including the key assumptions for POS, price rises, prevalence rate and efficacy associated with the SHP-643 asset; • obtained evidence including external studies, market analyst reports and comparable product data and obtained an understanding of the primary information and opinions obtained from key opinion leaders by management's market specialist, using this information to challenge the relevant assumptions made by management; and • assessed the competence and independence of management's valuation expert, and used our own internal valuation experts to consider and challenge the appropriateness of valuation methodologies used and the accuracy of calculations.

Risk description	How the scope of our audit responded to the risk

The estimation of rebates against revenue as a result of contractual and regulatory requirements in the United States

A description of the key accounting policy for sales deductions is included at Note 2 and the critical accounting policy and estimate in relation to the level of rebates and other sales deductions is set out at Note 3.

The Directors are required to make certain judgements in respect of the level of rebates and other sales deductions that will be realised against the Group's sales.

The largest of these judgements relate to rebates for Medicaid and Managed Care programmes, for which the Group held accrued rebates as at December 31, 2016 of $1,431 million (2015: $982 million) in aggregate. The risk is primarily focused on the Neuroscience and Gastro Intestinal products.

The key elements of the judgements relating to Medicaid and Managed Care rebates include:

- the proportion of the inventory pipeline that will attract specific rebates; and
- the future value of rebate per unit expected to be applicable.

We identified a risk that these judgements are not appropriate and, as a result, rebate liabilities and sales deductions are recorded at an incorrect level.

There is a significant track record of actual rebate levels which informs our assessment of the level of risk of material misstatement. Nevertheless due to the manual nature and extent of the accounting process in this area it forms a significant part of our audit effort and requires a notable level of resource within the audit engagement.

We have considered the Group's processes for making judgements in this area and performed the following procedures:

- considered the appropriateness of the process and tested the design, implementation and operating effectiveness of controls adopted by management in determining the accounting for rebates and other sales deductions;
- undertook an analysis of the historical accuracy of judgements by reference to actual rebates paid in prior periods;
- confirmed rebate levels accrued during the year against subsequent payments;
- analysed and recalculated components of the year end liability based on contracted and statutory rebate rates; and
- challenged the key elements of judgements that were made in the period in light of externally verifiable data, such as pipeline levels and industry practice.

We also evaluated the presentation and disclosure of the transactions within the Group financial statements.

The description of risks above should be read in conjunction with the significant issues considered by the Audit, Compliance and Risk Committee discussed on pages 76 and 77. Our audit procedures relating to these matters were designed in the context of our audit of the financial statements as a whole, and not to express an opinion on individual accounts or disclosures. Our opinion on the financial statements is not modified with respect to any of the risks described above and we do not express an opinion on these individual matters.

Our application of materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Group materiality	$150 million (2015: $100 million)
Basis for determining materiality	Group materiality is 6 percent (2015: 5 percent) of adjusted pre-tax profit and the change on last year reflects the increase in the size of the Group. Pre-tax profit of $486 million (2015: $1,385 million) has been adjusted by removing the impact of non-recurring items such as the $1,087 million unwind of the fair value uplift associated with the Baxalta inventory acquired and acquisition and integration costs of $791 million directly associated with the Baxalta acquisition.
Rationale for the benchmark applied	Adjusted profit before tax from continuing operations represents the most appropriate benchmark in light of the views of investors and analysts, unusual one off events, the status of the Group and its key performance indicators.

We agreed with the Audit, Compliance and Risk Committee that we would report to the Committee all audit differences in excess of $7.5 million (2015: $5.0 million), as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds. We also report to the Audit, Compliance and Risk Committee on disclosure matters that we identified when assessing the overall presentation of the financial statements.

An overview of the scope of our audit

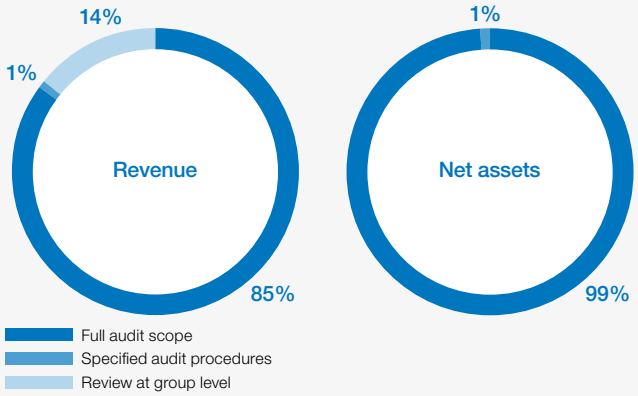
Our group audit was scoped by obtaining an understanding of the Group and its environment, including group-wide controls, and assessing the risks of material misstatement at the group level.

Based on that assessment, we identified three components, being North American Financial Operations (NAFO), UK Financial Operations (UKFO) and Baxalta which has a number of sub-components which we have scoped based on the relative size of the Baxalta Group. This assessment focused our group audit scope primarily on U.S., UK, Irish, Swiss and Austrian entities. In addition we identified certain companies to perform an audit of specified account balances where considered significant. These locations represent the principal operations and together with the Group functions in scope account for 96 percent (2015: 96 percent) of the Group's total assets and 86 percent (2015: 79 percent) of the Group's revenue.

They were also selected to provide an appropriate basis for undertaking audit work to address the risks of material misstatement identified above. Our audit work at the individual locations was performed at component materiality levels which ranged from $37.5 million to $95.0 million, which were determined by reference to a proportion of Group materiality appropriate to the relative scale of the business concerned.

At group level we also audited the consolidation process and carried out analytical procedures to confirm our conclusion that there were no significant risks of material misstatement of the aggregated financial information of the remaining components not subject to full scope audit or specified procedures.

The Group audit team directly supervises the work performed across all of the full scope and specified procedure components, with comprehensive referral instructions issued to each component team, and follows a programme of planned site visits that is designed to ensure that the Senior Statutory Auditor or other senior members of the audit team spend appropriate time in each of the full scope locations throughout the year. In addition to this the Group audit team will visit other locations not in full scope on a rotational basis.



Opinion on other matters prescribed by our engagement letter

In our opinion:

- the financial statements have been properly prepared in accordance with the provisions of the Companies Act 2006 that would have been applied were the Group incorporated in the United Kingdom;
- the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the provisions of the Companies Act 2006 that would have been applied were the Group incorporated in the United Kingdom; and
- the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified any material misstatements in the Strategic Report and the Directors' Report.

Matters on which we are required to report by exception

Adequacy of explanations received and accounting records

Under the Companies (Jersey) Law 1991 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- proper accounting records have not been kept by the parent company, or proper returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns.

We have nothing to report in respect of these matters.

Corporate Governance Statement

Under the Listing Rules we are also required to review part of the Corporate Governance Statement relating to the company's compliance with certain provisions of the UK Corporate Governance Code.

We have nothing to report arising from our review.

Our duty to read other information in the Annual Report
Under International Standards on Auditing (UK and Ireland), we are required to report to you if, in our opinion, information in the annual report is:

- materially inconsistent with the information in the audited financial statements; or
- apparently materially incorrect based on, or materially inconsistent with, our knowledge of the Group acquired in the course of performing our audit; or
- otherwise misleading.

In particular, we are required to consider whether we have identified any inconsistencies between our knowledge acquired during the audit and the Directors' statement that they consider the annual report is fair, balanced and understandable and whether the annual report appropriately discloses those matters that we communicated to the Audit, Compliance and Risk Committee which we consider should have been disclosed.

We confirm that we have not identified any such inconsistencies or misleading statements.

Respective responsibilities of Directors and Auditor

As explained more fully in the Directors' Responsibilities Statement, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). We also comply with International Standard on Quality Control 1 (UK and Ireland). Our audit methodology and tools aim to ensure that our quality control procedures are effective, understood and applied. Our quality controls and systems include our dedicated professional standards review team and independent partner reviews.

This report is made solely to the company's members, as a body, in accordance with Article 113A of the Companies (Jersey) Law 1991. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an Auditor's report and/or those further matters we have expressly agreed to report to them on in our engagement letter and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Group's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the Directors; and the overall presentation of the financial statements. In addition, we read all the financial and non-financial information in the annual report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

John Adam
For and on behalf of Deloitte LLP
Chartered Accountants and Recognised Auditors
London, United Kingdom
February 22, 2017

Consolidated balance sheets

Years ended December 31	Notes	2016 $'M	2015 $'M
Assets			
Current assets:			
Cash and cash equivalents		528.8	135.5
Restricted cash		25.6	86.0
Accounts receivable, net	9	2,616.5	1,201.2
Inventories	10	3,562.3	635.4
Prepaid expenses and other current assets	11	806.3	197.4
Total current assets		7,539.5	2,255.5
Investments		191.6	50.8
Property, plant and equipment ("PP&E"), net	12	6,469.6	828.1
Goodwill	13	17,888.2	4,147.8
Intangible assets, net	14	34,697.5	9,173.3
Deferred tax asset	22	96.7	121.0
Other non-current assets		152.3	33.3
Total assets		67,035.4	16,609.8
Liabilities and equity			
Current liabilities:			
Accounts payable and accrued expenses	17	4,312.4	2,050.6
Short-term borrowings and capital lease obligations	18	3,068.0	1,512.7
Other current liabilities		362.9	142.8
Total current liabilities		7,743.3	3,706.1
Long-term borrowings and capital lease obligations	18	19,899.8	82.1
Deferred tax liability	22	8,322.7	2,205.9
Other non-current liabilities		2,121.6	786.6
Total liabilities		38,087.4	6,780.7
Commitments and contingencies	25		
Equity:			
Common stock of 5p par value; 1,500 million shares authorized; and 912.2 million shares issued and outstanding (2015: 1,000 million shares authorized; and 601.1 million shares issued and outstanding)	27	81.3	58.9
Additional paid-in capital		24,740.9	4,486.3
Treasury stock: 9.0 million shares (2015: 9.7 million shares)	27	(301.9)	(320.6)
Accumulated other comprehensive loss	20	(1,497.6)	(183.8)
Retained earnings		5,925.3	5,788.3
Total equity		28,948.0	9,829.1
Total liabilities and equity		67,035.4	16,609.8

The accompanying notes are an integral part of these Consolidated Financial Statements.

Approved by the Board of Directors and signed on its behalf by:

Jeffrey Poulton
Chief Financial Officer
February 22, 2017

Consolidated statements of operations

Years ended December 31	Notes	2016 $'M	2015 $'M	2014 $'M
Revenues:				
Product sales		**10,885.8**	6,099.9	5,830.4
Royalties and other revenues		**510.8**	316.8	191.7
Total revenues		**11,396.6**	6,416.7	6,022.1
Costs and expenses:				
Cost of sales		**3,816.5**	969.0	979.3
Research and development		**1,439.8**	1,564.0	1,067.5
Selling, general and administrative		**3,015.2**	1,842.5	1,782.0
Amortization of acquired intangible assets	14	**1,173.4**	498.7	243.8
Integration and acquisition costs	6	**883.9**	39.8	158.8
Reorganization costs	7	**121.4**	97.9	180.9
Gain on sale of product rights		**(16.5)**	(14.7)	(88.2)
Total operating expenses, net		**10,433.7**	4,997.2	4,324.1
Operating income from continuing operations		**962.9**	1,419.5	1,698.0
Interest income		**18.4**	4.2	24.7
Interest expense		**(469.6)**	(41.6)	(30.8)
Other (expense)/income, net		**(25.6)**	3.7	8.9
Receipt of break fee	24	**–**	–	1,635.4
Total other (expense)/income, net		**(476.8)**	(33.7)	1,638.2
Income from continuing operations before income taxes and equity in (losses)/earnings of equity method investees		**486.1**	1,385.8	3,336.2
Income taxes	22	**126.1**	(46.1)	(56.1)
Equity in (losses)/earnings of equity method investees, net of taxes		**(8.7)**	(2.2)	2.7
Income from continuing operations, net of taxes		**603.5**	1,337.5	3,282.8
(Loss)/gain from discontinued operations, net of taxes[1]	8	**(276.1)**	(34.1)	122.7
Net income		**327.4**	1,303.4	3,405.5
Earnings per Ordinary Share — basic				
Earnings from continuing operations	21	**0.78**	2.27	5.60
(Loss)/gain from discontinued operations	21	**(0.35)**	(0.06)	0.21
Earnings per Ordinary Share — basic		**0.43**	2.21	5.81
Earnings per Ordinary Share — diluted				
Earnings from continuing operations	21	**0.77**	2.26	5.55
(Loss)/gain from discontinued operations	21	**(0.35)**	(0.06)	0.21
Earnings per Ordinary Share — diluted		**0.42**	2.20	5.76
Cash dividends declared and paid per Ordinary Share		**0.27**	0.23	0.21
Weighted average number of shares (millions):				
Basic	21	**770.1**	590.4	586.7
Diluted	21	**776.2**	593.1	591.3

The accompanying notes are an integral part of these Consolidated Financial Statements.

Consolidated statements of comprehensive income

Years ended December 31	2016 $'M	2015 $'M	2014 $'M
Net income	**327.4**	1,303.4	3,405.5
Other comprehensive loss:			
Foreign currency translation adjustments	**(1,323.3)**	(156.4)	(136.1)
Pension and other employee benefits (net of tax expense of $8.8 million)	**(5.2)**	–	–
Unrealized holding gain/(loss) on available-for-sale securities (net of tax benefit of $0.1 million, $nil, and $1.3 million)	**8.3**	4.1	(5.6)
Hedging activities (net of tax expense of $3.3 million)	**6.4**	–	–
Comprehensive (loss)/income	**(986.4)**	1,151.1	3,263.8

The components of Accumulated other comprehensive loss as of December 31, 2016 and December 31, 2015 are as follows:

Years ended December 31	2016 $'M	2015 $'M
Foreign currency translation adjustments	**(1,505.4)**	(182.1)
Pension and other employee benefits, net of taxes	**(5.2)**	–
Unrealized holding gain/(loss) on available-for-sale securities, net of taxes	**6.6**	(1.7)
Hedging activities, net of taxes	**6.4**	–
Accumulated other comprehensive loss	**(1,497.6)**	(183.8)

The accompanying notes are an integral part of these Consolidated Financial Statements.

Consolidated statements of changes in equity

	Common stock Number of shares M's	Common stock $'M	Additional paid-in capital $'M	Treasury stock $'M	Accumulated other comprehensive loss $'M	Retained earnings $'M	Total equity $'M
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

The accompanying notes are an integral part of these Consolidated Financial Statements.

Dividends per share

During the year ended December 31, 2016, Shire plc declared and paid dividends of $0.27 per Ordinary Share (equivalent to $0.81 per ADS) totaling $171.3 million.

	Common stock Number of shares M's	Common stock $'M	Additional paid-in capital $'M	Treasury stock $'M	Accumulated other comprehensive loss $'M	Retained earnings $'M	Total equity $'M
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

The accompanying notes are an integral part of these Consolidated Financial Statements.

Dividends per share

During the year ended December 31, 2015, Shire plc declared and paid dividends of $0.23 per Ordinary Share (equivalent to $0.70 per ADS) totaling $134.4 million.

	Common stock Number of shares M's	Common stock $'M	Additional paid-in capital $'M	Treasury stock $'M	Accumulated other comprehensive loss $'M	Retained earnings $'M	Total equity $'M
As of January 1, 2014	597.5	58.6	4,186.3	(450.6)	110.2	1,461.5	5,366.0
Net income	–	–	–	–	–	3,405.5	3,405.5
Other comprehensive income, net of tax	–	–	–	–	(141.7)	–	(141.7)
Options exercised	1.6	0.1	15.1	–	–	–	15.2
Share-based compensation	–	–	97.0	–	–	–	97.0
Tax benefit associated with exercise of stock options	–	–	39.6	–	–	–	39.6
Shares released by employee benefit trust to satisfy exercise of stock options	–	–	–	104.7	–	(102.2)	2.5
Dividends	–	–	–	–	–	(121.2)	(121.2)
As of December 31, 2014	599.1	58.7	4,338.0	(345.9)	(31.5)	4,643.6	8,662.9

The accompanying notes are an integral part of these Consolidated Financial Statements.

Dividends per share

During the year ended December 31, 2014, Shire plc declared and paid dividends of $0.21 per Ordinary Share (equivalent to $0.62 per ADS) totaling $121.2 million.

Consolidated statements of cash flows

Years ended December 31	2016 $'M	2015 $'M	2014 $'M
Cash flows from operating activities:			
Net income	**327.4**	1,303.4	3,405.5
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	**1,466.3**	637.2	407.3
Share-based compensation	**318.5**	100.3	97.0
Amortization of deferred financing costs	**125.5**	–	–
Change in fair value of contingent consideration	**11.1**	(149.9)	14.7
Unwind of inventory fair value step-up	**1,118.0**	31.1	91.9
Impairment of intangible assets	**8.9**	643.7	190.3
Movement in deferred taxes	**(594.6)**	(198.2)	(14.3)
Write-down of PP&E	**92.4**	–	–
Other, net	**31.4**	–	(27.9)
Changes in operating assets and liabilities:			
Increase in accounts receivable	**(701.7)**	(211.4)	(66.1)
Increase in sales deduction accruals	**288.3**	97.6	107.6
Increase in inventory	**(255.8)**	(63.2)	(25.3)
Decrease/(increase) in prepayments and other assets	**(198.4)**	37.2	42.4
Increase in accounts and notes payable and other liabilities	**621.6**	109.2	5.3
Net cash provided by operating activities	**2,658.9**	2,337.0	4,228.4
Cash flows from investing activities:			
Movements in restricted cash	**62.8**	(32.0)	(32.6)
Purchases of subsidiary undertakings and businesses, net of cash acquired	**(17,476.2)**	(5,553.4)	(4,104.4)
Purchases of non-current investments and PP&E	**(648.7)**	(124.2)	(100.1)
Proceeds from short-term investments	**–**	67.0	57.8
Proceeds received on sale of product rights	**10.9**	17.5	127.0
Proceeds from disposal of non-current investments and PP&E	**0.9**	18.7	21.5
Other, net	**(41.9)**	(13.5)	0.2
Net cash used in investing activities	**(18,092.2)**	(5,619.9)	(4,030.6)

The accompanying notes are an integral part of these Consolidated Financial Statements.

Years ended December 31	2016 $'M	2015 $'M	2014 $'M
Cash flows from financing activities:			
Proceeds from revolving line of credit, long-term and short-term borrowings	**32,443.4**	3,760.8	2,310.8
Repayment of revolving line of credit, long-term and short-term borrowings	**(16,404.3)**	(3,110.9)	(1,461.8)
Repayment of debt acquired through business combinations	**–**	–	(551.5)
Proceeds from ViroPharma call options	**–**	–	346.7
Payment of dividend	**(171.3)**	(134.4)	(121.2)
Debt issuance costs	**(172.3)**	(24.1)	(10.2)
Contingent consideration payments	**(8.0)**	(101.2)	(15.2)
Proceeds from exercise of options	**129.0**	16.6	17.4
Other, net	**9.3**	32.2	39.5
Net cash provided by financing activities	**15,825.8**	439.0	554.5
Effect of foreign exchange rate changes on cash and cash equivalents	**0.8**	(3.0)	(9.3)
Net increase/(decrease) in cash and cash equivalents	**393.3**	(2,846.9)	743.0
Cash and cash equivalents at beginning of period	**135.5**	2,982.4	2,239.4
Cash and cash equivalents at end of period	**528.8**	135.5	2,982.4

Supplemental information associated with continuing operations:

Years ended December 31	2016 $'M	2015 $'M	2014 $'M
Interest paid	**(284.0)**	(20.0)	(14.5)
Income taxes (paid)/received	**(431.0)**	(69.0)	194.4
Receipt of break fee	**–**	–	1,635.4

For stock issued as purchase consideration on the Baxalta acquisition related to non-cash investing activities, see Note 4, Business Combinations.

The accompanying notes are an integral part of these Consolidated Financial Statements.

Notes to the 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 and other highly specialized conditions across core therapeutic areas including Hematology, Genetic Diseases, Neuroscience, Immunology, Internal Medicine, Ophthalmology, and Oncology.

Some of the Company's marketed products include ADVATE/ ADYNOVATE,VONVENDI and FEIBA for hematology, CINRYZE, ELAPRASE and REPLAGAL for genetic diseases, VYVANSE and ADDERALL XR for neuroscience, GAMMAGARD and HYQVIA for immunology, LIALDA/MEZAVANT and PENTASA for internal medicine, XIIDRA for ophthalmology and ONCASPAR and ONIVYDE for oncology.

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 and other highly specialized conditions, 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 preparation

The accompanying Consolidated Financial Statements include the accounts of Shire plc, all of its subsidiary undertakings 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 ("US 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 preliminary 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, please refer to Note 4, Business Combinations.

Due to the Baxalta acquisition, the Company concluded that it was appropriate to reclassify the Amortization of Acquired Intangibles from Selling, General and Administrative ("SG&A") on the Consolidated Statements of Operations. Accordingly, the Company reclassified the Amortization of Acquired Intangibles from SG&A in comparative periods to conform to the current classification. The Company reclassified capital lease obligations from Other current liabilities to the Short-term borrowings and from Other non-current liabilities to Long-term borrowings and capital lease obligations in comparative periods to conform the current classification.

Use of estimates in Consolidated Financial Statements

The preparation of the Consolidated Financial Statements, in conformity with US 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 the Consolidated Financial Statements and reported amounts of revenues and expenses during the reporting period. On an ongoing 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 percent 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.

2. Summary of Significant Accounting Policies (continued)

- 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.
- 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 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 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 23, 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. The Company assesses all events or circumstances and determines if it is more likely than not that the fair value of a reporting unit exceeds its carrying value. 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.

The Company compares the fair value of its reporting unit to its carrying value. 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 2 to 25 years (weighted average 20 years) and the Company amortizes its intangibles on a straight-line basis. The Company reviews intangible assets for impairment when facts or circumstances suggest that the carrying value of these assets may not be recoverable.

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 tested for impairment at least annually, as of October 1, until commercialization, after which time the IPR&D is amortized over its estimated useful life.

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. This fair value is usually determined based on estimated discounted cash flows.

When performing the impairment assessment, the Company calculates the fair value using the same methodology as described above. If the carrying value of the acquired IPR&D exceeds its fair value, then the intangible asset is written-down to its fair value.

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 identical or 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

2. Summary of Significant Accounting Policies (continued)

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 (losses)/ earnings 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 statement 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, 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 or market. Cost incurred in bringing each product to its present location and condition is based on purchase costs calculated on a first-in, first-out basis, including transportation costs. 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 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 market value based upon assumptions about future demand and market conditions. Amounts written down due to unmarketable inventory are charged to Cost of product 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.

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 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 Statement 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 on the balance sheet in current assets/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, in Net income.

Foreign currency exchange transaction losses included in Consolidated Statements of Operations in the years ended December 31, 2016, 2015 and 2014 amounted to $17.7 million, $(26.5) million and $(15.6) million, respectively.

Cost of product sales
Cost of product 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 product sales.

Research and development ("R&D") expense
Research and development expenses consist of upfront fees and milestones paid to collaborators and expenses incurred in performing research and development activities, which include compensation and benefits, facilities and overhead expenses, clinical trial expenses and fees paid to contract research organizations ("CROs"), clinical supply and manufacturing expenses. R&D expense also includes the impairment charges related to 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 $216.0 million, $56.1 million and $56.4 million for the years ended December 31, 2016, 2015 and 2014, 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.

2. Summary of Significant Accounting Policies (continued)
For collaborations with commercialized products, if the Company is the principal, we record revenue and the corresponding operating costs in their respective line items in the Consolidated Statements of Operations. If we are not the principal, we record 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 federal, state, local and 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 percent 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. Differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the Company's income tax return are 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). The Company's share-based compensation plans are described more fully in Note 28, 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 period

Reporting requirements for development stage entities

In June 2014, the FASB issued Accounting Standards Update ("ASU") No. 2014-10 Development Stage Entities (Topic 915) Elimination of Certain Financial Reporting Requirements, Including an Amendment to Variable Interest Entities Guidance in Topic 810, Consolidation. ASU 2014-10 simplified the existing guidance for development stage entities by removing all incremental financial reporting requirements and the exception available for development stage entities when determining whether the development stage entity is a variable interest entity. The elimination of the exception may change the consolidation analysis, consolidation decision, and disclosure requirements for a reporting entity that has an interest in an entity in the development stage. Shire adopted this guidance as of January 1, 2016, with prospective application. The adoption of this guidance did not impact the Company's consolidated financial position, results of operations or cash flows.

Debt Issuance Costs

In April 2015, the FASB issued ASU No. 2015-03, Interest — Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs. The new standard requires debt issuance costs related to a recognized debt liability to be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. In August 2015, the FASB issued additional guidance which clarified that debt issuance costs related to line-of-credit arrangements can be presented in the balance sheet as an asset and amortized over the term of the line-of-credit arrangement. The recognition and measurement guidance for debt issuance costs were not affected by these amendments.

Shire adopted this guidance as of January 1, 2016, with retroactive application. The Short-term borrowings and Long-term borrowings line items in the Consolidated Balance Sheets and related footnote disclosures for all periods presented have been adjusted accordingly. The adoption of this guidance did not impact the Company's results of operations or cash flows.

Cloud Computing Arrangement

In April 2015, the FASB issued ASU No. 2015-05, Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Fees Paid in a Cloud Computing Arrangement. Under the standard, if a cloud computing arrangement includes a software license, then the software license element of the arrangement should be accounted for consistent with the acquisition of other software licenses. If a cloud computing arrangement does not include a software license, the arrangement should be accounted for as a service contract. Shire adopted this guidance as of January 1, 2016, with prospective application. The adoption of this guidance did not impact the Company's consolidated financial position, results of operations or cash flows.

Measurement-Period Adjustments

In September 2015, the FASB issued ASU No. 2015-16, Business Combinations (Topic 805): Simplifying the Accounting for Measurement-Period Adjustments to simplify the accounting for adjustments related to business combinations arising within one year of the acquisition. The standard simplifies the accounting for adjustments related to business combinations arising within one year of the acquisition. The new standard requires that an acquirer recognize adjustments to provisional amounts that are identified during the measurement period in the reporting period in which the adjustment amounts are determined and record the effect on earnings of those changes as if the accounting had been completed at the acquisition date, and sets forth new disclosure requirements related to the adjustments. Shire adopted this guidance as of January 1, 2016, with prospective application. The adoption of this guidance impacted the recognition and disclosure of measurement period adjustments identified during the twelve months ended December 31, 2016 related to the Baxalta and Dyax acquisitions. Refer to Note 4, Business Combinations for further information.

Financial Instrument Accounting

In March 2016, the FASB issued ASU No. 2016-06, Derivatives and Hedging (Topic 815): Contingent Put and Call Options in Debt Instruments. The new guidance clarifies the requirements for assessing whether contingent call and put options that can accelerate the payment of principal of debt instruments are clearly and closely related to their debt host. This guidance will be effective beginning on January 1, 2017, and modified retrospective application is required. Early adoption is permitted. Shire adopted this guidance as of 2016, and it had no impact on the Company's financial position or results of operations.

Pension Plans

In May 2015, the FASB issued ASU No. 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent). The new guidance removes the disclosure requirement to categorize within the fair value hierarchy all investments that measure fair value using the net asset value per share as a practical expedient and certain disclosures associated with these types of investments. This guidance became effective beginning on January 1, 2016, and retrospective application is required. This guidance was adopted during the current period and impacted the disclosure of certain acquired pension plan assets in the fair value hierarchy in Note 19, Retirement and Other Benefit Programs, but did not impact the Company's financial position or results of operations.

To be adopted in future periods

Simplifying the Test for Goodwill Impairment

In January 2017, the FASB issued ASU 2017-04-Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. The new guidance eliminates Step 2 from the goodwill impairment test. Under Step 2, an entity had to perform procedures to determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Instead, under the amendments in this Update, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit.

Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable.

The Board also eliminated the requirements for any reporting unit with a zero or negative carrying amount to perform a qualitative assessment and, if it fails that qualitative test, to perform Step 2 of the goodwill impairment test. Therefore, the same impairment assessment applies to all reporting units. An entity is required to disclose the amount of goodwill allocated to each reporting unit with a zero or negative carrying amount of net assets. An entity still

2. Summary of Significant Accounting Policies (continued)

has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary.

The amendment is effective for the Company beginning on January 1, 2020, with early adoption permitted for annual goodwill impairment tests performed after January 1, 2017. The Company is currently evaluating the potential impact on its financial position and results of operations of the amendment.

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 a screen to determine when an integrated set of assets and activities is not a business. The screen requires that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. This new standard will be effective for us on January 1, 2018.

Revenue from Contracts with Customers

In May 2014, the FASB issued Accounting Standards Update (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 also agreed to allow entities to choose to adopt the standard as of the original effective date.

In March 2016, the FASB issued ASU No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations, which clarifies the implementation guidance on principal versus agent considerations.

In April 2016, the FASB issued ASU No. 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing, which clarifies certain aspects of identifying performance obligations and licensing implementation guidance.

In May 2016, the FASB issued ASU No. 2016-12, Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients related to disclosures of remaining performance obligations, as well as other amendments to guidance on collectability, non-cash consideration and the presentation of sales and other similar taxes collected from customers.

In May 2016, the FASB rescinded several SEC Staff Announcements that are codified in ASC 605, including, among other items, guidance relating to accounting for shipping and handling fees and freight services.

These standards have the same effective date and transition date of January 1, 2018. 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.

Inventory

In July 2015, the FASB issued ASU No. 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory. The new guidance 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. This standard is effective for the Company as of January 1, 2017. Early adoption is permitted. The Company does not believe the adoption of this guidance will have a material impact on its financial position or results of operations.

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 does not apply to investments accounted for under the equity method of accounting or those that result in consolidation of the investee. Equity investments that do not have readily determinable fair values may be measured at fair value or at cost minus impairment adjusted for changes in observable prices. A financial liability that is measured at fair value in accordance with the fair value option is required to be presented separately in Other Comprehensive Income for the portion of the total change in the fair value resulting from change in the instrument-specific credit risk. In addition, a valuation allowance should be evaluated on deferred tax assets related to available-for-sale debt securities in combination with other deferred tax assets. The new standard will be effective for the Company as of January 1, 2018. 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.

Leases

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new accounting guidance will require the recognition of all 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 is 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. For detail on the Company's commitments under operating leases see Note 25 Commitments and Contingencies.

Share-Based Payment Accounting

In March 2016, the FASB issued 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 statement of cash flows and allows a one-time accounting policy election to account for forfeitures as they occur. The new standard will be effective on January 1, 2017.

The Company will adopt ASU 2016-09 in the first quarter of 2017. Currently, excess tax benefits or deficiencies from the Company's equity awards are recorded as Additional paid-in capital in its Consolidated Balance Sheets. Upon adoption, the Company will

record 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. Subsequent to adoption, the Company's income tax expense and associated effective tax rate will be impacted by fluctuations in stock price between the grant dates and vesting or settlement dates of equity awards and timing of employee exercise activity.

Upon adoption of ASU 2016-09, the Company will elect to change its accounting policy to account for forfeitures as they occur. These changes will be applied on a modified retrospective basis with an immaterial cumulative effect adjustment to retained earnings as of January 1, 2017.

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 amendment is effective for the Company as of January 1, 2018. Early adoption is permitted. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Statement 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 pronouncement goes into effect for the Company as of January 1, 2018. The adoption of this guidance is not expected to have a significant impact on the Company's Consolidated Statement of Cash Flows.

Statutory accounts

The Consolidated Financial Statements are prepared in accordance with US GAAP, in fulfillment of the Company's United Kingdom Listing Authority ("UKLA") annual reporting requirements and will be filed with the UKLA in due course.

Statutory accounts of Shire, consisting of the solus accounts of Shire plc for the year to December 31, 2016 are prepared in accordance with UK GAAP and the Companies (Jersey) Law 1991 and are included in the Annual Report.

3. Critical accounting estimates

The preparation of Consolidated Financial Statements, in conformity with accounting principles generally accepted in the United States ("US 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 the Consolidated Financial Statements and reported amounts of revenues and expenses during the reporting period. On an ongoing 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.

Valuation of intangible assets

In conjunction with the accounting for business combinations, the Company recorded intangible assets primarily related to marketed products and in-process research and development ("IPR&D") projects. The Company has intangible assets of $34,697.5 million as of December 31, 2016 and $9,173.3 million as of December 31, 2015.

If the Company 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, the Company engages an independent third-party valuation firm to assist in determining the fair values of these assets as of the acquisition date. 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.

The Company 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.

If IPR&D projects fail during development, are abandoned or subject to significant delay, or do not receive the relevant regulatory approvals, the Company may not realize the future cash flows that it has estimated nor recover the value of the R&D investment made subsequent to acquisition of the project. If such circumstances occur, the Company's future operating results could be materially adversely impacted.

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 tested for impairment at least annually, as of October 1st, until commercialization, after which time the IPR&D is amortized over its estimated useful life.

Intangible assets related to commercially marketed products are amortized over their estimated useful lives on a straight-line basis. Intangible assets related to commercially marketed products are reviewed for impairment when facts or circumstances suggest that the carrying value of these assets may not be recoverable.

Goodwill

Goodwill represents the excess of the consideration transferred over the estimated fair value of assets acquired and liabilities assumed in a business combination. The Company has $17,888.2 million and $4,147.8 million of goodwill as of December 31, 2016 and 2015, respectively, as a result of accounting for business combinations using the acquisition method of accounting.

3. Critical accounting estimates (continued)

The Company 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. The Company reviews goodwill for impairment by assessing qualitative and quantitative factors, including comparing the market capitalization of the Company 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.

The Company completed its annual impairment test in the fourth quarters of 2016, 2015 and 2014, 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.

Revenue Recognition and Related Allowances

a. Product Revenue

The Company 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. The Company 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. The Company 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 the Company 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 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. 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 the Company'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, the Company estimates the accruals and related reserves required for amounts payable under these programs.

If actual results vary, the Company 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, 2016 and 2015 were $1,431.3 million and $982.4 million, or 13 percent and 16 percent, respectively, of Product sales. Historically, actual rebates have not varied significantly from the reserves provided.

d. 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 expiration date of the relevant product and the returned product is destroyed. 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:

- 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, 2016, 2015 and 2014, reserves for product returns were $118.4 million, $128.3 million, and $131.7 million or 1.1 percent, 2.1 percent and 2.3 percent, respectively, of Product sales. Historically, actual returns have not varied significantly from the reserves provided.

Income Taxes

The Company 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, the Company 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. The Company believes its tax positions comply with applicable tax law and the Company 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 the 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 the Company 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 the Company's results of operations or financial condition. However, the Company 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 the Company'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.

The Company has significant deferred tax assets due to various tax attributes, including net operating losses ("NOLs") 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 the Company's financial condition and results of operations.

Litigation and legal proceedings

The Company has a number of lawsuits pending. The Company 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 the Company 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 the Company's estimate may result in an additional expense (or credit) in a future accounting period. As of December 31, 2016, provisions for litigation losses, insurance claims and other disputes totaled $415.0 million (December 31, 2015: $9.9 million).

Contingent consideration payable

The fair value of the Company's contingent consideration payable as of December 31, 2016 was $1,058.0 million (December 31, 2015: $475.9 million).

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 relevant milestones and future net sales of the relevant products over the life of the milestone or term, respectively.

The Company 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 the Company 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, the Company's financial condition and results of operations could be materially affected in the period of any such change of estimate.

Pension and other post employment 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. The Company's key assumptions are listed in Note 19, Retirement and Other Benefit Programs, to the Consolidated Financial Statements.

Share-based compensation

The Company 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.

The Company 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.

3. Critical accounting estimates (continued)

Share-based compensation expense also includes an estimate, which is made at the time of grant, of the number of awards that are expected to be forfeited. This estimate is revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Restructuring costs

The Company has made estimates and judgments regarding the amount and timing of its restructuring expense and liability, including current and future period termination benefits, pipeline program termination costs and other exit costs to be incurred when related actions take place. Severance and other related costs are reflected in the Consolidated Statements of Operations as a component of Reorganization costs. Actual results may differ from these estimates.

4. 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, oncology and immunology.

The preliminary fair value of the purchase price consideration consisted of the following:

	Estimated fair value $'M
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	169.0
Total Purchase Consideration	32,397.7

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, please see Note 28, Share-based Compensation Plans, to the Consolidated Financial Statements.

The assets acquired and the liabilities assumed from Baxalta have been recorded at their preliminary 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 is $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 Company's preliminary allocation of the purchase price to the assets acquired and liabilities assumed as of the acquisition date, including measurement period adjustments identified during the year ended December 31, 2016, is outlined below.

	Preliminary values as of June 3, 2016 $'M	Measurement period adjustments $'M	**Preliminary values as of December 31, 2016 $'M**
Assets			
Current assets:			
Cash and cash equivalents	583.2	–	**583.2**
Accounts receivable	1,071.7	(2.0)	**1,069.7**
Inventories	5,341.1	(1,447.7)	**3,893.4**
Other current assets	673.3	(97.3)	**576.0**
Total current assets	7,669.3	(1,547.0)	**6,122.3**
Property, plant and equipment	5,687.7	(235.0)	**5,452.7**
Investments	128.2	–	**128.2**
Goodwill	6,106.4	5,316.0	**11,422.4**
Intangible assets			
Currently marketed products	24,550.0	(2,555.0)	**21,995.0**
In-Process Research and Development ("IPR&D")	2,940.0	(2,210.0)	**730.0**
Contract based arrangements	72.2	(30.0)	**42.2**
Other non-current assets	103.3	51.7	**155.0**
Total assets	47,257.1	(1,209.3)	**46,047.8**
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	1,283.9	38.0	**1,321.9**
Other current liabilities	241.0	113.4	**354.4**
Long-term borrowings and capital lease obligations	5,424.9	–	**5,424.9**
Deferred tax liability	6,831.7	(1,386.4)	**5,445.3**
Other non-current liabilities	1,092.1	11.5	**1,103.6**
Total liabilities	14,873.6	(1,223.5)	**13,650.1**
Preliminary fair value of identifiable assets acquired and liabilities assumed	32,383.5	14.2	**32,397.7**
Consideration			
Preliminary fair value of purchase consideration	32,383.5	14.2	**32,397.7**

The purchase price allocation is preliminary pending final determination of the fair values of certain assets and liabilities. As of December 31, 2016, certain items related to the fair values of other current and non-current liabilities and current and deferred taxes have not been finalized and may be subject to change as additional information is received and certain tax returns are finalized. The finalization of these matters and any additional information received that was existed as of acquisition date may result in changes to the underlying assets, liabilities and goodwill. These changes may be material. The final determination of these fair values will be completed as soon as possible but no later than one year from the acquisition date.

Intangible Assets

The preliminary 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 preliminary 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 $21,995.0 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 8 to 23 years (weighted average 21 years), with amortization being recorded on a straight-line basis.

IPR&D intangible assets totaling $730.0 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 percent 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.

The measurement period adjustments for Intangible assets reflect changes in the estimated fair value of Currently marketed products and IPR&D. The changes in the estimated fair values for Intangible assets are primarily to better 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.

Goodwill

Goodwill of $11,422.4 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.

For the year ended December 31, 2016, the Company expensed $791.4 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.

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 $169.0 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 preliminary 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 preliminary 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 changes in the estimated fair values for Inventory are primarily to better reflect the expected selling price of the inventory based on market participant assumptions existing as of the acquisition date. The measurement period adjustments did not result from intervening events subsequent to the acquisition date.

Retirement plans

The Company assumed pension plans as part of the acquisition of Baxalta, including defined benefit and post-retirement benefit plans in the United States 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.

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 acquisitions 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.

Years to December 31	**2016 $'M**	2015 $'M
Revenues	13,999.6	12,564.7
Net income/(loss) from continuing operations	2,235.9	(1,014.2)
Per share amounts:		
Net income/(loss) from continuing operations per share — basic	2.90	(1.72)
Net income/(loss) from continuing operations per share — diluted	2.88	(1.72)

4. Business Combinations (continued)

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 and a corresponding decrease in net income for the year ended December 31, 2015 by $678.9 million to give effect to the integration and acquisition of Baxalta as if it had occurred on January 1, 2015;

(ii) an adjustment to increase net income for the year ended December 31, 2016 by $897.1 million and a corresponding decrease for the year ended December 31, 2015 by $1,428.2 million, respectively, to reflect amortization of the fair value adjustments for inventory as inventory is sold. As acquired inventory turns within 12 months of the acquisition, there has been no expense included in net income for the year ended December 31, 2016;

(iii) an adjustment to increase amortization expense by $330.9 million and $815.0 million for the year ended December 31, 2016 and December 31, 2015, respectively, 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 and for the year ended December 31, 2015 by $357.6 million, respectively, primarily related to the additional interest expense and deferred debt issuance costs associated with the debt incurred to partially fund the acquisition of Baxalta and the bonds issued to replace the debt incurred for the acquisition.

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 preliminary acquisition-date fair value consideration was $6,330.0 million, comprising cash paid on closing of $5,934.0 million and the preliminary 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 preliminary 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.

Since the acquisition date, the Company adjusted its preliminary valuation and allocation of purchase price consideration. The adjustment, which was not material, decreased goodwill and deferred tax liabilities. The revised preliminary allocation of the total purchase price is as follows:

	Fair value $'M
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
Preliminary fair value of identifiable assets acquired and liabilities assumed	6,330.0
Consideration	
Preliminary 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 percent.

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.

For the year ended December 31, 2016, the Company expensed $67.7 million relating to the acquisition and integration of Dyax, which has been recorded within Integration and Acquisition costs in the Company's Consolidated Statements of Operations.

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 acquisitions 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.

Years to December 31	**2016 $'M**	2015 $'M
Revenues	**11,402.5**	6,503.8
Net income from continuing operations	**792.2**	1,056.6
Per share amounts:		
Net income from continuing operations per share — basic	**1.03**	1.79
Net income from continuing operations per share — diluted	**1.02**	1.78

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 a corresponding decrease in net income for the year ended December 31, 2015 by $111.1 million to give effect to the acquisition of Dyax as if it had occurred on January 1, 2015;

(ii) an adjustment to decrease net income for the year ended December 31, 2015 by $5.4 million, to reflect amortization of the fair value adjustments for inventory as inventory is sold;

(iii) an adjustment to increase amortization expense for the year ended December 31, 2016 by $1.3 million and a corresponding adjustment to decrease net income for the year ended December 31, 2015 by $21.6 million, related to the identifiable intangible assets acquired; and

(iv) an adjustment to record interest expense for the year ended December 31, 2015 of $81.6 million associated with the debt incurred to partially fund the acquisition of Dyax and the amortization of related deferred debt issuance costs.

The adjustments above are stated net of their tax effects, where applicable.

4. Business Combinations (continued)

Acquisition of NPS

On February 21, 2015, Shire completed its acquisition of all of the outstanding common stock of NPS. As of the acquisition date, fair value of the cash consideration paid on closing was $5,219.6 million.

The acquisition of NPS added GATTEX/REVESTIVE and NATPARA/NATPAR to Shire's portfolio of currently marketed products. GATTEX/REVESTIVE is approved in the U.S. and EU for the treatment of adults with short bowel syndrome ("SBS") who are dependent on parenteral support, a rare and potentially fatal gastrointestinal disorder. NATPARA/NATPAR is approved in the U.S. and indicated as an adjunct to calcium and vitamin D to control hypocalcemia in patients with hypoparathyroidism ("HPT"), a rare endocrine disease.

The acquisition of NPS was accounted for as a business combination using the acquisition method. The assets acquired and the liabilities assumed from NPS have been recorded at their fair values at the date of acquisition, February 21, 2015. The Company's Consolidated Financial Statements include the results of NPS from February 21, 2015.

The purchase price allocation for the acquisition of NPS was finalized in the fourth quarter of 2015. The Company's allocation of the purchase price to the fair value of assets acquired and liabilities assumed is outlined below:

	Fair value $'M
Assets	
Current assets:	
Cash and cash equivalents	41.6
Short-term investments	67.0
Accounts receivable	33.4
Inventories	89.4
Other current assets	11.1
Total current assets	242.5
Property, plant and equipment	4.8
Goodwill	1,551.0
Intangible assets	
Currently marketed products	4,640.0
Royalty rights (categorized as "Other amortized intangible assets")	353.0
Total assets	6,791.3
Liabilities	
Current liabilities:	
Accounts payable and other current liabilities	75.7
Short-term borrowings and capital lease obligations	27.4
Long-term borrowings and capital lease obligations	78.9
Deferred tax liabilities	1,385.2
Other non-current liabilities	4.5
Total liabilities	1,571.7
Fair value of identifiable assets acquired and liabilities assumed	5,219.6
Consideration	
Cash consideration paid	5,219.6

Currently marketed products

Currently marketed products totaling $4,640.0 million relate to intellectual property rights of NATPARA/NATPAR and GATTEX/REVESTIVE. The fair value of the currently marketed products has been estimated using an income approach, based on the present value of incremental after tax cash flows attributable to each separately identifiable intangible asset.

The estimated useful lives of the NATPARA/NATPAR and GATTEX/REVESTIVE intangible assets are 24 years, with amortization being recorded on a straight-line basis.

Royalty rights

Intangible assets totaling $353.0 million relate to the royalty rights arising from the collaboration agreements with Amgen Inc ("Amgen"), Janssen Pharmaceutica N.V. ("Janssen") and Kyowa Hakko Kirin Co. Ltd ("Kyowa Hakko Kirin"). Amgen markets cinacalcet HCl as Sensipar in the U.S. and as Mimpara in the EU; Janssen markets tapentadol as Nucynta in the U.S.; and Kyowa Hakko Kirin markets cinacalcet HCl as Regpara in Japan, Hong Kong, Malaysia, Macau, Singapore, and Taiwan. From the acquisition of NPS, the Company is entitled to royalties from the net sales of these products.

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 four to five years (weighted average four years) with amortization being recorded on a straight-line basis.

Goodwill

Goodwill of $1,551.0 million, which is not deductible for tax purposes, includes the expected synergies that will result from combining the operations of NPS with the operations of 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 NPS as if the acquisitions of NPS had occurred as of January 1, 2014. The unaudited pro forma financial information is not necessarily indicative of what the consolidated results of operations actually would have been had the respective acquisitions been completed on January 1, 2014. In addition, the unaudited pro forma financial information does not purport to project the future results of operations of the combined Company.

Year to December 31	2015 $'M
Revenues	6,446.6
Net income from continuing operations	1,293.6
Per share amounts:	
Net income from continuing operations per share — basic	2.19
Net income from continuing operations per share — diluted	2.18

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, 2015 by $105.3 million, to eliminate acquisition related costs incurred by Shire and NPS;

(ii) an adjustment to increase net income by $18.8 million for the year ended December 31, 2015, to reflect charges on the unwind of inventory fair value adjustments as acquisition date inventory is sold; and

(iii) an adjustment to increase amortization expense for the year ended December 31, 2015 by $22.2 million, related to the identifiable intangible assets acquired.

The adjustments above are stated net of their tax effects, where applicable.

5. 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 $15.7 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 year ended 2016 and 2015, the Company received cash related to up-front and milestone payments of $10.5 million and $19.6 million, respectively. During the year ended 2016, 2015 and 2014, the Company recognized milestone income of $17.4 million, $8.9 million and $16.7 million, respectively, in other revenues, and $63.0 million, $51.0 million and $46.5 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, many of which were acquired through the acquisition of Baxalta. 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. 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.

Pfizer Inc.

In July 2016, the Company 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. Under the terms of the agreement, Pfizer received an up-front payment of $90.0 million, and is eligible to receive between $75.0 million to $460.0 million in milestone payments based on clinical, regulatory and commercialization milestones and low double-digit royalties on any potential sales if the product is approved.

Sangamo BioSciences

In September 2015, Shire and Sangamo BioSciences, Inc. ("Sangamo") agreed to revise the collaboration and license agreement originally entered into in January 2012 to expedite the development of ZFP Therapeutics for hemophilia A and B and Huntington's disease. Under the revised terms, Shire has returned to Sangamo the exclusive world-wide rights to gene targets for the development, clinical testing and commercialization of ZFP Therapeutics for hemophilia A and B, and has retained rights and will continue to develop ZFP Therapeutic clinical leads for Huntington's disease and a ZFP Therapeutic for one additional gene target. Each company will be responsible for expenses associated with its own programs and will reimburse the other for any ongoing services provided. Sangamo has granted Shire a right of first negotiation to license the hemophilia A and B programs. No milestone payments will be made on any program and each company will pay certain royalties to the other on commercial sales up to a specified maximum cap.

Precision BioSciences

In June 2016, the Company acquired a strategic immuno-oncology collaboration with Precision BioSciences ("Precision"), a private biopharmaceutical company based in the United States, specializing in genome editing technology. 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, with the first program expected to enter clinical studies in late 2017. On a product-by-product basis, following successful completion of early-stage research activities up to Phase 2, 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. As of the balance sheet date, the Company had the potential to make future payments related to option fees and development, regulatory and commercial milestones totaling up to $1.5 billion, in addition to future royalty payments on worldwide sales.

5. Collaborative and Other Licensing Arrangements (continued)

Symphogen

In June 2016, the Company acquired a research, option and commercial agreement with Symphogen, a private biopharmaceutical company headquartered in Denmark that is developing recombinant antibodies and antibody mixtures. The Company acquired the agreement through the acquisition of Baxalta. Under the terms of the agreement, the Company has options to obtain exclusive licensing rights for four specified proteins in development for the treatment of immune-oncology diseases as well as two additional proteins that may be selected at a later date. Each option is exercisable for a period of 90 days when each protein is ready for Phase 2 clinical trials. Symphogen is responsible for development costs for each protein until option exercise, at which point Shire would become responsible for development costs.

Each option exercise fee is variable depending on when it is exercised, with a maximum exercise price of up to €20.0 million for each protein. As of the balance sheet date, the Company had the potential to make additional future payments of up to approximately €1.2 billion related to development, regulatory and commercial milestones achieved after option exercise for all six proteins, in addition to future royalty payments.

Merrimack Pharmaceuticals, Inc.

In June 2016, the Company acquired an exclusive license agreement with Merrimack Pharmaceuticals, Inc. ("Merrimack") relating to the development and commercialization of ONIVYDE (nanoliposomal irinotecan injection), also known as "nal-IRI" or MM-398. 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. As of December 31, 2016, the company had potential payments related to development, regulatory and commercial milestones of $637.5 million.

Coherus Biosciences, Inc.

In June 2016, the Company acquired a license agreement with Coherus Biosciences, Inc. ("Coherus") to develop and commercialize a biosimilar to ENBREL® (etanercept). The Company acquired the agreement through the acquisition of Baxalta. The Company also obtained the right of first refusal to certain other biosimilars in the collaboration. Under the terms of the agreement, Coherus was responsible for the development plan, preparation of regulatory filings, and manufacture of the product, subject to certain cost reimbursement by the Company. In September 2016, the Company terminated the licensing agreement with Coherus in accordance with its terms.

Momenta Pharmaceuticals, Inc.

In June 2016, the Company acquired an exclusive license agreement with Momenta Pharmaceuticals, Inc. ("Momenta") to develop and commercialize biosimilars, including adalimumab (BAX 2923), a biosimilar product candidate for HUMIRA® (adalimumab). The agreement was acquired through the acquisition of Baxalta. The arrangement includes specified funding by the Company, as well as other responsibilities, relating to development and commercialization activities. In December 2016, the Company formally terminated its agreement with Momenta and agreed to pay $51.2 million, which was paid in January 2017, to satisfy its remaining obligations under the agreement, except with respect to certain clinical and regulatory services. The Company will be responsible for costs associated with those activities through April 2017. As part of this termination, on December 31, 2016, the Company and Momenta entered into an Asset Return and Termination Agreement that provided for the earlier termination of the license agreement and agreed to the terms associated with the termination.

Other arrangements

SFJ Pharmaceuticals Group

In June 2015, Baxalta entered into a co-development agreement with SFJ Pharmaceuticals IX, L.P., a SFJ Pharmaceuticals Group company ("SFJ") relating to BAX 2923, whereby SFJ would fund specified development costs related to the BAX 2923 program, in exchange for payments in the event the product obtains regulatory approval in the United States and Europe. There were certain termination provisions that could have triggered payment of the contingent success payments prior to regulatory approval.

The preliminary fair value of the assumed contingency was recorded as a long-term liability at June 3, 2016 and as of the balance sheet date, as part of Company's purchase accounting for the Baxalta acquisition. The fair value of the assumed contingency on the date of acquisition was $288.6 million.

This co-development agreement was terminated by mutual agreement of the Company and SFJ in September 2016 and the Company made a one-time $288.0 million payment to SFJ in connection with the termination, in full satisfaction of the Company's financial obligations under the agreement.

6. Integration and Acquisition Costs

For the year ended December 31, 2016, Shire recorded integration and acquisition costs of $883.9 million, primarily due to the acquisition and integration of Baxalta and Dyax and related contract termination costs. The Baxalta integration is estimated to be completed by mid to late 2019 and the integration of Dyax is substantially complete as of December 31, 2016.

As part of the Company's activities to integrate Baxalta, it terminated certain employees and announced plans to close certain facilities. For the year ended December 31, 2016, the Company incurred costs relating to employee termination benefits of $381.2 million including severance and acceleration of stock compensation. The Baxalta integration activities are ongoing and the Company is continuing to evaluate the total costs expected to be incurred and the time-frame.

The following table summarizes the related reserve as of December 31, 2016:

	Severance and employee benefits $'M
As of January 1, 2016	–
Amount charged to integration costs	267.3
Paid/utilized	(193.3)
As of December 31, 2016	74.0

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.

For the year ended December 31, 2014, Shire recorded integration and acquisition costs of $158.8 million, comprised of $144.1 million relating to the acquisition and integration of ViroPharma and a net charge of $14.7 million relating to the change in fair value of contingent consideration liabilities mainly related to the acquisition of SARcode Bioscience Inc. ("SARcode") offset by credits in relation to the acquisition of FerroKin BioSciences, Inc., reflecting the decision to place the Phase 2 clinical trial for SHP602 on clinical hold.

7. Reorganization Costs

The Company incurred reorganization costs totaling $121.4 million during the year ended December 31, 2016. The costs primarily relate 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 and 2014, the Company incurred reorganization costs totaling $97.9 million and $180.9 million, respectively, relating 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.

8. 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 Consolidated Statements of Operations for all periods presented.

During the year ended December 31, 2016, the Company recorded a loss from discontinued operations of $276.1 million (net of tax of $98.8 million), primarily due 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 of $18.9 million), primarily relating to a change in estimate in relation to reserves for onerous leases retained by the Company.

During the year ended December 31, 2014, the Company recorded a gain from discontinued operations of $122.7 million (net of tax of $211.3 million). The gain from discontinued operations for the year ended December 31, 2014 includes a tax credit of $211.3 million primarily driven by a tax benefit arising following a reorganization of the former Regenerative Medicine business undertaken in the fourth quarter of 2014, associated with the divestment of the DERMAGRAFT business in the first quarter of 2014. This gain was partially offset by costs associated with the divestment of the DERMAGRAFT business, including a loss on re-measurement of contingent consideration receivable from Organogenesis to its fair value.

9. Accounts Receivable, Net

Accounts receivable as of December 31, 2016 of $2,616.5 million (December 31, 2015: $1,201.2 million), are stated at the invoiced amount and net of provision for discounts and doubtful accounts of $169.6 million (December 31, 2015: $55.8 million, 2014: $48.5 million).

Provision for discounts and doubtful accounts:

	2016 $'M	2015 $'M	2014 $'M
As of January 1	**55.8**	48.5	47.9
Provision charged to operations	**838.1**	424.2	338.2
Provision utilization	**(724.3)**	(416.9)	(337.6)
As of December 31	**169.6**	55.8	48.5

As of December 31, 2016 accounts receivable included $102.2 million (December 31, 2015: $79.0 million) related to royalty receivable.

10. Inventories

Inventories are stated at the lower of cost or market. Inventories comprise:

Years to December 31	2016 $'M	2015 $'M
Finished goods	1,380.0	184.9
Work-in-progress	1,491.0	302.0
Raw materials	691.3	148.5
	3,562.3	635.4

As of December 31, 2016 and 2015, there was $18.1 million and $nil amounts of inventory which have been capitalized in advance of regulatory approval, respectively.

For a more detailed description of the inventories acquired with Baxalta and Dyax, please see Note 4, Business Combinations, to the Consolidated Financial Statements.

11. Prepaid Expenses and Other Current Assets

Components of prepaid expenses and other current assets are summarized as follows:

Years to December 31	2016 $'M	2015 $'M
Income tax receivable	237.5	73.6
Prepaid expenses	183.9	35.6
Value added taxes receivable	40.3	18.2
Other current assets	344.6	70.0
	806.3	197.4

12. Property, Plant and Equipment, Net

Property, plant and equipment are recorded at cost, net of accumulated depreciation. Components of property, plant and equipment, net are summarized as follows:

Years to December 31	2016 $'M	2015 $'M
Land	337.9	96.7
Buildings and leasehold improvements	1,915.4	606.4
Machinery, equipment and other	2,547.2	827.4
Assets under construction	2,632.5	93.7
Total property, plant and equipment at cost	7,433.0	1,624.2
Less: Accumulated depreciation	(963.4)	(796.1)
Property, plant and equipment, net	6,469.6	828.1

Depreciation expense for the years ended December 31, 2016, 2015 and 2014 was $292.9 million, $138.5 million and $163.5 million, respectively.

13. Goodwill

The following table provides a roll-forward of the goodwill balance:

	2016 $'M	2015 $'M
As of January 1	4,147.8	2,474.9
Acquisitions	14,124.5	1,700.1
Foreign currency translation	(384.1)	(27.2)
As of December 31	17,888.2	4,147.8

During 2016, the Company completed the acquisitions of Baxalta and Dyax which resulted in aggregate goodwill of $14,124.5 million (see Note 4, Business Combinations, to the Consolidated Financial Statements for details).

14. Intangible Assets

The following table summarizes the Company's intangible assets:

	Currently marketed products $'M	IPR&D $'M	Other intangible assets $'M	Total $'M
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
December 31, 2015				
Gross acquired intangible assets	9,371.9	1,362.0	375.0	11,108.9
Accumulated amortization	(1,852.1)	–	(83.5)	(1,935.6)
Intangible assets, net	7,519.8	1,362.0	291.5	9,173.3

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 year ended December 31, 2016 and 2015 is shown in the table below:

	2016 $'M	2015 $'M
As of January 1,	9,173.3	4,934.4
Additions	27,462.8	5,474.9
Amortization charged	(1,173.4)	(498.7)
Impairment charges	(8.9)	(643.7)
Foreign currency translation	(756.3)	(93.6)
As of December 31,	34,697.5	9,173.3

In connection with the acquisition of Baxalta, the Company acquired IP rights related to currently marketed products of $21,995.0 million, IPR&D assets of $730.0 million and other contract rights of $42.2 million. For a more detailed description of this acquisition, refer to Note 4, Business Combinations.

In connection with the acquisition of Dyax, 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 4, Business Combinations.

In the year ended December 31, 2015, the Company acquired intangible assets totaling $5,474.9 million, primarily relating to the fair value of intangible assets for currently marketed products and royalty rights acquired with NPS Pharma of $4,993.0 million and IPR&D assets of $475.0 million acquired with Meritage and Foresight.

The Company reviews its intangible assets for impairment whenever events or circumstances suggest that their carrying value may not be recoverable.

For the year ended December 31, 2015, the Company recorded $643.7 million (within R&D expenses) in impairment charges related to its SHP625 and SHP608 IPR&D assets. The fair values of the related contingent consideration liabilities (recorded within integration and acquisition costs) were reduced by $203.2 million.

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:

	Anticipated future amortization $'M
2017	1,592.0
2018	1,585.2
2019	1,506.5
2020	1,502.8
2021	1,496.8

15. Fair Value Measurement

Assets and liabilities that are measured at fair value on a recurring basis

As of December 31, 2016 and December 31, 2015, 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).

	Carrying value and fair value			
As of December 31, 2016	**Total $'M**	**Level 1 $'M**	**Level 2 $'M**	**Level 3 $'M**
Financial assets:				
Marketable equity securities	**65.8**	**65.8**	**–**	**–**
Marketable debt securities	**15.5**	**3.6**	**11.9**	**–**
Contingent consideration receivable	**15.6**	**–**	**–**	**15.6**
Derivative contracts	**18.0**	**–**	**18.0**	**–**
Total	**114.9**	**69.4**	**29.9**	**15.6**
Financial liabilities:				
Derivative contracts	**8.3**	**–**	**8.3**	**–**
Contingent consideration payable	**1,058.0**	**–**	**–**	**1,058.0**
Total	**1,066.3**	**–**	**8.3**	**1,058.0**

	Carrying value and fair value			
As of December 31, 2015	Total $'M	Level 1 $'M	Level 2 $'M	Level 3 $'M
Financial assets:				
Marketable equity securities	17.2	17.2	–	–
Contingent consideration receivable	13.8	–	–	13.8
Derivative contracts	1.9	—	1.9	–
Total	32.9	17.2	1.9	13.8
Financial liabilities:				
Derivative contracts	11.5	–	11.5	–
Contingent consideration payable	475.9	–	—	475.9
Total	487.4	–	11.5	475.9

Marketable equity and debt securities are included within Investments in the Consolidated Balance Sheets. Shire's strategic investment portfolio includes investments in equity securities of certain biotechnology companies and in venture capital funds where the underlying investments are in equity securities of biotechnology companies. Contingent consideration receivable is included within prepaid expenses and other current assets and Other non-current assets 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 a discussion of the Company's derivative contracts, see Note 16, Financial Instruments, to the Consolidated Financial Statements.

15. Fair Value Measurement (continued)

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.
- Contingent consideration receivable: the fair value of the contingent consideration receivable has been estimated using the income approach (using a probability weighted discounted cash flow method).
- Derivative contracts: 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.
- 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).

Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

The following table provides a roll forward of the fair values of our contingent consideration receivable and payables which include Level 3 measurements:

Contingent consideration receivable

	2016 $'M	2015 $'M
Balance at January 1,	**13.8**	15.9
Change in fair value included in earnings	**1.6**	13.6
Other	**0.2**	(15.7)
Balance at December 31,	**15.6**	13.8

Contingent consideration payable

	2016 $'M	2015 $'M
Balance at January 1,	**475.9**	629.9
Additions	**565.4**	92.8
Change in fair value included in earnings	**11.1**	(149.9)
Other	**5.6**	(96.9)
Balance at December 31,	**1,058.0**	475.9

The increase in contingent consideration payable is primarily related to the Company's acquisition of Dyax as well as contingent consideration payable assumed in the acquisition of Baxalta. Other primarily includes foreign currency adjustments.

Of the $1,058.0 million of contingent consideration payable as of December 31, 2016, $65.1 million is recorded within Other current liabilities and $992.9 million is recorded within Other non-current liabilities in the Company's Consolidated Balance Sheets.

Quantitative Information about Assets and Liabilities Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)

Quantitative information about the Company's recurring Level 3 fair value measurements is included below:

	Fair value at the measurement date			
Financial assets: As of December 31, 2016	**Fair value $'M**	**Valuation technique**	**Significant unobservable inputs**	**Range**
Contingent consideration receivable ("CCR")	15.6	Income approach (probability weighted discounted cash flow)	Probability weightings applied to different sales scenarios	10 to 90%
			Future forecast consideration receivable based on contractual terms with purchaser	$0 to $21 million
			Assumed market participant discount rate	8%

	Fair value at the measurement date			
Financial liabilities: As of December 31, 2016	**Fair value $'M**	**Valuation technique**	**Significant unobservable inputs**	**Range**
Contingent consideration payable	1,058.0	Income approach (probability weighted discounted cash flow)	Cumulative probability of milestones being achieved	6 to 90%
			Assumed market participant discount rate	1.2 to 10.5%
			Periods in which milestones are expected to be achieved	2017 to 2040
			Forecast quarterly royalties payable on net sales of relevant products	$0.1 to $7.5 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 receivable and 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 receivable or payable.

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 are as follows:

	December 31, 2016		December 31, 2015	
	Carrying amount $'M	Fair value $'M	Carrying amount $'M	Fair value $'M
Financial liabilities:				
Senior notes	12,039.2	11,633.8	–	–
Baxalta notes	5,063.6	5,066.5	–	–
Capital lease obligation	353.6	353.6	13.4	13.4

The estimated fair values of Senior Notes and Baxalta Notes were based upon recent observable market prices and are considered level 2 in the fair value hierarchy. The estimated fair value of the 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.

16. Financial Instruments

Foreign Currency Contracts

Due to the global nature of 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. In order to mitigate these changes, the Company uses foreign currency forward contracts to lock in exchange rates associated with a portion of its forecasted international revenues and operating expenses. The main trading currencies of the Company are the U.S. Dollar, Euro, Pounds 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 Sheets. The Company does not have credit risk related contingent features or collateral linked to the derivatives.

Designated Derivative Instruments

Certain foreign currency forward contracts have been designated as cash flow hedges and accordingly, to the extent effective, any unrealized gains or losses on these foreign currency forward contracts are reported in AOCI. Realized gains and losses for the effective portion of such contracts are recognized in cost of sales when the sale of product in the currency being hedged is recognized. To the extent ineffective, hedge transaction gains and losses are reported in Other income/(expense), net. The amount of ineffectiveness for the years ended December 31, 2016 and December 31, 2015 was immaterial.

As of December 31, 2016, the foreign currency forward contracts had a total notional value of $78.7 million with a maximum duration of six months. The Company did not have any designated forward contracts as of December 31, 2015. As of December 31, 2016, the fair value of these contracts was a net asset of $4.2 million (2015: $nil). The portion of the fair value of these foreign currency forward contracts that was included in AOCI in total equity reflected net gain of $14.6 million as of December 31, 2016. The Company expects all contracts to be settled over the next six months and any amounts in AOCI to be reported as an adjustment to revenue or cost of sales. 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, 2016, credit risk did not change the fair value of the Company's foreign currency forward contracts.

16. Financial Instruments (continued)

Undesignated Derivative Instruments

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 notional amount of undesignated derivative instruments was $1,309.1 million and $645.2 million as of December 31, 2016 and 2015, respectively.

As of December 31, 2016 the undesignated derivative instruments included option contracts assumed from Baxalta that were previously designated as cash flow hedges. The notional amount of these option contracts totaled $11.2 million as of December 31, 2016. Upon acquisition, the Company did not elect to redesignate these option contracts as cash flow hedges. In addition, the company also assumed undesignated forward contracts from Baxalta, included in undesignated derivative instruments as of December 31, 2016. The notional amount of these undesignated forward contracts totaled $776.4 million as of December 31, 2016.

As of December 31, 2016, the fair value of these contracts was a net asset of $6.7 million (2015: $nil).

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 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, see Note 18, Borrowings and Capital Lease Obligations, to the Consolidated Financial Statements.

Designated Derivative Instruments

As of December 31, 2016, interest rate swap contracts with an aggregate notional amount of $1.0 billion and maturing in June 2020 and June 2025 were in place. These interest rate swap contracts were 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 as income. 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. As of December 31, 2016, the fair value of these contracts was a net liability of $1.1 million (2015: $nil) presented within other non-current liabilities. For the year ended December 31, 2016, the Company recognized a loss of $6.0 million as ineffectiveness (2015: $nil) related to these contracts as a component of interest expense.

Undesignated Derivative Instruments

During the year ended December 31, 2016, the Company entered into interest rate swap contracts with a total notional amount of $5.1 billion related to the November 2015 Facilities Agreement, which matured during 2016. The Company did not elect hedge accounting for these contracts. As of December 31, 2016 and December 31, 2015, the Company did not have any outstanding undesignated derivative instruments. For the year ended December 31, 2016, the Company recognized $3.2 million (2015: $nil) loss related to these contracts, which was recognized as a component of Interest expense.

The following tables summarize the income statement locations and gains and losses on the Company's designated and undesignated derivative instruments for the year ended December 31, 2016. There were no designated derivatives for the year ended December 31, 2015.

As of December 31, 2016, the Company had in total 155 swaps and forward foreign exchange contracts.

Years ended December 31	Gain (loss) recognized in OCI 2016 $'M	Gain (loss) recognized in OCI 2015 $'M	Location in Statements of Operations	Gain (loss) reclassified from AOCI into income 2016 $'M	Gain (loss) reclassified from AOCI into income 2015 $'M
Designated Derivative Instruments					
Cash flow hedges					
Foreign exchange contracts	**14.6**	–	Cost of sales	**4.9**	–

Years ended December 31	Location of gain (loss) in Statements of Operations	Gain (loss) recognized in income 2016 $'M	Gain (loss) recognized in income 2015 $'M
Fair value hedges			
Interest rate contracts	Interest expense	(6.0)	–
Undesignated Derivative Instruments			
Foreign exchange contracts	Other (expense)/ income, net	(40.2)	9.5
Interest rate swap contracts	Interest expense	(3.2)	–

As of December 31, 2016, $6.2 million of deferred gains, net of tax, on derivative instruments included in AOCI are expected to be recognized in earnings during the next 12 months, coinciding with when the hedged items are expected to impact earnings.

The following table presents the classification and estimated fair value of the Company's derivative instruments as of December 31, 2016:

	Derivatives in asset positions		Derivatives in liability positions	
	Balance Sheet location	Fair Value $'M	Balance Sheet location	Fair Value $'M
Designated Derivative Instruments				
Foreign exchange contracts	Prepaid expenses and other current assets	4.3	Accounts payable and accrued expenses	0.1
Interest rate contracts	Long term borrowings	0.1	Long-term borrowings	1.3
		4.4		1.4
Undesignated Derivative Instruments				
Foreign exchange forward contracts	Prepaid expenses and other current assets	13.6	Accounts payable and accrued expenses	6.9
		18.0		8.3

16. Financial Instruments (continued)

As of December 31, 2016, the potential effect of rights to offset associated with the Interest rate swap and foreign exchange forward contracts would be an offset to both assets and liabilities of $1.7 million, resulting in net derivative assets and derivative liabilities of $16.3 million and $6.6 million, respectively.

17. Accounts Payable and Accrued Expenses

Components of Accounts payable and accrued expenses are summarized as follows:

Years ended December 31	2016 $'M	2015 $'M
Accounts payable and accrued purchases	**911.9**	441.4
Accrued employee compensation and benefits payable	**574.8**	254.5
Accrued rebates	**1,431.3**	982.4
Accrued sales returns	**118.4**	128.3
Other accrued expenses	**1,276.0**	244.0
	4,312.4	2,050.6

18. Borrowings and Capital Lease Obligations

Years ended December 31	2016 $'M	2015 $'M
Short-term borrowings:		
Borrowings under the Revolving Credit Facilities Agreement (the "RCF")	**450.0**	750.0
Borrowings under the November 2015 Facilities Agreement	**2,594.8**	—
Borrowings under the January 2015 Facilities Agreement	**—**	750.0
Other borrowings and capital lease obligations (short-term portion)	**23.2**	12.7
	3,068.0	1,512.7
Long-term borrowings:		
Senior Notes	**12,039.2**	—
Baxalta Notes	**5,063.6**	—
Borrowings under the November 2015 Facilities Agreement	**2,391.8**	—
Capital lease obligations (long-term portion)	**347.2**	12.2
Other borrowings	**58.0**	69.9
	19,899.8	82.1
	22,967.8	1,594.8

The future payments related to short and long-term borrowings and capital lease obligations, on maturities, as of December 31, 2016 are as follows:

	$'M
2017	3,072.6
2018	3,217.2
2019	3,341.3
2020	1,035.3
2021	3,320.5
Thereafter	9,116.1
Total obligations	23,103.0
Less: Deferred financing costs	(135.2)
Total debt obligations	22,967.8

Senior Notes Issuance

On September 23, 2016, Shire Acquisitions Investments Ireland Designated Activity Company ("SAIIDAC"), a wholly owned subsidiary of Shire Plc, issued 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. 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 the Company's acquisition of Baxalta. Below is a summary of the SAIIDAC Notes as of December 31, 2016:

	Aggregate amount $'M	Coupon rate %	Effective interest rate %	Carrying amount $'M
Fixed-rate notes due 2019	3,300.0	1.900	2.05	3,287.5
Fixed-rate notes due 2021	3,300.0	2.400	2.53	3,283.0
Fixed-rate notes due 2023	2,500.0	2.875	2.97	2,487.9
Fixed-rate notes due 2026	3,000.0	3.200	3.30	2,980.8
	12,100.0			12,039.2

The SAIIDAC Notes are senior unsecured obligations and may be redeemed at SAIIDAC's option at the greater of (1) 100 percent of the principal amount plus accrued and unpaid interest or (2) the sum of the present values of the remaining scheduled payments of interest and principal discounted to the date of redemption on a semi-annual basis at the applicable treasury rate (as defined) plus an incremental margin, plus, in either case, accrued and unpaid interest. The SAIIDAC Notes also contain a change of control provision that may require that SAIIDAC to offer to purchase the SAIIDAC Notes at a price equal to 101 percent of the principal amount plus accrued and unpaid interest to the date of purchase under certain circumstances. On December 1, 2016, Baxalta Inc., a wholly owned subsidiary of Shire Plc, has fully and unconditionally guaranteed the SAIIDAC Notes.

The costs and discount associated with this offering of $60.8 million have been recorded as a reduction to the carrying amount of the debt on the Consolidated Balance Sheets. These costs will be amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity. Interest on the SAIIDAC Notes is payable March 23 and September 23 of each year, beginning on March 23, 2017.

Baxalta Notes

Shire plc guaranteed senior notes issued by Baxalta with a total aggregate principal amount of $5.0 billion in connection with the Baxalta acquisition ("Baxalta Notes"). Below is a summary of the Baxalta Notes as of December 31, 2016:

	Aggregate principal $'M	Coupon rate %	Effective interest rate %	Carrying amount $'M
Variable-rate notes due 2018	375.0	LIBOR plus 0.780	2.20	371.6
Fixed-rate notes due 2018	375.0	2.000	2.00	374.8
Fixed-rate notes due 2020	1,000.0	2.875	2.80	1,004.3
Fixed-rate notes due 2022	500.0	3.600	3.30	508.4
Fixed-rate notes due 2025	1,750.0	4.000	3.90	1,772.8
Fixed-rate notes due 2045	1,000.0	5.250	5.10	1,031.7
Total Baxalta Notes	5,000.0			5,063.6

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 16, Financial Instruments, to the Consolidated Financial Statements.

Revolving Credit Facilities Agreement

On December 12, 2014, Shire entered into a $2,100.0 million revolving credit facilities agreement (the "RCF") with a number of financial institutions. Shire is an original borrower and original guarantor under the RCF. On January 15, 2016, SAIIDAC became additional guarantor to the RCF and on December 1, 2016, Baxalta became additional guarantor to the RCF. Shire has agreed to act as guarantor for any of its subsidiaries that become additional borrowers under the RCF. As of December 31, 2016, the Company utilized $450.0 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 $250.0 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 percent 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 shall also pay (i) a commitment fee equal to 35 percent 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 percent per year of the aggregate of all outstanding loans up to an aggregate base currency amount equal to $700.0 million, (b) 0.15 percent 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 percent 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. Consequently, the applicable ratio for the period ending December 31, 2016 is 5.0:1.

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

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 (the "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 additional borrower and additional guarantor to the January 2016 Facilities Agreement.

18. Borrowings and Capital Lease Obligations (continued)
The January 2016 Facility A was utilized to finance the cash consideration payable in respect of the acquisition of Baxalta on June 3, 2016 in the amount of $12,390.0 million. The net proceeds from the issuance of the SAIIDAC Notes were used to fully repay the amounts outstanding under the January 2016 Facility A in September 2016. The January 2016 Facility B was canceled effective July 11, 2016, in accordance with its terms.

November 2015 Facilities Agreement
On November 2, 2015, Shire (as original guarantor and original borrower) entered into a $5.6 billion facilities agreement with various financial institutions (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 matures on November 2, 2017 ("November 2015 Facility A"), (ii) a $2.2 billion amortizing term loan facility which matures on November 2, 2017 ("November 2015 Facility B") and (iii) a $2.4 billion amortizing term loan facility which matures on November 2, 2018 ("November 2015 Facility C").

On January 15, 2016, SAIIDAC became additional borrower and additional guarantor to the November 2015 Facilities Agreement and on December 1, 2016, Baxalta became an additional guarantor to the November 2015 Facilities Agreement. As of December 31, 2016, the November 2015 Facilities Agreement was fully utilized by SAIIDAC as borrower in the amount of $5.0 billion to finance the cash consideration payable and certain costs related to the acquisition of Dyax. On January 30, 2017, SAIIDAC made its first repayment installment of $400.0 million of November 2015 Facility B in accordance with the terms of the agreement.

Interest on any loans made under the November 2015 Facilities Agreement is payable on the last day of each interest period, which may be one week or one, two, three or six months, or as otherwise agreed with the lenders. The interest rate applicable is LIBOR plus, in the case of the November 2015 Facility A, 0.55 percent per annum, in the case of the November 2015 Facility B, 0.65 percent per annum and, in the case of the November 2015 Facility C, 0.75 percent per annum, in each case subject to change depending on (i) the prevailing ratio of Net Debt to EBITDA (each as defined in the November 2015 Facilities Agreement) 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 failure to provide a compliance certificate.

The November 2015 Facilities Agreement 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 November 2015 Facilities Agreement), 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, Shire has elected to increase this ratio in connection with the period ended June 30, 2016, following the completion of the acquisition of Baxalta during the period and (c) 4.5:1 in respect of the second relevant period following the relevant period in which the acquisition was completed, Shire has elected to increase this ratio in connection with the period ending June 30, 2016, following the completion of the acquisition of Baxalta during the period and (ii) ratio of EBITDA to Net Interest in respect of the most recently ended 12 month relevant period, (each as defined in the November 2015 Facilities Agreement), must not be less than 4.0:1.

The November 2015 Facilities Agreement 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 November 2015 Facilities Agreement include, subject to customary grace periods and materiality thresholds: (i) non-payment of any amounts due under the finance documents (as defined in the November 2015 Facilities Agreement), (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 November 2015 Facilities Agreement to perform their obligations thereunder or (viii) if Shire (or any successor parent company) or any subsidiary thereof which is a party to the November 2015 Facilities Agreement repudiates the November 2015 Facilities Agreement or any other finance document, among others.

January 2015 Facility Agreement
On January 11, 2015, Shire entered into an $850.0 million term facility agreement with various financial institutions (the "January 2015 Facility Agreement") with an original maturity date of January 10, 2016. The maturity date was subsequently extended to July 11, 2016 in line with the provisions within the January 2015 Facility Agreement allowing the maturity date to be extended twice, at Shire's option, by six months on each occasion.

The January 2015 Facility Agreement was used to finance Shire's acquisition of NPS Pharma (including certain related costs). On September 28, 2015, the Company reduced the January 2015 Facility Agreement by $100.0 million. In January 2016 and at various points thereafter, the Company canceled parts of the January 2015 Facilities Agreement. On February 22, 2016, the Company repaid the remaining balance of $100.0 million of the January 2015 Facilities Agreement in full.

Capital lease obligations
As of December 31, 2016, capital lease obligations predominantly related to the obligations assumed as part of the Baxalta acquisition. These leases are primarily related to office and manufacturing facilities. As of December 31, 2016, the total capital lease obligations, including current portions, were $353.6 million.

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, 2016, these Credit lines were not utilized.

19. Retirement and Other Benefit Programs

The Company sponsored various pension and other post-employment benefit ("OPEB") plans in the United States and other countries during 2016. The Company did not report any pension or OPEB obligations as of December 31, 2015.

Reconciliation of Pension and OPEB Plan Obligations and Funded Status

The benefit plan information is for the year ended December 31, 2016.

	U.S. pensions $'M	International pensions $'M	OPEB $'M
Benefit obligations			
Beginning of period	–	–	–
Assumption of benefit obligations from Baxalta	441.6	503.8	23.5
Service cost	13.0	18.6	0.8
Interest cost	11.1	3.2	0.6
Participant contributions	–	3.2	–
Actuarial (gain)/loss	(10.6)	(29.8)	0.1
Benefit payments	(1.6)	(9.1)	–
Settlements	–	(3.2)	–
Curtailments	(73.4)	–	–
Foreign exchange	–	(18.3)	–
Other	4.0	113.0	–
End of Period	384.1	581.4	25.0
Fair value of plan assets			
Beginning of period	–	–	–
Assumption of plan assets from Baxalta	218.0	140.5	–
Actual return on plan assets	8.3	2.0	–
Employer contributions	0.4	12.3	–
Participant contributions	–	3.2	–
Benefit payments	(1.6)	(9.1)	–
Settlements	–	(3.2)	–
Foreign exchange	–	(3.8)	–
Other	3.3	56.0	–
End of period	228.4	197.9	–
Funded status at December 31, 2016	(155.7)	(383.5)	(25.0)
Amounts recognized in the Consolidated Balance Sheets			
Other current liabilities	(0.6)	(8.8)	(0.2)
Other non-current liabilities	(155.1)	(374.7)	(24.8)
Net liability recognized at December 31, 2016	(155.7)	(383.5)	(25.0)

Curtailments represent the adoption of an amendment to the company's U.S. pension plans which eliminates the estimate of future compensation levels beyond the December 31, 2017 effective date.

Other primarily represents the recognition of an additional defined benefit plan in Switzerland.

Accumulated Benefit Obligation Information

The pension obligation represents the projected benefit obligation ("PBO") as of December 31, 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 for all the U.S. pension plans was $373.2 million as of December 31, 2016. The ABO for the International pension plans was $457.9 million as of December 31, 2016.

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 as of December 31, 2016.

Year ended December 31	2016 $'M
U.S.	
ABO	**373.2**
Fair value of plan assets	**228.4**
International	
ABO	**437.5**
Fair value of plan assets	**176.2**

Expected Net Pension and OPEB Plan Payments for the Next 10 Years

	U.S. pensions $'M	International pensions $'M	OPEB $'M
2017	3.6	21.1	0.2
2018	5.7	18.6	0.3
2019	7.6	19.9	0.5
2020	9.7	20.1	0.6
2021	11.7	22.7	0.7
2022 through 2026	85.3	124.1	4.6
Total expected benefit payments for next 10 years	123.6	226.5	6.9

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, 2016. 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 on a net of tax basis in AOCI and will be amortized from AOCI to net periodic benefit cost in the future.

The Company had net pre-tax gains included in AOCI as of December 31, 2016 of $14.0 million related to its U.S. pension plans and net pre-tax losses included in AOCI as of December 31, 2016 of $10.3 million and $0.1 million related to its International plans and OPEB plan, respectively. Refer to Note 20, Accumulated Other Comprehensive Loss, for the net of tax balances included in AOCI as of December 31, 2016. The Company does not expect to amortize a significant amount of AOCI to net periodic benefit cost in 2017.

19. Retirement and Other Benefit Programs (continued)

Following is a summary of the net of tax amounts recorded in OCI relating to the pension and OPEB plans during 2016:

	U.S. pensions $'M	International pensions $'M	OPEB $'M
Gain (loss) arising during the year, net of tax expense of $30.9 million for U.S. plans and $3.8 million for international plans	52.5	(14.2)	–
Reclassification of gain to income statement, net of tax benefit of $25.9 million for U.S. plans	(43.5)		–
Pension and other employee benefits gain (loss), net of tax	9.0	(14.2)	–

Gain (loss) arising during the year includes a loss of $34.6 million, net of tax, related to the recognition of a defined benefit plan in Switzerland.

The reclassification of gain to 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 from June 3, 2016, the date the Company assumed the obligations from Baxalta, through December 31, 2016:

	June 3, 2016 through December 31, 2016		
	U.S. pensions $'M	International pensions $'M	OPEB $'M
Net periodic benefit cost			
Service cost	13.0	18.6	0.8
Interest cost	11.1	3.2	0.6
Expected return on plan assets	(8.9)	(3.9)	–
Curtailment and other	(69.4)	20.0	–
Net periodic benefit cost	(54.2)	37.9	1.4

Curtailment 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 the December 31, 2016 measurement date benefit obligations.

	U.S. pensions %	International pensions %	OPEB %
Discount rate	4.2	1.0	4.3
Rate of compensation increase	3.8	2.9	n/a
Annual rate of increase in the per-capita cost	n/a	n/a	6.3
Rate decreased to	n/a	n/a	5.0
by the year ended	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 for 2016.

	U.S. pensions %	International pensions %	OPEB %
Discount rate	4.1	1.0	4.2
Expected return on plan assets	7.0	4.5	n/a
Rate of compensation increase	3.8	3.2	n/a
Annual rate of increase in the per-capita cost	n/a	n/a	6.5
Rate decreased to	n/a	n/a	5.0
by the year ended	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, 2016 or the plan's service and interest cost during 2016.

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 holdings in a single corporate or other entity (generally 5 percent, except for holdings in U.S. government or agency securities);
- Specified average credit quality for the fixed-income securities portfolio (at least A- by Standard & Poor's or A3 by Moody's);
- 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 percent in an equity portfolio and 25 percent 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 percent. 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.

U.S. pension plan assets

	Balance as of December 31, 2016 $'M	Level 1 $'M	Level 2 $'M	Level 3 $'M
Assets				
Fixed income				
Cash equivalents	**5.7**	–	–	–
Collective trust funds	**46.4**	–	–	–
Mutual fund	**11.4**	–	–	–
Equity				
Collective trust funds	**100.4**	–	–	–
Mutual fund	**53.4**	16.5	–	–
Hedge funds	**11.1**	–	–	–
Fair value of pension plan assets	**228.4**	16.5	–	–

International pension plan assets

	Balance as of December 31, 2016 $'M	Level 1 $'M	Level 2 $'M	Level 3 $'M
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*	**12.1**	8.4	–	–
Other holdings	**71.4**	–	71.4	–
Fair value of pension plan assets	**197.9**	122.8	71.4	–

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

19. Retirement and Other Benefit Programs (continued)

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 has no obligation to fund its principal plans in the U.S. in 2017. The Company did not make any significant voluntary contributions to its U.S. Qualified plan from the June 3, 2016 acquisition date through December 31, 2016. During 2017, the Company expects to make cash contributions to its pension plans of at least $11.0 million, primarily related to its international plans, and expects to have net cash outflows relating to its OPEB plan of less than $1.0 million. 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, 2016, including certain plans that are unfunded in accordance with the guidelines of the Company's funding policy outlined above.

	United States		International		
	Qualified plan $'M	Non-qualified plan $'M	Funded plans $'M	Unfunded plans $'M	Total $'M
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 $68.1 million, $38.9 million and $34.3 million during 2016, 2015 and 2014, respectively.

20. Accumulated Other Comprehensive Loss

The changes in Accumulated other comprehensive loss ("AOCL"), net of their related tax effects, in the years ended December 31, 2016 are shown below:

	Foreign currency translation adjustment $'M	Pension and other employee benefits $'M	Unrealized holding gain/(loss) on available-for-sale securities $'M	Hedging activities $'M	Accumulated other comprehensive loss $'M
As of January 1, 2016	(182.1)	–	(1.7)	–	(183.8)
Current period change:					
Other comprehensive (loss)/income before reclassification	(1,323.3)	38.3	8.3	9.9	(1,266.8)
Amounts reclassified from AOCL	–	(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 AOCL to net income during the fiscal year ended December 31, 2016:

	Amounts reclassified from AOCL	
	2016 $'M	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

The changes in Accumulated other comprehensive loss, net of their related tax effects, in the year ended December 31, 2015 are shown below:

	Foreign currency translation adjustment $'M	Pension and other employee benefits $'M	Unrealized holding gain/(loss) on available-for-sale securities $'M	Hedging activities $'M	Accumulated other comprehensive loss $'M
As of January 1, 2015	(25.7)	–	(5.8)	–	(31.5)
Current period change:					
Net current period other comprehensive (loss)/income	(156.4)	–	4.1	–	(152.3)
As of December 31, 2015	(182.1)	–	(1.7)	–	(183.8)

The amounts reclassified out of Accumulated other comprehensive loss and into the Statements of Operations for the fiscal year ended December 31, 2015 were immaterial.

21. Earnings Per Share

The following table reconciles net income and the weighted average Ordinary Shares outstanding for basic and diluted earnings per share for the periods presented:

Years ended December 31	**2016 $'M**	2015 $'M	2014 $'M
Income from continuing operations, net of taxes	**603.5**	1,337.5	3,282.8
(Loss)/gain from discontinued operations	**(276.1)**	(34.1)	122.7
Numerator for basic and diluted earnings per share	**327.4**	1,303.4	3,405.5
Weighted average number of shares:			
Basic	**770.1**	590.4	586.7
Effect of dilutive shares:			
Share-based awards to employees	**6.1**	2.7	4.6
Diluted	**776.2**	593.1	591.3
Earnings per Ordinary Share — basic			
Earnings from continuing operations	**0.78**	2.27	5.60
(Loss)/gain from discontinued operations	**(0.35)**	(0.06)	0.21
Earnings per Ordinary Share — basic	**0.43**	2.21	5.81
Earnings per Ordinary Share — diluted			
Earnings from continuing operations	**0.77**	2.26	5.55
(Loss)/gain from discontinued operations	**(0.35)**	(0.06)	0.21
Earnings per Ordinary Share — diluted	**0.42**	2.20	5.76

21. Earnings Per Share (continued)

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	**2016 No. of shares M's**	2015 No. of shares M's	2014 No. of shares M's
Share-based awards to employees	**4.1**	3.4	0.3

Certain stock options have been excluded from the calculation of diluted EPS because (a) their exercise prices exceeded Shire's average share price during the calculation period or (b) the required performance conditions were not satisfied as of the balance sheet date.

22. Taxation

The components of pre-tax income from continuing operations are as follows:

Years ended December 31	**2016 $'M**	2015 $'M	2014 $'M
Ireland	**214.3**	(11.4)	1,472.0
United States	**(75.3)**	975.8	1,025.9
Rest of the world	**347.1**	421.4	838.3
	486.1	1,385.8	3,336.2

The provision for income taxes on continuing operations by location of the taxing jurisdiction for the years ended December 31, 2016, 2015 and 2014 consisted of the following:

Years ended December 31	**2016 $'M**	2015 $'M	2014 $'M
Current income taxes:			
Ireland	**5.2**	0.8	–
U.S. federal tax	**318.6**	191.7	291.8
U.S. state and local taxes	**30.2**	17.3	25.3
Rest of the world	**68.9**	17.8	(290.9)
Total current taxes	**422.9**	227.6	26.2
Deferred taxes:			
Ireland	**18.2**	(38.8)	–
U.S. federal tax	**(433.8)**	(151.2)	39.7
U.S. state and local taxes	**(74.1)**	(1.7)	(2.9)
Rest of the world	**(59.3)**	10.2	(6.9)
Total deferred taxes	**(549.0)**	(181.5)	29.9
Total income taxes	**(126.1)**	46.1	56.1

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 8, Results of Discontinued Operations.

The operating results associated with the DERMAGRAFT business have been classified as discontinued operations for all periods presented.

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	**2016 $'M**	2015 $'M	2014 $'M
Income from continuing operations before income taxes and equity in (losses)/ earnings of equity method investees (in millions)	**486.1**	1,385.8	3,336.2
	%	%	%
Statutory tax rate[1]	**25.0**	25.0	25.0
U.S. R&D credit	**(25.9)**	(7.7)	(2.5)
Intra-group items[2]	**(44.4)**	(18.6)	(6.3)
Other permanent items	**4.5**	1.1	(0.2)
U.S. Domestic Manufacturing Deduction	**(4.0)**	(1.6)	(0.5)
Acquisition related Costs	**8.5**	1.1	0.7
Irish Treasury Operations	**(8.6)**	0.6	0.7
Change in valuation allowance	**7.9**	1.0	0.8
Difference in taxation rates[3]	**13.0**	7.3	3.4
Change in provisions for uncertain tax positions	**(1.5)**	(0.4)	0.2
Prior year adjustment	**1.0**	(1.6)	0.1
Change in fair value of contingent consideration	**3.7**	(3.8)	0.3
Change in tax rates	**(5.1)**	0.9	0.5
Receipt of break fee	**–**	–	(12.3)
Settlement with Canadian revenue authorities	**–**	–	(7.0)
Other	**–**	–	(1.2)
Provision for income taxes on continuing operations	**(25.9)**	3.3	1.7

[1] In addition to being subject to the Irish corporation tax rate of 25 percent in 2016, the Company is also subject to income tax in other territories in which the Company operates, including: Canada (15 percent); France (33.3 percent); Germany (15 percent); Italy (27.5 percent); Japan (23.9 percent); Luxembourg (21.0 percent); the Netherlands (25 percent); Belgium (33.99 percent); Singapore (17 percent); Spain (28 percent); Sweden (22 percent); Switzerland (8.5 percent); United Kingdom (20 percent) and the U.S. (35 percent). 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 2016,

included items related to the Baxalta acquisition, primarily the reversal of deferred tax liabilities (including in higher tax territories) for inventory and intangible asset amortization, as well as acquisition and integration costs. These same items are also causing the significant reduction in the U.S. pre-tax book income that is evident in the components of pre-tax income table above.

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 2012, although the Company is contesting certain matters pertaining to 2011 and 2012. Tax authorities in various jurisdictions are in the process of auditing the Company's tax returns for fiscal periods primarily after 2011, with the earliest being 2007; these tax audits cover primarily transfer pricing, but may include other areas.

In respect of the receipt of the break fee from AbbVie in 2014, the Company has obtained advice that the break fee should not be taxable in Ireland. The Company has therefore concluded that no tax liability should arise and did not recognize a tax charge in the income statement in 2014. The relevant tax return was submitted on September 23, 2015.

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:

Years ended December 31	**2016 $'M**	2015 $'M	2014 $'M
Balance as of January 1	**216.3**	207.8	355.2
Increases based on tax positions related to the current year	**34.3**	27.0	20.3
Decreases based on tax positions taken in the current year	**–**	–	–
Increases for tax positions taken in prior years	**0.5**	3.9	64.2
Decreases for tax positions taken in prior years	**(17.8)**	(30.6)	(211.0)
Acquisition related items	**29.5**	17.9	–
Decreases resulting from settlements with the taxing authorities	**(24.4)**	(1.2)	(9.4)
Decreases as a result of expiration of the statute of limitations	**(2.4)**	(4.4)	(0.6)
Foreign currency translation adjustments[1]	**0.3**	(4.1)	(10.9)
Balance as of December 31[2]	**236.3**	216.3	207.8

[1] Foreign currency translation adjustments are recognized within Other Comprehensive Income.
[2] As of December 31, 2016, approximately $227 million (2015: $207 million, 2014: $181 million) of which would affect the effective rate if recognized.

The Company considers it reasonably possible that certain audits currently being conducted could be concluded in the next 12 months, and as a result the total amount of unrecognized tax benefits recorded as of December 31, 2016 could decrease by up to approximately $50.0 million. 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, 2016, 2015 and 2014, the Company recognized a charge/(credit) to income taxes of $4.2 million, $0.8 million and $(103.1) million in interest and penalties and the Company had a liability of $30.8 million, $26.5 million and $25.8 million for the payment of interest and penalties accrued as of December 31, 2016, 2015 and 2014, respectively.

As part of Baxalta's separation from Baxter, a tax sharing agreement was entered into, effective on the date of separation, which employs a tracing approach to determine which company is liable for certain pre-separation income tax items. If a liability arises and is attributable to the former Baxalta business, the liability would be allocated to Baxalta. If the liability arises and is attributable to Baxter's Medical Device, Renal or Biosurgery businesses, it would be allocated to Baxter. The table above only reflects pre-acquisition liabilities for Baxalta for which it was the primary obligor.

Deferred taxes

The significant components of deferred tax assets and liabilities and their balance sheet classifications, as of December 31, are as follows:

Years ended December 31	**2016 $'M**	2015 $'M
Deferred tax assets:		
Deferred revenue	**16.8**	2.4
Inventory & warranty provisions	**88.7**	36.1
Losses carried forward (including tax credits)[1]	**1,907.3**	980.3
Provisions for sales deductions and doubtful accounts	**191.6**	178.0
Intangible assets	**79.7**	5.9
Share-based compensation	**137.5**	40.6
Excess of tax value over book value of assets	**14.2**	0.6
Accruals and provisions	**448.6**	130.4
Other	**78.5**	19.3
Gross deferred tax assets	**2,962.9**	1,393.6
Less: valuation allowance	**(569.4)**	(416.1)
	2,393.5	977.5
Deferred tax liabilities:		
Intangible assets	**(9,073.4)**	(2,850.6)
Excess of book value over tax value in inventory	**(150.3)**	(10.3)
Excess of book value over tax value of assets and investments	**(1,304.2)**	(153.9)
Other	**(91.6)**	(47.6)
Net deferred tax liabilities	**(8,226.0)**	(2,084.9)
Balance sheet classifications:		
Deferred tax assets — non-current	**96.7**	121.0
Deferred tax liabilities — non-current	**(8,322.7)**	(2,205.9)
	(8,226.0)	(2,084.9)

[1] Losses carried forward excludes $38.9 million of deferred tax assets as of December 31, 2016 (2015: $30.4 million), related to net operating losses that result from excess stock-based compensation and for which any benefit realized will be recorded to stockholders' equity.

22. Taxation (continued)

As of December 31, 2016, the Company had a valuation allowance of $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 (2016: $176.8 million; 2015: $131.5 million); U.S. (2016: $155.1 million; 2015: $125.9 million); Ireland (2016: $22.4 million; 2015: $22.2 million); and other foreign tax jurisdictions (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 $153.3 million includes (i) increases of $166.4 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 $13.1 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, 2016, 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:

Years ended December 31	2016 $'M	2015 $'M
U.S. federal tax	**687.1**	149.3
U.S. state tax	**170.7**	77.2
Republic of Ireland	**45.1**	61.2
Foreign tax jurisdictions	**614.9**	434.9
R&D and other tax credits	**389.5**	257.7
	1,907.3	980.3

The approximate gross value of net operating losses ("NOLs") and capital losses at December 31, 2016 is $10,843.1 million (2015: $5,562.3 million). The tax effected NOLs, capital losses and tax credit carry-forwards shown above have the following expiration dates:

Year ended December 31	2016 $'M
Within 1 year	**0.3**
Within 1 to 2 years	**2.6**
Within 2 to 3 years	**45.5**
Within 3 to 4 years	**12.8**
Within 4 to 5 years	**52.6**
Within 5 to 6 years	**55.3**
After 6 years	**1,269.6**
Indefinitely	**468.6**

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, 2016, that excess totaled $16.6 billion (2015: $11.3 billion). As part of the acquisition of Baxalta, the Company determined that $1.5 billion of Baxalta's pre-acquisition earnings incurred outside of the U.S. are not permanently reinvested and has recorded an associated deferred tax liability of $503.0 million on these earnings as part of the business combination accounting for the acquisition. The determination of additional deferred taxes on the Company's permanently reinvested earnings that have not been provided is not practicable.

23. Segment Reporting

Shire comprises a single 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	2016 $'M	2015 $'M	2014 $'M
Ireland	**41.6**	14.1	18.5
United States	**7,666.9**	4,659.2	4,174.1
Rest of the world	**3,688.1**	1,743.4	1,829.5
Total revenues	**11,396.6**	6,416.7	6,022.1

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	2016 $'M	2015 $'M
Ireland	**41.2**	1.7
United States	**6,449.4**	751.3
Rest of the world	**84.0**	82.2
Total	**6,574.6**	835.2

Material customers

In the periods set out below, certain customers accounted for greater than 10 percent of the Company's Product sales:

Years ended December 31	2016 $'M	2016 % Product sales	2015 $'M	2015 % Product sales	2014 $'M	2014 % Product sales
AmerisourceBergen Corp	**1,695.3**	16	1,048.3	17	759.2	13
McKesson Corp.	**1,336.7**	12	1,044.1	17	1,021.0	18
Cardinal Health Inc.	**1,052.2**	10	796.9	13	979.9	17

Amounts outstanding in respect of these material customers were as follows:

Years ended December 31	2016 $'M	2015 $'M
AmerisourceBergen Corp	**427.2**	171.5
McKesson Corp.	**312.9**	193.1
Cardinal Health Inc.	**278.4**	181.7

In the periods set out below, revenues by major product were as follows:

Years ended December 31	2016 $'M	2015 $'M	2014 $'M
Product sales:			
HEMOPHILIA	**1,789.0**	–	–
INHIBITOR THERAPIES	**451.8**	–	–
Hematology total	**2,240.8**	–	–
CINRYZE	**680.2**	617.7	503.0
ELAPRASE	**589.0**	552.6	592.8
FIRAZYR	**578.5**	445.0	364.2
REPLAGAL	**452.4**	441.2	500.4
VPRIV	**345.7**	342.4	366.7
KALBITOR	**52.2**	–	–
Genetic Diseases total	**2,698.0**	2,398.9	2,327.1
VYVANSE	**2,013.9**	1,722.2	1,449.0
ADDERALL XR	**363.8**	362.8	383.2
Other Neuroscience	**112.8**	115.4	372.3
Neuroscience total	**2,490.5**	2,200.4	2,204.5
IMMUNOGLOBULIN THERAPIES	**1,143.9**	–	–
BIO THERAPEUTICS	**372.2**	–	–
Immunology total	**1,516.1**	–	–
LIALDA/MEZAVANT	**792.1**	684.4	633.8
PENTASA	**309.4**	305.8	289.7
GATTEX/REVESTIVE	**219.4**	141.7	–
NATPARA	**85.3**	24.4	–
Other Internal Medicine	**349.3**	344.3	375.3
Internal Medicine total	**1,755.5**	1,500.6	1,298.8
Oncology total	**130.5**	–	–
Ophthalmology Total	**54.4**	–	–
Total Product sales	**10,885.8**	6,099.9	5,830.4

24. Receipt of Break Fee

On July 18, 2014, the Boards of AbbVie and Shire announced that they had agreed the terms of a recommended combination of Shire with AbbVie, subject to a number of conditions including approval by shareholders and regulators. On the same date, Shire and AbbVie entered into a co-operation agreement in connection with the recommended combination. On October 16, 2014, the Board of AbbVie confirmed that it had withdrawn its recommendation of its offer for Shire as a result of the anticipated impact of a U.S. Treasury Notice on the benefits that AbbVie expected from its offer. As AbbVie's offer was conditional on the approval of its stockholders, and given their Board's decision to change its recommendation and to advise AbbVie's stockholders to vote against the offer, there was no realistic prospect of satisfying this condition. Accordingly, Shire's Board agreed with AbbVie to terminate the cooperation agreement on October 20, 2014. The Company entered into a termination agreement with AbbVie, pursuant to which AbbVie paid the break fee due under the cooperation agreement of approximately $1,635.4 million. The Company has obtained advice that the break fee should not be taxable in Ireland. The Company has therefore concluded that no tax liability should arise and has not recognized a tax charge in the income statement in 2014. The relevant tax return was submitted on September 23, 2015.

25. Commitments and Contingencies

Leases

Future minimum lease payments under operating leases as of December 31, 2016 are presented below:

	Operating leases $'M
2017	155.5
2018	117.2
2019	98.7
2020	89.2
2021	82.7
Thereafter	441.9
	985.2

The Company leases land, facilities, motor vehicles and certain equipment under operating leases expiring through 2032. Lease and rental expense amounted to $100.8 million, $40.7 million and $32.9 million for the year ended December 31, 2016, 2015 and 2014, respectively, which is predominately included in SG&A expenses in the Company's Consolidated Statement of Operations.

Letters of credit and guarantees

As of December 31, 2016 and 2015, the Company had irrevocable standby letters of credit and guarantees with various banks and insurance companies totaling $139.7 million and $48.0 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

(i) Clinical testing

As of December 31, 2016, the Company had committed to pay approximately $1,037.4 million (December 31, 2015: $490.0 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.

(ii) Contract manufacturing

As of December 31, 2016, the Company had committed to pay approximately $528.9 million (December 31, 2015: $325.0 million) in respect of contract manufacturing. The Company expects to pay $220.4 million of these commitments in 2017.

(iii) Other purchasing commitments

As of December 31, 2016, the Company had committed to pay approximately $1,745.4 million (December 31, 2015: $485.0 million) for future purchases of goods and services, predominantly relating to active pharmaceutical ingredients sourcing. The Company expects to pay $436.6 million of these commitments in 2017.

(iv) Investment commitments

As of December 31, 2016, the Company had outstanding commitments to subscribe for interests in companies and partnerships for amounts totaling $76.4 million (December 31, 2015: $22.0 million) which may all be payable in 2017, depending on the timing of capital calls. The investment commitments include additional funding to certain VIEs of which Shire is not the primary beneficiary.

(v) Capital commitments

As of December 31, 2016, the Company had committed to spend $100.5 million (December 31, 2015: $60.0 million) on capital projects.

26. 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, 2016, provision for litigation losses, insurance claims and other disputes totaled $415.0 million (December 31, 2015: $9.9 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.

VYVANSE

In May and June 2011, Shire was notified that six separate Abbreviated New Drug Applications ("ANDAs") were submitted under the Hatch-Waxman Act seeking permission to market generic versions of all approved strengths of VYVANSE. The notices were from Sandoz, Inc. ("Sandoz"); Amneal Pharmaceuticals LLC ("Amneal"); Watson Laboratories, Inc.; Roxane Laboratories, Inc. ("Roxane"); Mylan Pharmaceuticals, Inc. ("Mylan"); and Actavis Elizabeth LLC and Actavis Inc. (collectively, "Actavis"). Since filing suit against these ANDA filers, along with API suppliers Johnson Matthey Inc. and Johnson Matthey

Pharmaceuticals Materials (collectively, "Johnson Matthey"), Shire has been engaged in a consolidated patent infringement litigation in the U.S. District Court for the District of New Jersey against the aforementioned parties (except Watson, who withdrew their ANDA).

On June 23, 2014, the U.S. District Court for the District of New Jersey granted Shire's summary judgment motion holding that 18 claims of the patents-in-suit were both infringed and valid. On September 24, 2015, the U.S. Court of Appeals of the Federal Circuit ("CAFC") affirmed that ruling against all of the ANDA filers and remanded the case to the trial court for further proceedings. The CAFC ruling overturned the infringement ruling against Johnson Matthey and the case against Johnson Matthey has been dismissed. Following remand to the U.S. District Court for the District of New Jersey, the case has been fully resolved as a result of the Stipulation of Dismissal and Final Judgment entered by the court on August 30, 2016 in which the court imposed an injunction preventing all of the ANDA filers (Sandoz, Roxane, Amneal, Actavis and Mylan) from launching generic versions of VYVANSE until the expiration of these patents in 2023.

In March, April and May 2016, Shire received Notices of Allegation ("NOA") from Apotex Inc. ("Apotex") informing Shire that Apotex filed an Abbreviated New Drug Submission ("ANDS") with Health Canada seeking approval to market a generic version of VYVANSE in Canada. Within the requisite 45 days, Shire filed for orders of prohibition and, as a result, a 24-month stay of approval of the ANDS has been put into effect. Apotex has withdrawn the first two NOAs. On July 4, 2016, Apotex filed a Statement of Claim in Federal Court seeking a judicial declaration of invalidity and noninfringement of Shire's Canadian patent relating to VYVANSE which Shire is actively defending.

On April 14, 2016, Shire prevailed in upholding its European patent for ELVANSE. Shire initially prevailed in an opposition to its patent lodged by Johnson Matthey plc, Generics UK Limited (trading as Mylan) and Hexal AG and on April 14, 2016 Shire prevailed in the appeal. The decision by the appeals board of the European Patent Office is final and cannot be further appealed.

LIALDA

In May 2010, Shire was notified that Zydus Pharmaceuticals U.S.A., 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 has appealed the ruling to the CAFC.

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 have been stayed.

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.

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.

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 canceled and has not yet been rescheduled. No trial date has been set.

26. Legal and Other Proceedings (continued)

On October 7, 2015 the Patent Trial and Appeals Board ("PTAB") of the United States Patent Office instituted an inter partes review ("IPR") of U.S. Patent 6,773,720 which is the patent-in-suit in the litigations referred to above. The IPR process is designed to re-assess the patentability of the claims of the patent. A decision from the PTAB was issued on October 5, 2016 upholding the validity of the patent in view of the challenges put forward in the IPR.

DERMAGRAFT

The Department of Justice, including the U.S. Attorney's Office for the Middle District of Florida, Tampa Division and the U.S. Attorney's Office for Washington, DC, is conducting civil and criminal investigations into the sales and marketing practices of Advanced BioHealing Inc. ("ABH") relating to DERMAGRAFT, which Shire acquired in June 2011. Following the disposal of the DERMAGRAFT business in January 2014, Shire retained certain legacy liabilities including any liability that may arise from this investigation.

Over the several years, Shire has been cooperating fully with these investigations and engaged in discussions with the Department of Justice about a resolution. In August 2016, Shire announced that it reached an agreement with the Department of Justice on a proposal for a civil settlement in the amount of $350.0 million plus interest. Shire established a reserve for the expected settlement, $340.0 million in the second quarter of 2016 and an additional $10.0 million in the third quarter of 2016.

Shire entered into a final settlement agreement with the Department of Justice, announced in January 2017, in the amount of $350.0 million, plus interest. Shire paid $345.5 million of the settlement amount in January 2017 and anticipates the remaining payment will be made in the second quarter of 2017. The agreement resolves the civil investigations conducted by the Department of Justice, including multiple U.S. Attorney's Offices and relevant federal and state agencies.

The agreement also resolves the federal government's claims under the federal False Claims Act and the DERMAGRAFT Medicaid-related claims for states that opt into the settlement. Some states with DERMAGRAFT Medicaid-related claims might elect to opt out of the final settlement and those states' claims would remain unresolved.

Under the terms of Shire's merger agreement with ABH, $37.5 million was held in escrow at the close of the transaction as an indemnity against potential breaches of representations and warranties on the part of ABH. After the civil settlement with the DOJ had been finalized, in January 2017, Shire made a formal demand upon ABH's former equityholders to return the entire amount held in escrow to Shire. In February 2017, Shire and ABH's equityholders entered into a settlement agreement, pursuant to which ABH's equityholders agreed to release the full $37.5 million escrow to Shire and Shire will release the claims against ABH equityholders upon receipt of the entire amount held in escrow.

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 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.

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. The final decision can be appealed through the Superior Court of Justice or through the Supreme Court; however, the likelihood of one of those courts accepting the appeal is remote.

27. Shareholders' Equity

Authorized common stock

The authorized stock of Shire plc as of December 31, 2016, 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, 2016, Shire plc's distributable reserves were approximately $4.4 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, 2016, the EBT held 0.5 million Ordinary Shares (2015: 0.6 million; 2014: 0.7 million) and 0.2 million ADSs (2015: 0.2 million; 2014: 0.3 million) and shares held under the share buy-back program were 8.0 million Ordinary Shares (2015: 8.5 million; 2014: 9.0 million). During the years ended December 31, 2016 and 2015 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 (the "IAS Trust"), which is held by the trustee of the IAS Trust (the "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 percent 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, 2016, Old Shire paid dividends totaling $150.6 million (2015: $127.7 million; 2014: $112.8 million) on the income access share to the Trustee in an amount equal to the dividend ordinary shareholders would have received from Shire plc.

28. Share-based Compensation Plans

The following table shows the total share-based compensation expense (see below for types of share-based awards) included in the Consolidated Statements of Operations:

Years ended December 31	**2016 $'M**	2015 $'M	2014 $'M
Cost of product sales	**23.3**	7.6	8.5
Research and development	**46.9**	28.6	22.2
Selling, general and administrative	**67.1**	37.4	35.9
Integration and acquisitions costs	**181.2**	–	–
Reorganization costs	**–**	26.7	30.4
Total	**318.5**	100.3	97.0
Less tax	**(85.3)**	(28.4)	(23.8)
	233.2	71.9	73.2

As of December 31, 2016, the Company incurred total expense of $223.1 million (2015: $nil, 2014: $nil) related to replacement and other awards held by Baxalta employees as further described below. This includes integration related expenses of $171.0 million 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, 2016, 2015 and 2014.

As of December 31, 2016, $244.2 million (2015: $115.3 million, 2014: $83.1 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 vest after three years and contain performance conditions as explained above.

28. Share-based Compensation Plans (continued)

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 canceled 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, 2016:

	Compensation type	Number of awards	Expiration period from date of issue	Vesting period
Stock-settled SARs	SARs	10,646,207	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	119,300	6 months after vesting	3 or 5 years
Global Employee Stock Purchase Plan	Stock options	411,900	On vesting date	1 to 5 years
Baxalta Replacement Options	Stock options	10,692,426	10 years	3 years graded vesting
Stock-settled SARs and stock options	Stock-settled SARs and stock options	**21,869,833**		
RSUs, PSUs and PSAs	RSUs, PSUs and PSAs	2,346,511	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	1,630,146	3 years	3 years graded vesting
RSUs/PSUs and PSAs		**3,976,657**		

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 percent and 75 percent 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 percent of the fair market value of a share on the enrollment date (the first day of the offering period) or 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, 2016 and of the related activity during the period then ended is presented below:

Year ended December 31, 2016	Weighted average exercise price £	Number of shares	Intrinsic value £'M
Outstanding as of beginning of period	52.02	7,796,496	
Granted	42.37	6,506,762	
Exercised	39.83	(4,717,106)	
Baxalta Replacement Options	34.30	13,328,592	
Forfeited	48.49	(1,044,911)	
Outstanding as of end of period	38.98	21,869,833	76.6
Exercisable as of end of period	34.55	11,035,437	66.0

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 7.7 million and 6.9 million were outstanding and exercisable, respectively, as of December 31, 2016.

The weighted average grant date fair value of SARs and stock options granted in the year ended December 31, 2016 was £8.25 (2015: £10.36; 2014: £6.19).

SARs and stock options including Baxalta Replacement Options, outstanding as of December 31, 2016 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 £
3,433,225	14.59-28.00	3.0	25.37	3,422,480	25.38
10,704,846	28.01-40.00	7.3	35.56	6,161,513	34.91
7,731,762	40.01-70.48	5.7	49.77	1,451,444	54.67
21,869,833				11,035,437	

28. Share-based Compensation Plans (continued)

RSUs, PSUs and PSAs

RSUs and PSUs under LTIP and PSAs under PSP (Part B)

PSUs and PSAs granted to Executive Directors and PSUs granted to certain senior employees are exercisable subject to certain performance and service criteria.

RSUs and PSAs granted to employees below Executive Director 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, 2016 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	**1,791,930**	40.06	
Granted	**1,663,070**	42.28	
Exercised	**(2,470,179)**	37.52	
Baxalta Replacement RSUs	**3,294,150**	39.28	
Forfeited	**(302,314)**	48.47	
Outstanding as of end of period	**3,976,657**	41.31	3.8
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 0.3 million were outstanding as of December 31, 2016.

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, 2016, 2015 and 2014 were $214.6 million, $198.8 million and $200.8 million, respectively. The total cash received as a result of share option exercises for the period ended December 31, 2016, 2015 and 2014 was approximately $129.0 million, $16.6 million and $17.4 million, respectively. In connection with these exercises, the tax benefit credited to additional paid-in capital for the years ended December 31, 2016, 2015 and 2014 was $8.8 million, $31.6 million and $39.6 million, respectively.

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 2017 is dependent on the number of awards granted and exercised during the year and Shire plc's share price. As of December 31, 2016, 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	2016	2015	2014
Risk-free interest rate	**0.29-1.6%**	0.6-1.8%	0.3-1.8%
Expected dividend yield	**0.3-0.5%**	0.2-0.4%	0.2-0.4%
Expected life	**1-4 years**	1-4 years	1-4 years
Volatility	**26-29%**	23-26%	23-27%
Forfeiture rate	**5-7%**	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.

29. 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. As a result of the acquisition of Baxalta, the Company became party to the separation-related agreements with Baxter. These agreements, among others, included a manufacturing and supply agreement, a transition services agreement, an international commercial operations agreement and 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 of approximately $81 million from the 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. The services generally extend for approximately two years following the July 1, 2015 separation except for certain information technology services that may extend for three years following the July 1, 2015 separation. The Company reported SG&A expenses associated with the transition services agreement with Baxter of approximately $54 million from the 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 Company reported net sales related to these operations of $101 million from the June 3, 2016 acquisition date through December 31, 2016. As of December 31, 2016, the assets and liabilities of these operations consisted of inventories of $11 million, which are reported in Inventories on the Consolidated Balance Sheet, other assets of $50 million, which are reported as Prepaid expenses and other current assets, and liabilities of $3 million, which are reported in Other current liabilities. The majority of these operations have been transferred to the Company as of December 31, 2016 and the remaining are expected to transfer in 2017 or 2018.

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. The net tax-related indemnification amount reported by the Company as of December 31, 2016 was $26 million.

As of December 31, 2016, the Company had total amounts due from or to Baxter of $189 million reported in prepaid expenses and other current assets, $34 million reported in Other non-current assets, $72 million reported in Other current liabilities and $92 million reported in Other non-current liabilities. These balances include the net tax-related indemnification liabilities and assets and liabilities of certain operations that have not transferred to the Company.

30. Auditor remuneration

The Audit, Compliance & Risk Committee reviews the scope and results of the audit and non-audit services, including tax advisory and compliance services, provided by the Company's Independent Registered Public Accountants, Deloitte LLP, and the cost effectiveness and the independence and objectivity of the Registered Public Accountants. In recognition of the importance of maintaining the independence of Deloitte LLP, a process for pre-approval has been in place since July 1, 2002 and has continued through to the end of the period covered by this Annual Report.

The following table provides an analysis of the amount paid to the Company's Independent Registered Public Accountants, Deloitte LLP, all fees having been pre-approved by the Audit, Compliance & Risk Committee.

Years ended December 31	**2016 $'M**	2015 $'M
Audit fees	**14.7**	4.7
Audit related fees[1]	**1.0**	0.4
Tax fees[2]	**0.3**	0.1
All other fees[3]	**18.9**	3.9
Total fees	**34.9**	9.1

[1] Audit related fees consisted of audit work only the Independent Registered Public Accountant can reasonably be expected to perform, such as statutory audits or procedures relating to regulatory filings.

[2] Tax fees consisted principally of assistance with matters related to compliance and advice in various tax jurisdictions.

[3] All other fees include $14.5 million of fees related to the continuation of projects already under way at Baxalta prior to its acquisition by the Company. A comprehensive review and reorganization of these services was performed following the acquisition date to ensure the continued independence of Deloitte LLP as auditors for the Company. All other fees also include $4.4 million of services provided to support the transaction and facilitate regulatory reporting related to the acquisition of Baxalta as this transaction qualified as a Class One Transaction. In the year to December 31, 2015 All other fees includes reporting accountant fees of $3.9 million, in connection with Shire's proposed combination with Baxalta.

31. List of subsidiaries

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Shire Albania Sh.p.k.	Albania	Ordinary ALL100.00	Rr: Sami Frasheri, Kompleksi T.I.D, Shk. B, Floor 1, 10 000 Tirana, Albania
Baxalta Argentina S.A.U.	Argentina	ARS 1.00 Ordinary	Entre Rios 1632. Olivos. Buenos Aires. Argentina.
Shire Human Genetic Therapies S.A.	Argentina	ARS 1.00 Ordinary	Calle Olga Cossettini 263 — 3º piso — UF 21, Dique IV — Puerto Madero — C1107CCF, Buenos Aires, Argentina
Baxalta Australia Pty. Ltd.	Australia	NPV Shares	1 Baxter Drive, Old Toongabbie NSW 2146, Australia
Farboud Pty Ltd	Australia	AUD 1.00 Ordinary	Avaya House, 6th Floor, 123 Epping Road, North Ryde, Sydney, NSW 2113, Australia
Fibrotech Therapeutics Pty Ltd	Australia	AUD Ordinary	Avaya House, 6th Floor, 123 Epping Road, North Ryde, Sydney, NSW 2113, Australia
Shire Australia Pty Limited	Australia	AUD Ordinary — no par value	Avaya House, 6th Floor, 123 Epping Road, North Ryde, Sydney, NSW 2113, Australia
Viropharma Pty Ltd	Australia	AUD Ordinary — no par value	Suites 3 and 4, 25 Terminus Street, Castle Hill, NSW 2154, Australia
Baxalta Innovations GmbH	Austria	€36,336,417.08	Industriestrasse 67, 1221 Vienna, Austria
Baxalta Osterreich GmbH	Austria	€35,000	Industriestrasse 67, 1221 Vienna, Austria
Baxter AG	Austria	€1	Industriestrasse 67, 1221 Vienna, Austria
Shire Austria GmbH	Austria	€35,000.00 Equity Interest	Kärntner Ring 5-7, 1010, Vienna, Austria
Shire Intellectual Property 2 SRL	Barbados	US$1.00 Common	Chancery House, High Street, Bridgetown, Barbados
Shire Intellectual Property SRL	Barbados	US$1.00 Common	Chancery House, High Street, Bridgetown, Barbados
Baxalta Belgium Manufacturing S.A.	Belgium	€2.43622	7860 Lessines, Boulevard René Branquart 80, Belgium
Baxalta Belgium SPRL	Belgium	€0.77173	7860 Lessines, Boulevard René Branquart 80, Belgium
Baxalta Services Europe SPRL	Belgium	€18.55	7860 Lessines, Boulevard René Branquart 80, Belgium
Shire Belgium BVBA	Belgium	€1.00 Ordinary	Rue Montoyer 47, 1000 Brussels, Belgium
Shire Services BVBA	Belgium	€1.00 Ordinary	Rue Montoyer 47, 1000 Brussels, Belgium
Shire Holdings Limited	Bermuda	£1.00 Ordinary	H.P. House, 21 Laffan Street, Hamilton HM 09, Bermuda
Viropharma Holdings Limited	Bermuda	US$1.00 Ordinary	Canon's Court, 22 Victoria Street, Hamilton, 12, Bermuda
Baxalta Brasil Biociência Ltda.	Brazil	BRL$ 1.01 Ordinary	Rua Henri Dunant, 1383, Tower B, 12th floor, suite 1202, Santo Amaro, Zip Code 04709-110, São Paulo, Brazil
Shire Farmacêutica Brasil Ltda	Brazil	BRL1.00 Ordinary	Headquarters Rochaverá Corporate Towers, Avenida das Nações Unidas, 14.171– Torre A, 5º andar — conj. 501, 502, 503 e 504, CEP, 04794-000 — São Paulo — SP, Brazil
Baxalta Bulgaria EOOD	Bulgaria	BGN лв375,001 Common	45 Bulgaria Blvd., Triaditza District, Stolichna Municipality, Sofia Region, 1404 Sofia, Bulgaria
Shire Bulgaria EOOD	Bulgaria	Ordinary BGL 1.00	51B Bulgaria blvd., floor 4, 1404 Sofia, Triaditza district, Stolichna Municipality, Sofia City Region, Bulgaria
Baxalta Canada Corporation	Canada	CAD Common — nil par value	7125 Mississauga Road, Ontario L5N 0C2, Canada
NPS Holdings Company	Canada	CAD Common — nil par value	1959 Upper Water Street, Suite 800 Po Box 997, Halifax, NS B3J 2X2, Canada
NPS Pharma Canada Inc.	Canada	CAD Common — nil par value	1959 Upper Water St., Suite 800, P.O. Box 997, Halifax, NS B3J 2X2, Canada
Shire IP Services Corporation	Canada	CAD Common — no par value	1959 Upper Water Street, Suite 900, P.O. Box 997, Halifax, NS B3J 2X2, Canada
Shire Pharma Canada ULC	Canada	CAD Class A Common — no par value	1000 Cathedral Place, 925 West Georgia Street, Vancouver, BC BC V6C 3L2, Canada
Shire 2005 Investments Limited	Cayman Islands	£1.00 Ordinary	Maples Corporate Services Limited, PO Box 309G/T, Ugland House, South Church Street, George Town, Grand Cayman, KY1 1104, Cayman Islands
Shire Finance Limited	Cayman Islands	US$1.00 Founder	Maples Corporate Services Limited, PO Box 309G/T, Ugland House, South Church Street, George Town, Grand Cayman, KY1 1104, Cayman Islands
Baxalta Chile SpA	Chile	Common — no par value	Avenida Mexico 715, Santiago, Chile
Shire Chile SpA	Chile	Chilean Peso Ordinary No Par Value	Miraflores 222, piso 28, comuna de Santiago, Chile
Baxalta BioScience (Shanghai) Co. Ltd.	China	Equity Interest	Room 1706, 17/F, Building 1, No. 18 Taigu Road, China (Shanghai) Pilot Free Trade Zone

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Baxalta Hong Kong Limited	China	Ordinary Shares — no par value	1401 Hutchison House, 10 Harcourt Road, Hong Kong
Shire (Shanghai) Pharmaceuticals Consultancy Co., Ltd.	China	€140,000.00 Equity Interest	Room 5120, 51st Floor, Raffles Centre, 268 XiZang Road, HuangPu District, Shanghai, China
Baxalta Colombia S.A.S.	Colombia	COP $1.000 Common	Avenida Calle 82 No. 10 50 P 5. Bogotá, Colombia
Shire Colombia S.A.S.	Colombia	COP1,000.00 Common	Carrera 11A n° 94 45 Oficina 702, Bogota, Colombia
Baxalta BioScience Costa Rica S.R.L.	Costa Rica	CRC100.00 Ordinary	3er piso, Centro Corporativo Internacional Paseo Colon San Jose, Costa Rica
Shire društvo s ograničenom odgovornošć u za trgovinu i usluge	Croatia	HRK20,000.00 Ordinary	Ljudevita Gaja 35, 10 000 Zagreb, Croatia
SG Biotech Limited******	Cyprus	Class A shares EUR 1.00 — 51.00%	Dimikritou, 15 Panaretos Eliana Complex Flat/Office 104, Potamos. Gemasogeias, 4041, Limassol, Cyprus
		Class B shares EUR 1.00 — 49.00%	
Baxalta Czech spol. S.R.O.	Czech Republic	CZK Kč1,000 capital	Karla Englise 3201/6, Smichov, 15000 Prague 5, Czech Republic
Shire Czech S.R.O.	Czech Republic	CZK1,000.00 Ordinary	U Centre, Dejvice, Evropska 136/810, Prague 6, 160 12, Czech Republic
Baxalta Denmark A/S	Denmark	DKK kr1,000 Common	Tobaksvejen 2A, Søborg, Gladsaxe, 2860, Denmark
Shire Denmark ApS	Denmark	DKK1,000.00 Ordinary	Havneholmen 29, 1561, Copenhagen V, Denmark
Baxalta-Ecuador S.A.	Ecuador	U.S.D $1.00 Common	Av. Amazonas N26-117, Quito — Ecuador
Baxalta Estonia OU	Estonia	€2, 501 Common	Mediq Eesti OÜ, Kungla 2, 76505 Saue, TALLINN, Estonia
Baxalta Finland Oy	Finland	Ordinary no par value	Tammasaarenkatu 7, 00180 PL 119 Helsinki, Finland
Shire Finland Oy	Finland	€1.00 Ordinary	c/o BDO Oy, Vattuniemenranta 2, Helsinki, 00210, Finland
Baxalta France S.A.S.	France	€1 Common	Immeuble Pacific, 11-13 cours Valmy, 92800 Puteaux, France
Shire France S.A.S.	France	€15.00 Ordinary	112 avenue Kléber, 75116 Paris, France
Baxalta Deutschland GmbH	Germany	€1,00	Edisonstrasse 2, 85716 Unterschleißheim, Germany
Jerini Ophthalmic Holding GmbH	Germany	€ Ordinary	Friedrichstrasse 149, 10117, Berlin, Germany
Shire Central & Eastern Europe GmbH	Germany	€ Ordinary	Friedrichstrasse 149, 10117, Berlin, Germany
Shire Deutschland GmbH	Germany	€25,565.60 Common Stock	Friedrichstrasse 149, 10117, Berlin, Germany
Shire Deutschland Investments GmbH	Germany	€ Ordinary no par value	Friedrichstrasse 149, 10117, Berlin, Germany
Shire Orphan Therapies GmbH	Germany	€1.00 Ordinary	Friedrichstrasse 149, 10117, Berlin, Germany
SuppreMol GmbH	Germany	€1.00 Ordinary	Am Klopferspitz 19a, 82152 Martinsried, Germany
Baxalta BioScience Greece Single Member LLC	Greece	€10.00 Common	47 M. Antypa Str., Irakleion, Greece
Shire Hellas Pharmaceuticals Import Export and Marketing S.A.	Greece	€100.00 Ordinary	38 Vasilleos Konstantinou Avenue and Aminta Street (1/F), Athens, 116.35, Greece
Baxalta Guatemala, Sociedad Anónima	Guatemala	Quetzales Q100 Common	16 Calle 0-55, Zona 10 Edificio Torre Internacional Nivel 9 Guatemala, Guatemala
Baxalta Hungary Limited Liability Company	Hungary	Equity Interest	1138 Budapest, Népfürdő utca 22
Shire Hungary Kft	Hungary	Equity Interest	Kőér utca 2/A. C. ép., Budapest, 1103, Hungary
Baxalta BioScience India Private Limited	India	INR 10 Equity shares	Plot No.183, Sector No.5, IMT Manesar, Gurgaon 122050, Haryana, India
Baxalta Ireland Financing Limited	Ireland	€1.00 Ordinary	Unit 7 Deansgrange Business Park, Deansgrange, Blackrock, Co. Dublin, Ireland
Navillus Insurance Company DAC	Ireland	U.S.D$10.00 Ordinary	Third Floor, The Metropolitan Building, James Joyce Street, Dublin 1, Ireland
NPS Pharma Holdings Limited	Ireland	€1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
NPS Pharma International Limited	Ireland	€1.00 Ordinary	70 Sir John Rogerson's Quay, Dublin 2, Ireland
Pharma International Insurance Designated Activity Company (DAC)	Ireland	US$1.00 Ordinary	3rd Floor, The Metropolitan Building, James Joyce Street, Dublin 1, Republic of Ireland
Shire Acquisitions Investments Ireland Designated Activity Company (DAC)	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Biopharmaceuticals Ireland Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Holdings Ireland U.C.	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland

31. List of subsidiaries (continued)

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Shire Holdings Ireland No.2 Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Holdings Ireland No.3 Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Intellectual Property Ireland Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Ireland Finance Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Ireland Finance Trading Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Ireland Investment Limited	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Ireland Premacure Investment U.C.	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceutical Holdings Ireland Limited*	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceutical Investment Trading Ireland U.C.	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceutical Investments 2008 U.C.	Ireland	US$0.0002 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceutical Services Ireland Limited	Ireland	€1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceuticals Finance Ireland Unlimited Company	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceuticals International U.C.	Ireland	US$1.00 A Ordinary — 20%	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
		US$1.00 B Ordinary — 20%	
		US$1.00 C Ordinary — 20%	
		US$1.00 D Ordinary — 20%	
		US$1.00 Preferred — 20%	
Shire Pharmaceuticals Investments 2007 U.C.	Ireland	US$1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceuticals Ireland Limited	Ireland	€1.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire Pharmaceutical Israel Ltd	Israel	Ordinary ILS NPV	58 Harakevet, Tel Aviv, Israel
Baxalta Italy Holding S.r.l.	Italy	€26,477,967.00	Rome (RM), 00144 Piazzale dell'Industria No. 20, Italia
Baxalta Italy S.r.l.	Italy	€1,668,778.00	Rome (RM), 00144 Piazzale dell'Industria No. 20, Italia
Baxter Manufacturing S.p.A.	Italy	€25.00 Common	Rome (RM), 00144 Piazzale dell'Industria No. 20, Italia
		€25.00 Treasury	
Shire Italia S.p.A.	Italy	€0.51 Ordinary	4th Floor, via Mike Bongiorno n.13, 20124 Milano, Italy
Baxalta Japan Limited	Japan	No par value Common	1-23-1 Toranomon, Minato-ku, Tokyo 105-6320, Japan
Shire Japan K.K.	Japan	JPY Ordinary	Tekko Building 21st Floor, 1-8-2 Marunouchi, Chiyoda-ku, Tokyo 100-0005
Shire Biopharmaceuticals Holdings Ireland Limited	Jersey	CHF1,000.00 Ordinary	22 Grenville Street, St Helier, JE4 8PX, Jersey
Shire Jersey Limited	Jersey	£1.00 Ordinary	23 Grenville Street, St Helier, JE4 8PX, Jersey
Baxalta Kazakhstan LLP	Kazakhstan	Members	Medeuskij District, 105 Dostyk Ave., 3rd floor, Office 300, Almaty, Republic of Kazakhstan 050051
Baxalta Korea Ltd.	Korea, Republic of	KRW5,000.00 Common	20th FL, 47, Jong-ro, Jongno-gu, Seoul, Korea (Gongpyeong-dong, Standard Chartered Bank Building)
Shire Pharma Korea Yuhan Hoesa	Korea, Republic of	KRW10,000.00 Ordinary	Yeoksam-dong, 16th Floor, 134 Tehaeran-ro, Gangnam-gu, Seoul, Republic of Korea
Baxalta Lithuania U.A.B.	Lithuania	€100 Ordinary	Jogailos g. 9, Vilnius, LT-01116 Lithuania
Shire Holdings Europe No.2 S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Holdings Luxembourg S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Luxembourg Finance S.à.r.l.	Luxembourg	US$1.00 Mandatory Redeemable Preference — <0.01%	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
		US$1.00 Ordinary — >99.99%	

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Shire Luxembourg Intellectual Property No.2 S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Luxembourg Intellectual Property No.3 S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Luxembourg Intellectual Property S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Luxembourg S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Pharmaceuticals International Finance S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Shire Sweden Holdings S.à.r.l.	Luxembourg	US$1.00 Ordinary	1, rue Hildegard von Bingen, L-1282, Grand-Duchy of Luxembourg, Luxembourg
Baxalta Malaysia SDN. BHD.	Malaysia	RM1.00 Ordinary	Level 21, Suite 21.01, The Gardens South Tower, Mid Valley City, Lingkaran Syed Putra, 59200 Kuala Lumpur.
Baxalta Mexico S. de R.L. de C.V.	Mexico	Equity Interest	Avenida Presidente Masarik 111 — Piso 4, Del. Miguel Hidalgo Mexico, D.F. 11570, Mexico
Baxalta S. de R.L. de C.V.	Mexico	Equity Interest	Avenida Presidente Masarik 111 — Piso 4, Del. Miguel Hidalgo Mexico, D.F. 11570, Mexico
Shire Pharmaceuticals Mexico SA de CV	Mexico	MXN1.00 Ordinary — 0.23%	Paseo de Tamarindo # 90, Torre 1 Piso 7, Colonia Bosques de Las Lomas, Delegacion Cuajimalpa CP05120, Mexico DF
		MXN1.00 Variable Capital — 99.77%	
Baxalta Holding B.V.	Netherlands	€ 0.01	Kobaltweg 49, 3542 CE Utrecht, The Netherlands
Baxalta Investments B.V.	Netherlands	€ 0.01	Kobaltweg 49, 3542 CE Utrecht, The Netherlands
Baxalta Netherlands B.V.	Netherlands	€ 0.01	Kobaltweg 49, 3542 CE Utrecht, The Netherlands
Baxalta Netherlands Holding B.V.	Netherlands	€ 0.01	Kobaltweg 49, 3542 CE Utrecht, The Netherlands
Baxalta Netherlands Investment B.V.	Netherlands	€ 0.01	Kobaltweg 49, 3542 CE Utrecht, The Netherlands
Shire Holdings Europe B.V.	Netherlands	€100.00 Ordinary	5 Riverwalk, Citywest Business Campus, Dublin 24, Ireland
Shire International Licensing B.V.	Netherlands	€100.00 Ordinary	Toren 6, Level C, World Trade Centre, Strawinskylaan 659, 1077 XX, Amsterdam, Netherlands
Shire Licensing V.O.F.	Netherlands	Members not shares	Strawinskylaan 659, 1077 XX Amsterdam, Netherlands
Tanaud International B.V.	Netherlands	€450.00 Ordinary	Prins Bernardplein 200, 1097 JB, Amsterdam, Netherlands
Baxalta New Zealand Limited	New Zealand	Ordinary no par value	33 Vestey Drive, Mount Wellington, Auckland, 1060, New Zealand
Shire New Zealand Limited	New Zealand	NZD1.00 Ordinary	Crowe Horwath, Level 29, 188 Quay Street, Auckland Central, Auckland, 1010, NZ, New Zealand
Baxalta Norway AS	Norway	NOK kr150 Ordinary	Gjerdrumsvei 11, 0484 Oslo, Norway
Shire Norway AS	Norway	NOK1,000.00 Ordinary	c/o BDO Accounting AS, PO Box 1704, Vika, Oslo, N-0121, Norway
Baxalta Panama S.A.	Panama	U.S.D $1.00 Common	P.H. Torres De Las Américas, Torre C, Nivel 27, Oficina 2703 C-2704C, Panama
Baxalta Poland sp. Z o.o	Poland	PLN zł50 Common	Pl. Pisudskiego 1, 00-078 Warsaw, Poland
Shire Polska Sp. Z o.o	Poland	PLN100.00 Ordinary	ul. Postępu 12, 02-676 Warsaw, Poland
Baxalta Portugal, Unipessoal, Ltda.	Portugal	€300.001 Ordinary	Sintra Business Park, Zona Industrial da Abrunheira, Edificio 10, 2710-089 Sintra, Portugal
Shire Pharmaceuticals Portugal, Lda	Portugal	€ Ordinary	Avenida da República, 50, 10º, Nossa Senhora de Fátima, 1069 211, Lisboa, Portugal
Shire ViroPharma Incorporated	Puerto Rico	US$0.01 Ordinary	Oriental Street, 254 Munoz Rivera Avenue P-1 Floor, Hato Reym, San Juan, 00918, Puerto Rico
Baxalta S.R.L.	Romania	Ordinary RON10.01	90 Calea 13 Septembrie, 7th floor, room no. 7.14, 5th District, Bucharest, Romania
Shire Romania SRL	Romania	Ordinary RON10.00	Bucureşti Sectorul 1, Calea Floreasca nr. 169A, CORP A, Etaj 4, BIROUL NR. 2090, Romania
SG Biotech Joint Stock Company*******	Russian Federation	Ordinary RUR1.00	Office 26, 18 Vladimirskaya Street, Volginsky Village, Petushinsky District, Vladimirsky Region, 601125, Russian Federation
Shire Rus Limited Liability Company	Russian Federation	Partnership Interest	Office 1017 — 1020, Floor 10, 3 Smolenskaya Square, 121099, Moscow, Russian Federation

31. List of subsidiaries (continued)

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Shire doo Beograd	Serbia	RSD1,111.99 Equity Interest	Uskočka 8/IV, 11 000 Belgrade, Serbia
Baxalta Singapore Pte. Ltd.	Singapore	Ordinary no par value	8 Marina Boulevard, #15-01, Marina Bay Finance Centre, Tower 1 Singapore 018981
Shire Singapore Pte. Ltd.	Singapore	SGD1.00 Ordinary	21 Merchant Road, #04-01 Royal Merukh S.E.A. Building, Singapore, 058267, Singapore
Baxalta Slovakia s.r.o.	Slovakia	Participation Interest	Palisády 36, 811 06 Bratislava, Slovak Republic.
Shire Slovakia s.r.o.	Slovakia	€5,000 Equity Interest	Zochova 6-8, mestská časť Staré Mesto 811 03, Bratislava, Slovakia
Baxalta Biofarmacevtska druzba d.o.o	Slovenia	Capital contribution	Zelezna cesta 18, 1000 Ljubljana, Slovenia
Shire Pharmaceuticals South Africa (Pty) Ltd	South Africa	Ordinary ZAR NPV	Mazars House, 54 Glenhove Road, Melrose Estate, Johannesburg, 2196 — South Africa
Baxalta Spain S.L.	Spain	€0.01 Ordinary	Parque Empresarial San Fernando de Henares, Edificio Londres, San Fernando de Henares, 28830 Madrid
Shire Pharmaceuticals Iberica S.L.	Spain	€10.00 Ordinary	4th Floor, Edificio Partenon, Avenida del Partenon 16-18, 28042, Madrid, Spain
Baxalta Sweden AB	Sweden	SEK kr1.00	c/o Baxter Sweden AB Box 63, 164 94 Kista Sweden
DuoCort Pharma AB	Sweden	SEK100.00 Ordinary	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
Premacure AB	Sweden	SEK1.00 Ordinary	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
Premacure Uppsala AB	Sweden	SEK1.00 Ordinary	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
Shire Human Genetic Therapies AB	Sweden	SEK10.00 Common	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
Shire Sweden AB	Sweden	SEK100.00 Ordinary	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
ViroPharma AB	Sweden	SEK1.00 Ordinary	Vasagatan 7, 6 tr, SE — 111 20 Stockholm, Sweden
Baxalta Export Services GmbH	Switzerland	CHF 100.00 Quota	Thurgauerstrasse 130, 8152 Glattpark (Opfikon), Switzerland
Baxalta GmbH	Switzerland	CHF 20.00 Ordinary Quota	Thurgauerstrasse 130, 8152 Glattpark (Opfikon), Switzerland
Baxalta Manufacturing S.à.r.l.	Switzerland	CHF 2,000,000.00 Quota	Route de Pierre-à-Bot 111, 2000 Neuchâtel, Switzerland
Baxalta Recombinant S.à.r.l.	Switzerland	CHF 100.00 Quota	Route de Pierre-à-Bot 111, 2000 Neuchâtel, Switzerland
Baxalta Schweiz AG	Switzerland	CHF 100.00 Quota	Thurgauerstrasse 130, 8152 Glattpark (Opfikon), Switzerland
SG Biotech S.à.r.l.*****	Switzerland	CHF 100.00 Quota	c/o Shire Orphan and Rare Diseases GmbH, Zahlerweg 10, 6300 Zug, Switzerland
Shire International Finance GmbH	Switzerland	CHF100.00 Quota	Zahlerweg 10, CH-6300, Zug, Switzerland
Shire International GmbH	Switzerland	CHF1,000.00 Ordinary	Zahlerweg 10, CH-6300, Zug, Switzerland
Shire Orphan and Rare Diseases GmbH	Switzerland	CHF100.00 Quotas	Zahlerweg 10, CH-6300, Zug, Switzerland
Shire Switzerland GmbH	Switzerland	CHF100.00 Ordinary	Zahlerweg 10, CH-6300, Zug, Switzerland
Baxalta Biopharmaceutical Ltd.	Taiwan	NT $1000.00 Common	15F., No. 216, Sec. 2, Dunhua S. Rd., Da-an Dist., Taipei 106, Taiwan (R.O.C.)
Taiwan Shire Limited Company	Taiwan	TWD5,000,000.00 Equity Interest	18F, No.460, Sec. 4 Xinyi Rd., Taipei City, Taiwan 110, Taiwan
Baxalta (Thailand) Limited	Thailand	THB 100 Ordinary	1550 Thanapoom Tower, 11th Floor, New Petchburi Road, Makkasan Sub-district, Ratchatewi District, Bangkok 10400
Baxalta Tunisia S.à.r.l.	Tunisia	DT 100.00 Common	21, Avenue Jugurtha Mutuelleville, 1002 Tunis Belvédère, Tunis
Eczacibasi Baxalta Hastane Urunleri Sanayi ve Ticaret A.S.****	Turkey	Group A shares TL 1.00 — 50.00%	Ayazağa Mah. Kemerburgaz Cad. No: 23 Sarıyer, Istanbul, Turkey
		Group B shares TL 1.00 — 50.00%	
Shire Ilac Ticaret Limited Sirketi	Turkey	TRL25.00 Ordinary	18th Floor, APA GIZ Plaza, Büyükdere Caddesi, No 191, 34330 Levent, Istanbul, Turkey
Baxalta Ukraine LLC	Ukraine	UAH Equity Interest	29 Berezniakivska St., Kyiv 02098, Ukraine
Shire Ukraine LLC	Ukraine	UAH Equity Interest	TC Gulliver, Sportyvna Square, 1a, Kiev, 01023, Ukraine
Auralis Limited	United Kingdom	£0.01 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Baxalta UK Holdco Limited	United Kingdom	£1.00 Ordinary	20 Kingston Road, Staines, UK, TW18 4LG
Baxalta UK Investments Limited	United Kingdom	£1.00 Ordinary	20 Kingston Road, Staines, UK, TW18 4LG
Baxalta UK Limited	United Kingdom	£1.00 Ordinary	20 Kingston Road, Staines, UK, TW18 4LG
Dyax Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Lumena Pharma UK Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Monmouth Pharmaceuticals Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
NPS Pharma UK Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Rybar Laboratories Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Biopharmaceuticals Holdings	United Kingdom	£0.05 Income Access — <0.01%	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
		£0.05 Ordinary — >99.99%	
		£0.05 Preferred Share — <0.01%	
		£0.05 Voting Share — <0.01%	
Shire Europe Finance	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Europe Limited	United Kingdom	US$1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Global Finance	United Kingdom	US$1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Holdings Europe Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Holdings UK Canada Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Holdings UK Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Human Genetic Therapies Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Human Genetic Therapies U.K. Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Investments & Finance (U.K.) Company	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Pharmaceutical Contracts Limited	United Kingdom	£0.01 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Pharmaceutical Development Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Pharmaceuticals Group	United Kingdom	£0.0001 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Pharmaceuticals Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire Pharmaceuticals Services Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire UK Investments Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Shire U.S. Investments	United Kingdom	US$1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Sigma-Tau Pharma Limited	United Kingdom	£1.00 Ordinary	20 Kingston Road, Staines, UK, TW18 4LG
Sparkleflame Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
The Endocrine Centre Limited	United Kingdom	£1.00 Ordinary	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
Viropharma Limited	United Kingdom	£1.00 Ordinary — 0.001%	Hampshire International Business Park, Chineham, Basingstoke, Hampshire, RG24 8EP
		£1.00 Redeemable Preference — 99.999%	
AesRX, LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801

31. List of subsidiaries (continued)

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Amsterdam Newco, Inc	United States	Common Stock US$0.01	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Armagen Technologies, inc***	United States	Series A preferred stock	26679 Agoura Rd #100, Calabasas, CA 91302, U.S.A.
Baxalta Export Corporation	United States	US$0.01 Ordinary	1209 Orange Street Wilmington, DE 19801
Baxalta Holdings LLC	United States	US$ — no par value	1200 Lakeside Drive, Bannockburn, IL 60015 U.S.A.
Baxalta Incorporated	United States	US$0.01 Ordinary	The Corporation Trust Company 1209 Orange Street, Corporation Trust Center Wilmington DE 19801 U.S.A.
Baxalta Mexico Holding LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801, U.S.A.
Baxalta Singapore Holding LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801, U.S.A.
Baxalta U.S. Inc.	United States	US$0.01 Ordinary	1200 Lakeside Drive, Bannockburn, IL 60015 U.S.A.
Baxalta World Trade LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801, U.S.A.
Baxalta Worldwide LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801, U.S.A.
BearTracks, Inc.	United States	US$0.001 Ordinary	1209 Orange Street Wilmington, DE 19801, U.S.A.
Bikam Pharmaceuticals, Inc.	United States	US$0.01 Ordinary	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
BioLife Plasma LLC	United States	US$ — no par value	1209 Orange Street Wilmington, DE 19801, U.S.A.
BioLife Plasma Services LP	United States	Partnership Interest	1200 Lakeside Drive, Bannockburn, IL 60015 U.S.A.
Cinacalcet Royalty Sub LLC	United States	US$10.00 Equity Interest	1209 Orange Street, Wilmington DE 19801, U.S.A.
Dyax Corp.	United States	Common Stock US$0.01	Corporation Trust Company, 1209 Orange Street, Corporation Trust Center, Wilmington DE 19801, U.S.A.
FerroKin BioSciences, Inc.	United States	US$0.01 Ordinary	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Foresight Biotherapeutics, Inc.	United States	US$0.01 Common Stock	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
JPT Peptide Technologies Inc	United States	US$1.00 Common Stock	C T Corporation System 4701 Cox Road — Suite 285 Henrico County Glen Allen, Virginia 23060-6802
Knight Newco 1, Inc.	United States	US$0.01 Common	1209 Orange Street, Wilmington DE 19801, U.S.A.
Laboratorios Baxalta S.A.	United States	US$0.01 Ordinary	1209 Orange Street Wilmington, DE 19801
Lotus Tissue Repair Inc	United States	US$0.001 Common — 29.641%	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
		US$0.001 Preferred — 70.359%	
Lumena Pharmaceuticals LLC	United States	US$ Ordinary — no par value	1209 Orange Street, Wilmington DE 19801, U.S.A.
Meritage Pharma, Inc.	United States	US$0.001 Common Stock	300 Shire Way, Lexington, MA 02421 U.S.A.
NPS Pharma Holdings U.S., Inc.	United States	US$0.0001 Common	1209 Orange Street, Wilmington DE 19801, U.S.A.
NPS Services, L.C.	United States	Partnership Interest	The Corporation Trust Company of Nevada, 701 S. Carson Street, Suite 200, Carson City NV 89701, U.S.A.
Rare Disease Charitable Foundation	United States	Charitable Foundation	C T Corporation System 116 Pine Street — Suite 320 Dauphin County Harrisburg, Pennsylvania 17101
SARcode Bioscience Inc.	United States	US$0.01 Ordinary	The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire Brandywine LLC	United States	US$1.00 Ordinary	The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire Development LLC	United States	US$ Common — nil par value	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire Executive Services LLC	United States	US$ — no par value	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire Holdings U.S. AG	United States	US$0.01 Common stock	The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire Human Genetic Therapies Securities Corporation	United States	US$0.01 Ordinary	The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, U.S.A.

Name	Country	Share class and proportion of authorized nominal value represented (if not 100%)	Address
Shire Human Genetic Therapies, Inc.	United States	US$0.01 Common Stock	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Shire Incorporated	United States	US$ Common — no par value	The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire Invicta U.S. Inc	United States	US$0.01 common stock	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Shire LLC	United States	US$ — no par value	C T Corporation System 306 West Main Street — Suite 512 Franklin County Frankfort, Kentucky 40601
Shire North American Group Inc.	United States	US$0.01 Common Stock	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire Orphan Therapies LLC	United States	US$0.001 Common Stock	1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire Pharmaceutical Development U.S. Inc	United States	US$0.01 Common Stock	CSC — Lawyers Incorporating Service Company, 11 E Chase Street, Baltimore MD 21202, U.S.A.
Shire Pharmaceuticals LLC	United States	US$ Common — no par value	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Shire Properties U.S.	United States	Partnership Interest	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire Regenerative Medicine LLC*	United States	US$0.01 Common	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Shire Regulatory Inc	United States	US$ Common — no par value	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire Supplies U.S. LLC	United States	Partnership Interest	Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington DE 19808, U.S.A.
Shire U.S. Holdings LLC	United States	US$0.01 Ordinary	The Corporation Trust Company, Corporation Trust Centre, 1209 Orange Street, Wilmington, New Castle County DE 19801, U.S.A.
Shire U.S. Inc	United States	US$ Common — no par value	The Corporation Trust Company 1209 Orange Street — Corporation Trust Center New Castle County Wilmington, Delaware 19801
Shire U.S. Investment Inc	United States	US$1.00 Common	1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire U.S. Manufacturing Inc	United States	US$1.00 Common	CSC — Lawyers Incorporating Service Company, 11 E Chase Street, Baltimore MD 21202, U.S.A.
Shire ViroPharma Incorporated	United States	US$0.01 Common	1209 Orange Street, Wilmington DE 19801, U.S.A.
Shire-NPS Pharmaceuticals, Inc.	United States	US$0.01 Common Stock	The Corporation Trust Center 1209 Orange Street, The City of Wilmington, County of New Castle, U.S.A.
VCO Incorporated	United States	US$0.01 Ordinary	1209 Orange Street, Wilmington, DE 19801, U.S.A.
Viropharma Biologics Inc	United States	US$0.01 Ordinary	1209 Orange Street, Wilmington, DE 19801, U.S.A.
Viropharma Holdings LLC	United States	Sole member	1209 Orange Street, Wilmington, DE 19801, U.S.A.
VPDE Incorporated	United States	US$0.01 Ordinary	1105 N. Market Street, Suite 1300, Wilmington, DE 19801, U.S.A.
VPINT Incorporated	United States	US$0.01 Ordinary	1105 N. Market Street, Suite 1300, Wilmington, DE 19801, U.S.A.
Shire Pharmaceuticals Investments (British Virgin Islands) Limited	Virgin Islands, British	US$1.00 Ordinary — 97.708%	Romasco Place, Wickhams Cay 1, P. O. Box 3140, Road Town, Tortola, VG1110, Virgin Islands, British
		US$1.00 Preference — 2.292%	

With the exception of those entities indicated, all subsidiary undertakings of Shire plc are 100% indirectly beneficially owned.
All subsidiary undertakings are consolidated in the consolidated financial statements of Shire plc.
*these entities are 100% directly beneficially owned
**this entity is 96% indirectly beneficially owned
***this entity is 22.13% indirectly beneficially owned
****this entity is 50.00% indirectly beneficially owned
*****this entity is 51.00% indirectly beneficially owned
******this entity is 26.01% indirectly beneficially owned
*******this entity is 13.26% indirectly beneficially owned

31. List of subsidiaries (continued)

Company Name	Location of Branch/Representative Office
Baxalta Export Services GmbH	Algeria
Shire (Shanghai) Pharmaceuticals Consultancy Co. Ltd.	China
Baxalta Export Services GmbH	Egypt
Baxalta UK Limited	Ireland
Shire Holdings Europe B.V.	Ireland
Shire Luxembourg Intellectual Property No.2 S.à.r.l.	Ireland
Shire Luxembourg Intellectual Property No.3 S.à.r.l.	Ireland
Shire Luxembourg Intellectual Property S.à.r.l.	Ireland
Shire Biopharmaceuticals Holdings Ireland Limited	Ireland
Shire plc	Ireland
Baxalta GmbH	Norway
Shire Pharmaceuticals Ireland Limited	Norway
Baxalta World Trade LLC	Puerto Rico
Shire društvo s ograničenom odgovornošću za trgovinu i usluge	Romania
Shire Pharmaceuticals Contracts Limited	Russia
Baxalta Export Services GmbH	Saudi Arabia
Baxalta Manufacturing S.à.r.l.	Singapore
Shire Sweden Holdings S.à.r.l.	Sweden
Shire Pharmaceuticals Ireland Limited	Switzerland
Baxalta Export Services GmbH	United Arab Emirates
Shire Services BVBA	United Kingdom
Shire Holdings Ireland UC	United Kingdom
Shire Holdings Limited	United Kingdom
Shire Pharmaceuticals Investments 2007 UC	United Kingdom
Baxalta Singapore Pte Ltd	Vietnam