AstraZeneca

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AstraZeneca Annual Report and Form 20-F Information 2016

Preparation of the Financial Statements and Directors' Responsibilities

The Directors are responsible for preparing this Annual Report and Form 20-F Information and the Group and Parent Company Financial Statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare Group and Parent Company Financial Statements for each financial year. Under that law they are required to prepare the Group Financial Statements in accordance with IFRSs as adopted by the EU and applicable law and have elected to prepare the Parent Company Financial Statements in accordance with UK Accounting Standards, including FRS 101 'Reduced Disclosure Framework' and applicable law.

Under company law, the Directors must not approve the Financial Statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Parent Company and of their profit or loss for that period. In preparing each of the Group and Parent Company Financial Statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently
- make judgements and estimates that are reasonable and prudent
- for the Group Financial Statements, state whether they have been prepared in accordance with IFRSs as adopted by the EU
- for the Parent Company Financial Statements, state whether FRS 101 has been followed, subject to any material departures disclosed and explained in the Parent Company Financial Statements
- prepare the Financial Statements on the going concern basis unless it is inappropriate to presume that the Group and the Parent Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Parent Company's transactions and disclose with reasonable accuracy at any time the financial position of the Parent Company and enable them to ensure that its Financial Statements comply with the Companies Act 2006. They have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities.

Under applicable law and regulations, the Directors are also responsible for preparing a Directors' Report, Strategic Report, Directors' Remuneration Report, Corporate Governance Report and Audit Committee Report that comply with that law and those regulations.

The Directors are responsible for the maintenance and integrity of the corporate and financial information included on our website. Legislation in the UK governing the preparation and dissemination of Financial Statements may differ from legislation in other jurisdictions.

Directors' responsibility statement pursuant to DTR 4

The Directors confirm that to the best of our knowledge:

- The Financial Statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation taken as a whole.
- The Directors' Report includes a fair review of the development and performance of the business and the position of the issuer and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.

On behalf of the Board of Directors on 2 February 2017

Pascal Soriot
Director

Directors' Responsibilities for, and Report on, Internal Control over Financial Reporting

The Directors are responsible for establishing and maintaining adequate internal control over financial reporting. AstraZeneca's internal control over financial reporting is designed to provide reasonable assurance over the reliability of financial reporting and the preparation of consolidated Financial Statements in accordance with generally accepted accounting principles.

Due to its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

The Directors assessed the effectiveness of AstraZeneca's internal control over financial reporting as at 31 December 2016 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013). Based on this assessment, the Directors believe that, as at 31 December 2016, the internal control over financial reporting is effective based on those criteria.

KPMG LLP, an independent registered public accounting firm, has audited the effectiveness of internal control over financial reporting as at 31 December 2016 and, as explained on page 134, has issued an unqualified report thereon.

Auditor's Reports on the Financial Statements and on Internal Control over Financial Reporting (Sarbanes-Oxley Act Section 404)

The report set out below is provided in compliance with International Standards on Auditing (UK and Ireland). KPMG LLP has also issued reports in accordance with standards of the Public Company Accounting Oversight Board in the US, which will be included in the Annual Report on Form 20-F to be filed with the US Securities and Exchange Commission. Those reports are unqualified and include opinions on the Group Financial Statements and on the effectiveness of internal control over financial reporting as at 31 December 2016 (Sarbanes-Oxley Act Section 404). The Directors' statement on internal control over financial reporting is set out on page 133. KPMG LLP has also reported separately on the Company Financial Statements of AstraZeneca PLC and on the information in the Directors' Remuneration Report that is described as having been audited. This audit report is set out on page 197.

Independent Auditor's Report to the Members of AstraZeneca PLC only

Opinions and conclusions arising from our audit

1 Our opinion on the Group Financial Statements is unmodified

We have audited the Group Financial Statements of AstraZeneca PLC for the year ended 31 December 2016 set out on pages 138 to 196. In our opinion the Group Financial Statements:

- give a true and fair view of the state of the Group's affairs as at 31 December 2016 and of its profit for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union (EU); and
- have been prepared in accordance with the requirements of the Companies Act 2006 and Article 4 of the IAS Regulation.

2 Separate opinion in relation to IFRSs as issued by the International Accounting Standards Board (IASB)

As explained in the Group accounting policies section of the Group Financial Statements set out on pages 142 to 146, the Group, in addition to complying with its legal obligation to apply IFRSs as adopted by the EU, has also applied IFRSs as issued by the IASB.

In our opinion, the Group Financial Statements comply with IFRSs as issued by the IASB.

3 Our assessment of risks of material misstatement

We summarise below the risks of material misstatement that had the greatest effect on our audit (in decreasing order of audit significance), our key audit procedures to address those risks and our findings from those procedures in order that the Company's members as a body may better understand the process by which we arrived at our audit opinion. Our findings are based on procedures undertaken in the context of and solely for the purpose of our statutory audit opinion on the Group Financial Statements as a whole and consequently are incidental to that opinion, and we do not express discrete opinions on separate elements of the Group Financial Statements.

Rebates and chargebacks in the US ($2,812m) (2015: $3,307m) Risk vs 2015: ◄►

Refer to page 98 (Audit Committee Report), page 142 (accounting policy) and page 77 (financial risk management).

The risk

The Group makes sales to customers in the United States of America ('US') that fall under certain commercial and governmental reimbursement schemes, of which the most significant are Medicaid and Medicare. The resulting rebates and chargebacks, which are deducted in arriving at revenue, are complex and require significant judgement and estimation in establishing an appropriate accrual at year-end.

Our response

Our principal audit procedures included testing the Group's controls surrounding the deductions made to US revenue for rebates and chargebacks, and key manual and systems-based controls in the order-to-cash transaction cycle. Our audit work involved testing key controls including reconciliations between sales systems and the general ledger and those over claims, credits and system accrual rates. We also assessed the accuracy of the calculation of the accrual, corroborated inputs and key assumptions, both to internal and independent sources including sales contracts with customers, performed an analysis of the accrual balance and deductions to sales year on year, corroborating movements compared with expectations and payment claims, and considered the historical accuracy of the accrual. We also assessed the adequacy of the Group's disclosure of its rebates and chargebacks policy, the judgement involved, and other related disclosures.

Our findings

In determining the appropriateness of the deductions made in relation to US rebates and chargebacks, there is room for judgement and we found that within that, the assumptions used and the resulting estimates were balanced (2015: balanced). We also found no errors in the year-end US rebate accrual calculations. We found the disclosures on US rebates and chargebacks to be ample (2015: proportionate).

Carrying value of intangible assets ($27,586m) (2015: $22,646m) Risk vs 2015: ◄►

Refer to page 98 (Audit Committee Report), page 145 (accounting policy), page 157 (financial disclosures) and page 80 (financial risk management).

The risk

The Group has significant intangible assets arising from the acquisition of products both launched and in development. Recoverability of these assets is based on forecasting and discounting future cash flows, which are inherently highly judgemental. For products in development, the main risk is achieving successful trial results and obtaining required clinical and regulatory approvals. For launched products, the key risk is the ability to successfully commercialise the individual product concerned.

Our response

Our principal audit procedures included testing the Group's controls surrounding intangible asset impairments and evaluating the Group's assumptions used in assessing the recoverability of intangible assets, in particular, revenue and cash flow projections and the probability of obtaining regulatory approval for in-development assets. We also performed sensitivity analysis over individual intangible asset models, where we considered there to be a higher risk of impairment, to assess the level of sensitivity to key assumptions and focus our work in those areas. Our procedures for products in development included assessing the reasonableness of the Group's assumptions regarding probability of obtaining regulatory approval through consideration of the current phase of development and comparison to industry practice. We also interviewed a range of key research, development, and commercial personnel to corroborate these assumptions. For both launched and in-development products we challenged management's key assumptions regarding the size of the therapeutic area market and the product's projected share of this market through both discussion with a range of commercial personnel and comparison to external scientific literature and market research. Our procedures also included challenging internally generated evidence by reviewing analyst forecasts, and retrospective assessment of the accuracy of the Group's projections. We also assessed the adequacy of related disclosures in the Group's financial statements.

Our findings

We found the Group's assumptions and the resulting estimates to be balanced (2015: balanced). We found that the disclosures proportionately (2015: proportionately) describe the inherent degree of subjectivity in the estimates and the potential impact on future periods of revisions to these estimates.

Acquisition of Acerta Pharma (Intangible asset – $7,307m; option liability – $1,901m) (2015: n/a) (New risk)

Refer to page 143 (accounting policy), page 173 (financial disclosures) and page 79 (financial risk management).

The risk

In February 2016, the Group completed the acquisition of 55% of Acerta Pharma. The acquisition agreement included a mechanism providing Acerta shareholders the option to sell, and the Group the option to buy, the outstanding 45% of shares in Acerta. There is significant judgement involved in selecting the underlying assumptions used to value both the acalabrutinib asset in development and the option liability identified and recognised on acquisition. The assumptions with the greatest impact on the valuations are the discount rate and probability that acalabrutinib obtains approval in the US and Europe.

Our response

Our principal audit procedures included testing the Group's controls surrounding the selection and review of significant assumptions within the forecast cash flows used for the valuation of each of the acalabrutinib asset and option liability. We engaged our valuation specialists to assist in our review of the discount rate, which involved comparing the methodology used to the methodology KPMG would apply in a similar transaction and challenging the market inputs used based on observed market data. In addition, we challenged the probability of obtaining regulatory approval by interviewing a range of key research, development, and commercial personnel as well as corroborating the outcome of acalabrutinib's Phase I/II clinical trials. We considered whether adjustments to the original valuations were appropriate in light of additional information about assumptions that have become available in the measurement period to date. We also assessed the adequacy of the Group's disclosure of the judgements involved in valuing the acalabrutinib asset and the option liability, and related disclosures.

Our findings

We found the Group's assumptions and the resulting estimates to be balanced. We found that the disclosures proportionately describe the nature of the transaction, the judgements taken, and their impact on the valuation of the acalabrutinib asset and the option liability recognised.

Tax provisioning ($1,327m) (2015: $1,734m)
Risk vs 2015: ◄►

Refer to page 98 (Audit Committee Report), page 143 (accounting policy), page 191 (financial disclosures) and page 81 (financial risk management).

The risk

Due to the Group operating in a number of different tax jurisdictions and the complexities of transfer pricing and other international tax legislation, accruals for tax contingencies require the Directors to make judgements and estimates in relation to subjective tax issues and exposures.

Our response

In this area our principal audit procedures included testing the Group's controls surrounding tax provisioning, reviewing settlement correspondence between the Group and the relevant tax authorities, and the assistance of our own local and international tax specialists in analysing and challenging the assumptions used by management to determine tax provisions, based on our knowledge and experience of the application of the relevant legislation by authorities and courts. We also assessed the adequacy of the Group's disclosures in respect of tax and uncertain tax positions.

Our findings

We found the Group's estimate of the amounts to be recognised as tax liabilities to be conservative (2015: conservative) and that the disclosures provide a proportionate (2015: proportionate) description of the current status of uncertain tax positions.

Litigation and contingent liabilities (provisions of $438m) (2015: $357m)
Risk vs 2015: ◄►

Refer to page 98 (Audit Committee Report), page 145 (accounting policy), page 185 (financial disclosures) and page 80 (financial risk management).

The risk

In the normal course of business, litigation and contingent liabilities may arise from product-specific and general legal proceedings, from guarantees or from government investigations. The amounts involved are potentially material and the application of accounting standards to determine the amount, if any, to be provided as a liability is inherently subjective.

Our response

Having made enquiries of Directors and in-house legal counsel to obtain their view on the status of significant legal matters, our principal audit procedures included testing the Group's controls surrounding litigation and contingent liabilities, obtaining formal confirmations from the Group's external counsel for all significant legal cases, and discussions with external counsel where necessary. In addition we used our own forensic and compliance specialists to assess the Group's compliance reports to identify actual and potential non-compliance with laws and regulations, both those specific to the Group's business and those relating to the conduct of business generally. We then analysed correspondence with regulators, considered legal expenses incurred during the year, monitored external sources and considered assessments made by management of the probability of defending any litigation and the reliability of estimating any obligation. We also assessed whether the Group's disclosures detailing significant legal proceedings adequately disclose the potential liabilities of the Group.

Our findings

Whilst the outcome of these litigation matters is inherently uncertain in each case, we found that the Group applied balanced judgements (2015: balanced), on a case by case basis, in assessing whether or not a provision should be recognised. We found that the assumptions used and the resulting liability recorded to be balanced (2015: balanced). We found that the

Group gives ample disclosure (2015: ample) on the potential liability in excess of that recognised in the Financial Statements and the significant but unquantifiable contingent liability in respect of these litigation matters.

Post-retirement benefits ($2,186m) ($2,186m) (2015: $1,974m) Risk vs 2015: ◄►

Refer to page 101 (Audit Committee Report), page 143 (accounting policy), page 165 (financial disclosures) and page 80 (financial risk management).

The risk

Significant estimates are made in valuing the Group's post-retirement defined benefit plans. Small changes in assumptions and estimates used to value the Group's net pension deficit could have a significant effect on the results and financial position of the Group.

Our response

Our principal audit procedures included the testing of the Group's controls surrounding the valuation of the post-retirement defined benefit plans and the challenge of key assumptions, being the discount rate, inflation rate and mortality/life expectancy, which are included in the valuation calculations of the Group's retirement benefit obligations in countries with significant defined benefit pension plans, with the assistance of our own actuarial specialists. This involved a comparison of these key assumptions used against our own internal benchmarks and externally derived data. We also assessed the adequacy of the Group's disclosures in respect of post-retirement benefits.

Our findings

Overall, we found the key assumptions used in, and the resulting estimate of, the valuation of retirement benefit obligations within the Group to be mildly optimistic (2015: mildly optimistic). We found the disclosures in respect of post-retirement benefits to be proportionate (2015: proportionate).

Overall findings

In reaching our audit opinion on the Group Financial Statements we took into account the findings that we describe above and those for other, lower risk areas. Overall the findings from across the whole audit are that, although the Group Financial Statements uses estimates that are mainly balanced, there is one conservative estimate and one mildly optimistic estimate. However, compared with materiality and considering the qualitative aspects of the Group Financial Statements as a whole, our opinion on the Group Financial Statements is unmodified.

4 Our application of materiality and an overview of the scope of our audit

The materiality for the Group Financial Statements as a whole was set at $146m (2015: $140m), determined with reference to a benchmark of Group profit before taxation, normalised to exclude this year's asset impairments and fair value movement and discount unwind on contingent consideration as disclosed in Notes 9 and 18, which are specifically audited, of which it represents 5.0% (2015: 5.0%).

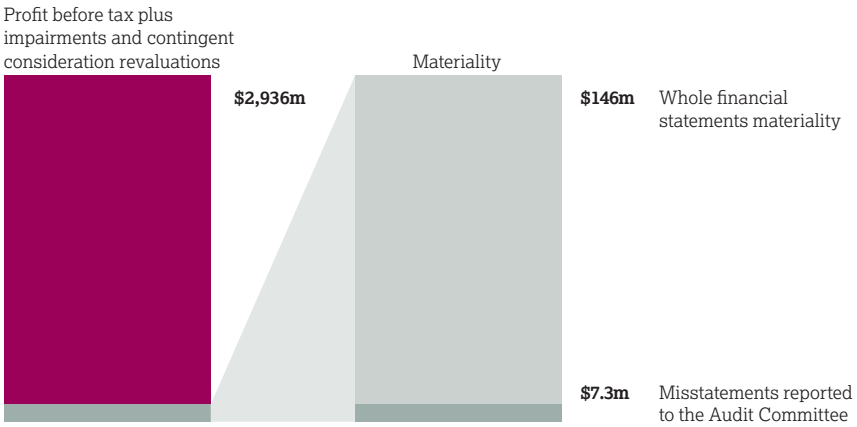
We report to the Audit Committee any corrected or uncorrected identified misstatements exceeding $7.3m (2015: $7.0m) (0.25% of normalised Group profit before taxation), in addition to other identified misstatements that warranted reporting on qualitative grounds.

The Group operates a significant number of entities, of which there are 191 (2015: 181) located in 67 (2015: 65) countries around the globe. The Operating Segment disclosures in Note 6 set out the individual significance of each geographical region.

We performed audits for Group reporting purposes at 11 components (2015: nine) and specified risk-focused audit procedures at three (2015: two) standalone components as well as at 33 (2015: 33) components serviced by the Group's shared service centres. The latter 36 (2015: 35) components were not individually financially significant enough to require an audit for Group reporting purposes, but were included in the scope of our audit in order to provide further coverage over relevant account balances.

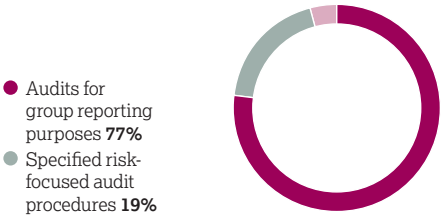
The Group operates four principal shared service centres (both in-house and outsourced) in the UK, Malaysia, Romania and India, which process a substantial proportion of the Group's transactions. The outputs from the shared service centres are included in the financial information of the reporting components they service and therefore they are not separate reporting components. Each of the service centres is subject to specified risk-focused audit procedures, predominantly the testing of transaction processing and review controls. Additional procedures are performed by component audit teams at certain reporting components to address the audit risks not

Materiality for the Group Financial Statements

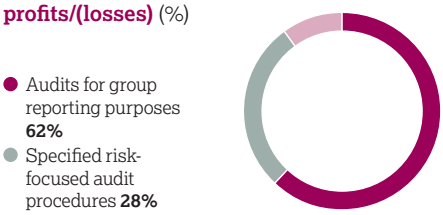


Scoping and coverage

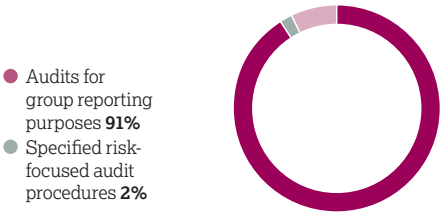
Group revenue (%)



Components' absolute profits/(losses) (%)



Group total assets (%)



covered by the work performed over the shared service centres. These procedures are designed to address the risk of material misstatement identified through our Group risk assessment processes.

This resulted in the coverage shown in the opposite charts. For the remaining components, we performed analysis at the Group level to re-examine our assessment that there were no significant risks of material misstatement within them.

The Group audit team instructed component and shared service centre auditors as to the significant areas to be covered, including the relevant risks detailed above and the information to be reported back. The Group audit team approved the component materiality levels, which ranged from $9m to $80m, having regard to the mix of size and risk profile of the Group across the components.

The work on all components in scope of our work, other than on the Parent Company, was performed by component and shared service centre auditors. The audit of the Parent Company and consolidation was performed by the Group audit team.

The Group audit team visited six (2015: five) component locations, during the year, in the UK, Sweden, Japan, China, Malaysia, and the United States to discuss and challenge key risks and audit strategy. Video or telephone conference meetings were also held with all Group reporting component auditors and shared service auditors throughout the audit. At these visits and meetings, the audit approach, findings and observations reported to the Group audit team were discussed in more detail, and any further work required by the Group audit team was then performed by the component auditor.

5 Our opinion on the other matter prescribed by the Companies Act 2006 is unmodified

In our opinion 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 Group Financial Statements.

Based solely on the work required to be undertaken in the course of the audit of the Financial Statements and from reading the Strategic Report and the Directors' Report:

- we have not identified material misstatements in those reports; and
- in our opinion, those reports have been prepared in accordance with the Companies Act 2006.

6 We have nothing to report on the disclosures of principal risks

Based on the knowledge we acquired during our audit, we have nothing material to add or draw attention to in relation to:

- the Directors' statement of Risk overview on pages 20 to 22, concerning the principal risks, their management, and, based on that, the Directors' assessment and expectations of the Group's continuing in operation over the three years to 31 December 2019; or
- the disclosures in the Group Accounting Policies concerning the use of the going concern basis of accounting.

7 We have nothing to report in respect of the matters on which we are required to report by exception

Under ISAs (UK and Ireland) we are required to report to you if, based on the knowledge we acquired during our audit, we have identified other information in this Annual Report that contains a material inconsistency with either that knowledge or the Financial Statements, a material misstatement of fact, or that is otherwise misleading.

In particular, we are required to report to you if:

- we have identified material inconsistencies between the knowledge we acquired during our audit and the Directors' statement that they consider that the Annual Report and Financial Statements taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy; or
- the Audit Committee Report does not appropriately address matters communicated by us to the Audit Committee.

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Under the Listing Rules we are required to review:

- the Directors' statements, set out on pages 96 and 22, in relation to going concern and longer-term viability; and
- the part of the Corporate Governance Report on pages 82 to 97 relating to the Company's compliance with the 11 provisions of the 2014 UK Corporate Governance Code specified for our review.

We have nothing to report in respect of the above responsibilities.

8 Other matter – we have reported separately on the Parent Company Financial Statements

We have reported separately on the Parent Company Financial Statements of AstraZeneca PLC for the year ended 31 December 2016 and on the information in the Directors' Remuneration Report that is described as having been audited.

Scope and responsibilities

As explained more fully in the Directors' Responsibilities Statement set out on page 133, the Directors are responsible for the preparation of the Financial Statements and for being satisfied that they give a true and fair view. A description of the scope of an audit of financial statements is provided on the Financial Reporting Council's website at www.frc.org.uk/auditscopeukprivate. This report is made solely to the Company's members as a body and is subject to important explanations and disclaimers regarding our responsibilities, published on our website at www.kpmg.com/uk/auditscopeukco2014b, which are incorporated into this report as if set out in full and should be read to provide an understanding of the purpose of this report, the work we have undertaken and the basis of our opinions.

Antony Cates (Senior Statutory Auditor)
for and on behalf of KPMG LLP,
Statutory Auditor
Chartered Accountants
15 Canada Square
London
E14 5GL
2 February 2017

Consolidated Statement of Comprehensive Income

for the year ended 31 December

	Notes	2016 $m	2015 $m	2014 $m
Product Sales	1	**21,319**	23,641	26,095
Externalisation Revenue	1	**1,683**	1,067	452
Total Revenue		**23,002**	24,708	26,547
Cost of sales		**(4,126)**	(4,646)	(5,842)
Gross profit		**18,876**	20,062	20,705
Distribution costs		**(326)**	(339)	(324)
Research and development expense	2	**(5,890)**	(5,997)	(5,579)
Selling, general and administrative costs	2	**(9,413)**	(11,112)	(13,000)
Other operating income and expense	2	**1,655**	1,500	335
Operating profit		**4,902**	4,114	2,137
Finance income	3	**67**	46	78
Finance expense	3	**(1,384)**	(1,075)	(963)
Share of after tax losses in associates and joint ventures	10	**(33)**	(16)	(6)
Profit before tax		**3,552**	3,069	1,246
Taxation	4	**(146)**	(243)	(11)
Profit for the period		**3,406**	2,826	1,235
Other comprehensive income:				
Items that will not be reclassified to profit or loss:				
Remeasurement of the defined benefit pension liability	20	**(575)**	652	(766)
Tax on items that will not be reclassified to profit or loss	4	**136**	(199)	216
		(439)	453	(550)
Items that may be reclassified subsequently to profit or loss:				
Foreign exchange arising on consolidation	21	**(1,050)**	(528)	(823)
Foreign exchange arising on designating borrowings in net investment hedges	21	**(591)**	(333)	(529)
Fair value movements on cash flow hedges		**(115)**	–	–
Fair value movements on cash flow hedges transferred to profit and loss		**195**	–	–
Fair value movements on derivatives designated in net investment hedges	21	**(4)**	14	100
Amortisation of loss on cash flow hedge		**1**	1	1
Net available for sale gains/(losses) taken to equity		**139**	(32)	245
Tax on items that may be reclassified subsequently to profit or loss	4	**86**	87	50
		(1,339)	(791)	(956)
Other comprehensive income for the period, net of tax		**(1,778)**	(338)	(1,506)
Total comprehensive income for the period		**1,628**	2,488	(271)
Profit attributable to:				
Owners of the Parent		**3,499**	2,825	1,233
Non-controlling interests	24	**(93)**	1	2
Total comprehensive income attributable to:				
Owners of the Parent		**1,722**	2,488	(266)
Non-controlling interests	24	**(94)**	–	(5)
Basic earnings per $0.25 Ordinary Share	5	**$2.77**	$2.23	$0.98
Diluted earnings per $0.25 Ordinary Share	5	**$2.76**	$2.23	$0.98
Weighted average number of Ordinary Shares in issue (millions)	5	**1,265**	1,264	1,262
Diluted weighted average number of Ordinary Shares in issue (millions)	5	**1,266**	1,265	1,264
Dividends declared and paid in the period	23	**3,540**	3,537	3,532

All activities were in respect of continuing operations.

$m means millions of US dollars.

Consolidated Statement of Financial Position

at 31 December

	Notes	2016 $m	2015 Restated* $m	2014 $m
Assets				
Non-current assets				
Property, plant and equipment	7	**6,848**	6,413	6,010
Goodwill	8	**11,658**	11,800	11,550
Intangible assets	9	**27,586**	22,646	20,981
Investments in associates and joint ventures	10	**99**	85	59
Other investments	11	**727**	458	502
Derivative financial instruments	12	**343**	446	465
Other receivables	13	**901**	907	1,112
Deferred tax assets	4	**1,102**	1,294	1,219
		49,264	44,049	41,898
Current assets				
Inventories	14	**2,334**	2,143	1,960
Trade and other receivables	15	**4,573**	6,622	7,232
Other investments	11	**884**	613	795
Derivative financial instruments	12	**27**	2	21
Income tax receivable		**426**	387	329
Cash and cash equivalents	16	**5,018**	6,240	6,360
		13,262	16,007	16,697
Total assets		**62,526**	60,056	58,595
Liabilities				
Current liabilities				
Interest-bearing loans and borrowings	17	**(2,307)**	(916)	(2,446)
Trade and other payables	18	**(10,486)**	(11,663)	(11,886)
Derivative financial instruments	12	**(18)**	(9)	(21)
Provisions	19	**(1,065)**	(798)	(623)
Income tax payable		**(1,380)**	(1,483)	(2,354)
		(15,256)	(14,869)	(17,330)
Non-current liabilities				
Interest-bearing loans and borrowings	17	**(14,501)**	(14,137)	(8,397)
Derivative financial instruments	12	**(117)**	(1)	–
Deferred tax liabilities	4	**(3,956)**	(2,665)	(1,796)
Retirement benefit obligations	20	**(2,186)**	(1,974)	(2,951)
Provisions	19	**(353)**	(444)	(484)
Other payables	18	**(9,488)**	(7,457)	(7,991)
		(30,601)	(26,678)	(21,619)
Total liabilities		**(45,857)**	(41,547)	(38,949)
Net assets		**16,669**	18,509	19,646
Equity				
Capital and reserves attributable to equity holders of the Company				
Share capital	22	**316**	316	316
Share premium account		**4,351**	4,304	4,261
Capital redemption reserve		**153**	153	153
Merger reserve		**448**	448	448
Other reserves	21	**1,446**	1,435	1,420
Retained earnings	21	**8,140**	11,834	13,029
		14,854	18,490	19,627
Non-controlling interests	24	**1,815**	19	19
Total equity		**16,669**	18,509	19,646

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25).

The Financial Statements from pages 138 to 196 were approved by the Board on 2 February 2017 and were signed on its behalf by

Pascal Soriot Director

Marc Dunoyer Director

Consolidated Statement of Changes in Equity

for the year ended 31 December

	Share capital $m	Share premium account $m	Capital redemption reserve $m	Merger reserve $m	Other reserves $m	Retained earnings $m	Total attributable to owners $m	Non-controlling interests $m	Total equity $m
At 1 January 2014	315	3,983	153	433	1,380	16,960	23,224	29	23,253
Profit for the period	–	–	–	–	–	1,233	1,233	2	1,235
Other comprehensive income	–	–	–	–	–	(1,499)	(1,499)	(7)	(1,506)
Transfer to other reserves[1]	–	–	–	–	40	(40)	–	–	–
Transactions with owners									
Dividends	–	–	–	–	–	(3,532)	(3,532)	–	(3,532)
Issue of Ordinary Shares	1	278	–	–	–	–	279	–	279
Share-based payments	–	–	–	–	–	(93)	(93)	–	(93)
Transfer from non-controlling interests to payables	–	–	–	–	–	–	–	(5)	(5)
True-up to Astra AB non-controlling interest buy out	–	–	–	15	–	–	15	–	15
Net movement	1	278	–	15	40	(3,931)	(3,597)	(10)	(3,607)
At 31 December 2014	316	4,261	153	448	1,420	13,029	19,627	19	19,646
Profit for the period	–	–	–	–	–	2,825	2,825	1	2,826
Other comprehensive income	–	–	–	–	–	(337)	(337)	(1)	(338)
Transfer to other reserves[1]	–	–	–	–	15	(15)	–	–	–
Transactions with owners									
Dividends	–	–	–	–	–	(3,537)	(3,537)	–	(3,537)
Issue of Ordinary Shares	–	43	–	–	–	–	43	–	43
Share-based payments	–	–	–	–	–	(131)	(131)	–	(131)
Net movement	–	43	–	–	15	(1,195)	(1,137)	–	(1,137)
At 31 December 2015	316	4,304	153	448	1,435	11,834	18,490	19	18,509
Profit for the period	**–**	**–**	**–**	**–**	**–**	**3,499**	**3,499**	**(93)**	**3,406**
Other comprehensive income	**–**	**–**	**–**	**–**	**–**	**(1,777)**	**(1,777)**	**(1)**	**(1,778)**
Transfer to other reserves[1]	**–**	**–**	**–**	**–**	**11**	**(11)**	**–**	**–**	**–**
Transactions with owners									
Dividends	**–**	**–**	**–**	**–**	**–**	**(3,540)**	**(3,540)**	**–**	**(3,540)**
Dividends paid by subsidiary to non-controlling interest	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(13)**	**(13)**
Acerta put option (Note 24)	**–**	**–**	**–**	**–**	**–**	**(1,825)**	**(1,825)**	**–**	**(1,825)**
Changes in non-controlling interest (Note 25)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**1,903**	**1,903**
Issue of Ordinary Shares	**–**	**47**	**–**	**–**	**–**	**–**	**47**	**–**	**47**
Share-based payments	**–**	**–**	**–**	**–**	**–**	**(40)**	**(40)**	**–**	**(40)**
Net movement	**–**	**47**	**–**	**–**	**11**	**(3,694)**	**(3,636)**	**1,796**	**(1,840)**
At 31 December 2016	**316**	**4,351**	**153**	**448**	**1,446**	**8,140**	**14,854**	**1,815**	**16,669**

[1] Amounts charged or credited to other reserves relate to exchange adjustments arising on goodwill.

Consolidated Statement of Cash Flows

for the year ended 31 December

	Notes	2016 $m	2015 $m	2014 $m
Cash flows from operating activities				
Profit before tax		**3,552**	3,069	1,246
Finance income and expense	3	**1,317**	1,029	885
Share of after tax losses of associates and joint ventures	10	**33**	16	6
Depreciation, amortisation and impairment		**2,357**	2,852	3,282
Decrease in trade and other receivables		**1,610**	152	311
(Increase)/decrease in inventories		**(343)**	(315)	108
(Decrease)/increase in trade and other payables and provisions		**(341)**	114	2,089
Gains on disposal of intangible assets	2	**(1,301)**	(961)	–
Fair value movements on contingent consideration arising from business combinations	18	**(1,158)**	(432)	512
Non-cash and other movements		**(492)**	(350)	353
Cash generated from operations		**5,234**	5,174	8,792
Interest paid		**(677)**	(496)	(533)
Tax paid		**(412)**	(1,354)	(1,201)
Net cash inflow from operating activities		**4,145**	3,324	7,058
Cash flows from investing activities				
Upfront payments on business combinations	25	**(2,564)**	(2,446)	(3,804)
Payment of contingent consideration from business combinations	18	**(293)**	(579)	(657)
Purchase of property, plant and equipment		**(1,446)**	(1,328)	(1,012)
Disposal of property, plant and equipment		**82**	47	158
Purchase of intangible assets		**(868)**	(1,460)	(1,740)
Disposal of intangible assets		**1,427**	1,130	–
Purchase of non-current asset investments		**(230)**	(57)	(130)
Disposal of non-current asset investments		**3**	93	59
Movement in short-term investments and fixed deposits		**(166)**	283	34
Payments to joint ventures	10	**(41)**	(45)	(70)
Interest received		**140**	123	140
Payments made by subsidiaries to non-controlling interests		**(13)**	–	(10)
Net cash outflow from investing activities		**(3,969)**	(4,239)	(7,032)
Net cash inflow/(outflow) before financing activities		**176**	(915)	26
Cash flows from financing activities				
Proceeds from issue of share capital		**47**	43	279
Repayment of obligations under finance leases		**(16)**	(42)	(36)
Issue of loans		**2,491**	5,928	919
Repayment of loans		**–**	(884)	(750)
Dividends paid		**(3,561)**	(3,486)	(3,521)
Hedge contracts relating to dividend payments		**18**	(51)	(14)
Payments to acquire non-controlling interests		**–**	–	(102)
Movement in short-term borrowings		**(303)**	(630)	520
Net cash (outflow)/inflow from financing activities		**(1,324)**	878	(2,705)
Net decrease in cash and cash equivalents in the period		**(1,148)**	(37)	(2,679)
Cash and cash equivalents at the beginning of the period		**6,051**	6,164	8,995
Exchange rate effects		**21**	(76)	(152)
Cash and cash equivalents at the end of the period	16	**4,924**	6,051	6,164

Group Accounting Policies

Basis of accounting and preparation of financial information

The Consolidated Financial Statements have been prepared under the historical cost convention, modified to include revaluation to fair value of certain financial instruments as described below, in accordance with the Companies Act 2006 and International Financial Reporting Standards (IFRSs) as adopted by the EU (adopted IFRSs) in response to the IAS regulation (EC 1606/2002). The Consolidated Financial Statements also comply fully with IFRSs as issued by the International Accounting Standards Board (IASB).

During the year, the Group has adopted the amendments to IFRS 11 Accounting for Acquisitions of Interests in Joint Operations, amendments to IAS 16 'Property, Plant and Equipment' and IAS 38 'Intangible Assets' Clarification of Acceptable Methods of Depreciation and Amortisation, and amendments to IAS 1 Disclosure Initiative, which were all effective for periods beginning on or after 1 January 2016.

The adoption has not had a significant impact on the Group's profit for the period, net assets or cash flows.

The Company has elected to prepare the Company Financial Statements in accordance with UK Accounting Standards, including FRS 101 'Reduced Disclosure Framework'. These are presented on pages 198 to 202 and the Accounting Policies in respect of Company information are set out on page 200.

The Consolidated Financial Statements are presented in US dollars, which is the Company's functional currency.

In preparing their individual Financial Statements, the accounting policies of some overseas subsidiaries do not conform with IASB issued IFRSs. Therefore, where appropriate, adjustments are made in order to present the Consolidated Financial Statements on a consistent basis.

Basis for preparation of Financial Statements on a going concern basis

Information on the business environment AstraZeneca operates in, including the factors underpinning the pharmaceutical industry's future growth prospects, is included in the Strategic Report. Details of the product portfolio of the Group (including patent expiry dates for key marketed products), our approach to product development and our development pipeline are covered in detail with additional information by Therapy Area in the Strategic Report and Directors' Report.

The financial position of the Group, its cash flows, liquidity position and borrowing facilities are described in the Financial Review from page 62. In addition, Note 26 to the Financial Statements includes the Group's objectives, policies and processes for managing its capital, its financial risk management objectives, details of its financial instruments and hedging activities and its exposures to credit, market and liquidity risk. Further details of the Group's cash balances and borrowings are included in Notes 16 and 17 to the Financial Statements.

The Group has considerable financial resources available. As at 31 December 2016, the Group has $5.7bn in financial resources (cash balances of $5.0bn and undrawn committed bank facilities of $3.0bn that are available until April 2020, with only $2.3bn of debt due within one year). The Group's revenues are largely derived from sales of products which are covered by patents which provide a relatively high level of resilience and predictability to cash inflows, although our revenue is expected to continue to be significantly impacted by the expiry of patents over the medium term. In addition, government price interventions in response to budgetary constraints are expected to continue to adversely affect revenues in many of our mature markets. However, we anticipate new revenue streams from both recently launched medicines and products in development, and the Group has a wide diversity of customers and suppliers across different geographic areas. Consequently, the Directors believe that, overall, the Group is well placed to manage its business risks successfully.

After making enquiries, the Directors have a reasonable expectation that the Company and the Group have adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the Annual Report and Financial Statements.

Estimates and judgements

The preparation of the Financial Statements in conformity with generally accepted accounting principles requires management to make estimates and judgements that affect the reported amounts of assets and liabilities at the date of the Financial Statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Judgements include matters such as the determination of operating segments while estimates focus on areas such as carrying values, estimated useful lives, potential obligations and contingent consideration.

AstraZeneca's management considers the following to be the most important accounting policies in the context of the Group's operations.

The accounting policy descriptions set out the areas where judgements and estimates need exercising, the most significant of which are revenue recognition, research and development (including impairment reviews of associated intangible assets), business combinations and goodwill, litigation and environmental liabilities, employee benefits and taxation.

Further information on estimates and critical judgements made in applying accounting policies, including details of significant methods and assumptions used, is detailed in the Financial Review from page 62 and is included in Notes 4, 8, 9, 20, 25 and 28 to the Financial Statements. Financial risk management policies are detailed in Note 26.

Revenue

Revenues comprise Product Sales and Externalisation Revenue.

Revenues exclude inter-company revenues and value-added taxes.

Product Sales

Product Sales represent net invoice value less estimated rebates, returns and chargebacks. Sales are recognised when the significant risks and rewards of ownership have been transferred to a third party. In general, this is upon delivery of the products to wholesalers. In markets where returns are significant (currently only in the US), estimates of returns are accounted for at the point revenue is recognised. In markets where returns are not significant, they are recorded when returned.

For the US market, we estimate the quantity and value of goods which may ultimately be returned at the point of sale. Our returns accruals are based on actual experience over the preceding 12 months for established products together with market-related information such as estimated stock levels at wholesalers and competitor activity which we receive via third party information services. For newly launched products, we use rates based on our experience with similar products or a predetermined percentage.

When a product faces generic competition, particular attention is given to the possible levels of returns and, in cases where the circumstances are such that the level of returns (and, hence, revenue) cannot be measured reliably, revenues are only recognised when the right of return expires, which is generally on ultimate prescription of the product to patients.

Externalisation Revenue

Externalisation Revenue includes income from collaborative arrangements on the Group's products where the Group retains a significant ongoing interest and there is no derecognition of an intangible asset. These may include development arrangements, commercialisation arrangements and collaborations.

Income may take the form of upfront access fees, milestones and/or sales royalties. Generally, upfront access fees are recognised upon delivery of the access. Where the Group provides ongoing services, revenue in respect of this element will be recognised over the duration of those services. Milestones and sales royalties are recognised when virtually certain and the amount can be reliably estimated.

Further detail on key judgements and estimates is included in the Financial Review from page 62.

Research and development

Research expenditure is recognised in profit in the year in which it is incurred.

Internal development expenditure is capitalised only if it meets the recognition criteria of IAS 38 'Intangible Assets'. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is recognised in profit and this is almost invariably the case prior to approval of the drug by the relevant regulatory authority. Where, however, recognition criteria are met, intangible assets are capitalised and amortised on a straight-line basis over their useful economic lives from product launch. At 31 December 2016, no amounts have met recognition criteria.

Payments to in-license products and compounds from third parties for new research and development projects (in process research and development), generally taking the form of upfront payments and milestones, are capitalised. Where payments made to third parties represent future research and development activities, an evaluation is made as to the nature of the payments. Such payments are expensed if they represent compensation for subcontracted research and development services not resulting in a transfer of intellectual property. By contrast, payments are capitalised if they represent compensation for the transfer of intellectual property developed at the risk of the third party. Since acquired products and compounds will only generate sales and cash inflows following launch, our policy is to minimise the period between final approval and launch if it is within AstraZeneca's control to do so. Assets capitalised are amortised, on a straight-line basis, over their useful economic lives from product launch. Under this policy, it is not possible to determine precise economic lives for individual classes of intangible assets. However, lives do not exceed 25 years.

Intangible assets relating to products in development are subject to impairment testing annually. All intangible assets are tested for impairment when there are indications that the carrying value may not be recoverable. Any impairment losses are recognised immediately in profit. Intangible assets relating to products which fail during development (or for which development ceases for other reasons) are tested for impairment at the point of termination and are written down to their recoverable amount (which is usually nil).

If, subsequent to an impairment loss being recognised, development restarts or other facts and circumstances change indicating that the impairment is less or no longer exists, the value of the asset is re-estimated and its carrying value is increased to the recoverable amount, but not exceeding the original value, by recognising an impairment reversal in profit.

Business combinations and goodwill

On the acquisition of a business, fair values are attributed to the identifiable assets and liabilities and contingent liabilities unless the fair value cannot be measured reliably, in which case the value is subsumed into goodwill. Where the Group fully acquires, through a business combination, assets that were previously held in joint operations, the Group has elected not to uplift the book value of the existing interest in the asset held in the joint operation to fair value at the date full control is taken. Where fair values of acquired contingent liabilities cannot be measured reliably, the assumed contingent liability is not recognised but is disclosed in the same manner as other contingent liabilities.

Where not all of the equity of a subsidiary is acquired the non-controlling interest is recognised either at fair value or at the non-controlling interest's proportionate share of the net assets of the subsidiary, on a case-by-case basis. Put options over non-controlling interests are recognised as a financial liability, with a corresponding entry in either retained earnings or against non-controlling interest reserves on a case-by-case basis.

Future contingent elements of consideration, which may include development and launch milestones, revenue threshold milestones and revenue-based royalties, are fair valued at the date of acquisition using decision-tree analysis with key inputs including probability of success, consideration of potential delays and revenue projections based on the Group's internal forecasts. Unsettled amounts of consideration are held at fair value within payables with changes in fair value recognised immediately in profit.

Goodwill is the difference between the fair value of the consideration and the fair value of net assets acquired.

Goodwill arising on acquisitions is capitalised and subject to an impairment review, both annually and when there is an indication that the carrying value may not be recoverable. Between 1 January 1998 and 31 December 2002, goodwill was amortised over its estimated useful life; such amortisation ceased on 31 December 2002.

The Group's policy up to and including 1997 was to eliminate goodwill arising upon acquisitions against reserves. Under IFRS 1 'First-time Adoption of International Financial Reporting Standards' and IFRS 3 'Business Combinations', such goodwill will remain eliminated against reserves.

Joint arrangements and associates

The Group has arrangements over which it has joint control and which qualify as joint operations or joint ventures under IFRS 11 'Joint Arrangements'. For joint operations, the Group recognises its share of revenue that it earns from the joint operations and its share of expenses incurred. The Group also recognises the assets associated with the joint operations that it controls and the liabilities it incurs under the joint arrangement. For joint ventures and associates, the Group recognises its interest in the joint venture as an investment and uses the equity method of accounting.

Employee benefits

The Group accounts for pensions and other employee benefits (principally healthcare) under IAS 19 'Employee Benefits'. In respect of defined benefit plans, obligations are measured at discounted present value while plan assets are measured at fair value. The operating and financing costs of such plans are recognised separately in profit; current service costs are spread systematically over the lives of employees and financing costs are recognised in full in the periods in which they arise. Remeasurements of the net defined pension liability, including actuarial gains and losses, are recognised immediately in other comprehensive income.

Where the calculation results in a surplus to the Group, the recognised asset is limited to the present value of any available future refunds from the plan or reductions in future contributions to the plan. Payments to defined contribution plans are recognised in profit as they fall due.

Taxation

The current tax payable is based on taxable profit for the year. Taxable profit differs from reported profit because taxable profit excludes items that are either never taxable or tax deductible or items that are taxable or tax deductible in a different period. The Group's current tax assets and liabilities are calculated using tax rates that have been enacted or substantively enacted by the reporting date.

Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax assets are recognised to the extent that it is probable that taxable profit will be available against which the asset can be utilised. This requires judgements to be made in respect of the availability of future taxable income.

No deferred tax asset or liability is recognised in respect of temporary differences associated with investments in subsidiaries and branches where the Group is able to control the timing of reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future.

The Group's deferred tax assets and liabilities are calculated using tax rates that are expected to apply in the period when the liability is settled or the asset realised based on tax rates that have been enacted or substantively enacted by the reporting date.

Accruals for tax contingencies require management to make judgements and estimates of exposures in relation to tax audit issues. Tax benefits are not recognised unless the tax positions will probably be sustained based upon management's interpretation of applicable laws and regulations. Once considered to be probable, management reviews each material tax benefit to assess whether a provision should be taken against full recognition of that benefit on the basis of potential settlement through negotiation and/or litigation. Accruals for tax contingencies are measured using the single best estimate of likely outcome approach. Any liability to pay interest on tax liabilities is provided for in the tax charge. See Note 28 to the Financial Statements for further details.

Share-based payments

All plans are assessed and have been classified as equity settled. The grant date fair value of employee share plan awards is calculated using a modified version of the binomial model. In accordance with IFRS 2 'Share-based Payment', the resulting cost is recognised in profit over the vesting period of the awards, being the period in which the services are received. The value of the charge is adjusted to reflect expected and actual levels of awards vesting, except where the failure to vest is as a result of not meeting a market condition. Cancellations of equity instruments are treated as an acceleration of the vesting period and any outstanding charge is recognised in profit immediately.

Property, plant and equipment

The Group's policy is to write off the difference between the cost of each item of property, plant and equipment and its residual value over its estimated useful life on a straight-line basis. Assets under construction are not depreciated.

Reviews are made annually of the estimated remaining lives and residual values of individual productive assets, taking account of commercial and technological obsolescence as well as normal wear and tear. Under this policy it becomes impractical to calculate average asset lives exactly. However, the total lives range from approximately 10 to 50 years for buildings, and three to 15 years for plant and equipment. All items of property, plant and equipment are tested for impairment when there are indications that the carrying value may not be recoverable. Any impairment losses are recognised immediately in profit.

Borrowing costs

The Group has no borrowing costs with respect to the acquisition or construction of qualifying assets. All other borrowing costs are recognised in profit as incurred and in accordance with the effective interest rate method.

Leases

Leases are classified as finance leases if they transfer substantially all the risks and rewards incidental to ownership, otherwise they are classified as operating leases. Assets and liabilities arising on finance leases are initially recognised at fair value or, if lower, the present value of the minimum lease payments. The discount rate used in calculating the present value of the minimum lease payments is the interest rate implicit in the lease. Finance charges under finance leases are allocated to each reporting period so as to produce a constant periodic rate of interest on the remaining balance of the finance liability. Rentals under operating leases are charged to profit on a straight-line basis.

Subsidiaries

A subsidiary is an entity controlled, directly or indirectly, by AstraZeneca PLC. Control is regarded as the exposure or rights to the variable returns of the entity when combined with the power to affect those returns.

The financial results of subsidiaries are consolidated from the date control is obtained until the date that control ceases.

Inventories

Inventories are stated at the lower of cost and net realisable value. The first in, first out or an average method of valuation is used. For finished goods and work in progress, cost includes directly attributable costs and certain overhead expenses (including depreciation). Selling expenses and certain other overhead expenses (principally central administration costs) are excluded. Net realisable value is determined as estimated selling price less all estimated costs of completion and costs to be incurred in selling and distribution.

Write-downs of inventory occur in the general course of business and are recognised in cost of sales.

Trade and other receivables

Financial assets included in trade and other receivables are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest rate method, less any impairment losses. Trade receivables that are subject to debt factoring arrangements are derecognised if they meet the conditions for derecognition detailed in IAS 39 'Financial Instruments: Recognition and Measurement'.

Trade and other payables

Financial liabilities included in trade and other payables are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest rate method.

Financial instruments

The Group's financial instruments include interests in leases, trade and other receivables and payables, liabilities for contingent consideration under business combinations, and rights and obligations under employee benefit plans which are dealt with in specific accounting policies.

The Group's other financial instruments include:

> cash and cash equivalents
> fixed deposits
> other investments
> bank and other borrowings
> derivatives.

Cash and cash equivalents

Cash and cash equivalents comprise cash in hand, current balances with banks and similar institutions and highly liquid investments with maturities of three months or less when acquired. They are readily convertible into known amounts of cash and are held at amortised cost.

Fixed deposits

Fixed deposits, principally comprising funds held with banks and other financial institutions, are initially measured at fair value, plus direct transaction costs, and are subsequently measured at amortised cost using the effective interest rate method at each reporting date. Changes in carrying value are recognised in profit.

Other investments

Where investments have been classified as held for trading, they are measured initially at fair value and subsequently remeasured to fair value at each reporting date. Changes in fair value are recognised in profit.

In all other circumstances, the investments are classified as 'available for sale', initially measured at fair value (including direct transaction costs) and subsequently remeasured to fair value at each reporting date. Changes in carrying value due to changes in exchange rates on monetary available for sale investments or impairments are recognised in profit with other operating income and expense. All other changes in fair value are recognised in other comprehensive income.

Impairments are recorded in profit when there is a decline in the value of an investment that is deemed to be other than temporary. On disposal of the investment, the cumulative amount recognised in other comprehensive income is recognised in profit as part of the gain or loss on disposal.

Bank and other borrowings

The Group uses derivatives, principally interest rate swaps, to hedge the interest rate exposure inherent in a portion of its fixed interest rate debt. In such cases the Group will either designate the debt as fair value through profit or loss when certain criteria are met or as the hedged item under a fair value hedge.

If the debt instrument is designated as fair value through profit or loss, the debt is initially measured at fair value (with direct transaction costs being included in profit as an expense) and is remeasured to fair value at each reporting date with changes in carrying value being recognised in profit (along with changes in the fair value of the related derivative). Such a designation has been made where this significantly reduces an accounting mismatch which would result from recognising gains and losses on different bases.

If the debt is designated as the hedged item under a fair value hedge, the debt is initially measured at fair value (with direct transaction costs being amortised over the life of the debt), and is remeasured for fair value changes in respect of the hedged risk at each reporting date with changes in carrying value being recognised in profit (along with changes in the fair value of the related derivative).

If the debt is designated in a cash flow hedge, the debt is measured at amortised cost (with gains or losses taken to profit and direct transaction costs being amortised over the life of the debt). The related derivative is remeasured for fair value changes at each reporting date with the portion of the gain or loss on the derivative that is determined to be an effective hedge recognised in other comprehensive income. The amounts that have been recognised in other comprehensive income are reclassified to profit in the same period that the hedged forecast cash flows affect profit.

Other interest-bearing loans are initially measured at fair value (with direct transaction costs being amortised over the life of the bond) and are subsequently measured at amortised cost using the effective interest rate method at each reporting date. Changes in carrying value are recognised in profit.

Derivatives

Derivatives are initially measured at fair value (with direct transaction costs being included in profit as an expense) and are subsequently remeasured to fair value at each reporting date. Changes in carrying value are recognised in profit.

Foreign currencies

Foreign currency transactions, being transactions denominated in a currency other than an individual Group entity's functional currency, are translated into the relevant functional currencies of individual Group entities at average rates for the relevant monthly accounting periods, which approximate to actual rates.

Monetary assets and liabilities arising from foreign currency transactions are retranslated at exchange rates prevailing at the reporting date. Exchange gains and losses on loans and on short-term foreign currency borrowings and deposits are included within finance expense. Exchange differences on all other foreign currency transactions are recognised in operating profit in the individual Group entity's accounting records.

Non-monetary items arising from foreign currency transactions are not retranslated in the individual Group entity's accounting records.

In the Consolidated Financial Statements, income and expense items for Group entities with a functional currency other than US dollars are translated into US dollars at average exchange rates, which approximate to actual rates, for the relevant accounting periods. Assets and liabilities are translated at the US dollar exchange rates prevailing at the reporting date. Exchange differences arising on consolidation are recognised in other comprehensive income.

If certain criteria are met, non-US dollar denominated loans or derivatives are designated as net investment hedges of foreign operations. Exchange differences arising on retranslation of net investments, and of foreign currency loans which are designated in an effective net investment hedge relationship, are recognised in other comprehensive income in the Consolidated Financial Statements. Foreign exchange derivatives hedging net investments in foreign operations are carried at fair value. Effective fair value movements are recognised in other comprehensive income, with any ineffectiveness taken to profit. Gains and losses accumulated in the translation reserve will be recycled to profit when the foreign operation is sold.

Litigation and environmental liabilities

AstraZeneca is involved in legal disputes, the settlement of which may involve cost to the Group. Provision is made where an adverse outcome is probable and associated costs, including related legal costs, can be estimated reliably. In other cases, appropriate disclosures are included.

Where it is considered that the Group is more likely than not to prevail, or in the rare circumstances where the amount of the legal liability cannot be estimated reliably, legal costs involved in defending the claim are charged to profit as they are incurred.

Where it is considered that the Group has a valid contract which provides the right to reimbursement (from insurance or otherwise) of legal costs and/or all or part of any loss incurred or for which a provision has been established, the best estimate of the amount expected to be received is recognised as an asset only when it is virtually certain.

AstraZeneca is exposed to environmental liabilities relating to its past operations, principally in respect of soil and groundwater remediation costs. Provisions for these costs are made when there is a present obligation and where it is probable that expenditure on remedial work will be required and a reliable estimate can be made of the cost. Provisions are discounted where the effect is material.

Impairment

The carrying values of non-financial assets, other than inventories and deferred tax assets, are reviewed at least annually to determine whether there is any indication of impairment. For goodwill, intangible assets under development and for any other assets where such indication exists, the asset's recoverable amount is estimated based on the greater of its value in use and its fair value less cost to sell. In assessing value in use, the estimated future cash flows, adjusted for the risks specific to each asset, are discounted to their present value using a discount rate that reflects current market assessments of the time value of money, the general risks affecting the pharmaceutical industry and other risks specific to each asset. For the purpose of impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash flows of other assets. Impairment losses are recognised immediately in profit.

International accounting transition

On transition to using adopted IFRSs in the year ended 31 December 2005, the Group took advantage of several optional exemptions available in IFRS 1 'First-time Adoption of International Financial Reporting Standards'. The major impacts which are of continuing importance are detailed below:

- Business combinations – IFRS 3 'Business Combinations' has been applied from 1 January 2003, the date of transition, rather than being applied fully retrospectively. As a result, the combination of Astra and Zeneca is still accounted for as a merger, rather than through purchase accounting. If purchase accounting had been adopted, Zeneca would have been deemed to have acquired Astra.
- Cumulative exchange differences – the Group chose to set the cumulative exchange difference reserve at 1 January 2003 to nil.

Applicable accounting standards and interpretations issued but not yet adopted

IFRS 9 'Financial Instruments' was finalised by the IASB in July 2014 and is effective for accounting periods beginning on or after 1 January 2018. The new standard will replace existing accounting standards. It is applicable to financial assets and liabilities, and will introduce changes to existing accounting concerning classification and measurement, impairment (introducing an expected-loss method), hedge accounting, and on the treatment of gains arising from the impact of credit risk on the measurement of liabilities held at fair value. The standard was endorsed by the EU on 22 November 2016. The adoption of IFRS 9 is not expected to have a significant impact on the Group's net results or net assets, although the full impact will be subject to further assessment. The Group will early adopt the treatment of fair value changes arising from changes in own credit risk from 1 January 2017.

IFRS 15 'Revenue from Contracts with Customers' was issued by the IASB in May 2014. It is effective for accounting periods beginning on or after 1 January 2018. The new standard will replace existing accounting standards, and provides enhanced detail on the principle of recognising revenue to reflect the transfer of goods and services to customers at a value which the Company expects to be entitled to receive. The standard also updates revenue disclosure requirements. The standard was endorsed by the EU on 22 September 2016. The adoption of IFRS 15 is not expected to have a significant impact on the Group's recognition of Product Sales. The Group is continuing to assess the impact of IFRS 15 on the results of the Group for other revenue and income streams including, but not limited to, the impact on revenue from collaborative arrangements, licence income and milestone revenues.

IFRS 16 'Leases' was issued by the IASB in January 2016 and is effective for accounting periods beginning on or after 1 January 2019. The new standard will replace IAS 17 'Leases' and will eliminate the classification of leases as either operating leases or finance leases and, instead, introduce a single lessee accounting model. The standard has yet to be endorsed by the EU. The adoption of IFRS 16 is not expected to have a significant impact on the Group's net results or net assets, although the full impact will be subject to further assessment.

In addition, the following amendments have been issued:

- Amendments to IFRS 10 and IAS 28 Sale or Contribution of Assets between an Investor and its Associate or Joint Venture. The IASB has deferred these amendments until a date to be determined by the IASB, although early application is permitted.
- Amendments to IAS 12 Recognition of Deferred Tax Assets for Unrealised Losses, effective for periods beginning on or after 1 January 2017.
- Amendments to IAS 7 Disclosure Initiative, effective for periods beginning on or after 1 January 2017.
- Amendments to IFRS 2 Classification and Measurement of Share-based Payment Transactions, effective for periods beginning on or after 1 January 2018.

The above amendments are not expected to have a significant impact on the Group's net results, net assets or disclosures. The amendments have yet to be endorsed by the EU.

Notes to the Group Financial Statements

1 Revenue

Product Sales

	2016 $m	2015 $m	2014 $m
Oncology:			
Faslodex	**830**	704	720
Zoladex	**816**	816	924
Iressa	**513**	543	623
Tagrisso	**423**	19	–
Casodex	**247**	267	320
Arimidex	**232**	250	298
Lynparza	**218**	94	–
Others	**104**	132	142
	3,383	2,825	3,027
Cardiovascular and Metabolic Diseases:			
Crestor	**3,401**	5,017	5,512
Brilinta	**839**	619	476
Farxiga	**835**	492	225
Seloken/Toprol-XL	**737**	710	758
Onglyza	**720**	786	820
Bydureon	**578**	580	440
Atacand	**315**	358	501
Byetta	**254**	316	327
Plendil	**136**	234	249
Tenormin	**106**	118	161
Others	**195**	259	333
	8,116	9,489	9,802
Respiratory:			
Symbicort	**2,989**	3,394	3,801
Pulmicort	**1,061**	1,014	946
Tudorza/Eklira	**170**	190	13
Daliresp/Daxas	**154**	104	–
Rhinocort	**112**	120	139
Others	**267**	165	164
	4,753	4,987	5,063
Other:			
Nexium	**2,032**	2,496	3,655
Seroquel XR	**735**	1,025	1,224
Synagis	**677**	662	900
Local Anaesthetics	**329**	404	488
Losec/Prilosec	**276**	340	422
Seroquel IR	**231**	250	178
Merrem	**201**	241	253
Diprivan	**143**	200	252
FluMist/Fluenz	**104**	288	295
Others	**339**	434	536
	5,067	6,340	8,203
Product Sales	**21,319**	23,641	26,095

Externalisation Revenue

Externalisation Revenue in 2016 was $1,683m (2015: $1,067m; 2014: $452m).

In 2016, Externalisation Revenue includes $520m from Aspen Global Incorporated for our anaesthetics medicines portfolio, $298m from the sale of commercialisation rights for *Plendil* in China to China Medical System Holdings Ltd, and $175m from Aralez Pharmaceuticals Inc. for the US rights to *Toprol-XL*.

In 2015, Externalisation Revenue includes $450m on entering into a collaboration with Celgene on durvalumab, $200m on entering into a collaboration with Daiichi Sankyo on *Movantik* and $100m on entering into a collaboration with Valeant on brodalumab.

In 2014, Externalisation Revenue includes $250m from a licence agreement with Pfizer on *Nexium* OTC.

Royalty income of $119m (2015: $87m; 2014: $53m) is included in Externalisation Revenue.

2 Operating profit

Operating profit includes the following significant items:

Selling, general and administrative costs

In 2016, selling, general and administrative costs includes a credit of $999m (2015: credit of $378m; 2014: charge of $529m) resulting from changes in the fair value of contingent consideration arising from the acquisition of the diabetes alliance with BMS. These adjustments reflect revised estimates for future sales performance for the products acquired and, as a result, revised estimates for future royalties payable.

In 2016, selling, general and administrative costs also includes a total of $223m (2015: $313m) of legal provisions relating to a number of legal proceedings in various jurisdictions in relation to several marketed products.

In July 2014, the US Internal Revenue Service issued final regulations that affected the recognition of the annual Branded Pharmaceutical Fee, imposed by the health care reform legislation in 2010. As a result, entities covered by the legislation now accrue for the obligation as each sale occurs. AstraZeneca recorded a catch-up charge of $226m in 2014 to reflect this new basis, $113m of which was recorded in selling, general and administrative costs and $113m as a deduction from revenue.

Further details of impairment charges for 2016, 2015 and 2014 are included in Notes 7 and 9.

Other operating income and expense

	2016 $m	2015 $m	2014 $m
Royalties			
Income	**406**	322	533
Amortisation	**(86)**	(114)	(212)
Impairment of intangible assets	**–**	(64)	(18)
Gains on disposal of intangible assets	**1,301**	961	–
Net gains/(losses) on disposal of other non-current assets	**29**	85	(235)
Other income	**146**	327	290
Other expense	**(141)**	(17)	(23)
Other operating income and expense	**1,655**	1,500	335

Royalty amortisation and impairment relates to income streams acquired with MedImmune and amounts relating to our arrangements with Merck.

Gains on disposal of intangible assets in 2016 includes $368m on the disposal of the small molecule antibiotics business in most markets outside the US, $321m on the disposal of Rest of World rights to *Rhinocort Aqua*, $231m on the disposal of global rights to MEDI2070 and $183m on the disposal of Rest of World rights to *Imdur*.

Gains on disposal of intangible assets in 2015 includes $380m on the disposal of US rights to *Entocort*, $215m on the disposal of Rest of World rights to *Entocort*, $193m on the disposal of global rights to *Myalept* and $165m on the disposal of global rights to *Caprelsa*.

Net losses on disposal of non-current assets in 2014 included a loss of $292m on disposal of Alderley Park.

Restructuring costs

The tables below show the costs that have been charged in respect of restructuring programmes by cost category and type. Severance provisions are detailed in Note 19.

	2016 $m	2015 $m	2014 $m
Cost of sales	**130**	158	107
Research and development expense	**178**	258	497
Selling, general and administrative costs	**823**	618	662
Other operating income and expense	**(24)**	–	292
Total charge	**1,107**	1,034	1,558

	2016 $m	2015 $m	2014 $m
Severance costs	**505**	298	246
Accelerated depreciation and impairment	**46**	81	153
Relocation costs	**18**	34	209
Loss on disposal of Alderley Park	**–**	–	292
Other	**538**	621	658
Total charge	**1,107**	1,034	1,558

Other costs are those incurred in designing and implementing the Group's various restructuring initiatives including costs of decommissioning sites impacted by changes to our global footprint, temporary leave costs during relocation, internal project costs, and external consultancy fees.

2 Operating profit continued

Financial instruments

Included within operating profit are the following net gains and losses on financial instruments:

	2016 $m	2015 $m	2014 $m
Losses on forward foreign exchange contracts	**(216)**	(22)	(98)
Gains/(losses) on receivables and payables	**132**	(36)	(64)
Gains and losses on available for sale investments	**–**	74	31
Total	**(84)**	16	(131)

Gains and losses on available for sale investments includes no gains or losses (2015: gains of $43m; 2014: gains of $9m) which have been reclassified from other comprehensive income.

3 Finance income and expense

	2016 $m	2015 $m	2014 $m
Finance income			
Returns on fixed deposits and equity securities	**8**	8	10
Returns on short-term deposits	**35**	28	23
Fair value gains on debt and interest rate swaps	**–**	10	16
Net exchange gains	**8**	–	29
Discount unwind on other long-term assets	**16**	–	–
Total	**67**	46	78
Finance expense			
Interest on debt and commercial paper	**(565)**	(361)	(383)
Interest on overdrafts, finance leases and other financing costs	**(52)**	(31)	(35)
Net interest on post-employment defined benefit plan net liabilities (Note 20)	**(63)**	(77)	(92)
Net exchange losses	**–**	(36)	–
Discount unwind on contingent consideration arising from business combinations (Note 18)	**(497)**	(524)	(391)
Discount unwind on other long-term liabilities	**(190)**	(46)	(62)
Fair value losses on debt and interest rate swaps	**(17)**	–	–
Total	**(1,384)**	(1,075)	(963)
Net finance expense	**(1,317)**	(1,029)	(885)

Financial instruments

Included within finance income and expense are the following net gains and losses on financial instruments:

	2016 $m	2015 $m	2014 $m
Interest and fair value adjustments in respect of debt designated at fair value through profit or loss, net of derivatives	**(14)**	6	(7)
Interest and changes in carrying values of debt designated as hedged items, net of derivatives	**(21)**	(10)	8
Interest and fair value changes on fixed and short-term deposits, equity securities and other derivatives	**74**	46	45
Interest on debt, overdrafts, finance leases and commercial paper held at amortised cost	**(553)**	(384)	(415)

Fair value losses of $29m (2015: $30m fair value losses; 2014: $29m fair value losses) on interest rate fair value hedging instruments and $30m fair value gains (2015: $30m fair value gains; 2014: $29m fair value gains) on the related hedged items have been included within interest and changes in carrying values of debt designated as hedged items, net of derivatives. All fair value hedge relationships were effective during the year.

Fair value losses of $12m (2015: $5m fair value losses; 2014: $4m fair value losses) on derivatives related to debt instruments designated at fair value through profit or loss and $9m fair value gains (2015: $15m fair value gains; 2014: $3m fair value gains) on debt instruments designated at fair value through profit or loss have been included within interest and fair value adjustments in respect of debt designated at fair value through profit or loss, net of derivatives. Ineffectiveness on the net investment hedge taken to profit was $nil (2015: $nil; 2014: $nil).

4 Taxation

Taxation recognised in the profit for the period in the consolidated statement of comprehensive income is as follows:

	2016 $m	2015 $m	2014 $m
Current tax expense			
Current year	**384**	1,037	981
Adjustment to prior years	**(14)**	(404)	(109)
Total	**370**	633	872
Deferred tax expense			
Origination and reversal of temporary differences	**(94)**	(482)	(833)
Adjustment to prior years	**(130)**	92	(28)
Total	**(224)**	(390)	(861)
Taxation recognised in the profit for the period	**146**	243	11

Taxation relating to components of other comprehensive income is as follows:

	2016 $m	2015 $m	2014 $m
Current and deferred tax			
Items that will not be reclassified to profit or loss:			
Remeasurement of the defined benefit liability	**110**	(133)	182
Deferred tax impact of reduction in UK tax rate	**(25)**	(58)	–
Share-based payments	**51**	(8)	34
Total	**136**	(199)	216
Items that may be reclassified subsequently to profit or loss:			
Foreign exchange arising on consolidation	**63**	(8)	(39)
Foreign exchange arising on designating borrowings in net investment hedges	**83**	80	150
Net available for sale (gains)/losses recognised in other comprehensive income	**(61)**	14	(64)
Other	**1**	1	3
Total	**86**	87	50
Taxation relating to components of other comprehensive income	**222**	(112)	266

The reported tax rate of 4% for the year ended 31 December 2016 benefited from a $453m adjustment following agreements between the Canadian tax authority and the UK and Swedish tax authorities in respect of transfer pricing arrangements for the 13-year period from 2004 to 2016. Excluding these effects, the reported tax rate for the year was 17%.

The cash tax paid for the year was $412m which was 12% of profit before tax. Cash tax was lower in 2016 due to refunds arising in relation to agreement of prior period tax liabilities and audit settlements.

Taxation has been provided at current rates on the profits earned for the periods covered by the Group Financial Statements. The 2016 prior period current tax adjustment relates mainly to net reductions in provisions for tax contingencies totalling $67m and tax accrual to tax return adjustments. The 2015 prior period current tax adjustment relates mainly to a $186m tax benefit following agreement of US federal tax liabilities of open years to 2008, net reductions in provisions for tax contingencies totalling $259m and tax accrual to tax return adjustments. The 2014 prior period current tax adjustment relates mainly to a reduction in provisions for tax contingencies, including a benefit of $117m arising from the inter-governmental agreement of a transfer pricing matter, partially offset by tax accrual to tax return adjustments.

The 2016 prior period deferred tax adjustments relate mainly to tax accrual to tax return adjustments and releases in provisions for tax contingencies. The 2015 and 2014 prior period deferred tax adjustments relate mainly to tax accrual to tax return adjustments.

To the extent that dividends remitted from overseas subsidiaries, joint ventures and associates are expected to result in additional taxes, appropriate amounts have been provided for. No deferred tax has been provided for unremitted earnings of Group companies overseas as these are considered permanently employed in the business of these companies. Unremitted earnings may be liable to overseas taxes and/or UK taxation (after allowing for double tax relief) if distributed as dividends. The aggregate amount of temporary differences associated with investments in subsidiaries and branches for which deferred tax liabilities have not been recognised totalled approximately $6,884m at 31 December 2016 (2015: $6,957m; 2014: $6,128m).

Factors affecting future tax charges

As a group with worldwide operations, AstraZeneca is subject to several factors that may affect future tax charges, principally the levels and mix of profitability in different jurisdictions, transfer pricing regulations, tax rates imposed and tax regime reforms. In 2016, the UK Government enacted legislation to reduce the main rate of UK Statutory Corporation Tax to 17% by 2020. Details of material tax exposures and items currently under audit and negotiation are set out in Note 28.

4 Taxation continued

Tax reconciliation to UK statutory rate

The table below reconciles the UK statutory tax charge to the Group's total tax charge.

	2016 $m	2015 $m	2014 $m
Profit before tax	**3,552**	3,069	1,246
Notional taxation charge at UK corporation tax rate of 20% (2015: 20.25%; 2014: 21.5%)	**710**	621	268
Differences in effective overseas tax rates	**(233)**	(144)	(195)
Deferred tax (credit)/charge relating to reduction in UK and other tax rates[1]	**(16)**	(25)	23
Unrecognised deferred tax asset[2]	**242**	149	34
Items not deductible for tax purposes	**132**	29	50
Items not chargeable for tax purposes	**(7)**	–	(39)
Other items[3]	**(538)**	(75)	7
Adjustments in respect of prior periods[4]	**(144)**	(312)	(137)
Total tax charge for the year	**146**	243	11

[1] The 2016 item relates to the reduction in the UK Statutory Corporation Tax rate from 18% to 17% effective from 1 April 2020. The 2015 item relates to the reduction in the UK Statutory Corporation Tax rate from 20% to 18% previously announced to be effective from 1 April 2020. The 2014 item relates to the reduction in the UK Statutory Corporation Tax rate from 23% to 20% effective from 1 April 2015.
[2] Includes an amount of $122m in relation to a write down of a previously recognised deferred tax asset.
[3] Other items relate to the release of tax contingencies following agreements between the Canadian tax authority and the UK and Swedish tax authorities in respect of transfer pricing arrangements for the 13-year period from 2004 to 2016 (credit of $453m) and release of certain tax contingencies following the expiry of the relevant statute of limitations (credit of $280m) partially offset by provision build for transfer pricing contingencies (charge of $195m). Other items in 2015 included the impact of internal transfers of intellectual property (tax charge of $181m) and the release of certain tax contingencies following the expiry of the relevant statute of limitations (tax credit of $256m). Other items in 2014 included the impact of internal transfers of intellectual property including recognition of deferred tax benefits acquired as part of a business combination (tax charge of $304m), and the release of certain tax contingencies following the expiry of the relevant statute of limitations (tax credits of $297m).
[4] Further detail explaining the adjustments in respect of prior periods is set out above on page 150.

AstraZeneca is domiciled in the UK but operates in other countries where the tax rates and tax laws are different to those in the UK. The impact of differences in effective overseas tax rates on the Group's overall tax charge is noted above. Profits arising from our manufacturing operation in Puerto Rico are granted special status and are taxed at a reduced rate compared with the normal rate of tax in that territory under a tax incentive grant continuing until 2031.

Deferred tax

The movements in the net deferred tax balance during the year are as follows:

	Intangibles, property, plant & equipment[1] $m	Pension and post-retirement benefits $m	Intercompany inventory transfers $m	Untaxed reserves[2] $m	Losses and tax credits carried forward[3] $m	Accrued expenses and other $m	Total $m
Net deferred tax balance at 1 January 2014	(3,064)	510	736	(1,114)	573	737	(1,622)
Taxation expense	543	(4)	(6)	368	(44)	4	861
Other comprehensive income	150	215	–	–	–	(35)	330
Additions through business combinations[4]	(147)	–	(35)	–	–	37	(145)
Exchange	40	(93)	(65)	168	(4)	(47)	(1)
Net deferred tax balance at 31 December 2014	(2,478)	628	630	(578)	525	696	(577)
Taxation expense	355	30	156	(156)	58	(53)	390
Other comprehensive income	80	(198)	–	–	–	(9)	(127)
Additions through business combinations (restated)[5]	(1,206)	–	–	–	229	–	(977)
Exchange	(12)	(33)	(48)	42	(8)	(21)	(80)
Net deferred tax balance at 31 December 2015 (restated)[5]	(3,261)	427	738	(692)	804	613	(1,371)
Income statement	**(132)**	**11**	**314**	**(53)**	**151**	**(67)**	**224**
Other comprehensive income	**83**	**101**	**–**	**–**	**–**	**(24)**	**160**
Additions through business combinations[6]	**(1,827)**	**–**	**–**	**–**	**50**	**–**	**(1,777)**
Exchange	**(1)**	**(74)**	**(38)**	**48**	**(1)**	**(13)**	**(79)**
Other movements[7]	**(11)**	**–**	**–**	**–**	**–**	**–**	**(11)**
Net deferred tax balance at 31 December 2016[8]	**(5,149)**	**465**	**1,014**	**(697)**	**1,004**	**509**	**(2,854)**

[1] Includes deferred tax on contingent liabilities in respect of intangibles.
[2] Untaxed reserves relate to taxable profits where the tax liability is deferred to later periods.
[3] Includes losses and tax credits carried forward which will expire within nine to 20 years.
[4] The deferred tax liability of $145m relates to the acquisition of BMS's share of Global Diabetes Alliance Assets ($28m) and the acquisition of Definiens Group ($117m).
[5] The deferred tax liability of $977m relates to the acquisition of ZS Pharma, which has been restated (see Note 25).
[6] The deferred tax liability of $1,777m relates to the acquisition of Acerta Pharma.
[7] Arising on the deconsolidation of Entasis as detailed in Note 10.
[8] The UK had a net deferred tax asset of $172m as at 31 December 2016, mainly in respect of the pension and post-retirement benefits, which has been recognised on the basis of sufficient forecast future taxable profits against which the deductible temporary differences can be utilised.

4 Taxation continued

The net deferred tax balance, before the offset of balances within countries, consists of:

	Intangibles, property, plant & equipment $m	Pension and post-retirement benefits $m	Intercompany inventory transfers $m	Untaxed reserves $m	Losses and tax credits carried forward $m	Accrued expenses and other $m	Total $m
Deferred tax assets at 31 December 2014	1,212	631	657	–	525	838	3,863
Deferred tax liabilities at 31 December 2014	(3,690)	(3)	(27)	(578)	–	(142)	(4,440)
Net deferred tax balance at 31 December 2014	(2,478)	628	630	(578)	525	696	(577)
Deferred tax assets at 31 December 2015 (restated)*	1,055	430	780	–	804	732	3,801
Deferred tax liabilities at 31 December 2015	(4,316)	(3)	(42)	(692)	–	(119)	(5,172)
Net deferred tax balance at 31 December 2015 (restated)*	(3,261)	427	738	(692)	804	613	(1,371)
Deferred tax assets at 31 December 2016	**875**	**465**	**1,014**	**–**	**1,004**	**629**	**3,987**
Deferred tax liabilities at 31 December 2016	**(6,024)**	**–**	**–**	**(697)**	**–**	**(120)**	**(6,841)**
Net deferred tax balance at 31 December 2016	**(5,149)**	**465**	**1,014**	**(697)**	**1,004**	**509**	**(2,854)**

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25).

Analysed in the statement of financial position, after offset of balances within countries, as:

	2016 $m	2015 Restated* $m	2014 $m
Deferred tax assets	**1,102**	1,294	1,219
Deferred tax liabilities	**(3,956)**	(2,665)	(1,796)
Net deferred tax balance	**(2,854)**	(1,371)	(577)

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25).

Unrecognised deferred tax assets

Deferred tax assets of $542m have not been recognised in respect of deductible temporary differences (2015: $414m; 2014: $216m) because it is not probable that future taxable profit will be available against which the Group can utilise the benefits therefrom.

5 Earnings per $0.25 Ordinary Share

	2016	2015	2014
Profit for the year attributable to equity holders ($m)	**3,499**	2,825	1,233
Basic earnings per Ordinary Share	**$2.77**	$2.23	$0.98
Diluted earnings per Ordinary Share	**$2.76**	$2.23	$0.98
Weighted average number of Ordinary Shares in issue for basic earnings (millions)	**1,265**	1,264	1,262
Dilutive impact of share options outstanding (millions)	**1**	1	2
Diluted weighted average number of Ordinary Shares in issue (millions)	**1,266**	1,265	1,264

The earnings figures used in the calculations above are post-tax.

6 Segment information

AstraZeneca is engaged in a single business activity of biopharmaceuticals and the Group does not have multiple operating segments. AstraZeneca's biopharmaceuticals business consists of the discovery and development of new products, which are then manufactured, marketed and sold. All of these functional activities take place (and are managed) globally on a highly integrated basis. These individual functional areas are not managed separately.

The SET, established and chaired by the CEO, is the vehicle through which he exercises the authority delegated to him from the Board for the management, development and performance of our business. It is considered that the SET is AstraZeneca's chief operating decision making body (as defined by IFRS 8 'Operating Segments'). The operation of the SET is principally driven by the management of the commercial operations, R&D, and manufacturing and supply. In addition to the CEO, CFO, the General Counsel and the Chief Compliance Officer, the SET comprises 10 Executive Vice-Presidents representing IMED, MedImmune, Global Medicines Development, North America, Europe, International East, International West, GPPS, Operations & Information Technology, and Human Resources. All significant operating decisions are taken by the SET. While members of the SET have responsibility for implementation of decisions in their respective areas, operating decision making is at SET level as a whole. Where necessary, these are implemented through cross-functional sub-committees that consider the Group-wide impact of a new decision. For example, product launch decisions would be initially considered by the SET and, on approval, passed to an appropriate sub-team for implementation. The impacts of being able to develop, produce, deliver and commercialise a wide range of pharmaceutical products drive the SET decision making process.

6 Segment information continued

In assessing performance, the SET reviews financial information on an integrated basis for the Group as a whole, substantially in the form of, and on the same basis as, the Group's IFRS Financial Statements. The high upfront cost of discovering and developing new products coupled with the relatively insignificant and stable unit cost of production means that there is not the clear link that exists in many manufacturing businesses between the revenue generated on an individual product sale and the associated cost and hence margin generated on a product. Consequently, the profitability of individual drugs or classes of drugs is not considered a key measure of performance for the business and is not monitored by the SET.

Resources are allocated on a Group-wide basis according to need. In particular, capital expenditure, in-licensing, and R&D resources are allocated between activities on merit, based on overall therapeutic considerations and strategy under the aegis of the Group's Early Stage Product Committees and a single Late Stage Product Committee.

Geographic areas

The following tables show information by geographic area and, for Total Revenue and property, plant and equipment, material countries. The figures show the Total Revenue, operating profit and profit before tax made by companies located in that area/country, together with segment assets, segment assets acquired, net operating assets, and property, plant and equipment owned by the same companies; export sales and the related profit are included in the area/country where the legal entity resides and from which those sales were made.

			Total Revenue
	2016 $m	2015 $m	2014 $m
UK			
External	**1,849**	2,176	1,878
Intra-Group	**7,503**	6,001	4,718
	9,352	8,177	6,596
Continental Europe			
Belgium	**163**	176	260
France	**899**	1,015	1,325
Germany	**615**	608	687
Italy	**529**	544	688
Spain	**440**	426	495
Sweden	**1,522**	645	639
Others	**1,412**	1,448	1,794
Intra-Group	**4,108**	4,664	4,763
	9,688	9,526	10,651
The Americas			
Canada	**495**	530	583
US	**7,828**	9,949	10,692
Others	**846**	1,018	1,165
Intra-Group	**3,487**	2,167	2,346
	12,656	13,664	14,786
Asia, Africa & Australasia			
Australia	**385**	435	657
China	**2,650**	2,548	2,228
Japan	**2,145**	1,985	2,202
Others	**1,224**	1,205	1,254
Intra-Group	**85**	46	56
	6,489	6,219	6,397
Continuing operations	**38,185**	37,586	38,430
Intra-Group eliminations	**(15,183)**	(12,878)	(11,883)
Total Revenue	**23,002**	24,708	26,547

Export sales from the UK totalled $8,421m for the year ended 31 December 2016 (2015: $6,851m; 2014: $5,709m). Intra-Group pricing is determined on an arm's length basis.

6 Segment information continued

	Operating (loss)/profit			(Loss)/profit before tax		
	2016 $m	2015 $m	2014 $m	**2016 $m**	2015 $m	2014 $m
UK	**(526)**	(743)	(851)	**(950)**	(1,113)	(1,174)
Continental Europe	**3,695**	3,412	1,780	**3,136**	3,023	1,477
The Americas	**1,259**	1,101	818	**919**	821	549
Asia, Africa & Australasia	**474**	344	390	**447**	338	394
Continuing operations	**4,902**	4,114	2,137	**3,552**	3,069	1,246

	Non-current assets[1]			Total assets		
	2016 $m	2015 Restated* $m	2014 $m	**2016 $m**	2015 Restated* $m	2014 $m
UK	**5,127**	6,251	5,826	**12,704**	14,712	14,926
Continental Europe	**15,731**	8,690	8,764	**18,174**	10,636	11,184
The Americas	**26,044**	26,431	24,750	**28,792**	31,536	29,324
Asia, Africa & Australasia	**917**	937	874	**2,856**	3,172	3,161
Continuing operations	**47,819**	42,309	40,214	**62,526**	60,056	58,595

	Assets acquired[2]			Net operating assets[3]		
	2016 $m	2015 Restated* $m	2014 $m	**2016 $m**	2015 $m	2014 $m
UK	**362**	1,478	2,703	**3,306**	3,713	3,002
Continental Europe	**8,494**	653	6,362	**8,479**	3,704	4,110
The Americas	**688**	4,147	2,732	**20,969**	22,334	20,190
Asia, Africa & Australasia	**129**	172	199	**1,030**	1,458	1,570
Continuing operations	**9,673**	6,450	11,996	**33,784**	31,209	28,872

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25).
[1] Non-current assets exclude deferred tax assets and derivative financial instruments.
[2] Included in Assets acquired are those assets that are expected to be used during more than one period (property, plant and equipment, goodwill and intangible assets).
[3] Net operating assets exclude short-term investments, cash, short-term borrowings, loans, derivative financial instruments, retirement benefit obligations and non-operating receivables and payables.

	Property, plant and equipment		
	2016 $m	2015 $m	2014 $m
UK	**1,026**	1,024	824
Sweden	**1,142**	1,023	971
US	**3,233**	2,986	2,830
Rest of the world	**1,447**	1,380	1,385
Continuing operations	**6,848**	6,413	6,010

Geographic markets

The table below shows Product Sales in each geographic market in which customers are located.

	2016 $m	2015 $m	2014 $m
UK	**487**	588	773
Continental Europe	**4,987**	5,180	6,394
The Americas	**8,717**	11,031	11,892
Asia, Africa & Australasia	**7,128**	6,842	7,036
Continuing operations	**21,319**	23,641	26,095

Product Sales are recognised when the significant risks and rewards of ownership have been transferred to a third party. In general this is upon delivery of the products to wholesalers. Transactions with one wholesaler (2015: two; 2014: two) individually represented greater than 10% of Product Sales. The value of these transactions recorded as Product Sales were $2,851m (2015: $3,458m and $2,757m; 2014: $3,261m and $2,674m).

7 Property, plant and equipment

	Land and buildings $m	Plant and equipment $m	Assets in course of construction $m	Total property, plant and equipment $m
Cost				
At 1 January 2014	5,683	8,453	771	14,907
Capital expenditure	34	184	874	1,092
Additions through business combinations (Note 25)	213	206	96	515
Transfers in from other non-current assets	156	124	70	350
Transfer of assets into use	136	405	(541)	–
Disposals and other movements	(976)	(962)	(27)	(1,965)
Exchange adjustments	(334)	(698)	(123)	(1,155)
At 31 December 2014	4,912	7,712	1,120	13,744
Capital expenditure	23	223	1,155	1,401
Additions through business combinations (Note 25)	21	–	–	21
Transfer of assets into use	269	359	(628)	–
Disposals and other movements	(239)	(442)	(3)	(684)
Exchange adjustments	(174)	(384)	(76)	(634)
At 31 December 2015	4,812	7,468	1,568	13,848
Capital expenditure	**29**	**206**	**1,214**	**1,449**
Transfer of assets into use	**222**	**109**	**(331)**	**–**
Disposals and other movements	**(236)**	**(700)**	**(16)**	**(952)**
Exchange adjustments	**(211)**	**(540)**	**(143)**	**(894)**
At 31 December 2016	**4,616**	**6,543**	**2,292**	**13,451**
Depreciation				
At 1 January 2014	2,952	6,137	–	9,089
Charge for year	252	524	–	776
Disposals and other movements	(639)	(744)	–	(1,383)
Exchange adjustments	(214)	(534)	–	(748)
At 31 December 2014	2,351	5,383	–	7,734
Charge for year	198	479	–	677
Impairment	9	19	–	28
Disposals and other movements	(203)	(411)	–	(614)
Exchange adjustments	(102)	(288)	–	(390)
At 31 December 2015	2,253	5,182	–	7,435
Charge for year	**185**	**424**	**–**	**609**
Impairment	**2**	**–**	**–**	**2**
Disposals and other movements	**(222)**	**(656)**	**–**	**(878)**
Exchange adjustments	**(126)**	**(439)**	**–**	**(565)**
At 31 December 2016	**2,092**	**4,511**	**–**	**6,603**
Net book value				
At 31 December 2014	2,561	2,329	1,120	6,010
At 31 December 2015	2,559	2,286	1,568	6,413
At 31 December 2016	**2,524**	**2,032**	**2,292**	**6,848**

Impairment charges in 2015 were attributable to assets dedicated to the production and manufacture of *Caprelsa*, for which global product rights were divested during the year, and to strategy changes affecting manufacturing operations in the US. These charges have been recognised in cost of sales.

	2016 $m	2015 $m	2014 $m
The net book value of land and buildings comprised:			
Freeholds	**2,326**	2,432	2,489
Leaseholds	**198**	127	72

Included within plant and equipment are Information Technology assets held under finance leases with a net book value of $43m (2015: $70m; 2014: $74m).

8 Goodwill

	2016 $m	2015 Restated* $m	2014 $m
Cost			
At 1 January	**12,113**	11,868	10,307
Additions through business combinations (Note 25)	**19**	388	1,841
Exchange and other adjustments	**(163)**	(143)	(280)
At 31 December	**11,969**	12,113	11,868
Amortisation and impairment losses			
At 1 January	**313**	318	326
Exchange and other adjustments	**(2)**	(5)	(8)
At 31 December	**311**	313	318
Net book value at 31 December	**11,658**	11,800	11,550

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25).

For the purpose of impairment testing of goodwill, the Group is regarded as a single cash-generating unit.

The recoverable amount is based on value in use using discounted risk-adjusted projections of the Group's pre-tax cash flows over 10 years which is considered by the Board as a reasonable period given the long development and life-cycle of a medicine. The projections include assumptions about product launches, competition from rival products and pricing policy as well as the possibility of generics entering the market. In setting these assumptions we consider our past experience, external sources of information (including information on expected increases and ageing of the populations in our established markets and the expanding patient population in newer markets), our knowledge of competitor activity and our assessment of future changes in the pharmaceutical industry. The 10-year period is covered by internal budgets and forecasts. Given that internal budgets and forecasts are prepared for all projections, no general growth rates are used to extrapolate internal budgets and forecasts for the purposes of determining value in use. No terminal value is included as these cash flows are more than sufficient to establish that an impairment does not exist. The methods used to determine recoverable amounts have remained consistent with the prior year.

In arriving at value in use, we disaggregate our projected pre-tax cash flows into groups reflecting similar risks and tax effects. For each group of cash flows we use an appropriate discount rate reflecting those risks and tax effects. In arriving at the appropriate discount rate for each group of cash flows, we adjust AstraZeneca's post-tax weighted average cost of capital (7.0% for 2016, 2015 and 2014) to reflect the impact of risks relevant to that group of assets, the time value of money and tax effects. The weighted average pre-tax discount rate we used was approximately 10% (2015: 10%; 2014: 10%).

As a further check, we compare our market capitalisation to the book value of our net assets and this indicates significant surplus at 31 December 2016 (and 31 December 2015 and 31 December 2014).

No goodwill impairment was identified.

The Group has also performed sensitivity analysis calculations on the projections used and discount rate applied. The Directors have concluded that, given the significant headroom that exists, and the results of the sensitivity analysis performed, there is no significant risk that reasonable changes in any key assumptions would cause the carrying value of goodwill to exceed its value in use.

9 Intangible assets

	Product, marketing and distribution rights $m	Other intangibles $m	Software development costs $m	Total $m
Cost				
At 1 January 2014	25,553	2,499	2,090	30,142
Additions through business combinations (Note 25)	6,926	575	–	7,501
Additions – separately acquired	907	25	115	1,047
Disposals	(23)	–	(41)	(64)
Exchange and other adjustments	(1,464)	(287)	(138)	(1,889)
At 31 December 2014	31,899	2,812	2,026	36,737
Additions through business combinations (Note 25)	3,162	–	–	3,162
Additions – separately acquired	1,341	60	77	1,478
Disposals	(198)	(4)	(14)	(216)
Exchange and other adjustments	(886)	(73)	(70)	(1,029)
At 31 December 2015	35,318	2,795	2,019	40,132
Additions through business combinations (Note 25)	**7,307**	**–**	**–**	**7,307**
Additions – separately acquired	**789**	**32**	**77**	**898**
Disposals	**(339)**	**(15)**	**(141)**	**(495)**
Exchange and other adjustments	**(1,472)**	**(232)**	**(127)**	**(1,831)**
At 31 December 2016	**41,603**	**2,580**	**1,828**	**46,011**
Amortisation and impairment losses				
At 1 January 2014	10,944	1,682	1,469	14,095
Amortisation for year	2,008	193	183	2,384
Impairment	81	18	23	122
Disposals	(23)	–	(41)	(64)
Exchange and other adjustments	(465)	(240)	(76)	(781)
At 31 December 2014	12,545	1,653	1,558	15,756
Amortisation for year	1,718	174	107	1,999
Impairment	143	–	5	148
Disposals	(31)	(2)	(14)	(47)
Exchange and other adjustments	(271)	(52)	(47)	(370)
At 31 December 2015	14,104	1,773	1,609	17,486
Amortisation for year	**1,454**	**162**	**85**	**1,701**
Impairment	**43**	**1**	**1**	**45**
Disposals	**(25)**	**(15)**	**(124)**	**(164)**
Exchange and other adjustments	**(481)**	**(85)**	**(77)**	**(643)**
At 31 December 2016	**15,095**	**1,836**	**1,494**	**18,425**
Net book value				
At 31 December 2014	19,354	1,159	468	20,981
At 31 December 2015	21,214	1,022	410	22,646
At 31 December 2016	**26,508**	**744**	**334**	**27,586**

Other intangibles consist mainly of licensing and rights to contractual income streams.

9 Intangible assets continued

Amortisation charges are recognised in profit as follows:

	Product, marketing and distribution rights $m	Other intangibles $m	Software development costs $m	Total $m
Year ended 31 December 2014				
Cost of sales	701	–	–	701
Research and development expense	–	60	–	60
Selling, general and administrative costs	1,203	25	183	1,411
Other operating income and expense	104	108	–	212
Total	2,008	193	183	2,384
Year ended 31 December 2015				
Cost of sales	369	–	–	369
Research and development expense	–	57	–	57
Selling, general and administrative costs	1,321	31	107	1,459
Other operating income and expense	28	86	–	114
Total	1,718	174	107	1,999
Year ended 31 December 2016				
Cost of sales	**124**	**–**	**–**	**124**
Research and development expense	**–**	**48**	**–**	**48**
Selling, general and administrative costs	**1,327**	**31**	**85**	**1,443**
Other operating income and expense	**3**	**83**	**–**	**86**
Total	**1,454**	**162**	**85**	**1,701**

Impairment charges are recognised in profit as follows:

	Product, marketing and distribution rights $m	Other intangibles $m	Software development costs $m	Total $m
Year ended 31 December 2014				
Research and development expense	81	–	–	81
Selling, general and administrative costs	–	–	23	23
Other operating income and expense	–	18	–	18
Total	81	18	23	122
Year ended 31 December 2015				
Research and development expense	79	–	–	79
Selling, general and administrative costs	–	–	5	5
Other operating income and expense	64	–	–	64
Total	143	–	5	148
Year ended 31 December 2016				
Research and development expense	**32**	**1**	**–**	**33**
Selling, general and administrative costs	**11**	**–**	**1**	**12**
Total	**43**	**1**	**1**	**45**

Impairment charges and reversals

Impairment charges relate to the termination, or reassessment of the likelihood of success, of several individual projects, none of which had significant capitalised values.

The write downs in value of intangible assets, other than those arising from termination of R&D activities, were determined based on value in use calculations using discounted risk-adjusted projections of the products' expected post-tax cash flows over a period reflecting the patent-protected lives of the individual products. The full period of projections is covered by internal budgets and forecasts. In arriving at the appropriate discount rate to use for each product, we adjust AstraZeneca's post-tax weighted average cost of capital (7.0% for 2016, 2015 and 2014) to reflect the impact of risks and tax effects specific to the individual products. The weighted average pre-tax discount rate we used was approximately 13% (2015: 13%; 2014: 13%).

By their nature, the value in use calculations are sensitive to the underlying methods, assumptions and estimates. Consistent with prior years, as part of the impairment review process, management has identified that reasonably possible changes in certain key assumptions may cause the carrying amount of the intangible assets to exceed the recoverable amount. At 31 December 2016, the Group held intangible assets for products in development of $14,261m (2015: $8,732m; 2014: $6,598m), for which the most sensitive assumption is the probability of technical success, and intangible assets for launched products of $12,991m (2015: $13,504m; 2014: $13,915m), for which the most sensitive assumptions are the projected market share of the therapeutic area and expected pricing. In particular, where a trial is unsuccessful and there is no alternative use for the development asset, this will result in a full impairment. As detailed in Note 25, we have recognised significant intangible assets for late stage development programmes and launched products on business combinations at their fair value at acquisition. Management has identified that the impairment review calculations on these assets, in particular those from Acerta Pharma, ZS Pharma, BMS's share of the Global Diabetes Alliance and Almirall's respiratory franchise, are especially sensitive to the key assumptions noted above. Given their nature, impairment adjustments triggered by future events that have yet to occur may be material. In addition, there is a significant risk that impairments recognised in any one period may be subject to material adjustments in future periods.

9 Intangible assets continued

Significant assets

	Carrying value $m	Remaining amortisation period
Intangible assets arising from the acquisition of Acerta Pharma[1]	7,307	Not amortised
Intangible assets arising from the acquisition of ZS Pharma[1]	3,162	Not amortised
RSV franchise assets arising from the acquisition of MedImmune	2,503	9 years
Intangible assets arising from the restructuring of a joint venture with Merck	1,587	2 to 14 years
Farxiga/*Forxiga* intangible assets acquired from BMS	1,427	11 years
Intangible assets arising from the acquisition of Ardea	1,359	11 years
Intangible assets acquired from Almirall and Actavis	1,318	3 to 22 years
Bydureon intangible assets acquired from BMS	1,161	14 years
Onglyza intangible assets acquired from BMS	1,055	7 years
Other diabetes intangible assets acquired from BMS	1,235	6 to 17 years
Intangible assets arising from the acquisition of Pearl Therapeutics[1]	877	Not amortised
Intangible assets arising from the acquisition of Omthera[1]	533	Not amortised
Intangible assets arising from the acquisition of Amplimmune[1]	470	Not amortised
Intangible assets arising from the acquisition of Takeda	456	3 to 8 years
FluMist intangible assets arising from the acquisition of MedImmune	415	15 years
Roxadustat intangible assets acquired from FibroGen[1]	301	Not amortised

[1] Assets in development are not amortised but are tested annually for impairment.

All the assets listed above are classified as Product, marketing and distribution rights.

10 Investments in associates and joint ventures

	2016 $m	2015 $m	2014 $m
At 1 January	**85**	59	–
Additions	**65**	45	70
Share of after tax losses	**(33)**	(16)	(6)
Exchange adjustments	**(18)**	(3)	(5)
At 31 December	**99**	85	59

In 2015, AstraZeneca established the subsidiaries Entasis Therapeutics Ltd and Entasis Therapeutics Inc. (collectively known as 'Entasis') for the development of early stage infection assets. On 29 March 2016, Entasis closed a Series B financing, raising $25m from four third-party investors. Under the funding agreement, a new board of directors was appointed, and a voting rights agreement was put in place committing to reduce AstraZeneca's voting interest to approximately 49%. Since AstraZeneca no longer has overall control of Entasis, it is now treated as an associate rather than a wholly owned subsidiary of the Group. The results of Entasis were deconsolidated from the Group on 29 March, with an investment in associate of $24m recognised. There was no gain or loss recognised on deconsolidation.

On 1 December 2015, AstraZeneca entered into a joint venture agreement with Fujifilm Kyowa Kirin Biologics Co., Ltd. to develop a biosimilar using the combined capabilities of the two parties. The agreement resulted in the formation of a joint venture entity based in the UK, Centus Biotherapeutics Limited. AstraZeneca contributed $45m in cash to the joint venture entity and has a 50% interest in the joint venture. An additional contribution of $10m was made in 2016.

On 30 April 2014, AstraZeneca entered into a joint venture agreement with Samsung Biologics Co., Ltd. to develop a biosimilar using the combined capabilities of the two parties. The agreement resulted in the formation of a joint venture entity based in the UK, Archigen Biotech Limited, with a branch in South Korea. AstraZeneca contributed $70m in cash to the joint venture entity and has a 50% interest in the joint venture. An additional contribution of $30m was made in 2016.

All investments are accounted for using the equity method.

Aggregated summarised financial information for the associate and joint venture entities is set out below.

	2016 $m	2015 $m	2014 $m
Non-current assets	**144**	123	76
Current assets	**128**	75	58
Current liabilities	**(20)**	(11)	(6)
Net assets	**252**	187	128
Amount attributable to AstraZeneca	**125**	93	64
Exchange adjustments	**(26)**	(8)	(5)
Carrying value of investments in associate and joint ventures	**99**	85	59

11 Other investments

	2016 $m	2015 $m	2014 $m
Non-current investments			
Equity securities available for sale	**727**	458	502
Total	**727**	458	502
Current investments			
Equity securities and bonds available for sale	**847**	548	775
Fixed deposits	**37**	65	20
Total	**884**	613	795

The equity securities and bonds available for sale in current investments include $nil (2015: $467m; 2014: $775m) held in a custody account. Further details of this custody account are included in Note 20.

Impairment charges of $21m in respect of available for sale securities are included in other operating income and expense (2015: $17m; 2014: $23m).

Equity securities and bonds available for sale are held at fair value. The fair value of listed investments is based on year end quoted market prices. For unlisted investments whose fair value cannot be reliably measured, cost is considered to approximate to fair value. Fixed deposits are held at amortised cost with carrying value being a reasonable approximation of fair value given their short-term nature.

None of the financial assets or liabilities have been reclassified in the year.

Fair value hierarchy

The table below analyses equity securities and bonds available for sale, contained within other investments and carried at fair value, by valuation method. The different levels have been defined as follows:

> Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
> Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (ie as prices) or indirectly (ie derived from prices).
> Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

	2016 $m	2015 $m	2014 $m
Level 1	**933**	654	927
Level 2	**–**	–	–
Level 3	**641**	352	350
Total	**1,574**	1,006	1,277

Equity securities available for sale that are analysed at Level 3 include investments in private biotech companies. In the absence of specific market data, these unlisted investments are held at cost, adjusted as necessary for impairments and revaluations on new funding rounds, which approximates to fair value. Movements in Level 3 investments are detailed below.

	2016 $m	2015 $m	2014 $m
At 1 January	**352**	350	209
Additions	**210**	49	107
Revaluations	**110**	–	95
Transfers out	**(12)**	(22)	(35)
Disposals	**(2)**	(6)	–
Impairments and exchange adjustments	**(17)**	(19)	(26)
At 31 December	**641**	352	350

Assets are transferred in or out of Level 3 on the date of the event or change in circumstances that caused the transfer.

12 Derivative financial instruments

	Non-current assets $m	Current assets $m	Current liabilities $m	Non-current liabilities $m	Total $m
Interest rate swaps designated in a fair value hedge	79	–	–	–	79
Interest rate swaps related to instruments designated at fair value through profit and loss	82	–	–	–	82
Cross currency swaps designated in a net investment hedge	304	–	–	–	304
Other derivatives	–	21	(21)	–	–
31 December 2014	465	21	(21)	–	465

	Non-current assets $m	Current assets $m	Current liabilities $m	Non-current liabilities $m	Total $m
Interest rate swaps designated in a fair value hedge	49	–	–	–	49
Interest rate swaps related to instruments designated at fair value through profit and loss	77	–	–	–	77
Cross currency swaps designated in a net investment hedge	320	–	–	–	320
Other derivatives	–	2	(9)	(1)	(8)
31 December 2015	446	2	(9)	(1)	438

	Non-current assets $m	**Current assets $m**	**Current liabilities $m**	**Non-current liabilities $m**	**Total $m**
Interest rate swaps designated in a fair value hedge	**–**	**19**	**–**	**(2)**	**17**
Interest rate swaps related to instruments designated at fair value through profit and loss	**65**	**–**	**–**	**–**	**65**
Cross currency swaps designated in a net investment hedge	**278**	**–**	**–**	**–**	**278**
Cross currency swaps designated in a cashflow hedge	**–**	**–**	**–**	**(115)**	**(115)**
Other derivatives	**–**	**8**	**(18)**	**–**	**(10)**
31 December 2016	**343**	**27**	**(18)**	**(117)**	**235**

All derivatives are held at fair value and fall within Level 2 of the fair value hierarchy as defined in Note 11. None of the derivatives have been reclassified in the year.

The fair value of interest rate swaps and cross-currency swaps is estimated using appropriate zero coupon curve valuation techniques to discount future contractual cash flows based on rates at current year end.

The fair value of forward foreign exchange contracts and currency options are estimated by cash flow accounting models using appropriate yield curves based on market forward foreign exchange rates at the year end. The majority of forward foreign exchange contracts for existing transactions had maturities of less than one month from year end.

The interest rates used to discount future cash flows for fair value adjustments, where applicable, are based on market swap curves at the reporting date, and were as follows.

	2016	2015	2014
Derivatives	**1.5% to 2.2%**	1.2% to 2.1%	1.2% to 2.3%

13 Non-current other receivables

Non-current other receivables of $901m (2015: $907m; 2014: $1,112m) include a prepayment of $380m (2015: $617m; 2014: $906m) which represents the long-term element of minimum contractual royalties payable to Shionogi under the global licence agreement for *Crestor*, which was renegotiated in December 2013. The resulting modified royalty structure, which includes fixed minimum and maximum payments in years until 2020, has resulted in the Group recognising liabilities, and corresponding prepayments, for the discounted value of total minimum payments. The current portion of the prepayment is $116m (2015: $260m; 2014: $323m) and is reported in amounts due within one year (see Note 15).

Non-current other receivables also include $178m (2015: $158m; 2014: $150m) prepayments in relation to our research collaboration with Moderna Therapeutics and $175m (2015: $nil; 2014: $nil) receivable related to the disposal of the small molecule antibiotics business.

14 Inventories

	2016 $m	2015 $m	2014 $m
Raw materials and consumables	**811**	960	663
Inventories in process	**1,060**	545	501
Finished goods and goods for resale	**463**	638	796
Inventories	**2,334**	2,143	1,960

The Group recognised $2,644m (2015: $2,942m; 2014: $3,214m) of inventories as an expense within cost of sales during the year.

Inventory write-offs in the year amounted to $198m (2015: $112m; 2014: $126m).

15 Current trade and other receivables

	2016 $m	2015 $m	2014 $m
Amounts due within one year			
Trade receivables	**2,625**	4,685	4,816
Less: Amounts provided for doubtful debts (Note 26)	**(42)**	(52)	(54)
	2,583	4,633	4,762
Other receivables	**852**	543	1,050
Prepayments and accrued income	**879**	1,268	1,262
	4,314	6,444	7,074
Amounts due after more than one year			
Other receivables	**140**	28	22
Prepayments and accrued income	**119**	150	136
	259	178	158
Trade and other receivables	**4,573**	6,622	7,232

All financial assets included within current trade and other receivables are held at amortised costs with carrying value being a reasonable approximation of fair value.

16 Cash and cash equivalents

	2016 $m	2015 $m	2014 $m
Cash at bank and in hand	**782**	1,250	1,009
Short-term deposits	**4,236**	4,990	5,351
Cash and cash equivalents	**5,018**	6,240	6,360
Unsecured bank overdrafts	**(94)**	(189)	(196)
Cash and cash equivalents in the cash flow statement	**4,924**	6,051	6,164

The Group holds $91m (2015: $110m; 2014: $114m) of cash and cash equivalents which is required to meet insurance solvency, capital and security requirements, and which, as a result, is not readily available for the general purposes of the Group.

Cash and cash equivalents are held at amortised cost. Fair value approximates to carrying value.

17 Interest-bearing loans and borrowings

		Repayment dates	2016 $m	2015 $m	2014 $m
Current liabilities					
Bank overdrafts		On demand	**94**	189	196
Finance leases			**87**	67	48
5.125% Non-callable bond	euros	2015	**–**	–	912
5.9% Callable bond	US dollars	2017	**1,769**	–	–
Other loans (Commercial paper)		Within one year	**357**	660	1,290
Total			**2,307**	916	2,446
Non-current liabilities					
Finance leases			**6**	28	60
5.9% Callable bond	US dollars	2017	**–**	1,796	1,825
Floating rate notes	US dollars	2018	**399**	399	–
1.75% Callable bond	US dollars	2018	**998**	997	–
1.95% Callable bond	US dollars	2019	**998**	997	996
2.375% Callable bond	US dollars	2020	**1,589**	1,586	–
0.875% Non-callable bond	euros	2021	**782**	812	902
0.25% Callable bond	euros	2021	**522**	–	–
7% Guaranteed debentures	US dollars	2023	**350**	355	370
0.75% Callable bond	euros	2024	**937**	–	–
3.375% Callable bond	US dollars	2025	**1,976**	1,971	–
1.25% Callable bond	euros	2028	**827**	–	–
5.75% Non-callable bond	pounds sterling	2031	**426**	515	540
6.45% Callable bond	US dollars	2037	**2,719**	2,719	2,718
4% Callable bond	US dollars	2042	**986**	986	986
4.375% Callable bond	US dollars	2045	**979**	976	–
Other loans			**7**	–	–
Total			**14,501**	14,137	8,397

All loans and borrowings above are unsecured, except for finance leases which are secured against the Information Technology assets to which they relate (see Note 7).

17 Interest-bearing loans and borrowings continued

Set out below is a comparison by category of carrying values and fair values of all the Group's interest-bearing loans and borrowings.

	Instruments in a fair value hedge relationship[1] $m	Instruments designated at fair value[2] $m	Instruments designated in cash flow hedge[3] $m	Amortised cost[4] $m	Total carrying value $m	Fair value $m
2014						
Overdrafts	–	–	–	196	196	196
Finance leases due within one year	–	–	–	48	48	48
Finance leases due after more than one year	–	–	–	60	60	60
Loans due within one year	–	–	–	2,202	2,202	2,202
Loans due after more than one year	828	370	–	7,139	8,337	9,662
Total at 31 December 2014	828	370	–	9,645	10,843	12,168
2015						
Overdrafts	–	–	–	189	189	189
Finance leases due within one year	–	–	–	67	67	67
Finance leases due after more than one year	–	–	–	28	28	28
Loans due within one year	–	–	–	660	660	660
Loans due after more than one year	1,398	355	–	12,356	14,109	15,132
Total at 31 December 2015	1,398	355	–	13,300	15,053	16,076
2016						
Overdrafts	**–**	**–**	**–**	**94**	**94**	**94**
Finance leases due within one year	**–**	**–**	**–**	**87**	**87**	**87**
Finance leases due after more than one year	**–**	**–**	**–**	**6**	**6**	**6**
Loans due within one year	**770**	**–**	**–**	**1,356**	**2,126**	**2,161**
Loans due after more than one year	**598**	**350**	**2,286**	**11,261**	**14,495**	**15,826**
Total at 31 December 2016	**1,368**	**350**	**2,286**	**12,804**	**16,808**	**18,174**

[1] Instruments designated as hedged items in fair value hedge relationships with respect to interest rate risk include a designated portion of the US dollar 5.9% Callable bond repayable in 2017, and a portion of the US dollar 1.75% Callable bond repayable in 2018.
[2] Instruments designated at fair value through profit or loss include the US dollar 7% guaranteed debentures repayable in 2023.
[3] Instruments designated in a cash flow hedge include the euro 0.25%, euro 0.75% and euro 1.25% Callable bonds repayable in 2021, 2024 and 2028 respectively.
[4] Included within borrowings held at amortised cost are amounts designated as hedges of net investments in foreign operations of $1,208m (2015: $1,327m; 2014: $1,453m) held at amortised cost. The fair value of these borrowings was $1,400m at 31 December 2016 (2015: $1,516m; 2014: $1,641m).

The fair value of fixed-rate publicly traded debt is based on year end quoted market prices; the fair value of floating rate debt is nominal value, as mark to market differences would be minimal given the frequency of resets. The carrying value of loans designated at fair value through profit or loss is the fair value; this falls within the Level 1 valuation method as defined in Note 11. For loans designated in a fair value hedge relationship, carrying value is initially measured at fair value and remeasured for fair value changes in respect of the hedged risk at each reporting date. All other loans are held at amortised cost. Fair values, as disclosed in the table above, are all determined using the Level 1 valuation method as defined in Note 11, with the exception of overdrafts and finance leases, where fair value approximates to carrying values.

A loss of $8m was made during the year on the fair value of bonds designated at fair value through profit or loss, due to decreased credit risk. A gain of $40m has been made on these bonds since designation due to increased credit risk. Changes in credit risk had no material effect on any other financial assets and liabilities recognised at fair value in the Group Financial Statements. The change in fair value attributable to changes in credit risk is calculated as the change in fair value not attributable to market risk. The amount payable at maturity on bonds designated at fair value through profit or loss is $288m.

The interest rates used to discount future cash flows for fair value adjustments, where applicable, are based on market swap curves at the reporting date, and were as follows:

	2016	2015	2014
Loans and borrowings	**1.5% to 2.2%**	1.2% to 2.1%	1.2% to 2.3%

18 Trade and other payables

	2016 $m	2015 $m	2014 $m
Current liabilities			
Trade payables	**2,990**	3,469	3,492
Value added and payroll taxes and social security	**240**	207	201
Rebates and chargebacks	**2,812**	3,307	3,530
Accruals	**2,855**	2,983	3,231
Contingent consideration	**527**	396	347
Other payables	**1,062**	1,301	1,085
Total	**10,486**	11,663	11,886
Non-current liabilities			
Accruals	**292**	256	219
Contingent consideration	**4,930**	6,015	6,552
Other payables	**4,266**	1,186	1,220
Total	**9,488**	7,457	7,991

Non-current other payables includes $1,901m arising from the put option over the non-controlling interest in Acerta Pharma (see Note 24). The put option liability is remeasured each period based on the latest assessment of the expected redemption amount, with remeasurements taken to selling, general and administrative costs (see Note 2). Interest arising from amortising the liability is included within Finance expense (see Note 3).

With the exception of contingent consideration payables of $5,457m (2015: $6,411m; 2014: $6,899m) held within other payables, that arose on business combinations (see Note 25), and which are held at fair value within Level 3 of the fair value hierarchy as defined in Note 11, all other financial liabilities are held at amortised cost with carrying value being a reasonable approximation of fair value.

Contingent consideration

	2016 $m	2015 $m	2014 $m
At 1 January	**6,411**	6,899	514
Additions arising on business combinations (Note 25)	**–**	–	6,138
Settlements	**(293)**	(579)	(657)
Revaluations	**(1,158)**	(432)	512
Discount unwind	**497**	524	391
Foreign exchange	**–**	(1)	1
At 31 December	**5,457**	6,411	6,899

As detailed in Note 25, contingent consideration arising from business combinations is fair valued using decision-tree analysis, with key inputs including the probability of success, consideration of potential delays and the expected levels of future revenues.

Revaluations of contingent consideration are recognised in selling, general and administrative costs and include a decrease of $999m in 2016 (2015: a decrease of $378m; 2014: an increase of $529m) based on revised milestone probabilities, and revenue and royalty forecasts, relating to the acquisition of BMS's share of the Global Diabetes Alliance.

Management has identified that reasonably possible changes in certain key assumptions including the likelihood of achieving successful trial results, obtaining regulatory approval, the projected market share of the therapeutic area and expected pricing for launched products may cause the calculated fair value of the above contingent consideration to vary materially in future years.

The maximum development and sales milestones payable under outstanding contingent consideration arrangements arising on business combinations are as follows:

Acquisitions	Year	Nature of contingent consideration	Maximum future milestones $m
Spirogen	2013	Milestones	216
Amplimmune	2013	Milestones	275
Omthera Pharmaceuticals	2013	Milestones	120
Pearl Therapeutics	2013	Milestones	465
BMS's share of Global Diabetes Alliance	2014	Milestones and royalties	700
Almirall	2014	Milestones and royalties	1,005
Definiens	2014	Milestones	150

As detailed in Note 25, the amount of royalties payable under the arrangements is inherently uncertain and difficult to predict, given the direct link to future sales and the range of outcomes cannot be reliably estimated. The maximum amount of royalties payable in each year is with reference to net sales.

19 Provisions

	Severance $m	Environmental $m	Employee benefits $m	Legal $m	Other provisions $m	Total $m
At 1 January 2014	771	87	152	59	320	1,389
Additions arising on business acquisitions	39	–	–	–	–	39
Charge for year	254	15	8	91	66	434
Cash paid	(472)	(17)	(16)	(71)	(57)	(633)
Reversals	(21)	–	–	(4)	(39)	(64)
Exchange and other movements	(45)	(1)	19	(1)	(30)	(58)
At 31 December 2014	526	84	163	74	260	1,107
Additions arising on business acquisitions	–	–	–	–	10	10
Charge for year	338	8	7	313	40	706
Cash paid	(408)	(25)	(12)	(69)	(43)	(557)
Reversals	(40)	–	–	–	(12)	(52)
Exchange and other movements	(13)	–	–	39	2	28
At 31 December 2015	403	67	158	357	257	1,242
Charge for year	**578**	**11**	**6**	**223**	**170**	**988**
Cash paid	**(433)**	**(19)**	**(21)**	**(126)**	**(87)**	**(686)**
Reversals	**(40)**	**–**	**–**	**–**	**(39)**	**(79)**
Exchange and other movements	**(21)**	**–**	**–**	**(16)**	**(10)**	**(47)**
At 31 December 2016	**487**	**59**	**143**	**438**	**291**	**1,418**

	2016 $m	2015 $m	2014 $m
Due within one year	**1,065**	798	623
Due after more than one year	**353**	444	484
Total	**1,418**	1,242	1,107

AstraZeneca is undergoing a global restructuring initiative which involves rationalisation of the global supply chain, the sales and marketing organisation, IT and business support infrastructure, and R&D. Employee costs in connection with the initiatives are recognised in severance provisions. Final severance costs are often subject to the completion of the requisite consultations on the areas impacted.

Details of the environmental and legal provisions are provided in Note 28.

Employee benefit provisions include the Deferred Bonus Plan. Further details are included in Note 27.

Other provisions comprise amounts relating to specific contractual or constructive obligations and disputes.

No provision has been released or applied for any purpose other than that for which it was established.

20 Post-retirement benefits

Pensions

Background

The Company and most of its subsidiaries offer retirement plans which cover the majority of employees in the Group. Many of these plans are 'defined contribution', where AstraZeneca's contribution and resulting charge is fixed at a set level or is a set percentage of employees' pay.

However, several plans, mainly in the UK, the US and Sweden, are 'defined benefit', where benefits are based on employees' length of service and linked to their salary. The major defined benefit plans, apart from the collectively bargained Swedish plan (which is still open to employees born before 1979), have been closed to new entrants since 2000. During 2010, following consultation with its UK employees' representatives, AstraZeneca introduced a freeze on pensionable pay at 30 June 2010 levels for defined benefit members of the UK Pension Fund.

The major defined benefit plans are funded through separate, fiduciary-administered assets. The cash funding of the plans, which may from time to time involve special payments, is designed, in consultation with independent qualified actuaries, to ensure that the assets together with future contributions should be sufficient to meet future obligations. The funding is monitored rigorously by AstraZeneca and appropriate fiduciaries including with reference to AstraZeneca's credit rating, market capitalisation, cash flows and the solvency and maturity of the relevant pension scheme.

20 Post-retirement benefits continued

Financing principles

92% of the Company's defined benefit obligations at 31 December 2016 are in schemes within the UK, the US and Sweden. In these countries, the pension obligations are funded with reference to the following financing principles:

> The Company has a fundamental belief in funding the benefits it promises to employees.

> The Company considers its pension arrangements in the context of its broader capital structure. In general, it does not believe in committing excessive capital for funding while it has better uses of capital within the business nor does it wish to generate surpluses.

> The pension funds are not part of the Company's core business. The Company believes in taking some measured and rewarded risks with the investments underlying the funding, subject to a long-term plan to reduce those risks when opportunities arise.

> The Company recognises that deciding to hold certain investments may cause volatility in the funding position. The Company would not wish to amend its contribution level for relatively small deviations from its preferred funding level, because it is expected that there will be short-term volatility, but it is prepared to react appropriately to more significant deviations.

> The Company proactively engages with local Fiduciary Bodies to provide oversight and input in relation to funding and investment strategy and to help facilitate liability management exercises appropriate to each pension plan.

> The Company considers the use of alternative methods of providing security that do not require immediate cash funding but help mitigate exposure of the pension arrangement to the credit risk of the Company.

These principles are appropriate to AstraZeneca's business at the present date; should circumstances change they may require review.

AstraZeneca has developed a long-term funding framework to implement these principles, which targets full funding on a low risk funding measure over the long term, as the pension funds mature. This framework determines the cash contributions payable to the pension funds, but does not affect the IAS 19 liabilities.

UK

With regard to the Company's UK defined benefit pension fund, the above principles are modified in light of the UK regulatory requirements (summarised below) and resulting discussions with the Pension Fund Trustee.

Role of Trustees (UK)

The UK Pension Fund is governed and administered by a corporate Trustee which is legally separate from the Company. The Trustee Directors are comprised of representatives appointed by both the employer and employees, and include an independent professional Trustee Director. The Trustee Directors are required by law to act in the interest of all relevant beneficiaries and are responsible in particular for the asset investment policy and the day-to-day administration of the benefits. They are also responsible for jointly agreeing with the employer the level of contributions due to the UK Pension Fund (see below).

Funding requirements (UK)

UK legislation requires that pension schemes are funded prudently (ie to a level in excess of the current expected cost of providing benefits). On a triennial basis, the Trustee and the Company must agree the contributions required (if any) to ensure the Fund is fully funded over time on a suitable prudent measure. The last full actuarial valuation of the AstraZeneca Pension Fund was carried out by a qualified actuary as at 31 March 2013. An updated actuarial valuation as at 31 March 2016 is in the process of being finalised with discussions ongoing between the Trustee and the Company.

A lump sum contribution of £51m ($72m) was made to help narrow the deficit in March 2016, with a further £51m contribution due before 31 March 2017.

The Company entered into a long-term funding agreement with the Trustee on 21 October 2016. Under this agreement, the Company will grant a charge in favour of the Trustee over the new Cambridge Biomedical Campus, which would crystallise only in the event of the Company's insolvency. This charge will provide security in respect of future UK Pension Fund contributions and replaces a charge over assets in a ring-fenced custodial account held by AstraZeneca with HSBC. Since the Trustee's charge over this custodial account has been released, these assets are now available for the Company to use in the business.

Under the funding assumptions used to set the statutory funding target, the key assumptions as at 31 March 2013 were as follows: long-term UK price inflation set at 3.55% per annum, salary increases at 0% per annum (as a result of pensionable pay levels being frozen in 2010), pension increases at 3.2% per annum and investment returns at 4.86% per annum. The resulting valuation of the Fund's liabilities on that basis were £4,887m ($5,997m) compared to a market value of assets at 31 March 2013 of £4,394m ($5,392m).

Under the governing documentation of the UK Pension Fund, any future surplus in the Fund would be returnable to AstraZeneca by refund assuming gradual settlement of the liabilities over the lifetime of the Fund. As such, there are no adjustments required in respect of IFRIC 14 'IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction'.

Liability Management Exercises (UK)

During 2016, the Company conducted a Pensions Increase Exchange ('PIE') exercise in two stages. This exercise offers certain pensioner members the option of taking a higher amount of pension right away, in exchange for giving up any potential future inflation linked increases on all, or part of their pension. Stage 1 was completed in 2016. Stage 2 commenced in 2016 and is due to complete by the end of June 2017.

20 Post-retirement benefits continued

Regulation (UK)

The UK pensions market is regulated by the Pensions Regulator whose statutory objectives and regulatory powers are described on its website, www.thepensionsregulator.gov.uk.

Rest of Group

The IAS 19 positions for the US and Sweden as at 31 December 2016 are shown below. These plans account for 29% of the Group's defined benefit obligations. The US and Sweden pension funds are governed by fiduciary bodies with responsibility for the investment policies of those funds. These plans are funded in line with the Company's financing principles and contributions are paid as prescribed by the long-term funding framework.

> The US defined benefits programme was actuarially revalued at 31 December 2016, when plan obligations were $1,795m and plan assets were $1,563m. This includes obligations in respect of the non-qualified plan which is largely unfunded.

> The Swedish defined benefits programme was actuarially revalued at 31 December 2016, when plan obligations were estimated to amount to $1,521m and plan assets were $1,009m.

On current bases, it is expected that contributions (excluding those in respect of past service deficit contributions) during the year ending 31 December 2017 for the three main countries will be approximately $55m.

Post-retirement benefits other than pensions

In the US, and to a lesser extent in certain other countries, AstraZeneca's employment practices include the provision of healthcare and life assurance benefits for retired employees. As at 31 December 2016, some 3,283 retired employees and covered dependants currently benefit from these provisions and some 10,381 current employees will be eligible on their retirement. AstraZeneca accrues for the present value of such retiree obligations over the working life of the employee. In practice, these benefits will be funded with reference to the financing principles.

The cost of post-retirement benefits other than pensions for the Group in 2016 was $17m (2015: $23m; 2014: $20m). Plan assets were $285m and plan obligations were $309m at 31 December 2016. These benefit plans have been included in the disclosure of post-retirement benefits under IAS 19.

Financial assumptions

Qualified independent actuaries have updated the actuarial valuations under IAS 19 of the major defined benefit schemes operated by the Group to 31 December 2016. The assumptions used by the actuaries are chosen from a range of possible actuarial assumptions which, due to the long-term nature of the schemes, may not necessarily be borne out in practice. These assumptions were as follows:

	2016		2015	
	UK	**Rest of Group**	UK	Rest of Group
Inflation assumption	**3.2%**	**2.1%**	3.0%	2.1%
Rate of increase in salaries	**–**[1]	**3.1%**	–[1]	3.0%
Rate of increase in pensions in payment	**3.0%**	**0.9%**	3.0%	0.8%
Discount rate	**2.7%**	**3.3%**	3.8%	3.8%

[1] Pensionable pay frozen at 30 June 2010 levels following UK fund changes.

Discount rate and methodology changes

Over 2016, the Company's discount rates were based on yields on long-term AA-rated fixed income instruments, using a single discount rate for each pension plan to value the defined benefit obligations, service cost and interest cost. The discount rate was based on the duration of cash flows underlying the defined benefit obligations. From 2017, for the largest plans, the Company will move to a multiple discount rate approach. This will result in separate discount rates for defined benefit obligations, service cost and interest cost. This change had no effect on the 2016 expense, and will not affect the future measurement of the defined benefit obligations, but will impact the service cost and interest cost in future years.

Demographic assumptions

The mortality assumptions are based on country-specific mortality tables. These are compared to actual AstraZeneca experience and adjusted where sufficient data is available. Additional allowance for future improvements in life expectancy is included for all major schemes where there is credible data to support this continuing trend.

The table below illustrates life expectancy assumptions at age 65 for male members retiring in 2016 and members expected to retire in 2036 (2015: 2015 and 2035 respectively).

	Life expectancy assumption for a male member retiring at age 65			
Country	**2016**	**2036**	2015	2035
UK	**23.3**	**24.6**	23.2	24.5
US	**22.4**	**23.9**	22.9	24.4
Sweden	**21.8**	**23.6**	20.5	22.4

The Company adopted the CMI 2015 Mortality Projections Model with a 1% long-term improvement rate in 2015.

20 Post-retirement benefits continued

Risks associated with the Company's defined benefit pensions

The UK defined benefit plan accounts for 63% of the Group's defined benefit obligations and exposes the Company to a number of risks, the most significant of which are:

Risk	Description	Mitigation
Volatile asset returns	The Defined Benefit Obligation (DBO) is calculated using a discount rate set with reference to AA-rated corporate bond yields; asset returns that differ from the discount rate will create an element of volatility in the solvency ratio. The UK Pension Fund holds a significant proportion (around 72.5%) in growth assets. Although these growth assets are expected to outperform corporate bonds in the long term, they can lead to volatility and mismatching risk in the short term. The allocation to growth assets is monitored to ensure it remains appropriate given the UK Pension Fund's long-term objectives.	In order to mitigate investment risk, changes to investment strategy, including to the portfolio of growth assets, were completed during 2016 to establish a suitably diversified range of asset classes, return drivers and investment managers. The investment strategy will continue to evolve to further improve the expected risk/return profile as opportunities arise. The Trustee has hedged the vast majority (over 90%) of unintended non-sterling, overseas currency risk within the UK Pension Fund assets.
Changes in bond yields	A decrease in corporate bond yields will increase the present value placed on the DBO for accounting purposes.	The interest rate hedge of the UK Pension Fund significantly increased in 2016 via additional investments in gilts and interest rate derivatives. The hedge is set at 75% of total assets and protects to some degree against falling interest rates (approximately 55% hedged at the end of 2015). Note that there are some differences in the bonds and instruments held by the UK Pension Fund to hedge interest rate risk on the statutory and long-term funding basis (gilts) and the bonds analysed to set the DBO discount rate on an accounting basis (AA corporate bonds). As such, there remains some mismatching risk on an accounting basis should yields on gilts and swaps diverge compared to corporate bonds (ie the 'credit spread' between gilts and corporate bonds narrows). The UK Pension Fund retains some exposure to corporate bonds to help mitigate this risk.
Inflation risk	A significant proportion of the DBO is indexed in line with price inflation (specifically inflation in the UK Retail Price Index) and higher inflation will lead to higher liabilities (although, in most cases, this is capped at an annual increase of 5%).	The UK Pension Fund holds index-linked gilts and derivative instruments such as swaps, which provide a hedge against higher-than-expected inflation increases on the DBO. The inflation hedge of the UK Pension Fund significantly increased in 2016 via additional investments in such assets, so that overall, the hedge is approximately 75% as a proportion of total assets (approximately 60% hedged at the end of 2015). The PIE exercise will further reduce the inflation sensitivity of the liabilities and mitigate this risk.
Life expectancy	The majority of the UK Pension Fund's obligations are to provide benefits for the life of the member, so increases in life expectancy will result in an increase in the liabilities.	The UK Pension Fund entered into a longevity swap during 2013 which provides hedging against the longevity risk of increasing life expectancy over the next 77 years for around 10,000 of the UK Pension Fund's current pensioners and covers $2.4bn of the UK Pension Fund's liabilities. A one-year increase in life expectancy will result in a $200m increase in pension fund assets.

Other risks

There are a number of other risks of running the UK Pension Fund including operational risks (such as paying out the wrong benefits) and legislative risks (such as the government increasing the burden on pension funds through new legislation). These are mitigated in so far as possible via the governance structure in place which oversees and administers the pension funds.

20 Post-retirement benefits continued

Post-retirement scheme deficit

The assets and obligations of the defined benefit schemes operated by the Company at 31 December 2016, as calculated in accordance with IAS 19, are shown below. The fair values of the schemes' assets are not intended to be realised in the short term and may be subject to significant change before they are realised. The present value of the schemes' obligations is derived from cash flow projections over long periods and is therefore inherently uncertain.

	2016			2015		
	UK $m	**Rest of Group $m**	**Total $m**	UK $m	Rest of Group $m	Total $m
Scheme assets						
Equity: Global (exc Emerging markets)	**704**	**769**	**1,473**	1,362	770	2,132
Equity: Emerging markets	**158**	**–**	**158**	140	1	141
Government bonds: Global (exc Emerging markets)	**1,624**	**124**	**1,748**	1,614	421	2,035
Government bonds: Emerging markets	**–**	**2**	**2**	3	59	62
Investment grade corporate bonds (AAA-BBB): Global (exc Emerging markets)	**83**	**951**	**1,034**	2,273	940	3,213
Investment grade corporate bonds (AAA-BBB): Emerging markets	**9**	**–**	**9**	30	–	30
Other corporate bonds: Global (exc Emerging markets)	**222**	**112**	**334**	61	6	67
Other corporate bonds: Emerging markets	**114**	**2**	**116**	23	2	25
Derivatives: Interest rate contracts	**(43)**	**(4)**	**(47)**	(111)	(32)	(143)
Derivatives: Inflation rate contracts	**(63)**	**(13)**	**(76)**	(92)	9	(83)
Derivatives: Foreign exchange contracts	**32**	**3**	**35**	(84)	3	(81)
Derivatives: Other	**(7)**	**–**	**(7)**	(140)	–	(140)
Derivatives: Longevity swap	**(43)**	**–**	**(43)**	(37)	–	(37)
Investment funds: Private equity funds (no quoted market price)	**–**	**1**	**1**	–	–	–
Investment funds: Hedge funds	**1,133**	**360**	**1,493**	531	154	685
Investment funds: Other	**1,751**	**287**	**2,038**	390	373	763
Cash and cash equivalents	**211**	**141**	**352**	436	159	595
Others	**252**	**244**	**496**	68	89	157
Total fair value of scheme assets[1]	**6,137**	**2,979**	**9,116**	6,467	2,954	9,421
Scheme obligations						
Present value of scheme obligations in respect of:						
Active membership	**(679)**	**(1,590)**	**(2,269)**	(1,094)	(1,420)	(2,514)
Deferred membership	**(1,806)**	**(1,046)**	**(2,852)**	(1,862)	(986)	(2,848)
Pensioners	**(4,633)**	**(1,548)**	**(6,181)**	(4,495)	(1,538)	(6,033)
Total value of scheme obligations	**(7,118)**	**(4,184)**	**(11,302)**	(7,451)	(3,944)	(11,395)
Deficit in the scheme as recognised in the Consolidated Statement of Financial Position	**(981)**	**(1,205)**	**(2,186)**	(984)	(990)	(1,974)

[1] Included in scheme assets is $nil (2015: $nil) of the Company's own assets.

Fair value of scheme assets

	2016			2015		
	UK $m	**Rest of Group $m**	**Total $m**	UK $m	Rest of Group $m	Total $m
At beginning of year	**6,467**	**2,954**	**9,421**	7,311	3,235	10,546
Interest income on scheme assets	**221**	**104**	**325**	257	100	357
Expenses	**(5)**	**(9)**	**(14)**	(5)	(10)	(15)
Actuarial gains/(losses)	**858**	**84**	**942**	(375)	(64)	(439)
Exchange adjustments	**(1,228)**	**(26)**	**(1,254)**	(311)	(97)	(408)
Employer contributions	**130**	**62**	**192**	360	42	402
Participant contributions	**4**	**–**	**4**	5	–	5
Settlements	**–**	**–**	**–**	(447)	–	(447)
Benefits paid	**(310)**	**(190)**	**(500)**	(328)	(252)	(580)
Scheme assets' fair value at end of year	**6,137**	**2,979**	**9,116**	6,467	2,954	9,421

The actual return on the plan assets was a gain of $1,267m (2015: loss of $82m).

20 Post-retirement benefits continued

Movement in post-retirement scheme obligations

	2016			2015		
	UK $m	**Rest of Group $m**	**Total $m**	UK $m	Rest of Group $m	Total $m
Present value of obligations in scheme at beginning of year	**(7,451)**	**(3,944)**	**(11,395)**	(8,842)	(4,655)	(13,497)
Current service cost	**(20)**	**(82)**	**(102)**	(34)	(105)	(139)
Past service credit/(cost)	**27**	**15**	**42**	(44)	16	(28)
Participant contributions	**(4)**	**(4)**	**(8)**	(5)	–	(5)
Benefits paid	**310**	**190**	**500**	328	252	580
Interest expense on post-retirement scheme obligations	**(253)**	**(135)**	**(388)**	(301)	(133)	(434)
Actuarial (losses)/gains	**(1,189)**	**(328)**	**(1,517)**	613	478	1,091
Settlements	**–**	**–**	**–**	447	–	447
Exchange adjustments	**1,462**	**104**	**1,566**	387	203	590
Present value of obligations in scheme at end of year	**(7,118)**	**(4,184)**	**(11,302)**	(7,451)	(3,944)	(11,395)

The obligations arise from the following plans:

	2016			2015		
	UK $m	**Rest of Group $m**	**Total $m**	UK $m	Rest of Group $m	Total $m
Funded – pension schemes	**(7,101)**	**(3,309)**	**(10,410)**	(7,429)	(3,142)	(10,571)
Funded – post-retirement healthcare	**–**	**(279)**	**(279)**	–	(281)	(281)
Unfunded – pension schemes	**–**	**(583)**	**(583)**	–	(506)	(506)
Unfunded – post-retirement healthcare	**(17)**	**(13)**	**(30)**	(22)	(15)	(37)
Total	**(7,118)**	**(4,184)**	**(11,302)**	(7,451)	(3,944)	(11,395)

The weighted average duration of the post-retirement scheme obligations in the UK is 18 years and 15 years in the Rest of Group.

Consolidated Statement of Comprehensive Income disclosures

The amounts that have been charged to the Consolidated Statement of Comprehensive Income, in respect of defined benefit schemes for the year ended 31 December 2016, are set out below.

	2016			2015		
	UK $m	**Rest of Group $m**	**Total $m**	UK $m	Rest of Group $m	Total $m
Operating profit						
Current service cost	**(20)**	**(82)**	**(102)**	(34)	(105)	(139)
Past service credit/(cost)	**27**	**15**	**42**	(44)	16	(28)
Expenses	**(5)**	**(9)**	**(14)**	(5)	(10)	(15)
Total charge to operating profit	**2**	**(76)**	**(74)**	(83)	(99)	(182)
Finance expense						
Interest income on scheme assets	**221**	**104**	**325**	257	100	357
Interest expense on post-retirement scheme obligations	**(253)**	**(135)**	**(388)**	(301)	(133)	(434)
Net interest on post-employment defined benefit plan liabilities	**(32)**	**(31)**	**(63)**	(44)	(33)	(77)
Charge before taxation	**(30)**	**(107)**	**(137)**	(127)	(132)	(259)
Other comprehensive income						
Difference between the actual return and the expected return on the post-retirement scheme assets	**858**	**84**	**942**	(375)	(64)	(439)
Experience gains/(losses) arising on the post-retirement scheme obligations	**220**	**(6)**	**214**	3	56	59
Changes in financial assumptions underlying the present value of the post-retirement scheme obligations	**(1,409)**	**(377)**	**(1,786)**	370	386	756
Changes in demographic assumptions	**–**	**55**	**55**	240	36	276
Remeasurement of the defined benefit liability	**(331)**	**(244)**	**(575)**	238	414	652

Past service credit in 2016 includes a credit to operating income of £54m ($74m) arising from the PIE exercise in the UK, as referred to in the Liability Management Exercises section on page 166, and a credit to operating income of $16m arising from a restructuring programme in the US which will involuntarily terminate certain targeted participants in the Defined Benefit Pension Plan, AZ Supplemental Plan and the VEBA Retiree Health Plan. The past service credit in 2016 has been partially offset by costs predominantly related to enhanced pensions in early retirement in the UK and Sweden.

Group costs in respect of defined contribution schemes during the year were $352m (2015: $302m).

2015 settlements included $447m relating to the removal of the Investment Account (defined contribution) section of the UK Pension Fund from both the UK assets and liabilities with a net impact of $nil on the overall deficit.

20 Post-retirement benefits continued

Rate sensitivities

The following table shows the US dollar effect of a change in the significant actuarial assumptions used to determine the retirement benefits obligations in our three main defined benefit pension obligation countries.

	2016		2015	
	+0.5%	-0.5%	+0.5%	-0.5%
Discount rate				
UK ($m)	**546**	**(712)**	530	(600)
US ($m)	**107**	**(114)**	111	(118)
Sweden ($m)	**128**	**(149)**	143	(164)
Total ($m)	**781**	**(975)**	784	(882)

	2016		2015	
	+0.5%	-0.5%	+0.5%	-0.5%
Inflation rate[1]				
UK ($m)	**(510)**	**486**	(525)	517
US ($m)	**(12)**	**12**	(14)	15
Sweden ($m)	**(147)**	**127**	(159)	140
Total ($m)	**(669)**	**625**	(698)	672

	2016		2015	
	+0.5%	-0.5%	+0.5%	-0.5%
Rate of increase in salaries				
UK ($m)	**–**	**–**	–	–
US ($m)	**(9)**	**9**	(12)	12
Sweden ($m)	**(33)**	**30**	(66)	58
Total ($m)	**(42)**	**39**	(78)	70

	2016		2015	
	+1 year	-1 year	+1 year	-1 year
Mortality rate				
UK ($m)	**(300)**[2]	**292**[3]	(313)	314
US ($m)	**(27)**	**28**	(24)	25
Sweden ($m)	**(57)**	**57**	(63)	62
Total ($m)	**(384)**	**377**	(400)	401

[1] Rate of increase in pensions in payment follows inflation.
[2] Of the $300m increase, $200m is covered by the longevity swap.
[3] Of the $292m decrease, $196m is covered by the longevity swap.

The sensitivity to the financial assumptions shown above has been estimated taking into account the approximate duration of the liabilities and the overall profile of the plan membership. The sensitivity to the life expectancy assumption has been estimated based on the distribution of the plan cash flows.

21 Reserves

Retained earnings

The cumulative amount of goodwill written off directly to reserves resulting from acquisitions, net of disposals, amounted to $613m (2015: $624m; 2014: $639m) using year end rates of exchange. At 31 December 2016, 276,303 shares, at a cost of $19m, have been deducted from retained earnings (2015: 49,105 shares, at a cost of $4m; 2014: 168,388 shares, at a cost of $10m).

There are no significant statutory or contractual restrictions on the distribution of current profits of subsidiaries; undistributed profits of prior years are, in the main, permanently employed in the businesses of these companies. The undistributed income of AstraZeneca companies overseas might be liable to overseas taxes and/or UK taxation (after allowing for double taxation relief) if they were to be distributed as dividends (see Note 4).

	2016 $m	2015 $m	2014 $m
Cumulative translation differences included within retained earnings			
At 1 January	**(372)**	490	1,782
Foreign exchange arising on consolidation	**(1,050)**	(528)	(823)
Exchange adjustments on goodwill (recorded against other reserves)	**(11)**	(15)	(40)
Foreign exchange arising on designating borrowings in net investment hedges	**(591)**	(333)	(529)
Fair value movement on derivatives designated in net investment hedges	**(4)**	14	100
Net exchange movement in retained earnings	**(1,656)**	(862)	(1,292)
At 31 December	**(2,028)**	(372)	490

Cumulative amounts with respect to cash flow hedges included within retained earnings are $80m (2015: $nil; 2014: $nil).

Other reserves

The other reserves arose from the cancellation of £1,255m of share premium account by the Company in 1993 and the redenomination of share capital ($157m) in 1999. The reserves are available for writing off goodwill arising on consolidation and, subject to guarantees given to preserve creditors at the date of the court order, are available for distribution.

22 Share capital of the Company

	Allotted, called-up and fully paid		
	2016 $m	2015 $m	2014 $m
Issued Ordinary Shares ($0.25 each)	**316**	316	316
Redeemable Preference Shares (£1 each – £50,000)	**–**	–	–
At 31 December	**316**	316	316

The Redeemable Preference Shares carry limited class voting rights and no dividend rights. This class of shares is capable of redemption at par at the option of the Company on the giving of seven days' written notice to the registered holder of the shares.

The movements in the number of Ordinary Shares during the year can be summarised as follows:

	No. of shares		
	2016	2015	2014
At 1 January	**1,264,122,670**	1,263,143,338	1,257,170,087
Issues of shares (share schemes)	**1,106,754**	979,332	5,973,251
At 31 December	**1,265,229,424**	1,264,122,670	1,263,143,338

Details of Directors' interests in shares are shown in the Directors' Remuneration Report from page 103.

Share repurchases

No Ordinary Shares were repurchased by the Company in 2016 (2015: nil; 2014: nil).

Shares held by subsidiaries

No shares in the Company were held by subsidiaries in any year.

23 Dividends to shareholders

	2016 Per share	2015 Per share	2014 Per share	**2016 $m**	2015 $m	2014 $m
Final	**$1.90**	$1.90	$1.90	**2,402**	2,400	2,395
Interim	**$0.90**	$0.90	$0.90	**1,138**	1,137	1,137
Total	**$2.80**	$2.80	$2.80	**3,540**	3,537	3,532

The second interim dividend, to be confirmed as final, is $1.90 per Ordinary Share and $2,404m in total. This will be payable on 20 March 2017.

On payment of the dividends, exchange losses of $3m (2015: $nil; 2014: losses of $3m) arose. These exchange losses are included in Note 3.

24 Non-controlling interests

Following the acquisition of a majority stake in Acerta Pharma on 2 February 2016, the Group Financial Statements at 31 December 2016 reflect equity of $1,808m and total comprehensive income of $95m attributable to the non-controlling interests, held by other parties, of Acerta Pharma B.V. and its subsidiaries. The following summarised financial information, for Acerta Pharma B.V. and its subsidiaries, is presented on a stand-alone basis since the acquisition date, and before the impact of Group-related adjustments:

	2016 $m
Total Revenue	–
Loss after tax	(212)
Other comprehensive income	–
Total comprehensive income	**(212)**

	2016 $m
Non-current assets	73
Current assets	79
Total assets	**152**
Current liabilities	(171)
Total liabilities	**(171)**
Net liabilities	**(19)**

	2016 $m
Net cash outflow from operating activities	(223)
Net cash inflow from investing activities	139
Decrease in cash and cash equivalents in the year	**(84)**

The non-controlling interest in Acerta Pharma is subject to a put option, exercisable by the minority shareholders at certain points in the future, not earlier than the commercial launch of acalabrutinib. This put option gives rise to a liability which is recorded at the present value of the expected redemption amount, calculated using a simulation model based on forecast revenue and earnings of Acerta Pharma, and is recorded within Non-current other payables (see Note 18). The corresponding debit has been recorded in retained earnings.

25 Acquisitions of business operations

2016 Acquisitions

Acerta Pharma

On 2 February 2016, AstraZeneca completed an agreement to invest in a majority equity stake in Acerta Pharma, a privately-owned biopharmaceutical company based in the Netherlands and US. The transaction provides AstraZeneca with a potential best-in-class irreversible oral Bruton's tyrosine kinase (BTK) inhibitor, acalabrutinib (ACP-196), currently in Phase III development for B-cell blood cancers and in Phase I/II clinical trials in multiple solid tumours. Acerta Pharma has approximately 150 employees.

Under the terms of the agreement, AstraZeneca has acquired 55% of the issued share capital of Acerta Pharma for an upfront payment of $2.5bn. A further payment of $1.5bn will be paid either on receipt of the first regulatory approval for acalabrutinib for any indication in the US, or the end of 2018, depending on which is first. The agreement also includes options which, if exercised, provide the opportunity for Acerta Pharma's shareholders to sell, and AstraZeneca to buy, the remaining 45% of shares in Acerta Pharma. The options can be exercised at various points in time, conditional on the first approval of acalabrutinib in both the US and Europe and when the extent of the commercial opportunity has been fully established, at a price of approximately $3bn net of certain costs and payments incurred by AstraZeneca and net of agreed future adjusting items, using a pre-agreed pricing mechanism.

The acquiring entity within the Group was a Swedish krona functional currency subsidiary. Foreign currency risk arises from the retranslation of the US dollar denominated liabilities arising from the transaction. To manage this foreign currency risk these liabilities have been designated as the hedge instrument in a net investment hedge of the Group's underlying US dollar net investments. Exchange differences on the retranslation of the contingent consideration liability are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

AstraZeneca's 55% holding is a controlling interest and Acerta Pharma's combination of intangible product rights with an established workforce and their operating processes requires that the transaction is accounted for as a business combination in accordance with IFRS 3.

Goodwill is principally attributable to the value of the specialist know-how inherent in the acquired workforce and the accounting for deferred taxes. Goodwill is not expected to be deductible for tax purposes.

Acerta Pharma's results have been consolidated into the Group's results from 2 February 2016. From the period from acquisition to 31 December 2016, Acerta Pharma had no revenues and its loss after tax was $212m.

If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2016), on a *pro forma* basis, the revenue of the combined Group for 2016 would have been unchanged and the profit after tax would have been $3,367m. This *pro forma* information does not purport to represent the results of the combined Group that actually would have occurred had the acquisition taken place on 1 January 2016 and should not be taken to be representative of future results.

25 Acquisitions of business operations continued

The fair values assigned to the Acerta Pharma business combination completed in 2016 were:

	Fair value $m
Non-current assets	
Intangible assets (Note 9)	**7,307**
Current assets	**253**
Current liabilities	**(90)**
Non-current liabilities	
Deferred tax liabilities	**(1,777)**
Total net assets acquired	**5,693**
Non-controlling interests	**(1,903)**
Goodwill (Note 8)	**19**
Fair value of total consideration	**3,809**
Less: fair value of deferred consideration	**(1,332)**
Total upfront consideration	**2,477**
Less: cash and cash equivalents acquired	**(94)**
Net cash outflow	**2,383**

Acquisition costs were immaterial.

2015 Acquisitions

ZS Pharma

On 17 December 2015, AstraZeneca completed the acquisition of ZS Pharma, a biopharmaceutical company based in San Mateo, California. ZS Pharma uses its proprietary ion-trap technology to develop novel treatments for hyperkalaemia, a serious condition of elevated potassium in the bloodstream, typically associated with chronic kidney disease (CKD) and chronic heart failure (CHF).

The acquisition gives AstraZeneca access to the potassium-binding compound ZS-9, a potential best-in-class treatment for hyperkalaemia.

ZS Pharma represents a strong fit with AstraZeneca's pipeline and portfolio in Cardiovascular & Metabolic Disease, one of the Company's three main therapy areas. AstraZeneca's strategy focuses on reducing morbidity, mortality and organ damage by addressing multiple risk factors across cardiovascular disease, diabetes and chronic kidney disease. ZS-9 complements the Company's increasing focus on CKD and CHF, including the investigational medicine roxadustat, which is currently in Phase III development for patients with anaemia associated with CKD, as well as its leading Diabetes portfolio.

Under the terms of the agreement, AstraZeneca acquired 100% of the share capital of ZS Pharma for $90 per share in an all-cash transaction, or approximately $2.7bn in aggregate transaction value.

ZS Pharma has around 200 employees across three sites in California, Texas and Colorado. The combination of intangible product rights with an established workforce and their associated operating processes, principally those related to research and development and manufacturing, requires that the transaction is accounted for as a business combination in accordance with IFRS 3.

Goodwill is principally attributable to the commercial synergies AstraZeneca expects to be able to realise upon launch of ZS-9, the value of the specialist know-how inherent in the acquired workforce and the accounting for deferred taxes. Goodwill is not expected to be deductible for tax purposes.

ZS Pharma's results have been consolidated into the Group's results from 17 December 2015. From the period from acquisition to 31 December 2015, ZS Pharma's revenues and loss were immaterial.

If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2015), on a *pro forma* basis, the revenue of the combined Group for 2015 would have been unchanged and the profit after tax would have been $2,702m. This *pro forma* information does not purport to represent the results of the combined Group that actually would have occurred had the acquisition taken place on 1 January 2015 and should not be taken to be representative of future results.

Given the proximity of the completion of the transaction to the date the 2015 Financial Statements were approved, the finalisation of the accounting entries for this transaction was not complete. Our provisional assessment of the fair values of the assets and liabilities acquired, as detailed in the 2015 Financial Statements, was revised during 2016 as a result of new information obtained about facts and circumstances that existed at the date of acquisition that impact the value of deferred tax. This has resulted in a reduction to both deferred tax liabilities and goodwill of $68m.

25 Acquisitions of business operations continued

The final fair values assigned to the ZS Pharma business combination are detailed below:

	Fair value $m
Non-current assets	
Intangible assets (Note 9)	**3,162**
Property, plant and equipment (Note 7)	**21**
	3,183
Current assets	**169**
Current liabilities	**(50)**
Non-current liabilities	
Deferred tax liabilities	**(977)**
Other liabilities	**(13)**
	(990)
Total net assets acquired	**2,312**
Goodwill (Note 8)	**388**
Total upfront consideration	**2,700**
Less: cash and cash equivalents acquired	**(73)**
Less: upfront consideration settled in January 2016	**(181)**
Net cash outflow	**2,446**

Acquisition costs were immaterial.

2014 Acquisitions

BMS's share of Global Diabetes Alliance Assets

On 1 February 2014, AstraZeneca completed the acquisition of BMS's interests in the companies' diabetes alliance. The acquisition provided AstraZeneca with 100% ownership of the intellectual property and global rights for the development, manufacture and commercialisation of the diabetes business, including *Onglyza* (saxagliptin), *Kombiglyze* XR (saxagliptin and metformin HCl extended release), *Komboglyze* (saxagliptin and metformin HCl), *Farxiga* (dapagliflozin, marketed as *Forxiga* outside the US), *Byetta* (exenatide), *Bydureon* (exenatide extended release for injectable suspension), *Myalept* (metreleptin) and *Symlin* (pramlintide acetate).

The transaction consolidated worldwide ownership of the diabetes business within AstraZeneca, leveraging its primary and specialty care capabilities and its geographical reach, especially in emerging markets. The transaction included the acquisition of 100% of the share capital of Amylin Pharmaceuticals, LLC, and the asset purchase of the additional intellectual property and global rights not already owned by AstraZeneca, for the development, manufacture and commercialisation of *Onglyza*, *Kombiglyze* XR, *Komboglyze* and *Farxiga*, including associated BMS employees. This combination of intangible product rights and manufacturing assets with an established workforce and their associated operating processes, principally those related to the global manufacturing and selling and marketing operations, required that the acquisition be accounted for as a business combination in accordance with IFRS 3.

Upfront consideration for the acquisition of $2.7bn was paid on 1 February 2014, with further payments of up to $1.4bn being payable for future regulatory, launch and sales-related milestones as well as various sales-related royalty payments up until 2025. The amount of royalties payable under the agreement is inherently uncertain and difficult to predict, given the direct link to future sales and the range of outcomes cannot be reliably estimated. The maximum amount payable in each year is with reference to net sales. AstraZeneca also agreed to make payments up to $225m when certain additional assets are transferred. Contingent consideration was fair valued using decision-tree analysis, with key inputs including the probability of success, consideration of potential delays and the expected levels of future revenues. In accordance with IFRS 3, the fair value of contingent consideration, including future royalties, was recognised immediately as a liability.

The acquiring entity within the Group was a Swedish krona functional currency subsidiary. Foreign currency risk arises from the retranslation of the US dollar denominated contingent consideration. To manage this foreign currency risk the contingent consideration liability has been designated as the hedge instrument in a net investment hedge of the Group's underlying US dollar net investments. Exchange differences on the retranslation of the contingent consideration liability are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

In addition to the acquired interests, AstraZeneca entered into certain agreements with BMS to maintain the manufacturing and supply chain of the full portfolio of diabetes products and to deliver specified clinical trials with an agreed number of R&D and manufacturing employees dedicated to diabetes remaining with BMS to progress the diabetes portfolio and support the transition for these areas. Payments by AstraZeneca to BMS in relation to these arrangements are expensed as incurred. No amounts were recognised in the initial acquisition accounting in relation to these arrangements but were separated, at fair value, from the business combination accounting.

The terms of the agreement partially reflected settlement of the launch and sales-related milestones under the pre-existing *Onglyza* and *Farxiga* collaboration agreements, which were terminated in relation to the acquisition. The expected value of those pre-existing milestones was $0.3bn and was recognised as a separate component of consideration and excluded from the business combination accounting. Subsequently, these separate intangible assets have been recognised.

Goodwill of $1,530m arising on the transaction is underpinned by a number of elements, which individually cannot be quantified. Most significant among these are the synergies AstraZeneca expects to be able to generate through more efficient manufacturing processes and the incremental value accessible through strategic and operational independence upon taking full control of the alliance. Goodwill of $1.5bn is expected to be deductible for tax purposes.

25 Acquisitions of business operations continued

The fair value of receivables acquired as part of the acquisition approximated the gross contractual amounts receivable. There were no significant amounts which were not expected to be collected.

The results from the additional acquired interests in the diabetes alliance were consolidated into the Group's results from 1 February 2014, which added revenue of $895m in the period to 31 December 2014. Due to the highly integrated nature of the diabetes alliance, and the fact that it is not operated through a separate legal entity, the incremental direct costs associated with the additional acquired interest are not separately identifiable and it is impracticable therefore to disclose the profit or loss recognised in the period since acquisition.

If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2014), on a *pro forma* basis, the revenue of the combined Group for 2014 would have been $26,174m. As detailed above, it is impracticable to disclose a *pro forma* profit after tax. This *pro forma* information does not purport to represent the results of the combined Group that actually would have occurred had the acquisition taken place on 1 January 2014 and should not be taken to be representative of future results.

Almirall

On 31 October 2014, the Group completed the agreement with Almirall to transfer the rights to Almirall's respiratory franchise to AstraZeneca.

The transaction provided AstraZeneca with 100% of the rights for the development and commercialisation of Almirall's existing proprietary respiratory business, including rights to revenues from Almirall's existing collaborations, as well as its pipeline of investigational novel therapies. The franchise includes *Eklira* (aclidinium); *Duaklir Genuair*, the combination of aclidinium with formoterol which had been filed for registration in the EU and developed in the US (EU approval received in November 2014); LAS100977 (abediterol), a once-daily long-acting beta$_2$-agonist (LABA) in Phase II; an M3 antagonist beta$_2$-agonist (MABA) platform in pre-clinical development (LAS191351, LAS194871) and Phase I (LAS190792); and multiple pre-clinical programmes. Almirall Sofotec, an Almirall subsidiary focused on the development of innovative proprietary devices, also transferred to AstraZeneca. In addition, Almirall employees dedicated to the respiratory business, including Almirall Sofotec employees, transferred to AstraZeneca.

Upfront consideration for the acquisition of $878m was paid in November 2014, with further payments of up to $1.22bn being payable for future development, launch, and sales-related milestones. AstraZeneca also agreed to make various sales-related royalty payments. The amount of royalties payable under the agreement is inherently uncertain and difficult to predict, given the direct link to future sales and the range of outcomes cannot be reliably estimated. The maximum amount payable in each year is with reference to net sales. Contingent consideration was fair valued using decision-tree analysis, with key inputs including the probability of success, consideration of potential delays and the expected levels of future revenues.

The acquiring entity within the Group was a pounds sterling functional currency subsidiary. Foreign currency risk arises from the retranslation of the contingent consideration. To manage this foreign currency risk the contingent consideration liability has been designated as the hedge instrument in a net investment hedge. Exchange differences on the retranslation of the contingent consideration liability are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

Almirall's pipeline of novel respiratory assets and its device capabilities further strengthen AstraZeneca's Respiratory portfolio, which includes *Symbicort* and *Pulmicort*, as well as the investigational medicines in development. The addition of aclidinium and the combination of aclidinium with formoterol, both in proprietary *Genuair* device, allows AstraZeneca to offer patients a choice between dry powder inhaler and metered-dose inhaler devices across a range of molecules and combinations.

The combination of intangible product rights with an established workforce and their associated operating processes, principally those related to the selling and marketing operations, requires that the transaction is accounted for as a business combination in accordance with IFRS 3.

Goodwill of $311m is underpinned by a number of elements, which individually cannot be quantified. Most significant among these is the premium attributable to the significant competitive advantage associated with AstraZeneca's complementary portfolio and that attributable to a highly skilled workforce. Goodwill of $0.3bn is expected to be deductible for tax purposes.

Almirall's respiratory franchise results were consolidated into the Group's results from 31 October 2014. For the period from acquisition to 31 December 2014, Almirall's respiratory franchise revenues were $13m. Due to the highly integrated nature of the respiratory franchise, and the fact that it is not operated through a separate legal entity, the incremental direct costs associated with the acquired interest are not separately identifiable and it is impracticable therefore to disclose the profit or loss recognised in the period since acquisition.

If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2014), on a *pro forma* basis, the revenue of the combined Group for 2014 would have been $26,198m. As detailed above, it is impracticable to disclose a *pro forma* profit after tax. This *pro forma* information does not purport to represent the results of the combined Group that actually would have occurred had the acquisition taken place on 1 January 2014 and should not be taken to be representative of future results.

Definiens

On 25 November 2014, AstraZeneca completed the acquisition of Definiens Group, a privately-held German company focused on imaging and data analysis technology, known as Tissue Phenomics™, which dramatically improves the identification of biomarkers in tumour tissue.

Definiens' technology provides detailed cell-by-cell readouts from target structures on tissue slides and allows the correlation of this information with data derived from other sources, generating new knowledge and supporting better decisions in research, diagnostics and therapy.

AstraZeneca acquired 100% of Definiens' shares for an upfront consideration of $150m and contingent consideration of up to $150m based on reaching three predetermined development milestones. Contingent consideration was fair valued using decision-tree analysis, with key inputs including the probability of success and consideration of potential delays.

25 Acquisitions of business operations continued

The acquiring entity within the Group was a pounds sterling functional currency subsidiary. Foreign currency risk arises from the retranslation of the US dollar denominated contingent consideration. To manage this foreign currency risk the contingent consideration liability has been designated as the hedge instrument in a net investment hedge of the Group's underlying US dollar net investments. Exchange differences on the retranslation of the contingent consideration liability are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

Definiens' results were consolidated into the Group's results from 25 November 2014. For the period from acquisition to 31 December 2014, Definiens' revenues were immaterial, in the context of the Group's revenues, and its loss after tax was immaterial.

If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2014), on a *pro forma* basis, the revenue of the combined Group for 2014 would have been unchanged and the change in profit after tax would have been immaterial. This *pro forma* information does not purport to represent the results of the combined Group that actually would have occurred had the acquisition taken place on 1 January 2014 and should not be taken to be representative of future results.

The fair values assigned to the business combinations completed in 2014 were:

2014 acquisitions	BMS's share of Global Diabetes Alliance Assets $m	Almirall $m	Definiens $m	Total $m
Non-current assets				
Intangible assets (Note 9)	5,746	1,400	355	7,501
Property, plant and equipment (Note 7)	478	37	–	515
	6,224	1,437	355	8,016
Current assets	480	24	–	504
Current liabilities	(278)	(2)	–	(280)
Non-current liabilities	(84)	(11)	(117)	(212)
Total net assets acquired	6,342	1,448	238	8,028
Goodwill (Note 8)	1,530	311	–	1,841
Fair value of total consideration	7,872	1,759	238	9,869
Less: fair value of contingent consideration (Note 18)	(5,169)	(881)	(88)	(6,138)
Total upfront consideration	2,703	878	150	3,731
Less: cash and cash equivalents acquired	–	(2)	–	(2)
Net cash outflow	2,703	876	150	3,729

Acquisition costs arising on acquisitions in 2014 were immaterial.

26 Financial risk management objectives and policies

The Group's principal financial instruments, other than derivatives, comprise bank overdrafts, finance leases, loans, current and non-current investments, cash and short-term deposits. The main purpose of these financial instruments is to manage the Group's funding and liquidity requirements. The Group has other financial assets and liabilities such as trade receivables and trade payables, which arise directly from its operations.

The principal financial risks to which the Group is exposed are those of liquidity, interest rate, foreign currency and credit. Each of these is managed in accordance with Board-approved policies. These policies are set out below.

The Group uses foreign currency borrowings, foreign currency forwards and swaps, currency options, cross-currency swaps and interest rate swaps for the purpose of hedging its foreign currency and interest rate risks. The Group may designate certain financial instruments as fair value hedges, cash flow hedges or net investment hedges in accordance with IAS 39. Key controls applied to transactions in derivative financial instruments are: to use only instruments where good market liquidity exists, to revalue all financial instruments regularly using current market rates and to sell options only to offset previously purchased options or as part of a risk management strategy. The Group is not a net seller of options, and does not use derivative financial instruments for speculative purposes.

Capital management

The capital structure of the Group consists of shareholders' equity (Note 22), debt (Note 17) and cash (Note 16). For the foreseeable future, the Board will maintain a capital structure that supports the Group's strategic objectives through:

> managing funding and liquidity risk
> optimising shareholder return
> maintaining a strong, investment-grade credit rating.

The Group utilises factoring arrangements for selected trade receivables. These factoring arrangements qualify for full derecognition of the associated trade receivables under IAS 39.

Funding and liquidity risk are reviewed regularly by the Board and managed in accordance with policies described below.

The Board's distribution policy comprises a regular cash dividend and, subject to business needs, a share repurchase component. The Board regularly reviews its shareholders' return strategy, and in 2012 decided to suspend share repurchases in order to retain strategic flexibility.

The Group's net debt position (loans and borrowings net of cash and cash equivalents, current investments and derivative financial instruments) has increased from a net debt position of $7,762m at the beginning of the year to a net debt position of $10,657m at 31 December 2016, primarily as a result of increased outflows from investing activities, including acquisitions.

26 Financial risk management objectives and policies continued

Liquidity risk

The Board reviews the Group's ongoing liquidity risks annually as part of the planning process and on an *ad hoc* basis. The Board considers short-term requirements against available sources of funding, taking into account forecast cash flows. The Group manages liquidity risk by maintaining access to a number of sources of funding which are sufficient to meet anticipated funding requirements. Specifically, the Group uses US commercial paper, committed bank facilities and cash resources to manage short-term liquidity and manages long-term liquidity by raising funds through the capital markets. The Group is assigned short-term credit ratings of P-2 by Moody's and A-2 by Standard and Poor's. The Group's long-term credit rating is A3 stable outlook by Moody's and A- stable outlook by Standard and Poor's.

In addition to cash and cash equivalents of $5,018m, fixed deposits of $37m, less overdrafts of $94m at 31 December 2016, the Group has committed bank facilities of $3bn available to manage liquidity. At 31 December 2016, the Group has issued $3,494m under a Euro Medium Term Note programme and $12,763m under a SEC-registered programme. The Group regularly monitors the credit standing of the banking group and currently does not anticipate any issue with drawing on the committed facilities should this be necessary. The committed facilities of $3bn mature in April 2021 and were undrawn at 31 December 2016.

The maturity profile of the anticipated future contractual cash flows including interest in relation to the Group's financial liabilities, on an undiscounted basis and which, therefore, differs from both the carrying value and fair value, is as follows:

	Bank overdrafts and other loans $m	Bonds $m	Finance leases $m	Trade and other payables $m	Total non-derivative financial instruments $m	Interest rate swaps $m	Cross-currency swaps $m	Total derivative financial instruments $m	Total $m
Within one year	1,488	1,490	45	11,909	14,932	(52)	(16)	(68)	14,864
In one to two years	–	401	45	1,720	2,166	(52)	(16)	(68)	2,098
In two to three years	–	2,151	31	936	3,118	(52)	(16)	(68)	3,050
In three to four years	–	298	8	924	1,230	(16)	(19)	(35)	1,195
In four to five years	–	1,298	1	1,323	2,622	(16)	(325)	(341)	2,281
In more than five years	–	10,135	–	7,002	17,137	(62)	–	(62)	17,075
	1,488	15,773	130	23,814	41,205	(250)	(392)	(642)	40,563
Effect of interest	(2)	(6,461)	(22)	–	(6,485)	250	83	333	(6,152)
Effect of discounting, fair values and issue costs	–	(63)	–	(3,937)	(4,000)	(161)	5	(156)	(4,156)
31 December 2014	1,486	9,249	108	19,877	30,720	(161)	(304)	(465)	30,255

	Bank overdrafts and other loans $m	Bonds $m	Finance leases $m	Trade and other payables $m	Total non-derivative financial instruments $m	Interest rate swaps $m	Cross-currency swaps $m	Total derivative financial instruments $m	Total $m
Within one year	851	568	66	11,701	13,186	(54)	(17)	(71)	13,115
In one to two years	–	2,318	41	1,522	3,881	(54)	(17)	(71)	3,810
In two to three years	–	1,865	22	1,110	2,997	(19)	(26)	(45)	2,952
In three to four years	–	1,444	10	1,277	2,731	(15)	(330)	(345)	2,386
In four to five years	–	2,025	2	2,187	4,214	(15)	–	(15)	4,199
In more than five years	–	14,192	–	5,313	19,505	(44)	–	(44)	19,461
	851	22,412	141	23,110	46,514	(201)	(390)	(591)	45,923
Effect of interest	(2)	(8,194)	(46)	–	(8,242)	201	67	268	(7,974)
Effect of discounting, fair values and issue costs	–	(109)	–	(3,990)	(4,099)	(126)	3	(123)	(4,222)
31 December 2015	849	14,109	95	19,120	34,173	(126)	(320)	(446)	33,727

	Bank overdrafts and other loans $m	**Bonds $m**	**Finance leases $m**	**Trade and other payables $m**	**Total non-derivative financial instruments $m**	**Interest rate swaps $m**	**Cross-currency swaps $m**	**Total derivative financial instruments $m**	**Total $m**
Within one year	**455**	**2,374**	**42**	**10,566**	**13,437**	**(54)**	**32**	**(22)**	**13,415**
In one to two years	**–**	**1,921**	**24**	**4,986**	**6,931**	**(19)**	**12**	**(7)**	**6,924**
In two to three years	**–**	**1,500**	**16**	**1,144**	**2,660**	**(15)**	**(216)**	**(231)**	**2,429**
In three to four years	**–**	**2,080**	**10**	**1,666**	**3,756**	**(15)**	**47**	**32**	**3,788**
In four to five years	**7**	**1,756**	**3**	**877**	**2,643**	**(15)**	**86**	**71**	**2,714**
In more than five years	**–**	**14,796**	**–**	**3,624**	**18,420**	**(30)**	**320**	**290**	**18,710**
	462	**24,427**	**95**	**22,863**	**47,847**	**(148)**	**281**	**133**	**47,980**
Effect of interest	**(4)**	**(8,111)**	**(2)**	**–**	**(8,117)**	**148**	**(351)**	**(203)**	**(8,320)**
Effect of discounting, fair values and issue costs	**–**	**(59)**	**–**	**(2,889)**	**(2,948)**	**(82)**	**(93)**	**(175)**	**(3,123)**
31 December 2016	**458**	**16,257**	**93**	**19,974**	**36,782**	**(82)**	**(163)**	**(245)**	**36,537**

26 Financial risk management objectives and policies continued

Where interest payments are on a floating rate basis, it is assumed that rates will remain unchanged from the last business day of each year ended 31 December.

It is not expected that the cash flows in the maturity profile could occur significantly earlier or at significantly different amounts, with the exception of $5,457m of contingent consideration and $1,901m arising from the put option over the non-controlling interest in Acerta Pharma, both held within other payables (see Note 18).

Market risk

Interest rate risk

The Group maintains a mix of fixed and floating rate debt. The portion of fixed rate debt was approved by the Board and any variation requires Board approval.

A significant portion of the Group's long-term debt is held at fixed rates of interest. The Group uses interest rate swaps and forward rate agreements to manage this mix.

At 31 December 2016, the Group held interest rate swaps with a notional value of $1.6bn, converting the 7% guaranteed debentures payable in 2023 to floating rates, partially converting the 5.9% callable bond maturing in 2017 to floating rates and partially converting the 1.75% callable bond maturing in 2018 to floating rates. No new interest rate swaps were entered into during 2016. At 31 December 2016, swaps with a notional value of $1.35bn were designated in fair value hedge relationships and swaps with a notional value of $0.29bn related to debt designated as fair value through profit or loss. Designated hedges are expected to be effective and therefore the impact of ineffectiveness on profit is not expected to be material. The accounting treatment for fair value hedges and debt designated as fair value through profit or loss is disclosed in the Group Accounting Policies section from page 142.

The majority of surplus cash is currently invested in US dollar liquidity funds earning floating rates of interest.

The interest rate profile of the Group's interest-bearing financial instruments is set out below. In the case of current and non-current financial liabilities, the classification includes the impact of interest rate swaps which convert the debt to floating rate.

	2016			2015			2014		
	Fixed rate $m	**Floating rate $m**	**Total $m**	Fixed rate $m	Floating rate $m	Total $m	Fixed rate $m	Floating rate $m	Total $m
Financial liabilities									
Interest-bearing loans and borrowings									
Current	**1,086**	**1,221**	**2,307**	67	849	916	960	1,486	2,446
Non-current	**13,154**	**1,347**	**14,501**	11,986	2,151	14,137	7,199	1,198	8,397
Total	**14,240**	**2,568**	**16,808**	12,053	3,000	15,053	8,159	2,684	10,843
Financial assets									
Fixed deposits	**–**	**37**	**37**	–	65	65	–	20	20
Cash and cash equivalents	**–**	**5,018**	**5,018**	–	6,240	6,240	–	6,360	6,360
Total	**–**	**5,055**	**5,055**	–	6,305	6,305	–	6,380	6,380

In addition to the financial assets above, there are $5,519m (2015: $6,494m; 2014: $7,576m) of other current and non-current asset investments and other financial assets on which no interest is received.

Foreign currency risk

The US dollar is the Group's most significant currency. As a consequence, the Group results are presented in US dollars and exposures are managed against US dollars accordingly.

Translational

Approximately 66% of Group external sales in 2016 were denominated in currencies other than the US dollar, while a significant proportion of manufacturing, and research and development costs were denominated in pounds sterling and Swedish krona. Surplus cash generated by business units is substantially converted to, and held centrally in, US dollars. As a result, operating profit and total cash flow in US dollars will be affected by movements in exchange rates.

This currency exposure is managed centrally, based on forecast cash flows. The impact of movements in exchange rates is mitigated significantly by the correlations which exist between the major currencies to which the Group is exposed and the US dollar. Monitoring of currency exposures and correlations is undertaken on a regular basis and hedging is subject to pre-execution approval.

As at 31 December 2016, 2.5% of interest-bearing loans and borrowings were denominated in pounds sterling and 18.3% were denominated in euros. Where there is non-US dollar debt and an underlying net investment of that amount in the same currency, the Group applies net investment hedging. Exchange differences on the retranslation of debt designated as net investment hedges are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

In 2016, the Group issued €2.2bn of bonds in the euro debt capital markets with maturities of 5, 8 and 12 years. The Group entered into cross-currency swaps to convert the proceeds into fixed US dollar debt with a weighted average interest rate of 2.69% and maturities equal to the bonds. These instruments were designated in a cash flow hedge. To the extent that the hedge is effective, fair value movements on the revaluation of cross-currency swaps designated in a cash flow hedge are taken to other comprehensive income. Any ineffectiveness is taken to profit.

26 Financial risk management objectives and policies continued

In 2016, the Group entered into a cross-currency swap to convert an additional $69m into fixed Chinese renminbi debt maturing in 2026. This instrument was designated in a net investment hedge against the foreign currency risk of the Group's renminbi net assets. Fair value movements on the revaluation of the cross-currency swaps are recognised in other comprehensive income to the extent that the hedge is effective. Any ineffectiveness is taken to profit.

Foreign currency risk arises when the Group has intercompany funding and investments in certain subsidiaries operating in countries with exchange controls. The most significant risk in this respect is Venezuela, where the Group has approximately $104m equivalent of local currency cash, on which there have been delays in obtaining approval for remittance outside the country.

The official exchange rate for essential goods and services is VEF 10/$ (the DIPRO rate) as published by CENCOEX (the National Foreign Trade Center). Alternative exchange rates include the SIMADI (Sistema Marginal de Divisas) rate, which was introduced in 2015. At 31 December 2016, the SIMADI rate was VEF 673.76/$ (31 December 2015: VEF 199.7/$).

For 2016, the Group used the DIPRO rate for the consolidation of the financial statements of the Venezuelan subsidiaries. The Group believes that this rate represents the most appropriate rate for consolidation as it reflects their best expectation of the rate at which profits will be remitted.

The Group has restructured $153m of intercompany trading balances in order to manage the FX retranslation risk should the DIPRO rate increase over the next 12 months. Had the Group applied the SIMADI rate for the consolidation of the financial statements of the Venezuelan subsidiaries, the Group would be exposed to a potential income statement devaluation loss of $15m on its total intercompany balances and the local currency cash would be reduced to $2m on consolidation.

Transactional

One hundred percent of the Group's major transactional currency exposures on working capital balances, which typically extend for up to three months, are hedged, where practicable, using forward foreign exchange contracts against individual Group companies' reporting currency. In addition, the Group's external dividend, which is paid principally in pounds sterling and Swedish krona, is fully hedged from announcement to payment date. Foreign exchange gains and losses on forward contracts transacted for transactional hedging are taken to profit.

Sensitivity analysis

The sensitivity analysis set out below summarises the sensitivity of the market value of our financial instruments to hypothetical changes in market rates and prices. The range of variables chosen for the sensitivity analysis reflects our view of changes which are reasonably possible over a one-year period. Market values are the present value of future cash flows based on market rates and prices at the valuation date. For long-term debt, an increase in interest rates results in a decline in the fair value of debt.

The sensitivity analysis assumes an instantaneous 100 basis point change in interest rates in all currencies from their levels at 31 December 2016, with all other variables held constant. Based on the composition of our long-term debt portfolio as at 31 December 2016, a 1% increase in interest rates would result in an additional $26m in interest expense being incurred per year. The exchange rate sensitivity analysis assumes an instantaneous 10% change in foreign currency exchange rates from their levels at 31 December 2016, with all other variables held constant. The +10% case assumes a 10% strengthening of the US dollar against all other currencies and the -10% case assumes a 10% weakening of the US dollar.

Each incremental 10% movement in foreign currency exchange rates would have approximately the same effect as the initial 10% detailed in the table below and each 1% change in interest rates would have approximately the same effect as the 1% detailed in the table below.

	Interest rates		Exchange rates	
31 December 2014	+1%	-1%	+10%	-10%
Increase/(decrease) in fair value of financial instruments ($m)	844	(856)	85	(85)
Impact on profit: (loss)/gain ($m)	–	–	(247)	247
Impact on equity: gain/(loss) ($m)	–	–	332	(332)

	Interest rates		Exchange rates	
31 December 2015	+1%	-1%	+10%	-10%
Increase/(decrease) in fair value of financial instruments ($m)	997	(1,150)	136	(136)
Impact on profit: (loss)/gain ($m)	–	–	(91)	91
Impact on equity: gain/(loss) ($m)	–	–	227	(227)

	Interest rates		**Exchange rates**	
31 December 2016	**+1%**	**-1%**	**+10%**	**-10%**
Increase/(decrease) in fair value of financial instruments ($m)	**1,249**	**(1,390)**	**180**	**(180)**
Impact on profit: (loss)/gain ($m)	**–**	**–**	**(24)**	**24**
Impact on equity: gain/(loss) ($m)	**–**	**–**	**204**	**(204)**

There has been no change in the methods and assumptions used in preparing the above sensitivity analysis over the three-year period.

26 Financial risk management objectives and policies continued

Credit risk

The Group is exposed to credit risk on financial assets, such as cash balances (including fixed deposits and cash and cash equivalents), derivative instruments, trade and other receivables. The Group is also exposed in its net asset position to its own credit risk in respect of the 2023 debentures which are accounted for at fair value through profit or loss.

Trade and other receivables

Trade receivable exposures are managed locally in the operating units where they arise and credit limits are set as deemed appropriate for the customer. The Group is exposed to customers ranging from government-backed agencies and large private wholesalers to privately owned pharmacies, and the underlying local economic and sovereign risks vary throughout the world. Where appropriate, the Group endeavours to minimise risks by the use of trade finance instruments such as letters of credit and insurance. The Group establishes an allowance for impairment that represents its estimate of incurred losses in respect of specific trade and other receivables where it is deemed that a receivable may not be recoverable. When the debt is deemed irrecoverable, the allowance account is written off against the underlying receivable.

In the US, sales to three wholesalers accounted for approximately 83% of US sales (2015: three wholesalers accounted for approximately 84%; 2014: three wholesalers accounted for approximately 75%).

The ageing of trade receivables at the reporting date was:

	2016 $m	2015 $m	2014 $m
Not past due	**2,559**	4,388	4,316
Past due 0-90 days	**14**	189	354
Past due 90-180 days	**–**	21	75
Past due > 180 days	**10**	35	17
	2,583	4,633	4,762

	2016 $m	2015 $m	2014 $m
Movements in provisions for trade receivables			
At 1 January	**52**	54	64
Income statement	**–**	2	(2)
Amounts utilised, exchange and other movements	**(10)**	(4)	(8)
At 31 December	**42**	52	54

The allowance for impairment has been calculated based on past experience and is in relation to specific customers. Given the profile of our customers, including large wholesalers and government-backed agencies, no further credit risk has been identified with the trade receivables not past due other than those balances for which an allowance has been made. The income statement charge is recorded in selling, general and administrative costs.

Other financial assets

The Group may hold significant cash balances as part of its normal operations, with the amount of cash held at any point reflecting the level of cash flow generated by the business and the timing of the use of that cash. The majority of excess cash is centralised within the Group treasury entity and is subject to counterparty risk on the principal invested. This risk is mitigated through a policy of prioritising security and liquidity over return, and as such cash is only invested in high credit quality investments. Counterparty limits are set according to the assessed risk of each counterparty and exposures are monitored against these limits on a regular basis. The majority of the Group's cash is invested in US dollar AAA-rated liquidity funds, fully collateralised repurchase agreements, fixed income securities and short-term bank deposits.

The most significant concentration of financial credit risk at 31 December 2016 was $3,440m invested in five AAA-rated liquidity funds. The liquidity fund portfolios are managed by the related external third party fund managers to maintain the AAA rating. No more than 15% of fund value is invested within each individual fund. There were no other significant concentrations of financial credit risk at the reporting date.

At 31 December 2016, the Group had investments of $950m (2015: $1,050m; 2014: $300m) in short-term repurchase agreements, which are fully collateralised investments. In the event of any default, ownership of the collateral would revert to the Group and would be readily convertible to cash. The value of the collateral held at 31 December 2016 was $951m (2015: $1,098m; 2014: $316m).

All financial derivatives are transacted with commercial banks, in line with standard market practice. The Group has agreements with some bank counterparties whereby the parties agree to post cash collateral, for the benefit of the other, equivalent to the market valuation of the derivative positions above a predetermined threshold. The carrying value of such cash collateral held by the Group at 31 December 2016 was $242m (2015: $451m; 2014: $457m).

27 Employee costs and share plans for employees

Employee costs

The average number of people, to the nearest hundred, employed by the Group is set out in the table below. In accordance with the Companies Act 2006, this includes part-time employees.

	2016	2015	2014
Employees			
UK	**7,000**	7,100	7,200
Continental Europe	**14,700**	14,800	13,800
The Americas	**17,800**	17,500	16,800
Asia, Africa & Australasia	**22,000**	20,700	18,100
Continuing operations	**61,500**	60,100	55,900

Geographical distribution described in the table above is by location of legal entity employing staff. Certain staff will spend some or all of their activity in a different location.

The number of people employed by the Group at the end of 2016 was 59,700 (2015: 61,500; 2014: 57,500).

The costs incurred during the year in respect of these employees were:

	2016 $m	2015 $m	2014 $m
Salaries	**4,664**	4,603	4,657
Social security costs	**584**	567	664
Pension costs	**426**	484	459
Other employment costs	**610**	474	499
Total	**6,284**	6,128	6,279

Severance costs of $578m are not included above (2015: $338m; 2014: $254m).

The Directors believe that, together with the basic salary system, the Group's employee incentive schemes provide competitive and market-related packages to motivate employees. They should also align the interests of employees with those of shareholders, as a whole, through long-term share ownership in the Company. The Group's current UK, Swedish and US schemes are described below; other arrangements apply elsewhere.

Bonus plans

The AstraZeneca UK Performance Bonus Plan

Employees of participating AstraZeneca UK companies are invited to participate in this bonus plan, which rewards strong individual performance. Bonuses are paid in cash.

The AstraZeneca Executive Annual Bonus Scheme

This scheme is a performance bonus scheme for Directors and senior employees who do not participate in the AstraZeneca UK Performance Bonus Plan. Annual bonuses are paid in cash and reflect both corporate and individual performance measures. The Remuneration Committee has discretion to reduce or withhold bonuses if business performance falls sufficiently short of expectations in any year such as to make the payment of bonuses inappropriate.

The AstraZeneca Deferred Bonus Plan

This plan was introduced in 2006 and is used to defer a portion of the bonus earned under the AstraZeneca Executive Annual Bonus Scheme into Ordinary Shares in the Company for a period of three years. The plan currently operates only in respect of Executive Directors and members of the SET. Awards of shares under this plan are typically made in March each year, the first award having been made in February 2006. Further details of this plan can be found in the Directors' Remuneration Report from page 103.

Sweden

In Sweden, an all-employee performance bonus plan is in operation, which rewards strong individual performance. Bonuses are paid 50% into a fund investing in AstraZeneca equities and 50% in cash. The AstraZeneca Executive Annual Bonus Scheme, the AstraZeneca Performance Share Plan and the AstraZeneca Global Restricted Stock Plan all operate in respect of relevant AstraZeneca employees in Sweden.

US

In the US, there are two all-employee short-term or annual performance bonus plans in operation to differentiate and reward strong individual performance. Annual bonuses are paid in cash. There is also one senior staff long-term incentive scheme, under which 91 participants may be eligible for awards granted as AstraZeneca ADSs. AstraZeneca ADSs necessary to satisfy the awards are purchased in the market or funded via a share trust. The AstraZeneca Performance Share Plan and the AstraZeneca Global Restricted Stock Plan operate in respect of relevant employees in the US.

27 Employee costs and share plans for employees continued

Share plans

The charge for share-based payments in respect of share plans is $241m (2015: $211m; 2014: $178m). The plans are equity settled.

The AstraZeneca UK All-Employee Share Plan

The Company offers UK employees the opportunity to buy Partnership Shares (Ordinary Shares). Employees may invest up to £1,800 over a 12 month accumulation period and purchase Partnership Shares in the Company with the total proceeds at the end of the period. The purchase price for the shares is the lower of the price at the beginning or the end of the 12-month period. In 2010, the Company introduced a Matching Share element, the first award of which was made in 2011. Currently one Matching Share is awarded for every four Partnership Shares purchased. Partnership Shares and Matching Shares are held in the HM Revenue & Customs (HMRC)-approved All-Employee Share Plan. At the Company's AGM in 2002, shareholders approved the issue of new shares for the purposes of the All-Employee Share Plan.

The AstraZeneca Performance Share Plan

This plan was approved by shareholders in 2005 for a period of 10 years. Generally, awards could be granted at any time, but not during a closed period of the Company. The first grant of awards was made in June 2005 and the last grant of awards was made in March 2014. Awards granted under the plan vest after three years and can be subject to the achievement of performance conditions. The Remuneration Committee has responsibility for agreeing any awards under the plan and for setting the policy for the way in which the plan should be operated, including agreeing performance targets and which employees would be invited to participate. The plan has been replaced by the AstraZeneca 2014 Performance Share Plan.

	Shares '000	WAFV[1] pence	WAFV[1] $
Shares awarded in February 2014	37	N/A	30.55
Shares awarded in March 2014	2,368	1952	32.34

[1] Weighted average fair value.

The AstraZeneca 2014 Performance Share Plan (PSP)

This plan was approved by shareholders in 2014 for a period of 10 years and replaces the AstraZeneca Performance Share Plan. Generally, awards can be granted at any time, but not during a closed period of the Company. The first grant of awards was made in May 2014. Awards granted under the plan vest after three years, or in the case of Executive Directors, after an additional two-year holding period, and can be subject to the achievement of performance conditions. For awards granted to all participants in 2016, vesting is subject to a combination of measures focused on scientific leadership, revenue growth and financial performance. The Remuneration Committee has responsibility for agreeing any awards under the plan and for setting the policy for the way in which the plan should be operated, including agreeing performance targets and which employees should be invited to participate. Further details of this plan can be found in the Directors' Remuneration Report from page 103. The main grant of awards in 2016 under the plan took place in March with further grants in May and August.

	Shares '000	WAFV pence	WAFV $
Shares awarded in May 2014	12	2133	35.75
Shares awarded in August 2014	141	2156	35.79
Shares awarded in September 2014	40	2250	N/A
Shares awarded in November 2014	2	N/A	36.62
Shares awarded in March 2015	2,223	2381	35.29
Shares awarded in June 2015	36	2087	33.05
Shares awarded in August 2015	152	2123	33.21
Shares awarded in September 2015	8	N/A	32.32
Shares awarded in November 2015	7	2178	33.31
Shares awarded in March 2016	2,673	1962	28.19
Shares awarded in May 2016	24	1935	28.64
Shares awarded in August 2016	67	2536	33.58

The AstraZeneca Investment Plan (AZIP)

This plan was introduced in 2010 and approved by shareholders at the 2010 AGM. The grant of awards in 2016 took place in March. Awards granted under the plan vest after eight years and are subject to performance conditions measured over a period of between three and eight years. For awards granted in 2016, the performance conditions relate to the annual dividend paid to shareholders and dividend cover over a four-year performance period. The awards are then subject to a four-year holding period before they can vest. The Remuneration Committee has responsibility for agreeing any awards under the plan and for setting the policy for the way in which the plan should be operated, including agreeing performance targets and which employees should be invited to participate. Further details of this plan can be found in the Directors' Remuneration Report from page 103.

	Shares '000	WAFV pence	WAFV $
Shares awarded in March 2014	67	3904	64.68
Shares awarded in September 2014	7	4499	N/A
Shares awarded in March 2015	64	4762	70.58
Shares awarded in August 2015	4	N/A	66.42
Shares awarded in March 2016	84	3923	56.38

27 Employee costs and share plans for employees continued

The AstraZeneca Global Restricted Stock Plan

This plan was introduced in 2010. The main grant of awards in 2016 under the plan was in March, with a further, smaller grant in August. This plan provides for the grant of restricted stock unit (RSU) awards to selected below SET-level employees and is used in conjunction with the AstraZeneca Performance Share Plan to provide a mix of RSUs and performance shares. Awards typically vest on the third anniversary of the date of grant and are contingent on continued employment with the Company. The Remuneration Committee has responsibility for agreeing any awards under the plan and for setting the policy for the way in which the plan should be operated.

	Shares '000	WAFV pence	WAFV $
Shares awarded in March 2014	2,076	3904	64.68
Shares awarded in August 2014	25	4312	71.57
Shares awarded in March 2015	1,966	4762	70.58
Shares awarded in August 2015	17	4245	66.42
Shares awarded in March 2016	2,695	3923	56.38
Shares awarded in August 2016	122	5071	67.16

The AstraZeneca Restricted Share Plan

This plan was introduced in 2008 and provides for the grant of restricted share awards to key employees, excluding Executive Directors. Awards are made on an *ad hoc* basis with variable vesting dates. The plan has been used four times in 2016 to make awards to 714 employees. The Remuneration Committee has responsibility for agreeing any awards under the plan and for setting the policy for the way in which the plan should be operated.

	Shares '000	WAFV pence	WAFV $
Shares awarded in February 2014	115	4042	61.10
Shares awarded in March 2014	155	N/A	64.68
Shares awarded in May 2014	134	4265	71.50
Shares awarded in August 2014	72	4312	71.57
Shares awarded in September 2014	64	4499	74.05
Shares awarded in November 2014	9	4672	73.23
Shares awarded in March 2015	164	4762	70.58
Shares awarded in June 2015	69	4174	66.09
Shares awarded in August 2015	31	4245	66.42
Shares awarded in September 2015	41	4199	64.64
Shares awarded in November 2015	41	4355	66.62
Shares awarded in March 2016	809	3923	56.38
Shares awarded in May 2016	335	3869	57.28
Shares awarded in August 2016	37	5071	67.16
Shares awarded in November 2016	14	4233	53.42

The fair values were determined using a modified version of the binomial model. This method incorporated expected dividends but no other features into the measurements of fair value. The grant date fair values of share awards disclosed in this section do not take account of service and non-market related performance conditions.

28 Commitments and contingent liabilities

	2016 $m	2015 $m	2014 $m
Commitments			
Contracts placed for future capital expenditure on property, plant and equipment and software development costs not provided for in these accounts	**629**	518	438

Guarantees and contingencies arising in the ordinary course of business, for which no security has been given, are not expected to result in any material financial loss.

Research and development collaboration payments

The Group has various ongoing collaborations, including in-licensing and similar arrangements with development partners. Such collaborations may require the Group to make payments on achievement of stages of development, launch or revenue milestones, although the Group generally has the right to terminate these agreements at no cost. The Group recognises research and development milestones as intangible assets once it is committed to payment, which is generally when the Group reaches set trigger points in the development cycle. Revenue-related milestones are recognised as intangible assets on product launch at a value based on the Group's long-term revenue forecasts for the related product. The table below indicates potential development and revenue-related payments that the Group may be required to make under such collaborations.

	Total $m	Under 1 year $m	Years 1 and 2 $m	Years 3 and 4 $m	Years 5 and greater $m
Future potential research and development milestone payments	**6,651**	**412**	**1,286**	**647**	**4,306**
Future potential revenue milestone payments	**5,259**	**77**	**143**	**970**	**4,069**

The table includes all potential payments for achievement of milestones under ongoing research and development arrangements. Revenue-related milestone payments represent the maximum possible amount payable on achievement of specified levels of revenue as set out in individual contract agreements, but exclude variable payments that are based on unit sales (eg royalty-type payments) which are expensed as the associated sale is recognised. The table excludes any payments already capitalised in the Financial Statements for the year ended 31 December 2016.

The future payments we disclose represent contracted payments and, as such, are not discounted and are not risk adjusted. As detailed in the Risk section from page 214, the development of any pharmaceutical product candidate is a complex and risky process that may fail at any stage in the development process due to a number of factors (including items such as failure to obtain regulatory approval, unfavourable data from key studies, adverse reactions to the product candidate or indications of other safety concerns). The timing of the payments is based on the Group's current best estimate of achievement of the relevant milestone.

Environmental costs and liabilities

The Group's expenditure on environmental protection, including both capital and revenue items, relates to costs that are necessary for implementing internal systems and programmes, and meeting legal and regulatory requirements for processes and products. This includes investment to conserve natural resources and otherwise minimise the impact of our activities on the environment.

They are an integral part of normal ongoing expenditure for carrying out the Group's research, manufacturing and commercial operations and are not separated from overall operating and development costs. There are no known changes in legal, regulatory or other requirements resulting in material changes to the levels of expenditure for 2014, 2015 or 2016.

In addition to expenditure for meeting current and foreseen environmental protection requirements, the Group incurs costs in investigating and cleaning up land and groundwater contamination. In particular, AstraZeneca has environmental liabilities at some currently or formerly owned, leased and third party sites.

In the US, Zeneca Inc., and/or its indemnitees, have been named as potentially responsible parties (PRPs) or defendants at approximately 14 sites where Zeneca Inc. is likely to incur future environmental investigation, remediation, operation and maintenance costs under federal, state, statutory or common law environmental liability allocation schemes (together, US Environmental Consequences). Similarly, Stauffer Management Company LLC (SMC), which was established in 1987 to own and manage certain assets of Stauffer Chemical Company acquired that year, and/or its indemnitees, have been named as PRPs or defendants at 34 sites where SMC is likely to incur US Environmental Consequences.

AstraZeneca has also given indemnities to third parties for a number of sites outside the US. These environmental liabilities arise from legacy operations that are not currently part of the Group's business and, at most of these sites, remediation, where required, is either completed or nearing completion. AstraZeneca has made provisions for the estimated costs of future environmental investigation, remediation, operation and maintenance activity beyond normal ongoing expenditure for maintaining the Group's R&D and manufacturing capacity and product ranges, where a present obligation exists, it is probable that such costs will be incurred and they can be estimated reliably. With respect to such estimated future costs, there were provisions at 31 December 2016 in the aggregate of $59m (2015: $67m; 2014: $84m), mainly relating to the US. Where we are jointly liable or otherwise have cost-sharing agreements with third parties, we reflect only our share of the obligation. Where the liability is insured in part or in whole by insurance or other arrangements for reimbursement, an asset is recognised to the extent that this recovery is virtually certain.

It is possible that AstraZeneca could incur future environmental costs beyond the extent of our current provisions. The extent of such possible additional costs is inherently difficult to estimate due to a number of factors, including: (1) the nature and extent of claims that may be asserted in the future; (2) whether AstraZeneca has or will have any legal obligation with respect to asserted or unasserted claims; (3) the type of remedial action, if any, that may be selected at sites where the remedy is presently not known; (4) the potential for recoveries from or allocation of liability to third parties; and (5) the length of time that the environmental investigation, remediation and liability allocation process can take. Notwithstanding and subject to the foregoing, we estimate the potential additional loss for future environmental investigation, remediation, remedial operation and maintenance activity above and beyond our provisions to be, in aggregate, between $85m and $141m (2015: $71m and $119m; 2014: $50m and $80m), which relates mainly to the US.

28 Commitments and contingent liabilities continued

Legal proceedings

AstraZeneca is involved in various legal proceedings considered typical to its business, including actual or threatened litigation and/or actual or potential government investigations relating to employment matters, product liability, commercial disputes, pricing, sales and marketing practices, infringement of IP rights, and the validity of certain patents and competition laws. The more significant matters are discussed below.

Most of the claims involve highly complex issues. Often these issues are subject to substantial uncertainties and, therefore, the probability of a loss, if any, being sustained and an estimate of the amount of any loss is difficult to ascertain. Consequently, for a majority of these claims, it is not possible to make a reasonable estimate of the expected financial effect, if any, that will result from ultimate resolution of the proceedings. In these cases, AstraZeneca discloses information with respect to the nature and facts of the cases.

With respect to each of the legal proceedings described below, other than those for which provision has been made, we are unable to make estimates of the possible loss or range of possible losses at this stage, other than as set forth in this section. We also do not believe that disclosure of the amount sought by plaintiffs, if known, would be meaningful with respect to those legal proceedings. This is due to a number of factors, including (1) the stage of the proceedings (in many cases trial dates have not been set) and the overall length and extent of pre-trial discovery; (2) the entitlement of the parties to an action to appeal a decision; (3) clarity as to theories of liability, damages and governing law; (4) uncertainties in timing of litigation; and (5) the possible need for further legal proceedings to establish the appropriate amount of damages, if any.

While there can be no assurance regarding the outcome of any of the legal proceedings referred to in this Note 28, based on management's current and considered view of each situation, we do not currently expect them to have a material adverse effect on our financial position. This position could of course change over time, not least because of the factors referred to above.

In cases that have been settled or adjudicated, or where quantifiable fines and penalties have been assessed and which are not subject to appeal (or other similar forms of relief), or where a loss is probable and we are able to make a reasonable estimate of the loss, we generally indicate the loss absorbed or make a provision for our best estimate of the expected loss.

Where it is considered that the Group is more likely than not to prevail, legal costs involved in defending the claim are charged to profit as they are incurred.

Where it is considered that the Group has a valid contract which provides the right to reimbursement (from insurance or otherwise) of legal costs and/or all or part of any loss incurred or for which a provision has been established, and we consider recovery to be virtually certain, the best estimate of the amount expected to be received is recognised as an asset.

Assessments as to whether or not to recognise provisions or assets, and of the amounts concerned, usually involve a series of complex judgements about future events and can rely heavily on estimates and assumptions. AstraZeneca believes that the provisions recorded are adequate based on currently available information and that the insurance recoveries recorded will be received. However, given the inherent uncertainties involved in assessing the outcomes of these cases, and in estimating the amount of the potential losses and the associated insurance recoveries, we could in the future incur judgments or insurance settlements that could have a material adverse effect on our results in any particular period.

IP claims include challenges to the Group's patents on various products or processes and assertions of non-infringement of patents. A loss in any of these cases could result in loss of patent protection on the related product. The consequences of any such loss could be a significant decrease in product sales, which could have a material adverse effect on our results. The lawsuits filed by AstraZeneca for patent infringement against companies that have filed ANDAs in the US, seeking to market generic forms of products sold by the Group prior to the expiry of the applicable patents covering these products, typically also involve allegations of non-infringement, invalidity and unenforceability of these patents by the ANDA filers. In the event that the Group is unsuccessful in these actions or the statutory 30-month stay expires before a ruling is obtained, the ANDA filers involved will also have the ability, subject to FDA approval, to introduce generic versions of the product concerned.

AstraZeneca has full confidence in, and will vigorously defend and enforce, its IP.

Over the course of the past several years, including in 2016, a significant number of commercial litigation claims in which AstraZeneca is involved have been resolved, particularly in the US, thereby reducing potential contingent liability exposure arising from such litigation. Similarly, in part due to patent litigation and settlement developments, greater certainty has been achieved regarding possible generic entry dates with respect to some of our patented products. At the same time, like other companies in the pharmaceutical sector and other industries, AstraZeneca continues to be subject to government investigations around the world.

Patent litigation

Brilinta (ticagrelor)

US patent proceedings

In 2015, in response to Paragraph IV notices challenging patents listed in the FDA Orange Book with reference to *Brilinta*, AstraZeneca filed separate patent infringement lawsuits against ANDA filers seeking to market ticagrelor. Proceedings are ongoing in the US District Court for the District of Delaware. Trial is scheduled for March and April 2018.

Byetta (exenatide)

US patent proceedings

In 2014, in the US District Court for the District of Delaware (the District Court), AstraZeneca filed a patent infringement lawsuit in response to a Paragraph IV notice from Teva Pharmaceuticals USA, Inc. (Teva) relating to patents listed in the FDA Orange Book with reference to *Byetta*. In June 2016, AstraZeneca settled the patent litigation against Teva. The District Court entered a consent judgment which will enjoin Teva from launching its proposed exenatide product until October 2017, subject to regulatory approval. Separately, in December 2015, AstraZeneca filed a patent infringement lawsuit in response to a Paragraph IV notice from Amneal Pharmaceuticals LLC in the District Court. Trial is scheduled for December 2017.

In November 2015, Sanofi-Aventis U.S. LLC and Sanofi-Aventis Deutschland GmbH (together, Sanofi) served AstraZeneca with a complaint for declaratory judgment that Sanofi's proposed lixisenatide product would not infringe three AstraZeneca patents. Sanofi also alleged invalidity of the patents. Separately, in December 2015, Sanofi filed petitions in the US Patent Trial and Appeals Board (PTAB) for *inter partes* review of certain patents at issue in the above-referenced District Court litigations. In October 2016, AstraZeneca and Sanofi settled the District Court and PTAB proceedings. Sanofi's claims have been dismissed.

Crestor (rosuvastatin calcium)

US patent proceedings

AstraZeneca has been a defendant in three patent infringement lawsuits in the US District Court for the District of South Carolina (the District Court) which, among other things, claimed that AstraZeneca's *Crestor* sales induce infringement of the plaintiffs' patents.

The first lawsuit, filed in April 2011 by plaintiff Palmetto Pharmaceuticals, LLC (Palmetto), was dismissed by the District Court in December 2015 with judgment entered in

28 Commitments and contingent liabilities continued

AstraZeneca's favour. Palmetto subsequently appealed. In December 2016, the Federal Circuit Court of Appeals affirmed the District Court's order dismissing the lawsuit.

The other two lawsuits were filed by co-plaintiffs Medical University of South Carolina Foundation for Research Development and Charleston Medical Therapeutics, Inc. (together, CMT) in July and December 2013 and subsequently consolidated. In February 2016, the District Court granted AstraZeneca's motion for summary judgment and dismissed the two consolidated lawsuits, and CMT appealed. In July 2016, AstraZeneca and CMT jointly filed a stipulated dismissal of CMT's appeal.

Patent proceedings outside the US

In Australia, AstraZeneca was unsuccessful in defending the validity of certain *Crestor* patents, at trial and on appeal. The patent litigation concluded in September 2015. A provision was taken in 2015 in respect of claims from generic entities which were prevented by court order from launching their products in Australia before AstraZeneca's patents were subsequently found to be invalid. In April 2016, AstraZeneca was notified that the Commonwealth of Australia also intended to pursue a claim against AstraZeneca in relation to alleged losses it suffered in connection with the same patent litigation and the Commonwealth formally joined the proceedings in November 2016. AstraZeneca has updated its provisions accordingly.

In France, in February 2016, Biogaran S.A.S. (Biogaran) obtained a marketing authorisation for its rosuvastatin zinc product. In April 2016, AstraZeneca and Shionogi Seiyaku Kabushiki Kaisha (Shionogi) sought a preliminary injunction to prevent Biogaran from launching its product. In July 2016, the Paris Court of First Instance declined to issue a preliminary injunction. AstraZeneca and Shionogi appealed, however, the parties settled the preliminary proceedings before the appeal hearing. AstraZeneca and Shionogi have commenced patent infringement proceedings against Biogaran relying on infringement of the supplementary protection certificate related to the *Crestor* substance patent (European Patent No. EP 0521471).

In Japan, in March 2015, an individual filed a patent invalidation request with the Japanese Patent Office (JPO) in relation to the *Crestor* substance patent (Japanese Patent No. JP 2648897). In July 2016, the JPO dismissed the request. The individual appealed to the Intellectual Property High Court of Japan (the High Court) with the intervention of Nippon Chemiphar Co. Ltd (Nippon). In addition, Nippon has commenced a separate patent invalidation request with the JPO in relation to the *Crestor* substance patent. In November 2016, the JPO refused Nippon's request. Nippon has appealed to the High Court.

In the Netherlands, in April 2014, AstraZeneca received a writ of summons from Resolution Chemicals Ltd (Resolution) alleging partial invalidity and non-infringement of the supplementary protection certificate (SPC) related to the *Crestor* substance patent (European Patent No. EP 0521471). In July 2015, the District Court of the Hague determined that the SPC does not extend to zinc salts of rosuvastatin and that Resolution's rosuvastatin zinc product does not infringe the SPC. In February 2016, the Court of Appeal of the Hague overturned the decision and found that Resolution's product does infringe the SPC. Resolution appealed, and a hearing was held before the Supreme Court in December 2016. A decision is pending.

In Switzerland, in May 2016, Mepha Pharma AG challenged the validity of the supplementary protection certificate related to the *Crestor* substance patent (European Patent No. EP 0521471). AstraZeneca has responded.

In the UK, in October 2015, Resolution commenced an action in the UK Patent Court alleging partial invalidity and non-infringement of the supplementary protection certificate related to the *Crestor* substance patent (European Patent No. EP 0521471). The case has been stayed.

***Daliresp* (roflumilast)**

US patent proceedings

In 2015, in response to Paragraph IV notices challenging patents listed in the FDA Orange Book with reference to *Daliresp*, AstraZeneca filed separate patent infringement lawsuits against ANDA filers seeking to market roflumilast. Proceedings are ongoing in the US District Court for the District of New Jersey. No trial date has been set.

***Faslodex* (fulvestrant)**

US patent proceedings

AstraZeneca has filed patent infringement lawsuits in the US District Court in New Jersey (the District Court) relating to four patents listed in the FDA Orange Book with reference to *Faslodex* after AstraZeneca received seven Paragraph IV notices relating to six ANDAs seeking FDA approval to market generic versions of *Faslodex* prior to the expiration of AstraZeneca's patents. In July 2016, AstraZeneca settled one of these, the lawsuit brought against Sandoz, Inc. (Sandoz), and the District Court entered a consent judgment, which includes an injunction preventing Sandoz from launching a generic fulvestrant product until 25 March 2019, or earlier in certain circumstances. In August and December 2016, AstraZeneca settled the lawsuits against three additional ANDA filers, and the District Court also entered consent judgments ending those lawsuits. The related lawsuit in the US District Court in West Virginia, that had been stayed pending the District Court lawsuits, was also settled and dismissed pursuant to a consent judgment. AstraZeneca continues to litigate in the District Court against two ANDA filers.

In July 2016, AstraZeneca was served with four petitions for *inter partes* review by the Patent Trial and Appeal Board (PTAB) relating to each of the four Orange Book-listed patents. In December 2016, the PTAB issued an order denying institution of the first of the four petitions. In January 2017, the PTAB terminated the remaining petitions at the request of the parties.

Patent proceedings outside the US

In Germany, in July 2015, AstraZeneca was served with complaints filed by Hexal AG (Hexal) and ratiopharm GmbH (ratiopharm) requesting the revocation of the German part of European Patent No. EP 1250138 (the '138 Patent). In January 2017, the German Federal Patent Court declared the patent invalid. AstraZeneca intends to appeal. In January 2017, the Regional Court of Düsseldorf lifted a provisional injunction based on the '138 Patent which had been in place against Hexal since February 2016. Hexal is also seeking to lift the provisional injunction based on European Patent No. EP 2266573. In January 2017, the Higher Regional Court of Düsseldorf suspended the effects of a provisional injunction based on the '138 Patent which had been in place against ratiopharm since September 2016.

In Spain, in January 2016, the Barcelona Commercial Court ordered a preliminary injunction based on European Patent No. EP 1250138 and European Patent No. EP 2266573, preventing Sandoz Farmacéutica, S.A. from launching generic *Faslodex* in Spain. Sandoz Farmacéutica, S.A. appealed.

In October 2015, Hexal filed a notice of opposition against European Patent No. EP 2266573, granted in June 2015, at the European Patent Office. In February and March 2016, further oppositions were filed by Actavis Group PTC ehf, Fresenius Kabi Deutschland GmbH, Intas Pharmaceuticals Ltd. and Teva Pharmaceutical Industries Ltd. An oral hearing has been scheduled for May 2017.

In China, in March 2014, AstraZeneca received a request for invalidation of the *Faslodex* formulation patent CN01803546.9 filed by Jiangsu Hansoh Pharmaceutical Co. Ltd. at the Chinese Patent Office. In September 2014, the Patent Re-examination Board of the Chinese Patent Board declared the patent invalid. AstraZeneca appealed to the Beijing IP Court and the appeal was rejected in April 2016. AstraZeneca appealed this decision to

28 Commitments and contingent liabilities continued

the Beijing Higher People's Court and the appeal was rejected in December 2016. AstraZeneca is considering its options.

In Brazil, in February 2013, Eurofarma Laboratorios S.A. (Eurofarma) filed a nullity action against a formulation patent for *Faslodex* in the 31st Specialized Intellectual Property Federal Court of Rio de Janeiro (the Court). In October 2015, the Court ruled in Eurofarma's favour and invalidated AstraZeneca's patent. In November 2015, AstraZeneca appealed the decision and the appeal remains pending.

Losec/Prilosec (omeprazole)

Patent proceedings outside the US

In Canada, in 2004, AstraZeneca brought proceedings against Apotex Inc. (Apotex) for infringement of several patents related to *Losec*. In February 2015, the Federal Court of Canada found that Apotex had infringed AstraZeneca's *Losec* formulation patent (Canadian Patent No. 1,292,693). Apotex appealed. In January 2017, the Federal Court of Appeal (the Appeal Court) upheld the trial court's findings of infringement and validity. However, the Appeal Court upheld one aspect of Apotex's appeal relating to a limitation period defence, which may lower the amount of damages owed by Apotex. A reference to determine patent infringement damages is scheduled to commence in February 2017.

Movantik/Movantig (naloxegol)

US patent proceedings

In 2015, Neptune Generics LLC, filed a petition seeking *inter partes* review with the Patent Office challenging the validity of a patent listed in the FDA Orange Book with reference to *Movantik* (US Patent No. 7,786,133). In April 2016, the Patent Trial and Appeal Board denied the petition.

Patent proceedings outside the US

In Europe, Generics (UK) Ltd (trading as Mylan) filed an opposition to the grant of European Patent No. EP 1694363 with the European Patent Office (EPO). In February 2016, the Opposition Division of the EPO upheld the patent as granted, and dismissed the opposition.

In Europe, in September 2016, Generics (UK) Ltd; ABG Patentes, SL; and Stada Arzneimittel AG filed oppositions to the grant of European Patent No. EP 2621496 with the European Patent Office. The Patent's proprietors (AstraZeneca AB and Nektar Therapeutics) have been invited to file a response to the Statements of Opposition.

Nexium (esomeprazole magnesium)

US patent proceedings

Several separate *Nexium*, *Nexium* oral suspension and *Nexium* 24HR (OTC) patent litigations are ongoing in the US District Court for the District of New Jersey. Proceedings are at various stages and no trial dates have been set.

Patent proceedings outside the US

In Canada, in July 2014, the Federal Court found the *Nexium* substance patent (Canadian Patent No. 2,139,653) invalid and not infringed by Apotex Inc. In July 2015, AstraZeneca's appeal was dismissed. AstraZeneca was granted leave to appeal to the Supreme Court of Canada and a hearing was held in November 2016. A decision is pending.

Onglyza (saxagliptin) and *Kombiglyze* (saxagliptin and metformin)

US patent proceedings

AstraZeneca initiated patent infringement proceedings against various entities in the US District Court for the District of Delaware (the District Court) after those entities had submitted ANDAs containing a Paragraph IV Certification alleging that US Patent No. RE44,186, listed in the FDA Orange Book with reference to *Onglyza* and *Kombiglyze* XR, is invalid and/or will not be infringed by the products as described in their ANDAs. A trial was held in September 2016 against Wockhardt Bio AG and Wockhardt USA LLC, Sun Pharma Global FZE, Sun Pharmaceutical Industries Ltd, Amneal Pharmaceuticals LLC, Mylan Pharmaceuticals Inc., Aurobindo Pharma Ltd., Aurobindo Pharma U.S.A., Inc., Actavis Laboratories FL, Inc. and Watson Laboratories, Inc. A decision is awaited. In September 2016, Apotex Corp. and Apotex, Inc. agreed to be bound by the District Court's decision.

In June 2016, the US Court of Appeals for the Federal Circuit denied Mylan Pharmaceuticals Inc. (Mylan) petition for rehearing *en banc* of the decision affirming the denial of Mylan's motion to dismiss for lack of jurisdiction. In September 2016, Mylan filed a petition for writ of *certiorari* with the Supreme Court of the United States seeking an appeal of that decision and, in January 2017, that petition was denied.

In May 2016, the US Patent and Trademark Office (USPTO) instituted an *inter partes* review brought by Mylan Pharmaceutical Inc. (the Mylan IPR) challenging the validity of US Patent No. RE44,186 (the '186 Patent). Subsequently, Wockhardt Bio AG, Teva Pharmaceuticals USA, Inc., Sun Pharmaceutical Industries, Ltd., Sun Pharma Global FZE and Amneal Pharmaceuticals LLC also filed petitions for *inter partes* review challenging the validity of the '186 Patent and joined the Mylan IPR. A hearing in the Mylan IPR was held in January 2017. A decision is awaited.

Pulmicort Respules (budesonide inhalation suspension)

US patent proceedings

In February 2015, the US District Court for the District of New Jersey (the District Court) determined that the asserted claims of US Patent No. 7,524,834 were invalid and denied AstraZeneca's motion for an injunction against Apotex, Inc. and Apotex Corp., Breath Limited, Sandoz, Inc. and Watson Laboratories, Inc. (together, the Generic Challengers) pending an appeal of the District Court's decision. AstraZeneca appealed that decision to the US Court of Appeals for the Federal Circuit (the Court of Appeals) and filed an Emergency Motion for an Injunction Pending Appeal. The Court of Appeals granted AstraZeneca's motion and issued an injunction against the Generic Challengers pending appeal. In May 2015, the Court of Appeals affirmed the District Court's decision and lifted the injunction that was issued. Since 2009, various injunctions were issued in this matter. Damages claims based on those injunctions have been filed and a provision has been taken.

Seroquel XR (quetiapine fumarate)

Patent proceedings outside the US

In Denmark, in June 2016, following a challenge to the validity of the formulation patent covering *Seroquel XR* by Teva Denmark A/S and Accord Healthcare Ltd., the Danish Maritime and Commercial High Court found the *Seroquel XR* formulation patent invalid.

In France, in April 2015, Mylan SAS (Mylan) brought a patent invalidation action against AstraZeneca's French designation of the *Seroquel XR* formulation patent. In July 2016, the Tribunal de grande instance de Paris found the *Seroquel XR* formulation patent invalid.

In Spain, in May 2016, the Supreme Court affirmed a decision from October 2013 which found the *Seroquel XR* formulation patent invalid. The generic challengers were Accord Healthcare S.L.U. and Sandoz Farmacéutica, S.A.

In Sweden, in May 2016, following a challenge to the validity of the formulation patent covering *Seroquel XR* by Sandoz A/S, the Stockholm District Court found the *Seroquel XR* formulation patent invalid.

In various countries in Europe generic entities have claimed, or may claim, damages relating to preliminary injunctions issued in those countries that prevented generic *Seroquel XR* sales by those entities. A provision has been taken.

Synagis (palivizumab)

US patent proceedings

In December 2016, UCB BioPharma SPRL filed a complaint against MedImmune in the US District Court for the District of Delaware alleging infringement of US Patent No. 7,566,771. The complaint relates to a royalty-bearing licence between Celltech R&D LTD and MedImmune which was terminated by MedImmune in 2010.

28 Commitments and contingent liabilities continued

Tagrisso (osimertinib)

Patent proceedings outside the US

In Europe, in October 2016, Stada Arzneimittel AG filed an opposition to the grant of European Patent No. EP 2736895.

Vimovo (naproxen/esomeprazole magnesium)

Patent proceedings outside the US

In Canada, in January 2015, AstraZeneca received two notices of allegation from Mylan Pharmaceuticals ULC. In response, AstraZeneca and Pozen Inc. (now Aralez Pharmaceuticals Inc.), the licensee and patent holder, respectively, commenced proceedings in relation to the *Vimovo* formulation patent (Canadian Patent No. 2,449,098). A hearing was held in November 2016 and a decision is pending.

Product liability litigation

Byetta/Bydureon (exenatide)

Amylin Pharmaceuticals, LLC, a wholly owned subsidiary of AstraZeneca, and/or AstraZeneca are among multiple defendants in various lawsuits filed in federal and state courts in the US involving claims of physical injury from treatment with *Byetta* and/or *Bydureon*. The lawsuits allege several types of injuries including pancreatitis, pancreatic cancer, thyroid cancer, and kidney cancer.
A multidistrict litigation was established in the US District Court for the Southern District of California (the District Court) in regard to the alleged pancreatic cancer cases in federal courts. Further, a coordinated proceeding has been established in Los Angeles, California in regard to the various lawsuits in California state courts.

In November 2015, the District Court granted the defendants' motion for summary judgment and dismissed all claims alleging pancreatic cancer that accrued prior to 11 September 2015. A similar motion was granted in favour of the defendants in the California state coordinated proceeding, and judgment was entered in May 2016. Plaintiffs have appealed both rulings.

A single case alleging similar claims that was pending in Alabama state court is now resolved.

Crestor (rosuvastatin calcium)

AstraZeneca is defending a number of lawsuits in the US alleging multiple types of injuries caused by the use of *Crestor*, including diabetes mellitus, various cardiac injuries, rhabdomyolysis, and/or liver and kidney injuries. The claims of approximately 600 plaintiffs, comprising approximately 100 California residents and approximately 500 non-California residents, were aggregated in one coordinated proceeding in Los Angeles, California. The claims of approximately 600 additional non-California plaintiffs were also pending in California state court. In October 2014, the coordination judge dismissed the claims of the non-California plaintiffs whose claims were in the coordinated proceeding. The plaintiffs appealed the October 2014 order dismissing the non-California plaintiffs from the proceeding. In July 2016, the Court of Appeal in California dismissed the plaintiffs' appeal, effectively dismissing the claims of all of the non-California residents from California state court, leaving the option of re-filing in the plaintiffs' home states. The claims of approximately 30 plaintiffs remain pending in California state court.

Farxiga (dapagliflozin)

AstraZeneca has been named as a defendant in lawsuits in the US involving plaintiffs claiming physical injury, including diabetic ketoacidosis and kidney failure, from treatment with *Farxiga* and/or *Xigduo* XR. Cases with these allegations have been filed in several jurisdictions in the US. In October 2016, one of these cases was dismissed with prejudice in favour of AstraZeneca. Since then, several other cases have been dismissed, either voluntarily or by the courts. Motions to dismiss are pending in many of the jurisdictions where AstraZeneca has been served.

Counsel for plaintiffs in a product liability action pertaining to *Invokana* (a product in the same class as *Farxiga*) filed a motion with the Judicial Panel on Multidistrict Litigation (JPML) seeking transfer of any currently pending cases as well as any similar, subsequently filed cases to a coordinated and consolidated pre-trial multidistrict litigation (MDL) proceeding on a class-wide basis. In December 2016, the JPML granted an MDL to only those plaintiffs alleging injury from *Invokana*.

Nexium and *Prilosec* (esomeprazole and omeprazole)

AstraZeneca has been defending product liability lawsuits brought in US federal and state courts by approximately 1,900 plaintiffs who alleged that *Nexium* caused osteoporotic injuries, such as bone deterioration, loss of bone density and/or bone fractures, but all such claims have now been dismissed with judgment entered in AstraZeneca's favour. Approximately 270 plaintiffs appealed the dismissal of their claims to the US Court of Appeals for the Ninth Circuit, and fewer than 40 plaintiffs appealed the dismissal of their claims to the California Second Appellate Division. In October 2016, the US Court of Appeals for the Ninth Circuit affirmed the dismissal of the approximately 270 claims in federal court. In January 2017, the California Second Appellate Division affirmed the dismissal of the fewer than 40 cases in California state court.

AstraZeneca is defending various lawsuits in the US involving multiple plaintiffs claiming that they have been diagnosed with kidney injuries following treatment with proton pump inhibitors, including *Nexium* and *Prilosec*. In October 2016, counsel for some of these plaintiffs filed a motion with the Judicial Panel on Multidistrict Litigation seeking transfer of any currently pending federal court cases as well as any similar, subsequently filed cases to a coordinated and consolidated pre-trial multidistrict litigation proceeding.

Onglyza/Kombiglyze (saxagliptin)

Amylin Pharmaceuticals, LLC, a wholly owned subsidiary of AstraZeneca, and/or AstraZeneca are among multiple defendants in various lawsuits filed in federal and state courts in the US involving multiple plaintiffs claiming pancreatic injuries, heart failure, cardiac failure and/or death injuries from treatment with *Onglyza* or *Kombiglyze*. In May 2016, a federal judge in California granted AstraZeneca's motion for summary judgment and dismissed the claims of 14 plaintiffs who alleged pancreatic injuries, including pancreatic cancer, from treatment with either *Onglyza* or *Kombiglyze*. No similar claims remain actively pending in any US jurisdiction.

In October 2016, the claims of 14 plaintiffs alleging heart failure, cardiac failure and/or death from treatment with either *Onglyza* or *Kombiglyze* were dismissed in response to motions filed by AstraZeneca. Approximately 85 plaintiffs' claims currently remain in active litigation. In December 2016, plaintiffs in the California Superior Court filed a Petition for Coordination with the Judicial Council of California requesting that all similar, currently pending or subsequently filed cases in California be coordinated for pre-trial purposes.

Seroquel IR (quetiapine fumarate)

AstraZeneca has resolved all active claims with regard to the *Seroquel* product liability litigation in the US.

Synagis (palivizumab)

AstraZeneca and MedImmune were named as defendants in a lawsuit filed in the US District Court for the Middle District of Louisiana involving two plaintiffs alleging wrongful death from treatment with *Synagis*. In July 2016, the plaintiffs dismissed their claims voluntarily.

Commercial litigation

Crestor (rosuvastatin calcium)

Qui tam litigation

In the US, in January and February 2014, AstraZeneca was served with lawsuits filed in the US District Court for the District of Delaware under the *qui tam* (whistleblower) provisions of the federal False Claims Act and related state statutes, alleging that AstraZeneca directed certain employees to promote *Crestor* off-label and provided unlawful remuneration to physicians in connection with the promotion of *Crestor*. The DOJ and all US states have declined to intervene in the lawsuits. This litigation has been stayed pending trial court

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disposition or earlier resolution of the Texas Attorney General litigation involving *Crestor* disclosed below.

Texas Attorney General Litigation

In the US, in January 2015, following a previously disclosed investigation by the State of Texas into AstraZeneca's sales and marketing activities involving *Crestor*, AstraZeneca was served with a lawsuit in which the Texas Attorney General's office intervened in a state whistleblower action pending in Travis County Court, Texas. The lawsuit alleges that AstraZeneca engaged in inappropriate promotion of *Crestor* and improperly influenced the formulary status of *Crestor*.

Israel

In Israel, in November 2012, a Motion to Certify a Claim as a Class Action and Statement of Claim (together, a Motion to Certify) were filed in the District Court in Tel Aviv, Jaffa, (the District Court) against AstraZeneca and four other pharmaceutical companies for alleged deception and failure to disclose material facts to consumers regarding potential adverse events associated with certain drugs, including *Crestor*. In July 2013, an amended Motion to Certify containing similar allegations to those in the first action were filed in the same District Court against the same defendants. In November 2016, the plaintiff filed a motion to withdraw from the action, which the District Court granted in December 2016. This matter has now concluded.

Citizen's Petition

In the US, in May 2016, AstraZeneca filed a Citizen's Petition with the FDA requesting that the FDA not approve any pending generic ANDAs for rosuvastatin until the expiration of the paediatric orphan exclusivity for *Crestor*. In June 2016, AstraZeneca filed its Complaint for Declaratory and Injunctive Relief and an Application for a Temporary Restraining Order (TRO) with the US District Court for the District of Columbia (the District Court) requesting that the District Court prohibit the FDA from granting final approval to any pending ANDAs for generic versions of *Crestor* until the expiration of paediatric orphan exclusivity. In July 2016, the District Court denied AstraZeneca's application for a TRO. In August 2016, the District Court entered an order dismissing the case without prejudice. This matter is now concluded.

***Nexium* (esomeprazole magnesium)**

Consumer litigation

In the US, AstraZeneca has been a defendant in a class action filed in Delaware State Court (the State Court) alleging that AstraZeneca's promotion, advertising and pricing of *Nexium* to physicians, consumers and third party payers was unfair, unlawful and deceptive. In July 2015, the State Court granted AstraZeneca's motion to dismiss and entered judgment in AstraZeneca's favour. In April 2016, the Delaware Supreme Court affirmed the dismissal.

Settlement anti-trust litigation

In the US, AstraZeneca is a defendant in a multidistrict litigation class action and individual lawsuit alleging that AstraZeneca's settlements of certain patent litigation in the US relating to *Nexium* violated US antitrust law and various state laws. A trial in the US District Court for the District of Massachusetts commenced in October 2014 and, in December 2014, a jury returned a verdict in favour of AstraZeneca and entered judgment in favour of AstraZeneca in September 2015. The plaintiffs appealed that judgment and, in November 2016, the US Court of Appeals for the First Circuit affirmed. The plaintiffs petitioned for rehearing and rehearing *en banc*, both of which were denied in January 2017.

Trademark litigation

AstraZeneca filed separate complaints in the US District Court for the District of Delaware against Camber Pharmaceuticals, Inc. and Dr. Reddy's Laboratories, Inc. to enforce certain AstraZeneca trademark rights related to *Nexium* and *Prilosec*. These matters have been successfully resolved.

***Seroquel* IR (quetiapine fumarate) and *Seroquel XR* (quetiapine fumarate)**

Mississippi Attorney General Investigation

In relation to the state law claims brought by State Attorneys General in the US generally alleging that AstraZeneca made false and/or misleading statements in marketing and promoting *Seroquel*, AstraZeneca's remaining case with the Attorney General of Mississippi has been resolved and the matter has been dismissed. This matter is now concluded.

Qui tam litigation in New York

In the US, in September 2015, AstraZeneca was served with a lawsuit filed in US Federal Court in New York under the *qui tam* (whistleblower) provisions of the federal and certain state False Claims Acts. The lawsuit alleges that AstraZeneca misrepresented the safety profile of, and improperly promoted, *Seroquel* IR and *Seroquel XR*. The US government and the named states have declined to intervene in this case.

Qui tam litigation in Delaware

In the US, in April 2014, AstraZeneca was served with lawsuits filed in the US District Court for the District of Delaware under the *qui tam* (whistleblower) provisions of the federal False Claims Act and related state statutes, alleging that AstraZeneca directed certain employees to promote *Seroquel* IR and *Seroquel XR* off-label and provided unlawful remuneration to physicians in connection with the promotion of *Seroquel* IR and *Seroquel XR*. The DOJ and all US states have declined to intervene in the lawsuits. This litigation has been stayed pending trial court disposition or earlier resolution of the Texas Attorney General litigation involving *Seroquel* disclosed below.

Texas Attorney General Litigation

In the US, in October 2014, following a previously disclosed investigation by the State of Texas into AstraZeneca's sales and marketing activities involving *Seroquel*, the Texas Attorney General's Office intervened in a state whistleblower action pending in Travis County Court, Texas. The lawsuit alleges that AstraZeneca engaged in inappropriate promotion of *Seroquel* and made improper payments intended to influence the formulary status of *Seroquel*.

***Toprol-XL* (metoprolol succinate)**

In the US, in March 2015, AstraZeneca was served with a state court complaint filed by the Attorney General for the State of Louisiana alleging that, in connection with enforcement of its patents for *Toprol-XL*, it had engaged in unlawful monopolisation and unfair trade practices, causing the state government to pay increased prices for *Toprol-XL*. In February 2016, the Louisiana state court heard oral argument on AstraZeneca's motion to dismiss and ordered the dismissal of the complaint with prejudice and judgment in AstraZeneca's favour. The State is appealing the dismissal.

Other commercial litigation

Ocimum Lawsuit

In the US, in December 2015, AstraZeneca was served with a complaint filed by Ocimum Biosciences, Ltd. (Ocimum) in the Superior Court for the State of Delaware that alleges, among other things, breaches of contractual obligations and misappropriation of trade secrets, relating to a now terminated 2001 licensing agreement between AstraZeneca and Gene Logic, Inc. (Gene Logic), the rights to which Ocimum purports to have acquired from Gene Logic.

Pearl Therapeutics

In the US, AstraZeneca was served with a complaint filed in Delaware State Court by the former shareholders of Pearl Therapeutics, Inc. (Pearl) that alleged, among other things, breaches of contractual obligations relating to a 2013 merger agreement between AstraZeneca and Pearl. This case was resolved in September 2016. This matter is now concluded.

Telephone Consumer Protection Act litigation

In the US, in December 2016, AstraZeneca and several other entities were served with a complaint filed in the US District Court for the Southern District of Florida (the District Court) that alleges, among other things, violations of the Telephone Consumer Protection Act caused by the sending of unsolicited advertisements by facsimile. AstraZeneca's motion to dismiss is pending. Plaintiff also

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made a motion for class certification, which, in January 2017, was denied without prejudice by the District Court.

Government investigations/proceedings

***Synagis* (palivizumab)**

In the US, in June 2011, MedImmune received a demand from the US Attorney's Office for the Southern District of New York requesting certain documents related to the sales and marketing activities of *Synagis*. In July 2011, MedImmune received a similar court order to produce documents from the Office of the Attorney General for the State of New York Medicaid and Fraud Control Unit pursuant to what the government attorneys advised was a joint investigation. MedImmune is cooperating with these inquiries.

In May 2012, MedImmune received a *subpoena duces tecum* from the Office of Attorney General for the State of Florida Medicaid and Fraud Control Unit requesting certain documents related to the sales and marketing activities of *Synagis*. MedImmune has accepted receipt of the request and has coordinated with the Florida government to provide the appropriate responses and cooperate with any related investigation. AstraZeneca is unaware of the nature or focus of the investigation, however, based on the nature of the requests, it appears to be similar to the inquiry from the State of New York (which is described above).

Other government investigations/proceedings

Foreign Corrupt Practices Act

In connection with investigations into anti-bribery and corruption issues in the pharmaceutical industry, AstraZeneca received inquiries from enforcement agencies, including the DOJ and the SEC, regarding, among other things, sales practices, internal controls, certain distributors and interactions with healthcare providers and other government officials in several countries. In August 2016, AstraZeneca entered into a civil settlement with the SEC to resolve these inquiries. The DOJ has informed AstraZeneca that it has closed its inquiry into this matter.

Additional government inquiries

As is true for most, if not all, major prescription pharmaceutical companies operating in the US, AstraZeneca is currently involved in multiple US federal and state inquiries into drug marketing and pricing practices. In addition to the investigations described above, various federal and state law enforcement offices have, from time to time, requested information from the Group. There have been no material developments in those matters.

Tax

Where tax exposures can be quantified, an accrual is made based on best estimates and management's judgement. Details of the movements in relation to material tax exposures are discussed below. As accruals can be built up over a long period of time but the ultimate resolution of tax exposures usually occurs at a point in time, and given the inherent uncertainties in assessing the outcomes of these exposures (which sometimes can be binary in nature), we could, in future periods, experience adjustments to these accruals that have a material positive or negative effect on our results in any particular period.

AstraZeneca faces a number of audits in jurisdictions around the world and, in some cases, is in dispute with the tax authorities. The issues under discussion are often complex and can require many years to resolve. Accruals for tax contingencies require management to make estimates and judgements with respect to the ultimate outcome of a tax audit, and actual results could vary from these estimates.

Transfer pricing and other international tax contingencies

The total net accrual included in the Group Financial Statements to cover the worldwide exposure to transfer pricing audits is $320m, a decrease of $41m compared with 2015 mainly due to the release of the net accrual following agreements between the Canadian and the UK and Swedish tax authorities in respect of transfer pricing arrangements for the 13-year period 2004 to 2016, partially offset by increases in accruals for transfer pricing contingencies and exchange rate effects.

Management continues to believe that AstraZeneca's positions on all its transfer pricing audits and disputes are robust and that AstraZeneca is appropriately provided, including the assessment where corresponding relief will be available. For transfer pricing audits where AstraZeneca and the tax authorities are in dispute, AstraZeneca estimates the potential for reasonably possible additional losses above and beyond the amount provided to be up to $184m (2015: $357m; 2014: $521m), however, management believes that it is unlikely that these additional losses will arise. It is possible that some of these contingencies may reduce in the future to the extent that any tax authority challenge is unsuccessful, or matters lapse following expiry of the relevant statutes of limitation resulting in a reduction in the tax charge in future periods.

Other tax contingencies

Included in the tax accrual is $1,007m relating to a number of other tax contingencies, a decrease of $366m mainly due to releases following expiry of statute of limitations, audit settlements and exchange rate effects offset by the impact of an additional year of transactions relating to contingencies for which accruals had already been established. For these tax exposures, AstraZeneca does not expect material additional losses. It is, however, possible that some of these contingencies may reduce in the future if any tax authority challenge is unsuccessful or matters lapse following expiry of the relevant statutes of limitation resulting in a reduction in the tax charge in future periods.

Timing of cash flows and interest

It is not possible to estimate the timing of tax cash flows in relation to each outcome, however, it is anticipated that a number of significant disputes may be resolved over the next one to two years. Included in the provision is an amount of interest of $142m (2015: $174m; 2014: $227m). Interest is accrued as a tax expense.

29 Operating leases

Total rentals under operating leases charged to profit were as follows:

	2016 $m	2015 $m	2014 $m
Operating leases	**174**	185	185

The future minimum lease payments under operating leases that have initial or remaining terms in excess of one year at 31 December 2016 were as follows:

	2016 $m	2015 $m	2014 $m
Obligations under leases comprise:			
Not later than one year	**98**	95	100
Later than one year and not later than five years	**247**	245	247
Later than five years	**96**	69	91
Total future minimum lease payments	**441**	409	438

30 Statutory and other information

	2016 $m	2015 $m	2014 $m
Fees payable to KPMG LLP and its associates:			
Group audit fee	**2.8**	3.2	2.5
Fees payable to KPMG LLP and its associates for other services:			
The audit of subsidiaries pursuant to legislation	**5.4**	5.4	5.0
Audit-related assurance services	**2.5**	2.5	2.5
Tax compliance services	**–**	0.1	0.3
Other assurance services	**0.2**	0.5	0.5
Fees payable to KPMG LLP in respect of the Group's pension schemes:			
The audit of subsidiaries' pension schemes	**0.6**	0.6	0.5
	11.5	12.3	11.3

Audit-related assurance services include fees of $1.8m (2015: $1.8m; 2014: $1.8m) in respect of section 404 of the Sarbanes-Oxley Act.

Related party transactions

The Group had no material related party transactions which might reasonably be expected to influence decisions made by the users of these Financial Statements.

Key management personnel compensation

Key management personnel are defined for the purpose of disclosure under IAS 24 'Related Party Disclosures' as the members of the Board and the members of the SET.

	2016 $'000	2015 $'000	2014 $'000
Short-term employee benefits	**23,725**	29,265	30,252
Post-employment benefits	**2,407**	2,636	2,265
Share-based payments	**20,377**	17,885	20,253
	46,509	49,786	52,770

Total remuneration is included within employee costs (see Note 27). Further details of Directors' emoluments are included in the Directors' Remuneration Report from pages 103 to 132.

31 Subsequent events

There were no material subsequent events.

Group Subsidiaries and Holdings

In accordance with section 409 of the Companies Act 2006 a full list of subsidiaries, partnerships, associates, joint ventures and joint arrangements, the country of incorporation, registered office address, and the effective percentage of equity owned as at 31 December 2016 are disclosed below. Unless otherwise stated the share capital disclosed comprises ordinary shares which are indirectly held by AstraZeneca PLC.

Unless otherwise stated the accounting year ends of subsidiaries are 31 December. The Group Financial Statements consolidate the Financial Statements of the Company and its subsidiaries at 31 December 2016.

At 31 December 2016	Percentage of voting share capital held
Wholly owned subsidiaries	
Argentina	
AstraZeneca S.A.	100
Vedia 3616-Piso 8, Ciudad de Buenos Aires, Argentina	
Australia	
AstraZeneca Holdings Pty Limited	100
AstraZeneca PTY Limited	100
Pharmaceutical Manufacturing Company Pty Limited	100
Pharmaceutical Manufacturing Division Pty Limited	100
66 Talavera Road, Macquarie Park NSW 2113, Australia	
Austria	
AstraZeneca Österreich GmbH	100
A-1030 Wien, Schwarzenbergplatz 7, Austria	
Belgium	
AstraZeneca S.A. / N.V.	100
Egide Van Ophemstraat 110 1180 Brussels, Belgium	
Brazil	
AstraZeneca do Brasil Limitada	100
Rod. Raposo Tavares, KM 26, 9, Cotia, Brazil	
Bulgaria	
AstraZeneca Bulgaria EOOD	100
36 Dragan Tzankov Blvd., District Izgrev, Sofia, 1057, Bulgaria	
Canada	
AstraZeneca Canada Inc.[1]	100
1004 Middlegate Road, Ontario, L4Y 1M4, Canada	
Cayman Islands	
AZ Reinsurance Limited	100
94 Solaris Avenue, Second Floor, Camana Bay, Grand Cayman, Cayman Islands	
Chile	
AstraZeneca S.A.	100
AstraZeneca Farmaceutica Chile Limitada	100
Av. Isadora Goyenechea 2939, of .201, Santiago de Chile, Chile	
China	
AstraZeneca Pharmaceuticals Co., Limited.	100
No 2 Huangshan Road, Wuxi, Jiangsu Province, China	
AstraZeneca (Wuxi) Trading Co. Ltd	100
2F, Building 4, No 2 Huangshan Road, Wuxi, Jiangsu Province, China	
AstraZeneca Investment (China) Co., Ltd	100
No.199 Liangjing Road, ZhangJiang Hi-tech Park, Shanghai, China	
AstraZeneca Pharmaceutical (China) Co. Ltd	100
No 88 Yaocheng Avenue, Taizhou, Jiangsu Province, China	
Colombia	
AstraZeneca Colombia S.A.	100
Carrera 7 No. 71-21, Torre A, Piso 19, Santafe de Bogota, Colombia	
Costa Rica	
AstraZeneca CAMCAR Costa Rica, S.A.	100
Escazu, Guachipelin, Centro Corporativo Plaza Roble, Edificio Los Balcones, Segundo Nivel, San Jose, Costa Rica	
Croatia	
AstraZeneca d.o.o.	100
Radnicka cesta 80/11, 10000 Zagreb, Croatia	
Czech Republic	
AstraZeneca Czech Republic, s.r.o.	100
Smichov Gate – Prague, Plzenska 3217/16, Prague 5, 150 00, Czech Republic	
Denmark	
AstraZeneca A/S	100
Arne Jacobsens Allé 13, DK-2300, Copenhagen S, Denmark	
Egypt	
AstraZeneca Egypt for Pharmaceutical Industries JSC	100
Villa 133, Road 90 North, New Cairo, Egypt	
Drimex LLC	100
Villa 47, Road 270, New Maadi, Cairo 11435, Egypt	
AstraZeneca Egypt for Trading LLC	100
14C Ahmed Kamel Street, New Maadi, Cairo, Egypt	
Estonia	
AstraZeneca Eesti OÜ	100
Jarvevana tee 9, II korrus, Tallinn, 11314, Estonia	
Finland	
AstraZeneca OY.	100
Itsehallintokuja 4, Espoo, 02600, Finland	
France	
AstraZeneca S.A.S.	100
AstraZeneca Finance S.A.S.	100
AstraZeneca Holding France S.A.S.	100
AstraZeneca Reims S.A.S.	100
Tour Carpe Diem – 31, Place des Corolles, 92400 Courbevoie, France	
AstraZeneca Dunkerque Production SCS	100
224 Avenue de la Dordogne, 59640 Dunkerque, France	
Germany	
AstraZeneca Holding GmbH	100
AstraZeneca GmbH	100
Tinsdaler Weg 183, Wedel, D-22880, Germany	
Sofotec GmbH	100
Benzstrasse 1-3, 61352, Bad Homburg v.d. Hohe, Germany	
Definiens AG	100
Bernhard-Wicki-Straße 5, 80636, Munich, Germany	
Greece	
AstraZeneca S.A.	100
Theotokopoulou 4 & Astronafton, Athens, 151 25, Greece	
Hong Kong	
AstraZeneca Hong Kong Limited	100
18/F., Shui On Centre, 6-8 Harbour Road, Wanchai, Hong Kong	
Hungary	
AstraZeneca Kft	100
2nd floor, 134-146 building B, Bocskai str., Budapest, 1113, Hungary	
India	
AstraZeneca India Private Limited[2]	100
12th Mile on Bellary Road, Venkatala, Opp. BSF (Border Security Force), Yelahanka, Bangalore-560 063, India	
Iran	
AstraZeneca Pars Company	100
No.4, Mahshahr Street, Karimkhan Street, Tehran, 15847-38515, Islamic Republic of Iran	
Ireland	
AstraZeneca Pharmaceuticals (Ireland) Designated Activity Company	100
4th Floor, South Bank House, Barrow Street, Dublin, 4, Republic of Ireland	

At 31 December 2016	Percentage of voting share capital held
Israel	
AstraZeneca Israel Ltd	100
13 Zarcin St., Ra'anana 43662, Israel	
Italy	
Simesa SpA	100
AstraZeneca SpA	100
Palazzo Ferraris, via Ludovico il Moro 6/c 20080, Basiglio (Milan), Italy	
Japan	
AstraZeneca K.K.	100
3-1, Ofuka-cho, Kita-ku, Osaka, Japan	
Kenya	
AstraZeneca Pharmaceuticals Limited	100
Chaka Place, Ground Floor, Argwings Kodhek, Nairobi, Kenya	
Latvia	
AstraZeneca Latvija SIA	100
Skanstes iela 54, Riga, LV-1013, Latvia	
Lithuania	
AstraZeneca Lietuva UAB	100
Jasinkio 16A, Vilnius, LT-03163, Lithuania	
Luxembourg	
AstraZeneca Luxembourg S.A.	100
Am Brill 7 B – L-3961 Ehlange – Grand Duchy du Luxembourg, Luxembourg	
Malaysia	
AstraZeneca Asia-Pacific Business Services Sdn Bhd	100
Level 8, Unit 8.01-8.05 Menara UAC, Jalan PJU 7/5, Multiara Damansara 47800 Petaling Jaya, Selangor, Malaysia	
AstraZeneca Sdn Bhd	100
Level 12, Surian Tower, No. 1 Jalan PJU 7/3, Mutiara Damansara, 47810 Petaling Jaya, Selangor, Malaysia	
Mexico	
AstraZeneca, S.A. de C.V.	100
Av. Periferico Sur 4305 interior 5, Colonia Jardines en la Montana, Mexico City, Tlalpan Distrito Federal, CP14210, Mexico	
AstraZeneca Health Care S.A. de C.V.	100
Avenida Lomas Verdes 67 Colonia Lomas Verdes, Naucalpan de Juarez, CP 53120, Mexico	
Morocco	
AstraZeneca Maroc SARLAU	100
92 Boulevard Anfa ETG 2 Casablanca 20000, Morocco	
The Netherlands	
AstraZeneca B.V.	100
AstraZeneca Continent B.V.	100
AstraZeneca Gamma B.V.	100
AstraZeneca Holdings B.V.	100
AstraZeneca Jota B.V.	100
AstraZeneca Rho B.V.	100
AstraZeneca Sigma B.V.	100
AstraZeneca Zeta B.V.	100
PO Box 283, 2700 AG Zoetermeer, Louis Pasteurlaan 5, 2719 EE, Zoetermeer, The Netherlands	
MedImmune Pharma B.V.	100
Lagelandsweeg 78, 6545 CG Nijmegen, The Netherlands	
New Zealand	
AstraZeneca Limited	100
Level 2, 347-351 Parnell Rd, Parnell, Auckland, 1052, New Zealand	
Nigeria	
AstraZeneca Nigeria Limited	100
No.9 Joel Ogunaike Street, GRA Ikeja, Lagos, Nigeria	
Norway	
AstraZeneca AS	100
Grensveien 92, Box 6050 Etterstad, NO-0602 Oslo, Norway	
Pakistan	
AstraZeneca Pharmaceuticals Pakistan (Private) Limited	100
Office No 1, 2nd Floor, Sasi Arcade, Block 7, Main Clifton Road, Karachi, Pakistan	
Panama	
AstraZeneca CAMCAR, S.A.	100
Bodega #1, Parque Logistico MIT, Carretera Hacia Coco Solo, Colon, Panama	
Peru	
AstraZeneca Peru S.A.	100
Av. El Derby 055, Torre 2. Piso 5. Of. 503. Santiago de Surco, Lima, Peru	
Philippines	
AstraZeneca Pharmaceuticals (Phils.) Inc.	100
16th Floors, Net Cube Center, corner 3rd Avenue & 30th St., E-Square Zone, Crescent Park W, Taguig, Metro Manila, 1634, Philippines	
Poland	
AstraZeneca Pharma Poland Sp.z.o.o.	100
Postepu 14, 02-676, Warszawa, Poland	
Portugal	
Astra Alpha Produtos Farmaceuticos Lda	100
AstraZeneca Produtos Farmaceuticos Lda	100
Novastra Promoção e Comércio Farmacêutico Lda	100
Novastuart Produtos Farmaceuticos Lda	100
Stuart-Produtos Farmacêuticos Lda	100
Zeneca Epsilon – Produtos Farmacêuticos Lda	100
Zenecapharma Produtos Farmaceuticos Lda	100
Rua Humberto Madeira, No 7, Queluz de Baixo, 2730-097, Barcarena, Portugal	
Puerto Rico	
IPR Pharmaceuticals, Inc.	100
San Isidro Industrial Park, Road 188, Lot 17, Canóvanas, PR 00729, Puerto Rico	
Romania	
AstraZeneca Pharma S.R.L.	100
12 Menuetului Street, Bucharest Business Park, Building D, West Wing, 1st Floor, Sector 1, Bucharest, 013713, Romania	
Russia	
AstraZeneca Industries, LLC	100
AstraZeneca Pharmaceuticals, LLC	100
125284, Begovaya str, 3, block 1, Moscow, Russian Federation	
Singapore	
AstraZeneca Singapore Pte Limited	100
10 Kallang Avenue #12-10, Aperia Tower 2, 339510, Singapore	
South Africa	
Astra Pharmaceuticals (Pty) Limited	100
AstraZeneca Pharmaceuticals (Pty) Limited	100
17 Georgian Crescent West, Northdowns Office Park, Bryanston, 2041, South Africa	
South Korea	
AstraZeneca Korea Co. Ltd	100
Shincheon-dong, Luther Building 17fl. 42, Shincheon-ro2-gil, Songpa-gu, Seoul, Republic of Korea	
Spain	
AstraZeneca Farmaceutica Spain S.A.	100
AstraZeneca Farmaceutica Holding Spain, S.A.	100
Laboratorio Beta, S.A.	100
Laboratorio Lailan, S.A.	100
Laboratorio Odin, S.A.	100
Laboratorio Tau S.A.	100
Parque Norte, Edificio Álamo, C/Serrano Galvache no 56., 28033 Madrid, Spain	
Sweden	
Astra Export & Trading Aktiebolag	100
Astra Lakemedel Aktiebolag	100
AstraZeneca AB	100
AstraZeneca Biotech AB	100
AstraZeneca BioVentureHub AB	100
AstraZeneca Holding Aktiebolag[3]	100
AstraZeneca International Holdings Aktiebolag[4]	100
AstraZeneca Nordic AB	100
AstraZeneca Pharmaceuticals Aktiebolag	100
AstraZeneca Sodertalje 2 AB	100
Stuart Pharma Aktiebolag	100
Tika Lakemedel Aktiebolag	100
SE-151 85 Sodertalje, Sweden	
Aktiebolaget Hassle	100
Symbicom Aktiebolag[4]	100
431 83 Molndal, Sweden	
Astra Tech International Aktiebolag	100
Box 14, 431 21 Molndal, Sweden	

At 31 December 2016	Percentage of voting share capital held
Switzerland	
AstraZeneca AG	100
AstraZeneca, Grafenauweg 10, CH-6301, Zug, Switzerland	
Spirogen Sarl[4]	100
Rue du Grand-Chêne 5, CH-1003 Lausanne, Switzerland	
Taiwan	
AstraZeneca Taiwan Limited[1]	100
21st Floor, Taipei Metro Building 207, Tun Hwa South Road, SEC 2 Taipei, Taiwan, Republic of China	
Thailand	
AstraZeneca (Thailand) Limited	100
Asia Centre 19th floor, 173/20, South Sathorn Rd, Khwaeng Thungmahamek, Khet Sathorn, Bangkok, 10120, Thailand	
Tunisia	
AstraZeneca Tunisie SaRL	100
Lot n°1.5.5 les jardins du lac, bloc B les berges du lac Tunis, Tunisia	
Turkey	
AstraZeneca Ilac Sanayi ve Ticaret Limited Sirketi	100
YKB Plaza, B Blok, Kat:3-4, Levent/Beşiktaş, Istanbul, Turkey	
Zeneca Ilac Sanayi Ve Ticaret Anonim Sirketi	100
Büyükdere Cad., Y.K.B. Plaza, B Blok, Kat:4, Levent/Beşiktaş, Istanbul, Turkey	
Ukraine	
AstraZeneca Ukraina LLC	100
Ukraine, 04080 Kyiv, 15/15, V. Khvoyky str.	
United Arab Emirates	
AstraZeneca FZ-LLC	100
P.O. Box 27614, Block D, Dubai Healthcare City, Oud Mehta Road, Dubai, United Arab Emirates	
United Kingdom	
AlphaCore Pharma Limited	100
Ardea Biosciences Limited	100
Arrow Therapeutics Limited	100
Astra Pharmaceuticals Limited	100
AstraPharm[4]	100
AstraZeneca China UK Limited	100
AstraZeneca Death In Service Trustee Limited	100
AstraZeneca Employee Share Trust Limited	100
AstraZeneca Finance Limited	100
AstraZeneca Insurance Company Limited	100
AstraZeneca Intermediate Holdings Limited[3]	100
AstraZeneca Investments Limited	100
AstraZeneca Japan Limited	100
AstraZeneca Nominees Limited	100
AstraZeneca Quest Limited	100
AstraZeneca Share Trust Limited	100
AstraZeneca Sweden Investments Limited	100

At 31 December 2016	Percentage of voting share capital held
AstraZeneca Treasury Limited[4]	100
AstraZeneca UK Limited	100
AstraZeneca US Investments Limited[3]	100
Ayzee 1 Limited	100
AYZEE 2 Limited	100
AYZEE 3 Limited	100
AYZEE 4 Limited	100
AZENCO2 Limited	100
AZENCO4 Limited	100
Cambridge Antibody Technology Group Limited	100
KuDOS Horsham Limited	100
KuDOS Pharmaceuticals Limited	100
Meronem Group Limited	100
Zenco (No 8) Limited	100
Zeneca Finance (Netherlands) Company	100
1 Francis Crick Avenue, Cambridge Biomedical Campus, Cambridge, CB2 0AA, United Kingdom	
MedImmune Limited	100
Milstein Building, Granta Park, Cambridge, CB21 6GH, United Kingdom	
MedImmune U.K. Limited	100
Plot 6, Renaissance Way, Boulevard Park, Liverpool, L24 9JW, United Kingdom	
United States	
Amylin Pharmaceuticals LLC[5]	100
AstraZeneca Collaboration Ventures LLC[5]	100
AstraZeneca Pharmaceuticals, LP[6]	100
AstraZeneca, LLC[5]	100
AstraZeneca, LP[6]	100
Atkemix Nine Inc.	100
Atkemix Ten Inc.	100
BMS Holdco Inc.	100
Corpus Christi Holdings Inc.	100
Omthera Pharmaceuticals Inc.	100
Stauffer Management Company LLC[5]	100
Zeneca Holdings Inc.	100
Zeneca Inc.	100
Zeneca Wilmington Inc.[3]	100
1800 Concord Pike, Wilmington DE 19850, United States	
ZS Pharma Inc.	100
1100 Park Place, Suite 300, San Mateo, CA 94403, United States	
AlphaCore Pharma, LLC[5]	100
333 Parkland Plaza, Suite 5, Ann Arbor, MI 48103, United States	
Amylin Ohio LLC[5]	100
8814 Trade Port Drive, West Chester, OH 45011, United States	
Ardea Biosciences, Inc.	100
4939 Directors Place, San Diego, CA 92121, United States	
AZ-Mont Insurance Company	100
76 St Paul Street, Suite 500, 05401-4477, United States	
Definiens Inc.	100
1808 Aston Avenue, Suite 190, Carlsbad, CA 92008, United States	

At 31 December 2016	Percentage of voting share capital held
MedImmune Biologics Inc.	100
MedImmune, LLC[5]	100
MedImmune Ventures, Inc.	100
MedImmune, One MedImmune Way, Gaithersburg, Maryland 20878, United States	
Optein, Inc.	100
2711 Centerville Road, Suite 400, Wilmington, Delaware 1989, United States	
Pearl Therapeutics, Inc.	100
200 Saginaw Drive, Redwood City CA 94063, United States	
Uruguay	
AstraZeneca S.A.[1]	100
Yaguarón 1407 of 1205, Montevideo, Uruguay	
Venezuela	
AstraZeneca Venezuela S.A.	100
Av. Principal De la Castellana, Cruce con calle, Jose Angel Lamas Piso 14, Venezuela	
Gotland Pharma S.A.	100
Av. La Castellana, Torre La Castellana, Piso 5, Oficina 5-G, 5-H, 5-I, Urbanización La Castellana, Municipio Chacao, Estado Bolivariano de Miranda, Venezuela	

Subsidiaries where the effective interest is less than 100%

Algeria	
SPA AstraZeneca Al Djazair[7]	65.77%
No 20 Zone Macro Economique, dar El Medina-Hydra, Alger, Algeria	
India	
AstraZeneca Pharma India Limited[2]	75%
Block N1, 12th Floor, Manyata Embassy Business Park, Rachenahalli, Outer Ring Road, Bangalore-560 045, India	
Indonesia	
P.T. AstraZeneca Indonesia	95%
Perkantoran Hijau Arkadia Tower F, 3rd Floor, Jl. T.B. Simatupang Kav. 88, Jakarta, 12520, Indonesia	
The Netherlands	
Acerta Pharma B.V.	55%
Molenstraat 110, 5342CC Oss, The Netherlands	
Aspire Therapeutics B.V.	55%
Kloosterstraat 9, 5349 AB, Oss, The Netherlands	
United Kingdom	
I.C. Insurance Holdings Limited (In Liquidation)	51%
c/o Deloitte LLP, PO Box 500, 2 Hardman Street, Manchester M60 2AT	

At 31 December 2016	Percentage of voting share capital held
United States	
Advent Healthcare & Life Sciences III-A Limited Partnership	60%
75 State Street, Boston, 02109, United States	
Acerta Pharma LLC	55%
1509 Industrial Road, San Carlos, CA 94070, United States	
Joint Ventures	
China	
WuXi MedImmune Biopharmaceutical Co. Limited	50%
Room 1902, 19/F, Lee Garden One, Hysan Avenue, Causeway Bay, Hong Kong	
United Kingdom	
Archigen Biotech Limited[7]	50%
Centus Biotherapeutics Limited[7]	50%
1 Francis Crick Avenue, Cambridge Biomedical Campus, Cambridge, CB2 0AA, United Kingdom	
United States	
Montrose Chemical Corporation of California	50%
Suite 380, 600 Ericksen Ave N/A, Bainbridge Island, United States	
Significant Holdings	
United Kingdom	
Apollo Therapeutics LLP	25%
Stevenage Biosciences Catalyst, Gunnels Wood Road, Stevenage, Hertfordshire, SG1 2FX, United Kingdom	
Entasis Therapeutics Limited[8]	49%
2 Kingdom Street, London, W2 6BD, United Kingdom	
United States	
C.C.Global Chemicals Company	37.5%
PO Box 7, MS2901, Texas, TX76101-0007, United States	
Associated Holdings	
Australia	
Armaron Bio Ltd[9]	17.43%
Level 1/120 Jolimont Road, East Melbourne 3002 VIC, Australia	
British Virgin Islands	
Biohaven Pharmaceuticals Holding Company Ltd.[10]	5%
P.O. Box 173, Kingston Chambers, Road Town, Tortola, British Virgin Islands	
New Zealand	
Adherium Limited	5.6%
Level 2, 204 Quay Street, Auckland, 1010, New Zealand	
Switzerland	
ADC Therapeutics Sàrl Switzerland[11]	8.84%
Biopôle, Route de la Corniche 3B, 1066 Epalinges, Switzerland	

At 31 December 2016	Percentage of voting share capital held
United Kingdom	
Silence Therapeutics PLC	0.17%
27 Eastcastle Street, London, W1W 8DH, United Kingdom	
United States	
Affinita Biotech, Inc.[12]	16.23%
329 Oyster Point Blvd., 3rd Floor, South San Francisco, CA 94080, United States	
Albireo Pharma, Inc.[13]	15.89%
50 Milk Street, 16th Floor, Boston, MA 02109, United States	
Biodesix Inc.	0.3%
2970 Wilderness Place Suite 100, Boulder, CO 80301, United States	
BlinkBio Inc.[9]	18.49%
25 Health Sciences Drive, Mailbox 123, Stony Brook, NY 11790, United States	
Catabasis Pharmaceuticals, Inc.	10.7%
One Kendall Square Bldg. 1400E, Suite B14202, Cambridge, MA 02139, United States	
Cerapedics, Inc.[14]	8.61%
11025 Dover St #1600, Broomfield, CO 80021, United States	
Cordivia Corporation	19.9%
1209 Orange Street, Wilmington, DE 19801, United States	
Elusys Therapeutics, Inc.[15]	7.2%
25 Riverside Drive Unit One, Pine Brook, NJ 07058, United States	
FibroGen, Inc.	1.8%
409 Illinois St., San Francisco, CA 94158, United States	
G1 Therapeutics, Inc.[16]	18.03%
79 T.W. Alexander Drive, 4401 Research Commons Suite 105, Research Triangle Park, NC 7709, United States	
Hydra Biosciences Inc.	4.27%
45 Moulton Street, Cambridge, MA 02138, United States	
Inotek Pharmaceuticals Corporation	7.3%
91 Hartwell Ave 2nd Floor, Lexington, MA 02421, United States	
Millendo Therapeutics, Inc.[9]	8.45%
301 North Main Street, Suite 100, Ann Arbor, MI 48104, United States	
Moderna Therapeutics Inc.[17]	7%
320 Bent Street, Cambridge, MA 02141, United States	
PhaseBio Pharmaceuticals, Inc.[14]	14.5%
One Great Valley, Parkway, Suite 30, Malvern, PA 19355, United States	
Rani Therapeutics, L.L.C.[14]	1%
2051 Ringwood Ave, San Jose, CA 95116, United States	

At 31 December 2016	Percentage of voting share capital held
Regulus Therapeutics Inc.	6.7%
10614 Science Center Dr., San Diego, CA 92121, United States	
VentiRx Pharmaceuticals, Inc.[10]	12%
1191 Second Avenue, Suite 1105, Seattle, WA 98101, United States	

[1] Ownership held in ordinary and special shares.
[2] Accounting year end is 31 March.
[3] Directly held by AstraZeneca PLC.
[4] Ownership held in class A and class B shares.
[5] Ownership held as membership interest.
[6] Ownership held as partnership interest.
[7] Ownership held in class A shares.
[8] Ownership held in preference, deferred and ordinary shares.
[9] Ownership held in class B preference shares.
[10] Ownership held in class A preference shares.
[11] Ownership held in class B ordinary shares, class C ordinary shares, and class D ordinary shares.
[12] Ownership held in class A voting and class A non-voting shares.
[13] Ownership held in class A voting preference shares, class A non-voting preference shares, and class B voting preference shares.
[14] Ownership held in class C preference shares.
[15] Ownership held in class D preference shares.
[16] Ownership held in class A preference shares and class B preference shares.
[17] Ownership held in class D preference shares and class E preference shares.

Independent Auditor's Report to the Members of AstraZeneca PLC only

Opinions and conclusions arising from our audit

1 Our opinion on the Parent Company Financial Statements is unmodified

We have audited the Parent Company Financial Statements of AstraZeneca PLC for the year ended 31 December 2016 set out on pages 198 to 202. In our opinion the Parent Company Financial Statements:

- give a true and fair view of the state of the Company's affairs as at 31 December 2016
- have been properly prepared in accordance with UK Accounting Standards, including FRS 101 'Reduced Disclosure Framework'; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

2 Our opinion on other matters prescribed by the Companies Act 2006 is unmodified

In our opinion:

- the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006; 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 Parent Company Financial Statements.

3 We have nothing to report in respect of the matters on which we are required to report by exception

The Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Company Financial Statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in respect of the above responsibilities.

4 Other matter – we have reported separately on the Group Financial Statements

We have reported separately on the Group Financial Statements of AstraZeneca PLC for the year ended 31 December 2016.

Scope and responsibilities

As explained more fully in the Directors' Responsibilities Statement set out on page 133, the Directors are responsible for the preparation of the Parent Company Financial Statements and for being satisfied that they give a true and fair view. A description of the scope of an audit of financial statements is provided on the Financial Reporting Council's website at www.frc.org.uk/auditscopeukprivate. This report is made solely to the Company's members as a body and is subject to important explanations and disclaimers regarding our responsibilities, published on our website www.kpmg.com/uk/auditscopeukco2014a, which are incorporated into this report as if set out in full and should be read to provide an understanding of the purpose of this report, the work we have undertaken and the basis of our opinions.

Antony Cates (Senior Statutory Auditor)
for and on behalf of KPMG LLP,
Statutory Auditor
Chartered Accountants
15 Canada Square, London, E14 5GL
2 February 2017

Company Balance Sheet

at 31 December

AstraZeneca PLC

	Notes	2016 $m	2015 $m
Fixed assets			
Fixed asset investments	1	**30,449**	30,047
Current assets			
Debtors – other		**14**	15
Debtors – amounts owed by Group undertakings		**8,935**	7,283
		8,949	7,298
Creditors: Amounts falling due within one year			
Non-trade creditors	2	**(518)**	(814)
Interest-bearing loans and borrowings	3	**(1,749)**	–
		(2,267)	(814)
Net current assets		**6,682**	6,484
Total assets less current liabilities		**37,131**	36,531
Creditors: Amounts falling due after more than one year			
Amounts owed to Group undertakings	3	**(283)**	(283)
Interest-bearing loans and borrowings	3	**(14,138)**	(13,705)
		(14,421)	(13,988)
Net assets		**22,710**	22,543
Capital and reserves			
Called-up share capital	4	**316**	316
Share premium account		**4,351**	4,304
Capital redemption reserve		**153**	153
Other reserves		**2,583**	2,623
Profit and loss account		**15,307**	15,147
Shareholders' funds		**22,710**	22,543

$m means millions of US dollars.

The Company Financial Statements from page 198 to 202 were approved by the Board on 2 February 2017 and were signed on its behalf by

Pascal Soriot Director

Marc Dunoyer Director

Company's registered number 02723534

Statement of Changes in Equity

for the year ended 31 December

	Share capital $m	Share premium account $m	Capital redemption reserve $m	Other reserves $m	Profit and loss account $m	Total equity $m
At 1 January 2015	316	4,261	153	2,754	16,709	24,193
Total comprehensive income for the period						
Profit for the period	–	–	–	–	1,974	1,974
Amortisation of loss on cash flow hedge	–	–	–	–	1	1
Total comprehensive income for the period	–	–	–	–	1,975	1,975
Transactions with owners, recorded directly in equity						
Dividends	–	–	–	–	(3,537)	(3,537)
Equity-settled share-based payment transactions	–	–	–	(131)	–	(131)
Issue of Ordinary Shares	–	43	–	–	–	43
Total contributions by and distributions to owners	–	43	–	(131)	(3,537)	(3,625)
At 31 December 2015	316	4,304	153	2,623	15,147	22,543
Total comprehensive income for the period						
Profit for the period	**–**	**–**	**–**	**–**	**3,699**	**3,699**
Amortisation of loss on cash flow hedge	**–**	**–**	**–**	**–**	**1**	**1**
Total comprehensive income for the period	**–**	**–**	**–**	**–**	**3,700**	**3,700**
Transactions with owners, recorded directly in equity						
Dividends	**–**	**–**	**–**	**–**	**(3,540)**	**(3,540)**
Equity-settled share-based payment transactions	**–**	**–**	**–**	**(40)**	**–**	**(40)**
Issue of Ordinary Shares	**–**	**47**	**–**	**–**	**–**	**47**
Total contributions by and distributions to owners	**–**	**47**	**–**	**(40)**	**(3,540)**	**(3,533)**
At 31 December 2016	**316**	**4,351**	**153**	**2,583**	**15,307**	**22,710**

At 31 December 2016, $15,307m (2015: $15,147m) of the profit and loss account reserve was available for distribution. Included in other reserves is a special reserve of $157m (2015: $157m), arising on the redenomination of share capital in 1999.

Included within other reserves at 31 December 2016 is $742m (2015: $782m) in respect of cumulative share-based payment awards. These amounts are not available for distribution.

Company Accounting Policies

Basis of presentation of financial information

These financial statements were prepared in accordance with FRS 101 'Reduced Disclosure Framework'.

In preparing these financial statements, the Company applied the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU ('Adopted IFRSs'), but makes amendments where necessary in order to comply with Companies Act 2006 and has set out below where advantage of the FRS 101 disclosure exemptions has been taken.

In these financial statements, the Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- Statement of Cash Flows and related notes
- comparative period reconciliations for share capital
- disclosures in respect of transactions with wholly owned subsidiaries
- disclosures in respect of capital management
- the effects of new but not yet effective IFRSs
- disclosures in respect of the compensation of Key Management Personnel.

As the Group Financial Statements (presented on pages 138 to 196) include the equivalent disclosures, the Company has also taken the exemptions under FRS 101 available in respect of the following disclosures:

- IFRS 2 Share-based Payment in respect of group settled share-based payments.

No individual profit and loss account is prepared as provided by section 408 of the Companies Act 2006. The Company proposes to continue to adopt the reduced disclosure framework of FRS 101 in its next financial statements.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these financial statements.

Basis of accounting

The Company Financial Statements are prepared under the historical cost convention, in accordance with the Companies Act 2006. The Group Financial Statements are presented on pages 138 to 196 and have been prepared in accordance with IFRSs as adopted by the EU and as issued by the IASB and in accordance with the Group Accounting Policies set out on pages 142 to 146.

The following paragraphs describe the main accounting policies, which have been applied consistently.

Foreign currencies

Profit and loss account items in foreign currencies are translated into US dollars at average rates for the relevant accounting periods. Assets and liabilities are translated at exchange rates prevailing at the date of the Company Balance Sheet. Exchange gains and losses on loans and on short-term foreign currency borrowings and deposits are included within net interest payable. Exchange differences on all other transactions, except relevant foreign currency loans, are taken to operating profit.

Taxation

The current tax payable is based on taxable profit for the year. Taxable profit differs from reported profit because taxable profit excludes items that are either never taxable or tax deductible or items that are taxable or tax deductible in a different period. The Company's current tax assets and liabilities are calculated using tax rates that have been enacted or substantively enacted by the reporting date.

Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax assets are recognised to the extent that it is probable that taxable profit will be available against which the asset can be utilised. This requires judgements to be made in respect of the availability of future taxable income.

No deferred tax asset or liability is recognised in respect of temporary differences associated with investments in subsidiaries and branches where the Company is able to control the timing of reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future.

The Company's deferred tax assets and liabilities are calculated using tax rates that are expected to apply in the period when the liability is settled or the asset realised based on tax rates that have been enacted or substantively enacted by the reporting date.

Accruals for tax contingencies require management to make judgements and estimates of exposures in relation to tax audit issues. Tax benefits are not recognised unless the tax positions will probably be sustained based upon management's interpretation of applicable laws and regulations. Once considered to be probable, management reviews each material tax benefit to assess whether a provision should be taken against full recognition of that benefit on the basis of potential settlement through negotiation and/or litigation. Accruals for tax contingencies are measured using the single best estimate of likely outcome approach. Any liability to interest on tax liabilities is provided for in the tax charge.

Investments

Fixed asset investments, including investments in subsidiaries, are stated at cost and reviewed for impairment if there are indications that the carrying value may not be recoverable.

Share-based payments

The issuance by the Company to employees of its subsidiaries of a grant of awards over the Company's shares, represents additional capital contributions by the Company to its subsidiaries. An additional investment in subsidiaries results in a corresponding increase in shareholders' equity. The additional capital contribution is based on the fair value of the grant issued, allocated over the underlying grant's vesting period, less the market cost of shares charged to subsidiaries in settlement of such share awards.

Financial instruments

Loans and other receivables are held at amortised cost. Long-term loans payable are held at amortised cost.

Litigation

Through the normal course of business, the AstraZeneca Group is involved in legal disputes, the settlement of which may involve cost to the Company. Provision is made where an adverse outcome is probable and associated costs can be estimated reliably. In other cases, appropriate descriptions are included.

Notes to the Company Financial Statements

1 Fixed asset investments

	Investments in subsidiaries		
	Shares $m	Loans $m	Total $m
At 1 January 2016	**16,053**	**13,994**	**30,047**
Additions	**–**	**2,480**	**2,480**
Transfer to current assets	**–**	**(1,749)**	**(1,749)**
Capital reimbursement	**(27)**	**–**	**(27)**
Exchange	**–**	**(307)**	**(307)**
Amortisation	**–**	**5**	**5**
At 31 December 2016	**16,026**	**14,423**	**30,449**

A list of subsidiaries is included on pages 193 to 196.

2 Non-trade creditors

	2016 $m	2015 $m
Amounts due within one year		
Short-term borrowings	**371**	679
Other creditors	**140**	128
Amounts owed to Group undertakings	**7**	7
	518	814

3 Loans

		Repayment dates	2016 $m	2015 $m
Amounts due within one year				
Interest-bearing loans and borrowings (unsecured)				
5.9% Callable bond	US dollars	2017	**1,749**	–
			1,749	–
Amounts due after more than one year				
Amounts owed to Group undertakings (unsecured)				
7.2% Loan	US dollars	2023	**283**	283
Interest-bearing loans and borrowings (unsecured)				
5.9% Callable bond	US dollars	2017	**–**	1,747
Floating rate notes	US dollars	2018	**399**	399
1.75% Callable bond	US dollars	2018	**998**	997
1.95% Callable bond	US dollars	2019	**998**	997
2.375% Callable bond	US dollars	2020	**1,589**	1,586
0.875% Non-callable bond	euros	2021	**782**	812
0.25% Callable bond	euros	2021	**522**	–
0.75% Callable bond	euros	2024	**937**	–
3.375% Callable bond	US dollars	2025	**1,976**	1,971
1.25% Callable bond	euros	2028	**827**	–
5.75% Non-callable bond	pounds sterling	2031	**426**	515
6.45% Callable bond	US dollars	2037	**2,719**	2,719
4% Callable bond	US dollars	2042	**986**	986
4.375% Callable bond	US dollars	2045	**979**	976
			14,138	13,705

	2016 $m	2015 $m
Loans or instalments thereof are repayable:		
After five years from balance sheet date	**9,133**	8,262
From two to five years	**3,891**	3,979
From one to two years	**1,397**	1,747
Within one year	**1,749**	–
Total unsecured	**16,170**	13,988

With the exception of the 2018 floating rate notes, all loans are at fixed interest rates. Accordingly, the fair values of the loans will change as market rates change. However, since the loans are held at amortised cost, changes in interest rates and the credit rating of the Company do not have any effect on the Company's net assets.

4 Share capital

Details of share capital movements in the year and share option schemes are included in Note 22 to the Group Financial Statements.

5 Contingent liabilities

In addition to the matter disclosed below, there are other cases where the Company is named as a party to legal proceedings. These include the *Nexium* and *Farxiga* product liability litigations, each of which are described more fully in Note 28 to the Group Financial Statements.

Foreign Corrupt Practices Act

In connection with investigations into anti-bribery and corruption issues in the pharmaceutical industry, AstraZeneca has received inquiries from enforcement agencies, including the DOJ and the SEC, regarding, among other things, sales practices, internal controls, certain distributors and interactions with healthcare providers and other government officials in several countries. In August 2016, AstraZeneca entered into a civil settlement with the SEC to resolve these inquiries. The DOJ has informed AstraZeneca that it has closed its inquiry into this matter.

Other

The Company has guaranteed the external borrowing of a subsidiary in the amount of $286m.

6 Statutory and other information

The Directors were paid by another Group company in 2016 and 2015.

7 Subsequent events

On 31 January 2017, the Company received a dividend from a subsidiary of $1,623m.

Group Financial Record

For the year ended 31 December	2012 $m	2013 $m	2014 $m	2015 $m	**2016 $m**
Revenue and profits					
Product Sales	27,973	25,711	26,095	23,641	**21,319**
Externalisation Revenue	451	95	452	1,067	**1,683**
Cost of sales	(5,393)	(5,261)	(5,842)	(4,646)	**(4,126)**
Distribution costs	(320)	(306)	(324)	(339)	**(326)**
Research and development expense	(5,243)	(4,821)	(5,579)	(5,997)	**(5,890)**
Selling, general and administrative costs	(9,839)	(12,206)	(13,000)	(11,112)	**(9,413)**
Other operating income and expense	519	500	335	1,500	**1,655**
Operating profit	8,148	3,712	2,137	4,114	**4,902**
Finance income	42	50	78	46	**67**
Finance expense	(544)	(495)	(963)	(1,075)	**(1,384)**
Share of after tax losses in associates and joint ventures	–	–	(6)	(16)	**(33)**
Profit before tax	7,646	3,267	1,246	3,069	**3,552**
Taxation	(1,376)	(696)	(11)	(243)	**(146)**
Profit for the period	6,270	2,571	1,235	2,826	**3,406**
Other comprehensive income for the period, net of tax	135	(113)	(1,506)	(338)	**(1,778)**
Total comprehensive income for the period	6,405	2,458	(271)	2,488	**1,628**
Profit attributable to:					
Owners of the Parent	6,240	2,556	1,233	2,825	**3,499**
Non-controlling interests	30	15	2	1	**(93)**
Earnings per share					
Basic earnings per $0.25 Ordinary Share	$4.95	$2.04	$0.98	$2.23	**$2.77**
Diluted earnings per $0.25 Ordinary Share	$4.94	$2.04	$0.98	$2.23	**$2.76**
Dividends	$2.85	$2.80	$2.80	$2.80	**$2.80**
Return on revenues					
Operating profit as a percentage of Total Revenue	28.7%	14.4%	8.0%	16.7%	**21.3%**
Ratio of earnings to fixed charges	19.9	9.9	6.1	11.3	**8.9**

At 31 December	2012 $m	2013 $m	2014 $m	2015 Restated* $m	**2016 $m**
Statement of Financial Position					
Property, plant and equipment, goodwill and intangible assets	32,435	31,846	38,541	40,859	**46,092**
Other investments and non-current receivables	940	2,513	2,138	1,896	**2,070**
Deferred tax assets	1,111	1,205	1,219	1,294	**1,102**
Current assets	19,048	20,335	16,697	16,007	**13,262**
Total assets	53,534	55,899	58,595	60,056	**62,526**
Current liabilities	(13,903)	(16,051)	(17,330)	(14,869)	**(15,256)**
Non-current liabilities	(15,685)	(16,595)	(21,619)	(26,678)	**(30,601)**
Net assets	23,946	23,253	19,646	18,509	**16,669**
Share capital	312	315	316	316	**316**
Reserves attributable to equity holders of the Company	23,419	22,909	19,311	18,174	**14,538**
Non-controlling interests	215	29	19	19	**1,815**
Total equity and reserves	23,946	23,253	19,646	18,509	**16,669**

* 2015 comparatives have been restated to reflect an adjustment to the acquisition accounting for ZS Pharma (see Note 25 from page 173).

For the year ended 31 December	2012 $m	2013 $m	2014 $m	2015 $m	**2016 $m**
Cash flows					
Net cash inflow/(outflow) from:					
Operating activities	6,948	7,400	7,058	3,324	**4,145**
Investing activities	(1,859)	(2,889)	(7,032)	(4,239)	**(3,969)**
Financing activities	(4,923)	(3,047)	(2,705)	878	**(1,324)**
	166	1,464	(2,679)	(37)	**(1,148)**

For the purpose of computing the ratio of earnings to fixed charges, earnings consist of the income from continuing ordinary activities before taxation of Group companies and income received from companies owned 50% or less, plus fixed charges. Fixed charges consist of interest on all indebtedness, amortisation of debt discount and expense, and that portion of rental expense representative of the interest factor.