AstraZeneca

What science can do

AstraZeneca Annual Report and Form 20-F Information 2022

Consolidated Statement of Comprehensive Income

for the year ended 31 December

	Notes	2022 $m	2021 $m	2020 $m
Product Sales	1	**42,998**	36,541	25,890
Collaboration Revenue	1	**1,353**	876	727
Total Revenue		**44,351**	37,417	26,617
Cost of sales		**(12,391)**	(12,437)	(5,299)
Gross profit		**31,960**	24,980	21,318
Distribution expense		**(536)**	(446)	(399)
Research and development expense	2	**(9,762)**	(9,736)	(5,991)
Selling, general and administrative expense	2	**(18,419)**	(15,234)	(11,294)
Other operating income and expense	2	**514**	1,492	1,528
Operating profit		**3,757**	1,056	5,162
Finance income	3	**95**	43	87
Finance expense	3	**(1,346)**	(1,300)	(1,306)
Share of after tax losses in associates and joint ventures	11	**(5)**	(64)	(27)
Profit/(loss) before tax		**2,501**	(265)	3,916
Taxation	4	**792**	380	(772)
Profit for the period		**3,293**	115	3,144
Other comprehensive income:				
Items that will not be reclassified to profit or loss:				
Remeasurement of the defined benefit pension liability	22	**1,118**	626	(168)
Net (losses)/gains on equity investments measured at fair value through other comprehensive income		**(88)**	(187)	938
Fair value movements related to own credit risk on bonds designated as fair value through profit and loss		**2**	–	(1)
Tax on items that will not be reclassified to profit or loss	4	**(216)**	105	(81)
		816	544	688
Items that may be reclassified subsequently to profit or loss:				
Foreign exchange arising on consolidation	23	**(1,446)**	(483)	443
Foreign exchange arising on designated liabilities in net investment hedges	23	**(282)**	(321)	573
Fair value movements on cash flow hedges		**(97)**	(167)	180
Fair value movements on cash flow hedges transferred to profit and loss		**73**	208	(254)
Fair value movements on derivatives designated in net investment hedges	23	**(8)**	34	8
(Costs)/gains of hedging		**(7)**	(6)	9
Tax on items that may be reclassified subsequently to profit or loss	4	**73**	46	(39)
		(1,694)	(689)	920
Other comprehensive (loss)/income for the period, net of tax		**(878)**	(145)	1,608
Total comprehensive income/(loss) for the period		**2,415**	(30)	4,752
Profit attributable to:				
Owners of the Parent		**3,288**	112	3,196
Non-controlling interests	26	**5**	3	(52)
Total comprehensive income/(loss) attributable to:				
Owners of the Parent		**2,413**	(33)	4,804
Non-controlling interests	26	**2**	3	(52)
Basic earnings per $0.25 Ordinary Share	5	**$2.12**	$0.08	$2.44
Diluted earnings per $0.25 Ordinary Share	5	**$2.11**	$0.08	$2.44
Weighted average number of Ordinary Shares in issue (millions)	5	**1,548**	1,418	1,312
Diluted weighted average number of Ordinary Shares in issue (millions)	5	**1,560**	1,427	1,313
Dividends declared and paid in the period	25	**4,485**	3,882	3,668

All activities were in respect of continuing operations.

$m means millions of US dollars.

Consolidated Statement of Financial Position
at 31 December

	Notes	2022 $m	2021 $m	2020 $m
Assets				
Non-current assets				
Property, plant and equipment	7	**8,507**	9,183	8,251
Right-of-use assets	8	**942**	988	666
Goodwill	9	**19,820**	19,997	11,845
Intangible assets	10	**39,307**	42,387	20,947
Investments in associates and joint ventures	11	**76**	69	39
Other investments	12	**1,066**	1,168	1,108
Derivative financial instruments	13	**74**	102	171
Other receivables	14	**835**	895	720
Deferred tax assets	4	**3,263**	4,330	3,438
		73,890	79,119	47,185
Current assets				
Inventories	15	**4,699**	8,983	4,024
Trade and other receivables	16	**10,521**	9,644	7,022
Other investments	12	**239**	69	160
Derivative financial instruments	13	**87**	83	142
Intangible assets	10	**–**	105	–
Income tax receivable		**731**	663	364
Cash and cash equivalents	17	**6,166**	6,329	7,832
Assets held for sale	18	**150**	368	–
		22,593	26,244	19,544
Total assets		**96,483**	105,363	66,729
Liabilities				
Current liabilities				
Interest-bearing loans and borrowings	19	**(5,314)**	(1,660)	(2,194)
Lease liabilities	8	**(228)**	(233)	(192)
Trade and other payables	20	**(19,040)**	(18,938)	(15,785)
Derivative financial instruments	13	**(93)**	(79)	(33)
Provisions	21	**(722)**	(768)	(976)
Income tax payable		**(896)**	(916)	(1,127)
		(26,293)	(22,594)	(20,307)
Non-current liabilities				
Interest-bearing loans and borrowings	19	**(22,965)**	(28,134)	(17,505)
Lease liabilities	8	**(725)**	(754)	(489)
Derivative financial instruments	13	**(164)**	(45)	(2)
Deferred tax liabilities	4	**(2,944)**	(6,206)	(2,918)
Retirement benefit obligations	22	**(1,168)**	(2,454)	(3,202)
Provisions	21	**(896)**	(956)	(584)
Other payables	20	**(4,270)**	(4,933)	(6,084)
		(33,132)	(43,482)	(30,784)
Total liabilities		**(59,425)**	(66,076)	(51,091)
Net assets		**37,058**	39,287	15,638
Equity				
Capital and reserves attributable to equity holders of the Company				
Share capital	24	**387**	387	328
Share premium account		**35,155**	35,126	7,971
Capital redemption reserve		**153**	153	153
Merger reserve		**448**	448	448
Other reserves	23	**1,468**	1,444	1,423
Retained earnings	23	**(574)**	1,710	5,299
		37,037	39,268	15,622
Non-controlling interests	26	**21**	19	16
Total equity		**37,058**	39,287	15,638

The Financial Statements from pages 138 to 203 were approved by the Board and were signed on its behalf by

Pascal Soriot
Director
9 February 2023

Aradhana Sarin
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 2020	328	7,941	153	448	1,445	2,812	13,127	1,469	14,596
Profit for the period	–	–	–	–	–	3,196	3,196	(52)	3,144
Other comprehensive income[1]	–	–	–	–	–	1,608	1,608	–	1,608
Transfer to other reserves[2, 3]	–	–	–	–	(22)	1,423	1,401	(1,401)	–
Transactions with owners									
Dividends (Note 25)	–	–	–	–	–	(3,668)	(3,668)	–	(3,668)
Issue of Ordinary Shares	–	30	–	–	–	–	30	–	30
Share-based payments charge for the period (Note 29)	–	–	–	–	–	277	277	–	277
Settlement of share plan awards	–	–	–	–	–	(349)	(349)	–	(349)
Net movement	–	30	–	–	(22)	2,487	2,495	(1,453)	1,042
At 31 December 2020	328	7,971	153	448	1,423	5,299	15,622	16	15,638
Profit for the period	–	–	–	–	–	112	112	3	115
Other comprehensive loss[1]	–	–	–	–	–	(145)	(145)	–	(145)
Transfer to other reserves[2]	–	–	–	–	21	(21)	–	–	–
Transactions with owners									
Dividends (Note 25)	–	–	–	–	–	(3,882)	(3,882)	–	(3,882)
Issue of Ordinary Shares	59	27,155	–	–	–	–	27,214	–	27,214
Share-based payments charge for the period (Note 29)	–	–	–	–	–	615	615	–	615
Settlement of share plan awards	–	–	–	–	–	(781)	(781)	–	(781)
Issue of replacement Alexion share awards upon acquisition (Note 27)[4]	–	–	–	–	–	513	513	–	513
Net movement	59	27,155	–	–	21	(3,589)	23,646	3	23,649
At 31 December 2021	387	35,126	153	448	1,444	1,710	39,268	19	39,287
Profit for the period	**–**	**–**	**–**	**–**	**–**	**3,288**	**3,288**	**5**	**3,293**
Other comprehensive loss[1]	**–**	**–**	**–**	**–**	**–**	**(875)**	**(875)**	**(3)**	**(878)**
Transfer to other reserves[2]	**–**	**–**	**–**	**–**	**24**	**(24)**	**–**	**–**	**–**
Transactions with owners									
Dividends (Note 25)	**–**	**–**	**–**	**–**	**–**	**(4,485)**	**(4,485)**	**–**	**(4,485)**
Issue of Ordinary Shares	**–**	**29**	**–**	**–**	**–**	**–**	**29**	**–**	**29**
Share-based payments charge for the period (Note 29)	**–**	**–**	**–**	**–**	**–**	**619**	**619**	**–**	**619**
Settlement of share plan awards	**–**	**–**	**–**	**–**	**–**	**(807)**	**(807)**	**–**	**(807)**
Net movement	**–**	**29**	**–**	**–**	**24**	**(2,284)**	**(2,231)**	**2**	**(2,229)**
At 31 December 2022	**387**	**35,155**	**153**	**448**	**1,468**	**(574)**	**37,037**	**21**	**37,058**

[1] Included within Other comprehensive loss of $878m (2021: loss of $145m; 2020: income of $1,608m) is a charge of $7m (2021: charge of $6m; 2020: gain of $9m), relating to Costs of hedging.
[2] Amounts charged or credited to Other reserves relate to exchange adjustments arising on goodwill.
[3] The Non-controlling interests reserve relating to the minority shareholders of Acerta Pharma, totalling $1,401m, was reclassified into Retained earnings in 2020 (see Note 26).
[4] Replacement share awards were issued as part of the acquisition of Alexion in 2021 (see Note 27).

Consolidated Statement of Cash Flows

for the year ended 31 December

	Notes	2022 $m	2021 $m	2020 $m
Cash flows from operating activities				
Profit/(loss) before tax		**2,501**	(265)	3,916
Finance income and expense	3	**1,251**	1,257	1,219
Share of after tax losses of associates and joint ventures	11	**5**	64	27
Depreciation, amortisation and impairment		**5,480**	6,530	3,149
Increase in trade and other receivables		**(1,349)**	(961)	(739)
Decrease/(increase) in inventories		**3,941**	1,577	(621)
Increase in trade and other payables and provisions		**1,165**	1,405	1,721
Gains on disposal of intangible assets	2	**(104)**	(513)	(1,030)
Gains on disposal of investments in associates and joint ventures	2	**–**	(776)	–
Fair value movements on contingent consideration arising from business combinations	20	**82**	14	(272)
Non-cash and other movements	17	**(692)**	95	(276)
Cash generated from operations		**12,280**	8,427	7,094
Interest paid		**(849)**	(721)	(733)
Tax paid		**(1,623)**	(1,743)	(1,562)
Net cash inflow from operating activities		**9,808**	5,963	4,799
Cash flows from investing activities				
Acquisition of subsidiaries, net of cash acquired	27	**(48)**	(9,263)	–
Payments upon vesting of employee share awards attributable to business combinations	27	**(215)**	(211)	–
Payment of contingent consideration from business combinations	20	**(772)**	(643)	(822)
Purchase of property, plant and equipment		**(1,091)**	(1,091)	(961)
Disposal of property, plant and equipment		**282**	13	106
Purchase of intangible assets		**(1,480)**	(1,109)	(1,645)
Disposal of intangible assets and assets held for sale		**447**	587	951
Movement in profit-participation liability	2	**–**	20	40
Purchase of non-current asset investments		**(45)**	(184)	(119)
Disposal of non-current asset investments		**42**	9	1,381
Movement in short-term investments, fixed deposits and other investing instruments		**(114)**	96	745
Payments to associates and joint ventures	11	**(26)**	(92)	(8)
Disposal of investments in associates and joint ventures		**–**	776	–
Interest received		**60**	34	47
Net cash outflow from investing activities		**(2,960)**	(11,058)	(285)
Net cash inflow/(outflow) before financing activities		**6,848**	(5,095)	4,514
Cash flows from financing activities				
Proceeds from issue of share capital		**29**	29	30
Issue of loans and borrowings		**–**	12,929	2,968
Repayment of loans and borrowings		**(1,271)**	(4,759)	(1,609)
Dividends paid		**(4,364)**	(3,856)	(3,572)
Hedge contracts relating to dividend payments		**(127)**	(29)	(101)
Repayment of obligations under leases		**(244)**	(240)	(207)
Movement in short-term borrowings		**74**	(276)	288
Payments to acquire non-controlling interests		**–**	(149)	–
Payment of Acerta Pharma share purchase liability		**(920)**	–	–
Net cash (outflow)/inflow from financing activities		**(6,823)**	3,649	(2,203)
Net increase/(decrease) in Cash and cash equivalents in the period		**25**	(1,446)	2,311
Cash and cash equivalents at the beginning of the period		**6,038**	7,546	5,223
Exchange rate effects		**(80)**	(62)	12
Cash and cash equivalents at the end of the period	17	**5,983**	6,038	7,546

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 UK-adopted International Accounting Standards and with the requirements of the Companies Act 2006 as applicable to companies reporting under those standards. The Consolidated Financial Statements also comply fully with International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board (IASB) and International Accounting Standards as adopted by the European Union.

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

The Group has considerable financial resources available. As at 31 December 2022, the Group has $11.1bn in financial resources (Cash and cash equivalent balances of $6.2bn and undrawn committed bank facilities of $4.9bn available until April 2026 with only $5.5bn of borrowings due within one year). All facilities contain no financial covenants and were undrawn at 31 December 2022. On 2 February 2023, the Group entered into an additional $2.0bn of two-year committed bank facilities.

The Group's revenues are largely derived from sales of medicines covered by patents, which provide a relatively high level of resilience and predictability to cash inflows, although government price interventions in response to budgetary constraints are expected to continue to adversely affect revenues in some of our significant markets. The Group, however, anticipates new revenue streams from both recently launched medicines and those 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. 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.

The accounting policy descriptions set out the areas where judgements and estimates need exercising, the most significant of which include the following Key Judgements KJ and Significant Estimates SE:

- revenue recognition – see Revenue Accounting Policy on page 142 KJ and Note 1 on page 149 SE
- expensing of internal development expenses – see Research and Development Policy on page 144 KJ
- impairment reviews of Intangible assets – see Note 10 on page 161 SE
- useful economic life of Intangible assets – see Research and Development Policy on page 144 KJ
- business combinations and Goodwill – see Business Combinations and Goodwill Policy on page 146 KJ and Note 27 on page 182 SE
- litigation liabilities – see Litigation and Environmental Liabilities within Note 30 on page 192 KJ
- operating segments – see Note 6 on page 157 KJ
- employee benefits – see Note 22 on page 173 SE
- taxation – see Note 30 on page 192 KJ.

AstraZeneca has assessed the impact of the uncertainty presented by the COVID-19 pandemic and the Russia-Ukraine conflict on the Financial Statements, specifically considering the impact on key judgements and significant estimates along with several other areas of increased risk. No material accounting impacts relating to COVID-19 or the Russia-Ukraine conflict were recognised in the year.

The Group will continue to monitor these areas of increased judgement, estimation and risk for material changes.

The Group has assessed the impact of climate risk on its financial reporting. The impact assessment was primarily focused on the valuation and useful lives of intangible assets and the identification and valuation of provisions and contingent liabilities, as these are judged to be the key areas that could be impacted by climate risks. No material accounting impacts or changes to judgements or other required disclosures were noted.

KJ Key Judgements are those judgements made in applying the Group's accounting policies that have a material effect on the amounts of assets and liabilities recognised in the financial statements.

SE A Significant Estimate has a significant risk of material adjustment to the carrying amounts of assets and liabilities within the next financial year.

Financial risk management policies are detailed in Note 28 to the Financial Statements from page 184.

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

Revenue

Revenue comprises Product Sales and Collaboration Revenue.

Revenue excludes inter-company revenues and value-added taxes.

Product Sales

Product Sales represent net invoice value less estimated rebates, returns and chargebacks, which are considered to be variable consideration and include significant estimates. Sales are recognised when the control of the goods has been transferred to a third party. This is usually when title passes to the customer, either on shipment or on receipt of goods by the customer, depending on local trading terms. In markets where returns are significant, estimates of the quantity and value of goods which may ultimately be returned are accounted for at the point revenue is recognised. Revenue is not recognised in full until it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur.

Rebates are amounts payable or credited to a customer, usually based on the quantity or value of Product Sales to the customer for specific products in a certain period. Product sales rebates, which relate to Product Sales that occur over a period of time, are normally issued retrospectively.

At the time Product Sales are invoiced, rebates and deductions that the Group expects to pay are estimated based upon assumptions developed using contractual terms, historical experience and market related information. The rebates and deductions are recognised as variable consideration and recorded as a reduction to revenue with an accrual recorded. These rebates typically arise from sales contracts with government payers, third-party managed care organisations, hospitals, long-term care facilities, group purchasing organisations and various state programmes.

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 Product Sales are considered highly probable to reverse, revenues are only recognised when the right of return expires, which is generally on ultimate prescription of the product to patients.

The methodology and assumptions used to estimate rebates and returns are monitored and adjusted regularly in the light of contractual and legal obligations, historical trends, past experience and projected market conditions. Once the uncertainty associated with returns is resolved, revenue is adjusted accordingly.

Under certain collaboration agreements which include a profit sharing mechanism, our recognition of Product Sales depends on which party acts as principal in sales to the end customer. In the cases where AstraZeneca acts as principal, we record 100% of sales to the end customer.

Contracts relating to the supply of certain Vaccines & Immune Therapies medicines relating to the COVID-19 pandemic include conditions whereby payments are receivable from customers in advance of the delivery of product. Such amounts are held on the balance sheet as contract liabilities until the related revenue is recognised, generally upon product delivery. Certain of these contracts contain further provisions that restrict the use of inventory manufactured in specified supply chains to specified customers, resulting in an enforceable right to payment as the activities are performed. Under IFRS 15, such contracts require revenue to be recognised over time using an appropriate and reasonably measurable method to measure progress. Revenue is recognised on these contracts based on the proportion of product delivered compared to the total contracted volumes.

Certain arrangements include bill-and-hold arrangements under which the Group invoices a customer for a product but retains physical possession of the product until it is transferred to the customer at a point in time in the future. For these types of arrangements, an assessment is made to determine when the performance obligation has been satisfied, which is when control of the product is transferred to the customer. If the customer has obtained control of the product even though that product remains in the Group's physical possession, the performance obligation to transfer a product has been satisfied and Product Sales are recognised. Control is considered to have transferred when the product is segregated as belonging to the customer, is readily available to be delivered to the customer and AstraZeneca is unable to sell the product to another customer.

Collaboration Revenue

Collaboration Revenue includes income from collaborative arrangements where either the Group has out-licensed (sold) or has in-licenced (acquired) certain rights associated with products, where either AstraZeneca (out-licences) or the collaborator (in-licences) retains a significant ongoing economic interest in the product. Significant interest can include ongoing supply of finished goods, profit sharing arrangements or being principal in the sales of medicines. These collaborations may include development, manufacturing and/or commercialisation arrangements with the collaborator. Income from out-licences may take the form of upfront fees, milestones and royalties and income from in-licences may comprise the sharing of profit arising from sales made as principal by the collaborator.

KJ Timing of recognition of clinical and regulatory milestones is considered to be a key judgement. There can be significant uncertainty over whether it is highly probable that there would not be a significant reversal of revenue in respect of specific milestones if these are recognised before they are triggered due to them being subject to the actions of third parties. In general, where the triggering of a milestone is subject to the decisions of third parties (e.g. the acceptance or approval of a filing by a regulatory authority), the Group does not consider that the threshold for recognition is met until that decision is made.

Where Collaboration Revenue arises from the licensing of the Group's own intellectual property, the licences we grant are typically rights to use intellectual property which do not change during the period of the licence and therefore related non-conditional revenue is recognised at the point the license is granted and variable consideration as soon as recognition criteria are met.

Other performance obligations in the contract might include the supply of product. These arrangements typically involve the receipt of an upfront payment, which the contract attributes to the license of the intangible assets, and ongoing receipts for supply, which the contract attributes to the sale of the product we manufacture. In cases where the transaction has two or more components, we account for the delivered item (for example, the transfer of title to the intangible asset) as a separate unit of account and record revenue on delivery of that component. Where practicable, consideration is allocated to performance obligations on the basis of the standalone selling price of each performance obligation. However, where there is a licence of intellectual property, it is not always possible to establish a reliable estimate of the standalone selling price of the licence as they are unique. Therefore, in these rare situations, the residual approach is used to determine the consideration attributable to the licence.

Where fixed amounts are payable over one year from the effective date of a contract, an assessment is made as to whether a significant financing component exists, and if so, the fair value of this component is deferred and recognised as financing income over the period to the expected date of receipt.

Where control of a right to use licence for an intangible asset passes at the outset of an arrangement, revenue is recognised at the point in time control is transferred. Where the substance of a licence arrangement is that of a right to access rights attributable to an intangible asset, revenue is recognised over time, normally on a straight-line basis over the life of the contract.

Where the Group provides ongoing development services, revenue in respect of this element is recognised over the duration of those services. Where the arrangement meets the definition of a licence agreement, sales milestones and sales royalties are recognised when achieved by applying the royalty exemption under IFRS 15. All other milestones and sales royalties are recognised when considered it is highly probable there will not be a significant reversal of cumulative income. The determination requires estimates to be made in relation to future Product Sales.

Where Collaboration Revenue is recorded and there is a related Intangible asset that is licensed as part of the arrangement, an appropriate amount of that Intangible asset is charged to Cost of sales based on an allocation of cost or value to the rights that have been licenced.

The Group periodically enters into transactions where it acquires part of the rights to a product intangible (either on-market or in-process R&D), but for commercial reasons does not act as principal in selling the product to the customer and therefore does not recognise income from the product in the form of Product Sales. This may occur where, for example, a collaboration partner retains the right to commercialise in a specific territory, and has sufficient local control over that commercialisation to book product sale revenue, while the Group instead receives a proportion of the value generated by those product sales, either in the form of a royalty or a profit share (alliance revenue).

Cost of sales

Cost of sales are recognised as the associated revenue is recognised. Cost of sales include manufacturing costs, royalties payable on revenues recognised, movements in provisions for inventories, inventory write-offs and impairment charges in relation to manufacturing assets. Cost of sales also includes co-collaborator sharing of profit arising from collaborations, and foreign exchange gains and losses arising from business trading activities.

Research and development

Research expenditure is charged to profit and loss in the year in which it is incurred.

KJ Internal development expenditure is capitalised only if it meets the recognition criteria of IAS 38 'Intangible Assets'. This is considered a key judgement. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is charged to profit and loss 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 2022, no amounts have met the recognition criteria.

Payments to in-license products and compounds from third parties for new research and development projects (in process research and development) generally take the form of upfront payments, milestones and royalty payments. Where payments made to third parties represent consideration for 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 sub-contracted 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 identifiable intellectual property developed at the risk of the third party. Such payments may be made once development or regulatory milestones are met and may also be made on the basis of sales volumes once a product is launched. Development and regulatory milestone payments are capitalised as the milestone is triggered. Sales-related payments are accrued and capitalised with reference to the latest Group sales forecasts for approved indications. Assets capitalised are amortised, on a straight-line basis, over their useful economic lives from product launch.

KJ The determination of useful economic life is considered to be a key judgement. On product launch, the Group makes a judgement as to the expected useful economic life with reference to the expiry of associated patents for the product, expectation around the competitive environment specific to the product and our detailed long-term risk-adjusted sales projections compiled annually across the Group and approved by the Board.

The useful economic life can extend beyond patent expiry dependent upon the nature of the product and the complexity of the development and manufacturing process. Significant sales can often be achieved post patent expiration.

Intangible assets

Intangible assets are stated at cost less amortisation and impairments. 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. The determination of the recoverable amounts include key estimates which are highly sensitive to, and depend upon, key assumptions as detailed in Note 10 to the Financial Statements from page 161.

Impairment reviews have been carried out on all Intangible assets that are in development (and not being amortised), all major intangible assets acquired during the year and all other intangible assets that have had indications of impairment during the year. Recoverable amount is determined as the higher of value in use or fair value less costs to sell using a discounted cash flow calculation, with the products' expected cash flows risk-adjusted over their estimated remaining useful economic life. Sales forecasts and specific allocated costs (which have both been subject to appropriate senior management review and approval) are risk-adjusted and discounted using appropriate rates based on our post-tax weighted average cost of capital or for fair value less costs to sell, a required rate of return for a market participant. Our weighted average cost of capital reflects factors such as our capital structure and our costs of debt and equity.

Any impairment losses are recognised immediately in Operating profit. Intangible assets relating to products which fail during development (or for which development ceases for other reasons) are also tested for impairment 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 Operating profit.

Government grants

Government grants are recognised in the Consolidated Statement of Comprehensive Income so as to match with the related expenses that they are intended to compensate. Where grants are received in advance of the related expenses, they are initially recognised in the Consolidated Statement of Financial Position under Trade and other payables as deferred income and released to net off against the related expenditure when incurred.

Each contract is assessed to determine whether there are both grant elements and supply of product which need to be separated. In each case, the contracts set out the specified terms for the supply of the product and the provisions for funding for certain costs, primarily research and development associated with the IP. It is considered whether there are any conditions for the funding to be refunded. The consideration in the contract is allocated between the grant and supply elements. The standalone selling price for the supply of products is determined by reference to observed prices with other customers. The amount allocated as a government grant is determined by reference to the specific agreed costs and activities identified in the contract as not directly attributable to the supply of product. Government grants are recorded as an offset to the relevant expense in the Consolidated Statement of Comprehensive Income and are capped to match the relevant costs incurred.

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 or associate 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 determined using the projected unit credit method and are discounted to present value by reference to market yields on high-quality corporate bonds, while plan assets are measured at fair value. Given the extent of the assumptions used to determine the value of scheme assets and scheme liabilities, these are considered to be significant estimates. 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 benefit 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 subject to consideration of the effect any minimum funding requirement for future service has on the benefit available as a reduction in future contributions.

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 there are future taxable temporary differences or it is probable that future 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. Deferred tax assets and liabilities are offset in the Consolidated Statement of Financial Position if, and only if, the taxable entity has a legally enforceable right to set off current tax assets and liabilities, and the Deferred tax assets and liabilities relate to taxes levied by the same taxation authority on the same taxable entity.

Liabilities for uncertain tax positions require management to make judgements of potential exposures in relation to tax audit issues. Tax benefits are not recognised unless the tax positions will probably be accepted by the tax authorities. This is based upon management's interpretation of applicable laws and regulations and the expectation of how the tax authority will resolve the matter. Once considered probable of not being accepted, management reviews each material tax benefit and reflects the effect of the uncertainty in determining the related taxable result.

Liabilities for uncertain tax positions are measured using either the most likely amount or the expected value amount depending on which method the entity expects to better predict the resolution of the uncertainty.

Further details of the estimates and assumptions made in determining our recorded liability for transfer pricing contingencies and other tax contingencies are included in Note 30 to the Financial Statements from page 192.

Share-based payments

All plans have been classified as equity settled after assessment. The grant date fair value of the market-based performance elements of employee share plan awards is calculated using a modified Monte Carlo model, with other elements at market price. In accordance with IFRS 2 'Share-based Payment', the resulting cost is recognised in profit on a straight-line basis over the vesting period of the awards. 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.

Cash outflows relating to the vesting of share plans for our employees are recognised within operating activities, as they relate to employee remuneration. The cash flows relating to replacement awards issued to employees as part of the Alexion acquisition (see Note 27 from page 182) are classified within investing activities, as they are part of the aggregate cash flows arising from obtaining control of the subsidiary.

Property, plant and equipment

The Group's policy is to depreciate 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 until the asset is available for use, at which point the asset is transferred into either Land and buildings or Plant and equipment, and depreciated over its estimated useful economic life.

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. It is impractical to calculate average asset lives exactly. However, the useful economic 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 Operating profit.

Leases

The Group's lease arrangements are principally for property, most notably a portfolio of office premises and employee accommodation, and for a global car fleet, utilised primarily by our sales and marketing teams.

The lease liability and corresponding right-of-use asset arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments, less any lease incentives receivable
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option
- payments of penalties for terminating the lease, if the lease term reflects the Group exercising that option, and
- amounts expected to be payable by the Group under residual value guarantees.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs.

Judgements made in calculating the lease liability include assessing whether arrangements contain a lease and determining the lease term. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. Property leases will often include an early termination or extension option to the lease term. Fleet management policies vary by jurisdiction and may include renewal of a lease until a measurement threshold, such as mileage, is reached. Extension and termination options have been considered when determining the lease term, along with all facts and circumstances that may create an economic incentive to exercise an extension option, or not exercise a termination option. Extension periods (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

The lease payments are discounted using incremental borrowing rates, as in the majority of leases held by the Group the interest rate implicit in the lease is not readily identifiable. Calculating the discount rate is an estimate made in calculating the lease liability. This rate is the rate that the Group would have to pay to borrow the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment with similar terms, security and conditions. To determine

the incremental borrowing rate, the Group uses a risk-free interest rate adjusted for credit risk, adjusting for terms specific to the lease including term, country and currency.

The Group is exposed to potential future increases in variable lease payments that are based on an index or rate, which are initially measured as at the commencement date, with any future changes in the index or rate excluded from the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Lease payments are allocated between principal and finance cost. The finance cost is charged to the Consolidated Statement of Comprehensive Income over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Payments associated with short-term leases of Property, plant and equipment and all leases of low-value assets are recognised on a straight-line basis as an expense in the Consolidated Statement of Comprehensive Income. Short-term leases are leases with a lease term of 12 months or less. Low-value leases are those where the underlying asset value, when new, is $5,000 or less and includes IT equipment and small items of office furniture.

Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative standalone prices.

Right-of-use assets are generally depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life. It is 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 motor vehicles and other assets.

There are no material lease agreements under which the Group is a lessor.

Business combinations and goodwill

In assessing whether an acquired set of assets and activities is a business or an asset, management will first elect whether to apply an optional concentration test to simplify the assessment. Where the concentration test is applied, the acquisition will be treated as the acquisition of an asset if substantially all of the fair value of the gross assets acquired (excluding cash and cash equivalents, deferred tax assets, and related goodwill) is concentrated in a single asset or group of similar identifiable assets.

Where the concentration test is not applied, or is not met, a further assessment of whether the acquired set of assets and activities is a business will be performed.

KJ The determination of whether an acquired set of assets and activities is a business or an asset can be judgemental, particularly if the target is not producing outputs. Management uses a number of factors to make this determination, which are primarily focused on whether the acquired set of assets and activities include substantive processes that mean the set is capable of being managed for the purpose of providing a return. Key determining factors include the stage of development of any assets acquired, the readiness and ability of the acquired set to produce outputs and the presence of key experienced employees capable of conducting activities required to develop or manufacture the assets. Typically, the specialised nature of many pharmaceutical assets and processes is such that until assets are substantively ready for production and promotion, there are not the required processes for a set of assets and activities to meet the definition of a business in IFRS 3.

On the acquisition of a business, fair values are attributed to the identifiable assets and liabilities. Attributing fair values is a key judgement; refer to Note 27 to the Financial Statements on page 182 for additional details of the 2021 acquisition. Contingent liabilities are also recorded at fair value unless the fair value cannot be measured reliably, in which case the value is subsumed into goodwill. 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 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 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.

The timing and amount of future contingent elements of consideration is an estimate. Contingent consideration, which may include development and launch milestones, revenue threshold milestones and revenue-based royalties, is 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.

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.

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. Control is normally evidenced by holding more than 50% of the share capital of the company, however other agreements may be in place that result in control where they give AstraZeneca finance decision-making authority over the relevant activities of the company.

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 for launched or approved products and in Research and development expense for products in development.

Assets held for sale

Non-current assets are classified as Assets held for sale when their carrying amount is to be recovered principally through a sale transaction and a sale is considered highly probable. A sale is considered highly probable only when the appropriate level of management has committed to the sale.

Assets held for sale are stated at the lower of carrying amount and fair value less costs to sell. Where there is a partial transfer of a non-current asset to held for sale, an allocation of value is made between the current and non-current portions of the asset based on the relative value of the two portions, unless there is a methodology that better reflects the asset to be disposed of.

Assets held for sale are not depreciated or amortised.

Trade and other receivables

Financial assets included in Trade and other receivables are recognised initially at fair value. The Group holds the Trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently 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 IFRS 9 'Financial Instruments'.

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. Contingent consideration payables are held at fair value within Level 3 of the fair value hierarchy as defined in Note 12.

Financial instruments

The Group's financial instruments include Lease liabilities, Trade and other receivables and payables, liabilities for contingent consideration and put options 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 under the hold to collect classification, where they meet the hold to collect 'solely payments of principal and interest' test criteria under IFRS 9. Those not meeting these criteria are held at fair value through profit and loss. Cash and cash equivalents in the Consolidated Statement of Cash Flows include unsecured bank overdrafts at the balance sheet date where balances often fluctuate between a cash and overdraft position.

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 the Consolidated Statement of Comprehensive Income.

Other investments

Investments are classified as fair value through profit or loss (FVPL), unless the Group makes an irrevocable election at initial recognition for certain non-current equity investments to present changes in Other comprehensive income (FVOCI). If this election is made, there is no subsequent reclassification of fair value gains and losses to profit and loss following the derecognition of the investment.

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 and 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), with the exception of changes in the fair value of the debt instrument relating to own credit risk which are recorded in Other comprehensive income in accordance with IFRS 9. 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. The reclassification adjustment is included in Finance expense in the Consolidated Statement of Comprehensive Income.

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

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 of derivatives not designated in hedging relationships are recognised in profit or loss.

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 all of the derivative positions above a predetermined threshold. Cash collateral received from counterparties is included within current Interest-bearing loans and borrowings within the Consolidated Statement of Financial Position. Cash collateral pledged to counterparties is recognised as a financial asset and is included in current Other investments within the Consolidated Statement of Financial Position. In prior years, cash collateral pledged to counterparties was included in Cash and cash equivalents. Cash collateral received is included in Movement in short-term borrowings within financing activities in the Consolidated Cash Flow Statement. Cash collateral paid is included in Movements in short-term investments within investing activities in the Consolidated Cash Flow Statement. The cash flow presentation of cash paid and received follows the Consolidated Statement of Financial Position presentation of the financial asset and financial liability that is recognised from posting the collateral.

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 and loss when the foreign operation is sold.

Provisions

Provisions are recognised when either a legal or constructive obligation as a result of a past event exists at the Consolidated Statement of Financial Position date, it is probable that an outflow of economic resources will be required to settle the obligation and a reasonable estimate can be made of the amount of the obligation (the timing or amount of the liability is uncertain).

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. Determining the timing of recognition of when an adverse outcome is probable is considered a key judgement, refer to Note 30 to the Financial Statements on page 192.

Where it is considered that the Group is more likely than not to prevail, or in the extremely rare circumstances where the amount of the legal liability cannot be estimated reliably, legal costs involved in defending the claim are charged to the Consolidated Statement of Comprehensive Income 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 at the relevant pre-tax discount rate where the effect is material.

Restructuring

Restructuring costs are incurred in programmes that are planned and controlled by the Group which materially change either the scope of a business undertaken by the Group, or the manner in which that business is conducted.

A provision for restructuring costs is recognised when a detailed formal plan is in place and has either been announced to those affected or has started to be implemented. The general recognition criteria for provisions must also be met, as described in the Provisions policy.

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 the recoverable amount, the estimated future cash flows, adjusted for the risks associated with the probability of success specific to each asset, as well as inflationary impacts, are discounted to their present value using a nominal 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 the Consolidated Statement of Comprehensive Income.

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

At the date of authorisation of these financial statements, certain new accounting standards and amendments were in issue relating to the following standards and interpretations but not yet adopted by the Group:

- amendments to IAS 12 'Income Taxes', IAS 8 'Accounting Policies, Changes in Accounting Estimates and Errors', IAS 1 'Presentation of Financial Statements' and IFRS Practice Statement 2 'Making Materiality Judgements', effective for periods beginning on or after 1 January 2023 – endorsed by the UK Endorsement Board (UKEB) on 30 November 2022
- new accounting standard IFRS 17 'Insurance Contracts', effective for periods beginning on or after 1 January 2023 – endorsed by the UKEB on 16 May 2022, and
- amendments to IAS 1 'Presentation of Financial Statements' and IFRS 16 'Leases', effective for periods beginning on or after 1 January 2024 – not endorsed by the UKEB.

These new standards, amendments and interpretations are not expected to have a significant impact on the Group's net results.

Notes to the Group Financial Statements

1 Revenue

Product Sales

	2022					2021					2020				
	Emerging Markets $m	**US $m**	**Europe $m**	**Rest of World $m**	**Total $m**	Emerging Markets $m	US $m	Europe $m	Rest of World $m	Total $m	Emerging Markets $m	US $m	Europe $m	Rest of World $m	Total $m
Oncology:															
Tagrisso	**1,567**	**2,007**	**1,023**	**847**	**5,444**	1,336	1,780	986	913	5,015	1,208	1,566	748	806	4,328
Imfinzi	**287**	**1,552**	**544**	**401**	**2,784**	277	1,245	485	405	2,412	158	1,185	370	329	2,042
Lynparza	**488**	**1,226**	**655**	**269**	**2,638**	384	1,087	618	259	2,348	264	876	435	201	1,776
Calquence	**45**	**1,657**	**286**	**69**	**2,057**	20	1,089	111	18	1,238	6	511	2	3	522
Enhertu	**51**	**–**	**21**	**7**	**79**	12	–	4	1	17	–	–	–	–	–
Orpathys	**33**	**–**	**–**	**–**	**33**	16	–	–	–	16	–	–	–	–	–
Zoladex	**657**	**15**	**133**	**122**	**927**	619	13	147	169	948	561	5	140	182	888
Faslodex	**159**	**17**	**55**	**103**	**334**	167	30	113	121	431	180	55	221	124	580
Iressa	**94**	**9**	**2**	**9**	**114**	151	11	5	16	183	221	14	12	21	268
Arimidex	**76**	**–**	**–**	**23**	**99**	106	–	4	29	139	147	–	3	35	185
Casodex	**53**	**–**	**1**	**24**	**78**	105	–	3	35	143	133	–	3	36	172
Others	**27**	**1**	**6**	**10**	**44**	29	–	5	16	50	28	–	4	19	51
	3,537	**6,484**	**2,726**	**1,884**	**14,631**	3,222	5,255	2,481	1,982	12,940	2,906	4,212	1,938	1,756	10,812
Cardiovascular, Renal & Metabolism:															
Farxiga	**1,665**	**1,071**	**1,297**	**348**	**4,381**	1,195	732	810	263	3,000	686	569	507	197	1,959
Brilinta	**286**	**744**	**282**	**46**	**1,358**	328	735	346	63	1,472	461	732	342	58	1,593
Lokelma	**20**	**170**	**30**	**69**	**289**	3	115	13	44	175	5	57	4	10	76
Roxadustat	**197**	**–**	**–**	**–**	**197**	174	–	–	–	174	–	–	–	–	–
Andexxa	**–**	**77**	**41**	**32**	**150**	–	50	18	–	68	–	–	–	–	–
Crestor	**794**	**65**	**41**	**148**	**1,048**	775	80	52	189	1,096	748	92	129	211	1,180
Seloken/Toprol-XL	**839**	**–**	**14**	**9**	**862**	928	1	11	11	951	782	13	16	10	821
Bydureon	**3**	**242**	**35**	**–**	**280**	3	321	55	6	385	4	382	53	9	448
Onglyza	**121**	**76**	**38**	**22**	**257**	179	88	61	32	360	201	166	58	45	470
Others	**194**	**34**	**128**	**10**	**366**	195	52	146	14	407	316	72	119	42	549
	4,119	**2,479**	**1,906**	**684**	**9,188**	3,780	2,174	1,512	622	8,088	3,203	2,083	1,228	582	7,096
Respiratory & Immunology:															
Symbicort	**608**	**973**	**582**	**375**	**2,538**	609	1,065	670	384	2,728	567	1,022	694	438	2,721
Fasenra	**43**	**906**	**305**	**142**	**1,396**	20	790	286	162	1,258	12	603	203	131	949
Breztri	**92**	**239**	**33**	**34**	**398**	55	115	7	26	203	14	5	–	9	28
Saphnelo	**–**	**111**	**2**	**3**	**116**	–	8	–	–	8	–	–	–	–	–
Tezspire	**–**	**–**	**2**	**2**	**4**	–	–	–	–	–	–	–	–	–	–
Pulmicort	**462**	**65**	**69**	**49**	**645**	770	72	73	47	962	798	71	73	54	996
Daliresp/Daxas	**3**	**176**	**9**	**1**	**189**	4	207	15	1	227	4	190	22	1	217
Bevespi	**5**	**42**	**10**	**1**	**58**	4	39	11	–	54	1	44	3	–	48
Others	**230**	**143**	**42**	**6**	**421**	287	108	185	14	594	203	6	176	13	398
	1,443	**2,655**	**1,054**	**613**	**5,765**	1,749	2,404	1,247	634	6,034	1,599	1,941	1,171	646	5,357
Vaccines & Immune Therapies:															
Vaxzevria	**729**	**79**	**365**	**625**	**1,798**	2,240	64	1,035	578	3,917	–	–	2	–	2
Evusheld	**413**	**1,067**	**298**	**407**	**2,185**	19	–	66	–	85	–	–	–	–	–
Synagis	**173**	**1**	**213**	**191**	**578**	35	23	203	149	410	–	47	325	–	372
FluMist	**1**	**21**	**151**	**2**	**175**	2	27	222	2	253	1	70	219	5	295
	1,316	**1,168**	**1,027**	**1,225**	**4,736**	2,296	114	1,526	729	4,665	1	117	546	5	669
Rare Disease:															
Soliris	**301**	**2,180**	**805**	**476**	**3,762**	170	1,068	439	197	1,874	–	–	–	–	–
Ultomiris	**38**	**1,136**	**481**	**310**	**1,965**	9	381	169	129	688	–	–	–	–	–
Strensiq	**35**	**769**	**78**	**76**	**958**	10	297	36	35	378	–	–	–	–	–
Koselugo	**26**	**162**	**20**	**–**	**208**	1	104	3	–	108	–	38	–	–	38
Kanuma	**31**	**77**	**44**	**8**	**160**	7	32	20	3	62	–	–	–	–	–
	431	**4,324**	**1,428**	**870**	**7,053**	197	1,882	667	364	3,110	–	38	–	–	38
Other:															
Nexium	**568**	**120**	**46**	**551**	**1,285**	705	128	62	431	1,326	757	169	71	495	1,492
Others	**220**	**24**	**77**	**19**	**340**	212	43	109	14	378	213	78	105	30	426
	788	**144**	**123**	**570**	**1,625**	917	171	171	445	1,704	970	247	176	525	1,918
Product Sales	**11,634**	**17,254**	**8,264**	**5,846**	**42,998**	12,161	12,000	7,604	4,776	36,541	8,679	8,638	5,059	3,514	25,890

1 Revenue *continued*

SE Rebates and chargebacks in the US

The major market where estimates are seen as significant is the US. When invoicing Product Sales in the US, we estimate the rebates and chargebacks we expect to pay and we consider there to be a significant estimate associated with the rebates for Managed Care, Medicaid and Medicare Part D. The total adjustment in respect of prior year net US Product Sales revenue in 2022 was 1.3% (2021: 1.5%; 2020: 3.5%); this represents the difference between our prior year estimates for rebates and chargebacks against actual amounts paid for the US business. The most significant of these relate to the Medicaid and state programmes with an adjustment in respect of prior year net US Product Sales revenue in 2022 of 0.5% (2021: 0.4%; 2020: 1.1%) and Managed Care and Medicare of 0.8% (2021: 0.7%; 2020: 1.5%).

The adjustment in respect of the prior year net US Product Sales revenue, excluding the Rare Disease therapy area in 2022, was 1.6% (2021: 1.8%), with Medicaid and state programmes of 0.6% (2021: 0.5%) and Managed Care and Medicare of 1.1% (2021: 0.8%).

These values demonstrate the level of sensitivity; further meaningful sensitivity is not able to be provided due to the large volume of variables that contribute to the overall rebates, chargebacks, returns and other revenue accruals.

Collaboration Revenue

	2022 $m	2021 $m	2020 $m
Enhertu: alliance revenue[1]	**519**	193	94
Tezspire: alliance revenue[1]	**79**	–	–
Roxadustat: alliance revenue[1]	**5**	6	30
Lynparza/Koselugo (MSD) – regulatory milestones	**355**	–	160
Lynparza/Koselugo (MSD) – sales-related milestones	**–**	400	300
Tralokinumab: sales milestone	**110**	–	–
Vaxzevria: royalties	**76**	64	–
Other royalty income	**72**	74	62
Nexium: sale of rights	**62**	75	–
Other Collaboration Revenue	**75**	64	81
	1,353	876	727

[1] Alliance revenue (previously referred to as share of gross profits) comprises income arising from collaborative arrangements, where AstraZeneca is entitled to a share of gross profits but does not lead on the commercialisation in the territory and so does not recognise Product Sales. Alliance revenue is included within Collaboration Revenue.

Collaboration Revenue includes some income that does not arise from the satisfaction of performance obligations, in particular profit share entitlements arising from product sales made by collaborators who have licenced intellectual property to AstraZeneca. $607m of Collaboration Revenue in 2022 (2021: $200m; 2020: $128m) relates to such income. Substantially all other Collaboration Revenue relates to performance obligations satisfied in prior periods.

2 Operating profit

Operating profit includes the following significant items:

Cost of sales

In 2022, Cost of sales includes a charge of $3,484m (2021: charge of $2,198m) in relation to the release, in line with sales, of fair value uplift to inventory that was recognised under IFRS 3 'Business Combinations' upon the acquisition of Alexion (see Note 27).

During the year no government grants were recognised within Cost of sales (2021: $290m; 2020: $nil). The grants recognised in 2021 related to funding of manufactured *Vaxzevria* product for the US government, which expired prior to being accepted by the FDA.

Selling, general and administrative expense

In 2022, Selling, general and administrative expense includes a charge of $182m (2021: charge of $42m; 2020: credit of $51m) resulting from changes in the fair value of contingent consideration arising from the acquisition of the diabetes alliance from 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 2022, Selling, general and administrative costs includes a credit of $49m (2021: charge of $5m; 2020: credit of $143m) resulting from changes in the fair value of contingent consideration arising from the acquisition of Almirall's respiratory business. These adjustments reflect revised estimates for future sales performance for the products acquired and, as a result, revised estimates for future milestones payable.

In 2022, Selling, general and administrative expense also includes a charge of $789m (2021: charge of $48m; 2020: credit of $9m) relating to a number of legal proceedings including settlements in various jurisdictions in relation to several marketed products (see Note 30).

Research and development expense: Government grants

During the year $113m (2021: $531m; 2020: $222m) of government grants were recognised within Research and development expense. The grants recognised relate to funding for research and development and related expenses for *Evusheld* of $112m (2021: $222m; 2020: $61m) and *Vaxzevria* of $1m (2021: $309m; 2020: $161m).

Other operating income and expense

	2022 $m	2021 $m	2020 $m
Royalty income	**59**	62	147
Gains on disposal of intangible assets	**104**	513	1,030
Gains on disposal of investments in associates and joint ventures	**–**	776	–
Net gains/(losses) on disposal of other non-current assets	**112**	(4)	25
Impairment of property, plant and equipment	**–**	–	(12)
Other income[1]	**439**	453	406
Other expense	**(200)**	(308)	(68)
Other operating income and expense	**514**	1,492	1,528

[1] Other income in 2022 includes $138m of payments from Allergan in respect of the development of brazikumab (2021: $99m; 2020: $107m).

Gains on disposal of intangible assets in 2021 includes $317m on disposal of rights to *Crestor* in over 30 countries in Europe, except in the UK and Spain.

Gains on disposal of intangible assets in 2020 includes $350m on disposal of global rights excluding US, India and Japan to established hypertension medicines to Atnahs Pharma, $400m on disposal of rights in over 70 countries to *Atacand* to Cheplapharm and $120m on the sale of an FDA Priority Review Voucher.

Net gains/(losses) on disposal of other non-current assets in 2022 includes a $125m gain in respect of the Waltham R&D site sale and leaseback in MA, US (see Note 8).

Gains on disposal of investments in associates and joint ventures in 2021 relates to the disposal of the 26.7% ownership in Viela Bio, as part of the acquisition of Viela by Horizon Therapeutics plc. AstraZeneca received cash proceeds and profit of $776m upon closing, with the profit recorded as Other operating income.

As part of the total consideration received in respect of the agreement to sell US rights to *Synagis* in 2019, $210m in total has been received related to the rights to participate in the future cash flows from the US profits or losses for nirsevimab. The full amount has been recognised as a financial liability as the Group has not fully transferred the risks and rewards of the underlying cash flows arising from nirsevimab to Sobi. This liability is presented in Other payables within Non-current liabilities. The associated cash flow is presented within investing activities as the Group has received the cash in exchange for agreeing to transfer future cash flows relating to an intangible asset. In 2021, as a result of the Probability of Technical/Regulatory Success unwind, an increase of $114m to the Profit Participation Liability was recorded in Other operating expense.

Restructuring costs

In conjunction with the acquisition of Alexion in 2021, the enlarged Group initiated a comprehensive Post Alexion Acquisition Group Review, aimed at integrating systems, structure and processes, optimising the global footprint and prioritising resource allocations and investments. These activities are expected to be substantially complete by the end of 2025, with a number of planned activities having commenced in late 2021 and during 2022. The Group has also continued to progress other legacy restructuring programmes.

During 2022, the Group has incurred $717m of restructuring costs, of which $675m resulted from activities that are part of the Post Alexion Acquisition Group Review, bringing the cumulative charges under this programme to $1,705m. Costs in 2022 included $266m within Cost of sales due to the rationalisation of our manufacturing capacity and footprint across certain production sites, $152m within Selling, general and administrative expenses in relation to the transfer of Alexion's distribution contracts with third parties to AstraZeneca Group companies, and $83m in Selling, general and administrative expenses related to rationalisation of commercial teams in China.

Total restructuring costs in 2022 include impairment reversal of Property, plant and equipment of $4m (2021: charge of $343m; 2020: charge of $7m) and impairment reversal of Intangible assets (software development costs) of $17m (2021: charge of $16m; 2020: $nil).

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 21.

	2022 $m	2021 $m	2020 $m
Cost of sales	**266**	722	53
Distribution expense	**2**	–	–
Research and development expense	**111**	223	35
Selling, general and administrative expense	**405**	338	162
Other operating income and expense	**(67)**	–	1
Total charge	**717**	1,283	251

	2022 $m	2021 $m	2020 $m
Severance costs	**187**	217	26
Accelerated depreciation and impairment charges	**135**	371	17
Other[1]	**395**	695	208
Total charge	**717**	1,283	251

[1] Other costs are those incurred in designing and implementing the Group's various restructuring initiatives, including costs of integrating systems, structure and processes as part of our Post Alexion Acquisition Group Review, costs relating to the Alexion acquisition, 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:

	2022 $m	2021 $m	2020 $m
Gains/(losses) on forward foreign exchange contracts	**150**	(21)	(86)
(Losses)/gains on receivables and payables	**(203)**	(42)	89
Total	**(53)**	(63)	3

Impairment charges

Details of impairment charges for 2022, 2021 and 2020 are included in Notes 7, 8 and 10.

3 Finance income and expense

	2022 $m	2021 $m	2020 $m
Finance income			
Returns on deposits and equity securities	**78**	12	41
Fair value gains on debt and interest rate swaps	**14**	–	4
Discount unwind on other long-term assets	**–**	–	6
Interest income on income tax balances	**3**	31	36
Total	**95**	43	87
Finance expense			
Interest on debt, leases and other financing costs	**(889)**	(774)	(736)
Net interest on post-employment defined benefit plan net liabilities (Note 22)	**(29)**	(26)	(37)
Net exchange losses	**(16)**	(20)	(34)
Discount unwind on contingent consideration arising from business combinations (Note 20)	**(168)**	(226)	(278)
Discount unwind on other long-term liabilities[1]	**(216)**	(248)	(219)
Fair value losses on debt and interest rate swaps	**–**	(4)	–
Interest expense on income tax balances	**(28)**	(2)	(2)
Total	**(1,346)**	(1,300)	(1,306)
Net finance expense	**(1,251)**	(1,257)	(1,219)

[1] Included within Discount unwind on other long-term liabilities is $108m relating to the Acerta Pharma share purchase liability (2021: $161m; 2020: $151m), see Note 20 for further details.

There was no interest capitalised during the year.

Financial instruments

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

	2022 $m	2021 $m	2020 $m
Interest and fair value adjustments in respect of debt designated at fair value through profit or loss, net of derivatives	**(9)**	(5)	(8)
Interest and changes in carrying values of debt designated as hedged items in fair value hedges, net of derivatives	**–**	(9)	(6)
Interest and fair value changes on fixed and short-term deposits, equity securities, other derivatives and tax balances	**54**	16	42
Interest on debt, commercial paper, overdrafts and lease liabilities held at amortised cost	**(837)**	(738)	(660)

The interest rate fair value hedges were closed in 2021. Fair value gain or loss of $nil (2021: loss of $33m; 2020: gain of $33m) on interest rate fair value hedging instruments and $nil fair value gain or loss (2021: gain of $29m; 2020: loss of $32m) on the related hedged items have been included within Interest and changes in carrying values of debt designated as hedged items, net of derivatives.

Fair value loss of $25m (2021: loss of $19m; 2020: gain of $2m) on derivatives related to debt instruments designated at fair value through profit or loss and $26m fair value gain (2021: gain of $19m; 2020: loss of $3m) 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.

4 Taxation

Taxation charge/(credit) recognised in the Consolidated Statement of Comprehensive Income is as follows:

	2022 $m	2021 $m	2020 $m
Current tax			
Current year	**1,823**	1,200	981
Adjustment to prior years	**(187)**	(5)	(10)
Total	**1,636**	1,195	971
Deferred tax			
Origination and reversal of temporary differences	**(2,563)**	(1,417)	(178)
Adjustment to prior years	**135**	(158)	(21)
Total	**(2,428)**	(1,575)	(199)
Taxation (credit)/charge recognised in the profit for the period	**(792)**	(380)	772

Taxation (charge)/credit recognised in Other comprehensive income is as follows:

	2022 $m	2021 $m	2020 $m
Current and deferred tax			
Items that will not be reclassified to profit or loss:			
Remeasurement of the defined benefit liability	**(231)**	(117)	36
Equity investments measured at fair value through Other comprehensive income	**15**	27	(180)
Movement in deferred taxes relating to changes in tax rates	**–**	195	63
Total	**(216)**	105	(81)
Items that may be reclassified subsequently to profit or loss:			
Foreign exchange arising on designated liabilities in net investment hedges[1]	**73**	43	(61)
Fair value movement on cash flow hedges[2]	**–**	(5)	22
Movement in deferred taxes relating to changes in tax rates	**–**	8	–
Total	**73**	46	(39)
Taxation (charge)/credit recognised in Other comprehensive income	**(143)**	151	(120)

[1] Previously reported as Foreign exchange arising on consolidation.
[2] Previously reported within Foreign exchange arising on designated liabilities in net investment hedges.

The reported tax rate in the year was (32)% and included a one-time favourable net adjustment of $876m to deferred taxes arising from an internal reorganisation to integrate the Alexion organisation which took place in the year. The internal legal entity reorganisation did not result in any corporate income tax becoming payable in the year, however it did result in a one-off deferred tax adjustment of $876m to the income statement and a further $49m credit included in Other comprehensive income. Following the reorganisation, it was necessary to re-measure certain deferred tax balances to reflect the tax rates applicable on their reversal, as under the revised structure there is a change in the income flows to the relevant territories. The 2022 reported tax rate also benefited from Intellectual Property incentive regimes, geographical mix of profits and favourable adjustments to prior year tax liabilities in a number of major jurisdictions, many of which were one-time items.

The income tax paid for the year was $1,623m.

Taxation has been provided at current rates on the profits earned for the periods covered by the Group Financial Statements. The 2022 prior period current tax adjustment relates mainly to tax accrual to tax return adjustments and updates to liabilities for uncertain tax positions. The 2021 prior period current tax adjustment relates mainly to tax accrual to tax return adjustments. The 2020 prior period current tax adjustment relates mainly to net reductions in liabilities for uncertain tax positions and tax accrual to tax return adjustments.

The 2022 prior period deferred tax adjustments relate mainly to tax accrual to tax return adjustments and updates to liabilities for uncertain tax positions. The 2021 prior period deferred tax adjustments relate mainly to tax accrual to tax return adjustments and updates to estimates of prior period tax liabilities following settlements with tax authorities. The 2020 prior period deferred tax adjustments relate mainly to tax accrual to tax return adjustments offset by net increases in liabilities for uncertain tax positions.

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. Unremitted earnings or differences in the carrying value and tax basis of investments may be liable to additional taxes if distributed as dividends or on a liquidation event. Deferred tax is provided for such differences in relation to Group entities where management is intending to remit earnings in the foreseeable future. The aggregate amount of gross temporary differences associated with investments in subsidiaries, partnerships and branches for which deferred tax liabilities have not been recognised totalled approximately $5,454m at 31 December 2022, $2,113m of which has a corresponding deductible temporary difference of the same gross value which is not recognised as it is not probable of reversing in the foreseeable future but on which different tax rates apply.

4 Taxation *continued*

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 2021, the UK Government enacted legislation to increase the main rate of UK statutory Corporation Tax to 25% effective 1 April 2023. In December 2021, the OECD issued model rules for a new global minimum tax framework (Pillar Two) and in 2022, the UK released draft legislation including the intention to bring these into effect for accounting periods commencing after 31 December 2023. AstraZeneca expects to fall within the global minimum tax framework which requires calculation of a new measure of effective tax rate by legal entity. It is possible that this may result in top-up taxes in some territories in which AstraZeneca operates. Whilst the UK released draft legislation that has not been substantively enacted at 31 December 2022, we are continuing to review the draft rules, and the IASB's staff paper and initial consideration, published in November 2022, to understand any potential impacts.

Tax reconciliation to UK statutory rate

The table below reconciles the UK statutory tax charge to the Group's total tax (credit)/charge:

	2022 $m	2021 $m	2020 $m
Profit/(loss) before tax	**2,501**	(265)	3,916
Notional taxation charge at UK corporation tax rate of 19%	**475**	(50)	744
Differences in effective overseas tax rates	**(59)**	1	(49)
Deferred tax (credit)/charge relating to change in tax rates[1]	**(108)**	54	138
Unrecognised deferred tax asset[2]	**68**	32	3
Items not deductible for tax purposes	**90**	208	71
Items not chargeable for tax purposes	**–**	(163)	(4)
Intellectual Property incentive regimes[3]	**(265)**	–	(35)
Other items[4]	**(941)**	(299)	(65)
Adjustments in respect of prior periods[5]	**(52)**	(163)	(31)
Total tax (credit)/charge for the period	**(792)**	(380)	772

[1] The 2022 item relates to the impact of the US state tax rate change and the impact of the difference in the UK current tax and deferred tax rates during 2022. The 2021 item relates to substantive enactment of the increase in UK Corporation Tax rate from 19% to 25% effective 1 April 2023 (debit of $12m), the increase in the Dutch Corporate Income Tax rate from 25% to 25.8% effective 1 January 2022 (debit of $39m) and other (debit of $3m). The 2020 item relates to the increase in the 2020 substantively enacted Dutch Corporate Income Tax rate (debit of $151m) and other (debit of $5m). In 2020, it was substantively enacted that the planned reduction in the Dutch Corporate Income Tax rate to 21.7% from 25% effective 1 January 2021 would not take place. In addition, the planned reduction in the UK corporation tax rate to 17% was not enacted with the corporation tax rate remaining at 19% (credit of $18m).

[2] The 2022 item relates to the derecognition of previously recognised deferred tax assets. The 2021 item includes a $15m debit arising on derecognition of previously recognised deferred tax assets. The 2020 item includes a $22m credit arising on recognition of previously unrecognised deferred tax assets.

[3] Previously reported within Items not deductible for tax purposes.

[4] Other items in 2022 relate to the aforementioned one-time favourable net adjustment of $876m to deferred taxes arising from an internal reorganisation to integrate the Alexion organisation which took place in 2022 and a credit of $65m relating to the reduction of tax liabilities arising from adjustments on expiry of the relevant statute of limitations. Other items in 2021 relate to a net credit of $299m relating to the reduction of tax liabilities arising from updates to estimates of prior period tax liabilities following settlements with tax authorities and on expiry of the relevant statute of limitations partially offset by a provision for transfer pricing and other uncertain tax treatments. Other items in 2020 relate to a net credit of $65m relating to the release of tax liabilities following the expiry of the relevant statute of limitations partially offset by a provision for transfer pricing and other uncertain tax treatments.

[5] Further details explaining the adjustments in respect of prior periods are set out on page 153.

AstraZeneca is domiciled in the UK but operates in other countries where the tax rates and laws are different to those in the UK. The impact on 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. The Group receives tax incentives in relation to Intellectual Property incentives in certain jurisdictions, resulting in a reduction to the tax charge in the income statement of $265m in 2022.

Deferred tax

The total movement in the net deferred tax balance in the year was $2,195m. The movements are as follows:

	Intangibles, property, plant and equipment[1] $m	Pension and post-retirement benefits $m	Elimination of unrealised profit on inventory $m	Untaxed reserves[2] $m	Losses and tax credits carried forward $m	Accrued expenses and other $m	Total $m
Net deferred tax balance at 1 January 2020	(2,265)	561	1,293	(598)	546	691	228
Income statement	(226)	(64)	444	(92)	136	1	199
Other comprehensive income	(78)	101	–	(1)	–	72	94
Equity	–	–	–	–	–	(16)	(16)
Exchange	(58)	58	70	(110)	32	23	15
Net deferred tax balance at 31 December 2020	(2,627)	656	1,807	(801)	714	771	520
Income statement	782	(166)	(59)	(139)	307	850	1,575
Other comprehensive income	52	83	–	–	–	40	175
Equity	–	–	–	–	–	14	14
Additions through business combinations[3]	(3,744)	13	166	–	507	(1,116)	(4,174)
Exchange	57	(33)	(53)	78	(10)	(25)	14
Net deferred tax balance at 31 December 2021	(5,480)	553	1,861	(862)	1,518	534	(1,876)
Income statement[4]	**1,414**	**(55)**	**274**	**38**	**(126)**	**883**	**2,428**
Other comprehensive income	**72**	**(231)**	**–**	**–**	**–**	**16**	**(143)**
Equity	**–**	**–**	**–**	**–**	**–**	**38**	**38**
Exchange	**63**	**(36)**	**(111)**	**108**	**(134)**	**(18)**	**(128)**
Net deferred tax balance at 31 December 2022[5]	**(3,931)**	**231**	**2,024**	**(716)**	**1,258**	**1,453**	**319**

[1] Includes deferred tax of $281m on contingent consideration liabilities in respect of intangibles.

[2] Untaxed reserves relate to taxable profits where the tax liability is deferred to later periods.

[3] The deferred tax liability of $4,174m relates to deferred tax on purchase accounting adjustments arising from the acquisition of Alexion (Note 27). Accrued expenses and other includes the deferred tax on the purchase accounting of inventory.

[4] The income statement movement in 2022 includes the aforementioned net adjustment to deferred taxes of $876m arising on the internal legal entity reorganisation to integrate the Alexion organisation, the majority of which arises on Intangibles, property, plant and equipment.

[5] The Group recognises deferred tax assets to the extent that there are either taxable temporary differences or that it is probable that sufficient future taxable profits will arise, against which these deductible temporary differences can be utilised. The US includes a net deferred tax asset of $283m and the UK includes a net deferred tax asset of $503m as at 31 December 2022 which include tax losses and other deductible temporary differences. The Group has performed an assessment of recovery of deferred tax assets and for these entities, the Group has forecasted future taxable profits and considers that it is probable that sufficient future taxable profits will arise against which these deductible temporary differences can be utilised. In arriving at these forecasts, the Group has reviewed the Group-level budgets and forecasts and the ability of those entities to generate future income from developing and commercialising products, including local tax laws and the scheduling of reversal of deductible temporary differences. Deferred tax assets are recognised on the basis there is sufficient forecast future taxable profits arising from the performance of on-market products and pipeline assets, including *Imfinzi*. For the UK, losses are forecast to be utilised within five years. For the US, recognised deferred taxes on losses and other items are forecast to be utilised within 15 years. It is considered that these sources of income are sufficiently predictable or diversified to support a recognition period in excess of five years. A sensitivity assessment has been performed which shows that a change in profit of 10% results in an immaterial adjustment to the amount of deferred tax asset recognised. Assessing the availability of future taxable income to support recognition of deferred tax assets relies upon our Group forecasts and changes in these Group forecasts will impact the recoverability of deferred tax assets. To the extent that there are neither taxable temporary differences nor sufficient taxable profits, no deferred tax asset is recognised and details of unrecognised deferred tax assets are included in the table below.

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

	Intangibles, property, plant and equipment $m	Pension and post-retirement benefits $m	Elimination of unrealised profit on inventory $m	Untaxed reserves $m	Losses and tax credits carried forward $m	Accrued expenses and other $m	Total $m
Deferred tax assets at 31 December 2020	1,061	690	2,286	–	852	1,130	6,019
Deferred tax liabilities at 31 December 2020	(3,688)	(34)	(479)	(801)	(138)	(359)	(5,499)
Net deferred tax balance at 31 December 2020	(2,627)	656	1,807	(801)	714	771	520
Deferred tax assets at 31 December 2021	1,476	574	1,910	–	1,571	1,735	7,266
Deferred tax liabilities at 31 December 2021	(6,956)	(21)	(49)	(862)	(53)	(1,201)	(9,142)
Net deferred tax balance at 31 December 2021	(5,480)	553	1,861	(862)	1,518	534	(1,876)
Deferred tax assets at 31 December 2022	**1,499**	**276**	**2,048**	**–**	**1,274**	**1,614**	**6,711**
Deferred tax liabilities at 31 December 2022	**(5,430)**	**(45)**	**(24)**	**(716)**	**(16)**	**(161)**	**(6,392)**
Net deferred tax balance at 31 December 2022	**(3,931)**	**231**	**2,024**	**(716)**	**1,258**	**1,453**	**319**

4 Taxation *continued*

Analysed in the Consolidated Statement of Financial Position, after offset of balances within countries, as follows:

	2022 $m	2021 $m	2020 $m
Deferred tax assets	**3,263**	4,330	3,438
Deferred tax liabilities	**(2,944)**	(6,206)	(2,918)
Net deferred tax balance	**319**	(1,876)	520

Unrecognised deferred tax assets

Deferred tax assets (DTA) of $807m (2021: $719m; 2020: $428m) have not been recognised in respect of deductible temporary differences because it is not probable that future taxable profit will be available against which the Group can utilise the benefits therefrom.

	2022 Temporary differences $m	**2022 Unrecognised DTA $m**	2021 Temporary differences $m	2021 Unrecognised DTA $m	2020 Temporary differences $m	2020 Unrecognised DTA $m
Trading and capital losses expiring:						
Within 10 years	**104**	**26**	4	1	2	–
More than 10 years	**153**	**32**	53	11	–	–
Indefinite	**686**	**163**	300	79	234	63
	943	**221**	357	91	236	63
Tax credits and State tax losses expiring:						
Within 10 years		**115**		101		36
More than 10 years		**384**		441		255
Indefinite		**87**		86		74
		586		628		365
Total		**807**		719		428

5 Earnings per $0.25 Ordinary Share

	2022	2021	2020
Profit for the year attributable to equity holders ($m)	**3,288**	112	3,196
Basic earnings per Ordinary Share	**$2.12**	$0.08	$2.44
Diluted earnings per Ordinary Share	**$2.11**	$0.08	$2.44
Weighted average number of Ordinary Shares in issue for basic earnings (millions)	**1,548**	1,418	1,312
Dilutive impact of share options outstanding (millions)	**12**	9	1
Diluted weighted average number of Ordinary Shares in issue (millions)	**1,560**	1,427	1,313

The earnings figures used in the calculations above are post-tax. The weighted average number of Ordinary Shares in issue is calculated by taking the number of Ordinary Shares outstanding each day weighted by the number of days that those shares were outstanding.

6 Segment information

The Group has reviewed its assessment of reportable segments under IFRS 8 'Operating Segments' and concluded that the Group continues to have one reportable segment.

KJ This determination is considered to be a Key Judgement and this judgement has been taken with reference to the following factors:

1 The level of integration across the different functions of the Group's pharmaceutical business:
AstraZeneca is engaged in a single business activity of pharmaceuticals and the Group does not have multiple operating segments. AstraZeneca's pharmaceuticals 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.

2 The identification of the Chief Operating Decision Maker (CODM) and the nature and extent of the financial information reviewed by the CODM:
The SET, established and chaired by the CEO, is the vehicle through which the CEO exercises the authority delegated to him from the Board for the management, development and performance of AstraZeneca as a whole. It is considered that the SET is AstraZeneca's Chief Operating Decision Making body (as defined by IFRS 8). The operation of the SET is principally driven by the management of the Commercial operations, R&D, manufacturing and supply and enabling functions. All significant operating decisions are undertaken 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 ability of the enterprise to develop, produce, deliver and commercialise a wide range of pharmaceutical products are central to the SET decision-making process.

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. The focus of additional financial information reviewed is at brand sales and gross margin level within specific geographies. Expenditure analysis is completed for the science units, operations and enabling functions; there is no allocation of these centrally managed Group costs to the individual product or brands. The bonus of SET members' continues to be derived from the Group scorecard outcome as discussed in our Directors' Remuneration Report.

3 How resources are allocated:
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 Late-Stage Product Committees.

Geographic areas

The following table shows information for Total Revenue by geographic area and material countries. The additional tables show the Operating profit and Profit before tax made by companies located in that area, together with Non-current assets, Total assets, assets acquired, net operating assets, and Property, plant and equipment owned by the same companies. Product Sales by geographic market are included in the area/country where the legal entity resides and from which those sales were made.

	Total Revenue		
	2022 $m	2021 $m	2020 $m
UK	**3,117**	3,245	1,741
Rest of Europe			
France	**1,107**	915	653
Germany	**1,902**	1,486	937
Italy	**735**	577	431
Spain	**738**	578	398
Sweden	**1,721**	2,322	1,026
Others	**2,706**	1,949	1,391
	8,909	7,827	4,836
The Americas			
Canada	**1,166**	772	596
US	**17,278**	12,047	8,955
Others	**1,175**	1,203	761
	19,619	14,022	10,312
Asia, Africa & Australasia			
Australia	**571**	547	282
China	**5,743**	6,002	5,345
Japan	**3,986**	3,395	2,567
Others	**2,406**	2,379	1,534
	12,706	12,323	9,728
Total Revenue	**44,351**	37,417	26,617

Total Revenue outside of the UK totalled $41,234m for the year ended 31 December 2022 (2021: $34,172m; 2020: $24,876m).

6 Segment information *continued*

	Operating profit/(loss)			Profit/(loss) before tax		
	2022 $m	2021 $m	2020 $m	**2022 $m**	2021 $m	2020 $m
UK	**1,120**	(950)	824	**272**	(1,477)	518
Rest of Europe	**2,945**	2,999	2,838	**2,709**	2,682	2,356
The Americas	**(954)**	(1,936)	758	**(1,140)**	(2,401)	297
Asia, Africa & Australasia	**646**	943	742	**660**	931	745
Continuing operations	**3,757**	1,056	5,162	**2,501**	(265)	3,916

	Non-current assets[1]			Total assets		
	2022 $m	2021 $m	2020 $m	**2022 $m**	2021 $m	2020 $m
UK	**8,635**	7,692	7,900	**16,786**	16,615	17,851
Rest of Europe	**35,093**	39,171	15,821	**40,669**	48,383	19,738
The Americas	**25,736**	26,570	18,501	**32,990**	34,301	23,640
Asia, Africa & Australasia	**1,089**	1,254	1,354	**6,038**	6,064	5,500
Continuing operations	**70,553**	74,687	43,576	**96,483**	105,363	66,729

	Assets acquired[2]			Net operating assets[3]		
	2022 $m	2021 $m	2020 $m	**2022 $m**	2021 $m	2020 $m
UK	**2,301**	810	1,611	**3,863**	3,239	5,244
Rest of Europe	**522**	26,527	505	**32,726**	40,161	10,242
The Americas	**421**	10,810	286	**23,290**	24,786	15,697
Asia, Africa & Australasia	**51**	94	116	**1,895**	736	607
Continuing operations	**3,295**	38,241	2,518	**61,774**	68,922	31,790

[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) and include those acquired through business combinations (Note 27).
[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		
	2022 $m	2021 $m	2020 $m
UK	**2,526**	2,542	2,227
Ireland	**1,040**	969	–
Sweden	**1,472**	1,593	1,755
US	**2,176**	2,660	2,662
Rest of the world	**1,293**	1,419	1,607
Continuing operations	**8,507**	9,183	8,251

Geographic markets

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

	2022 $m	2021 $m	2020 $m
UK	**996**	1,206	611
Rest of Europe	**7,503**	6,792	4,446
The Americas	**20,126**	14,893	10,004
Asia, Africa & Australasia	**14,373**	13,650	10,829
Continuing operations	**42,998**	36,541	25,890

Product Sales are recognised when control of the goods has been transferred to a third party. A significant proportion of this is upon delivery of the products to wholesalers. One wholesaler (2021: one; 2020: one) individually represented greater than 10% of Product Sales. The value of Product Sales to this wholesaler was $5,387m (2021: $4,862m; 2020: $3,321m).

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 2020	5,532	7,383	2,086	15,001
Capital expenditure	10	42	874	926
Transfer of assets into use	137	462	(599)	–
Disposals and other movements	(48)	(615)	(18)	(681)
Exchange adjustments	220	466	135	821
At 31 December 2020	5,851	7,738	2,478	16,067
Additions through business combinations (Note 27)	542	339	254	1,135
Capital expenditure	9	31	1,112	1,152
Transfer of assets into use	236	611	(847)	–
Disposals and other movements	(92)	(469)	(200)	(761)
Exchange adjustments	(169)	(347)	(69)	(585)
At 31 December 2021	6,377	7,903	2,728	17,008
Capital expenditure	**5**	**19**	**1,042**	**1,066**
Transfer of assets into use	**226**	**683**	**(909)**	**–**
Transferred to Assets held for sale (Note 18)	**(434)**	**(293)**	**–**	**(727)**
Disposals and other movements	**(425)**	**(146)**	**28**	**(543)**
Exchange adjustments	**(309)**	**(610)**	**(236)**	**(1,155)**
At 31 December 2022	**5,440**	**7,556**	**2,653**	**15,649**
Depreciation and impairment				
At 1 January 2020	2,505	4,808	–	7,313
Depreciation charge for the year	227	462	–	689
Impairment (reversal)/charge	(1)	2	12	13
Disposals and other movements	(42)	(606)	(12)	(660)
Exchange adjustments	137	324	–	461
At 31 December 2020	2,826	4,990	–	7,816
Depreciation charge for the year	231	493	–	724
Impairment (reversal)/charge	(1)	121	223	343
Disposals and other movements	(74)	(428)	(223)	(725)
Exchange adjustments	(105)	(228)	–	(333)
At 31 December 2021	2,877	4,948	–	7,825
Depreciation charge for the year	**286**	**566**	**–**	**852**
Impairment charge/(reversal)	**20**	**8**	**(28)**	**–**
Transferred to Assets held for sale (Note 18)	**(300)**	**(277)**	**–**	**(577)**
Disposals and other movements	**(227)**	**(188)**	**28**	**(387)**
Exchange adjustments	**(167)**	**(404)**	**–**	**(571)**
At 31 December 2022	**2,489**	**4,653**	**–**	**7,142**
Net book value				
At 31 December 2020	3,025	2,748	2,478	8,251
At 31 December 2021	3,500	2,955	2,728	9,183
At 31 December 2022	**2,951**	**2,903**	**2,653**	**8,507**

Impairment charges in 2021 totalling $343m were recognised for Plant and equipment and Assets in course of construction due to the rationalisation of our manufacturing capacity and footprint across certain production sites as a result of restructuring programmes, including the Post Alexion Acquisition Group Review (see Note 2). These charges were recognised in Cost of sales. The revised carrying value of the impacted assets is nil, under fair value less costs to sell.

	2022 $m	2021 $m	2020 $m
The net book value of land and buildings comprised:			
Freeholds	**2,555**	2,985	2,583
Leaseholds	**396**	515	442

8 Leases

Right-of-use assets

	Land and buildings $m	Motor vehicles $m	Other $m	Total right-of-use assets $m
Cost				
At 1 January 2020	627	202	22	851
Additions – separately acquired	87	89	15	191
Disposals and other movements	–	(27)	(2)	(29)
Exchange adjustments	21	8	1	30
At 31 December 2020	735	272	36	1,043
Additions through business combinations (Note 27)	255	8	–	263
Additions – separately acquired	145	98	2	245
Disposals and other movements	25	(44)	(4)	(23)
Exchange adjustments	(27)	(13)	(1)	(41)
At 31 December 2021	1,133	321	33	1,487
Additions through business combinations	**4**	**–**	**–**	**4**
Additions – separately acquired	**140**	**81**	**14**	**235**
Disposals and other movements	**(33)**	**(58)**	**(13)**	**(104)**
Exchange adjustments	**(62)**	**(15)**	**(2)**	**(79)**
At 31 December 2022	**1,182**	**329**	**32**	**1,543**
Depreciation and impairment				
At 1 January 2020	132	64	8	204
Depreciation charge for the year	131	75	9	215
Disposals and other movements	(24)	(26)	(4)	(54)
Exchange adjustments	8	4	–	12
At 31 December 2020	247	117	13	377
Depreciation charge for the year	144	85	6	235
Disposals and other movements	(54)	(42)	–	(96)
Exchange adjustments	(11)	(6)	–	(17)
At 31 December 2021	326	154	19	499
Depreciation charge for the year	**160**	**80**	**6**	**246**
Impairment charge	**2**	**–**	**–**	**2**
Disposals and other movements	**(54)**	**(50)**	**(10)**	**(114)**
Exchange adjustments	**(23)**	**(8)**	**(1)**	**(32)**
At 31 December 2022	**411**	**176**	**14**	**601**
Net book value				
At 31 December 2020	488	155	23	666
At 31 December 2021	807	167	14	988
At 31 December 2022	**771**	**153**	**18**	**942**

Lease Liability

	2022 $m	2021 $m	2020 $m
The present value of lease liabilities is as follows:			
Within one year	**(228)**	(233)	(192)
Later than one year and not later than five years	**(549)**	(544)	(389)
Later than five years	**(176)**	(210)	(100)
Total lease liabilities	**(953)**	(987)	(681)

The interest expense on lease liabilities included within finance costs was $24m (2021: $22m; 2020: $21m).

The total cash outflow for leases in 2022 was $268m (2021: $262m; 2020: $228m).

The discount rates used for calculating the present value of lease liabilities range from 0% to 63%.

The Group has entered into lease contracts that have not yet commenced. The nominal value of estimated future lease payments under these lease contracts approximates $1,460m as of 31 December 2022. Of this value, $1,349m relates to a property lease in the US which is expected to commence in 2026 with a lease term of 15 years.

The Group entered into a sale and leaseback agreement in relation to the Waltham R&D site in MA, US in 2022. Prior to the sale, the carrying value of the Property, plant and equipment was $124m. Cash proceeds of $265m have been received, recorded within Disposal of property, plant and equipment within the Consolidated Statement of Cash Flows, and a gain on disposal of $125m has been recorded within Other operating income and expense within the Consolidated Statement of Comprehensive Income. A lease liability and a corresponding right-of-use asset have been recorded of $28m and $13m, respectively.

9 Goodwill

	2022 $m	2021 $m	2020 $m
Cost			
At 1 January	**20,311**	12,164	11,982
Additions through business combinations (Note 27)	**15**	8,287	–
Exchange and other adjustments	**(195)**	(140)	182
At 31 December	**20,131**	20,311	12,164
Amortisation and impairment losses			
At 1 January	**314**	319	314
Exchange and other adjustments	**(3)**	(5)	5
At 31 December	**311**	314	319
Net book value			
At 31 December	**19,820**	19,997	11,845

Goodwill is tested for impairment at the operating segment level, this being the level at which goodwill is monitored for internal management purposes. As detailed in Note 6, the Group does not have multiple operating segments and is engaged in a single business activity of pharmaceuticals.

Recoverable amount is determined on a fair value less costs to sell basis using the market value of the Company's outstanding Ordinary Shares. Our market capitalisation is compared to the book value of the Group's net assets and this indicates a significant surplus at 31 December 2022 (and 31 December 2021 and 31 December 2020). No goodwill impairment was identified.

10 Intangible assets

	Product, marketing and distribution rights $m	Other intangibles $m	Software development costs $m	Total $m
Cost				
At 1 January 2020	40,654	2,649	1,781	45,084
Additions – separately acquired	1,454	2	136	1,592
Disposals	(970)	(66)	(636)	(1,672)
Exchange and other adjustments	1,539	57	7	1,603
At 31 December 2020	42,677	2,642	1,288	46,607
Additions through business combinations (Note 27)	26,455	430	70	26,955
Additions – separately acquired	587	6	119	712
Transferred to Assets held for sale (Note 18)	(1,266)	(47)	–	(1,313)
Disposals	(801)	(402)	(23)	(1,226)
Exchange and other adjustments	(1,062)	(18)	(22)	(1,102)
At 31 December 2021	66,590	2,611	1,432	70,633
Additions through business combinations (Note 27)	**–**	**46**	**–**	**46**
Additions – separately acquired	**2,051**	**12**	**105**	**2,168**
Disposals	**(57)**	**(105)**	**(36)**	**(198)**
Exchange and other adjustments	**(1,799)**	**(122)**	**(106)**	**(2,027)**
At 31 December 2022	**66,785**	**2,442**	**1,395**	**70,622**
Amortisation and impairment losses				
At 1 January 2020	20,605	2,097	1,549	24,251
Amortisation for year	1,872	59	61	1,992
Impairment charges	405	–	–	405
Impairment reversals	(165)	–	–	(165)
Disposals	(899)	(66)	(636)	(1,601)
Exchange and other adjustments	746	38	(6)	778
At 31 December 2020	22,564	2,128	968	25,660
Amortisation for year	2,908	172	63	3,143
Impairment charges	2,067	–	18	2,085
Transferred to Assets held for sale (Note 18)	(931)	(14)	–	(945)
Disposals	(797)	(402)	(21)	(1,220)
Exchange and other adjustments	(535)	(21)	(26)	(582)
At 31 December 2021	25,276	1,863	1,002	28,141
Amortisation for year	**3,899**	**181**	**76**	**4,156**
Impairment charges	**236**	**82**	**–**	**318**
Impairment reversals	**(77)**	**–**	**(17)**	**(94)**
Disposals	**(55)**	**(105)**	**(20)**	**(180)**
Exchange and other adjustments	**(887)**	**(76)**	**(63)**	**(1,026)**
At 31 December 2022	**28,392**	**1,945**	**978**	**31,315**
Net book value				
At 31 December 2020	20,113	514	320	20,947
At 31 December 2021	41,314	748	430	42,492
At 31 December 2022	**38,393**	**497**	**417**	**39,307**

10 Intangible assets *continued*

	2022 $m	2021 $m	2020 $m
Net book value			
Current intangible assets	**–**	105	–
Non-current intangible assets	**39,307**	42,387	20,947
At 31 December	**39,307**	42,492	20,947

Other intangibles consist mainly of research and device technologies and the Alexion brand name. Included within Software development costs are assets currently in development that will commence amortisation when ready for use.

Included within Additions – separately acquired are amounts of $1,135m (2021: $124m; 2020: $835m), relating to deferred payments and other non-cash consideration for the acquisition of Product, marketing and distribution rights, which are not reflected in the current year Consolidated Statement of Cash Flows. Disposals include amounts related to fully depreciated assets that are no longer in use by the Group.

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 2020				
Cost of sales	66	–	–	66
Research and development expense	–	29	–	29
Selling, general and administrative expense	1,806	28	61	1,895
Other operating income and expense	–	2	–	2
Total	1,872	59	61	1,992
Year ended 31 December 2021				
Cost of sales	66	–	–	66
Research and development expense	–	33	–	33
Selling, general and administrative expense	2,842	138	63	3,043
Other operating income and expense	–	1	–	1
Total	2,908	172	63	3,143
Year ended 31 December 2022				
Cost of sales	**32**	**–**	**–**	**32**
Research and development expense	**–**	**30**	**–**	**30**
Selling, general and administrative expense	**3,867**	**151**	**76**	**4,094**
Total	**3,899**	**181**	**76**	**4,156**

Net 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 2020				
Research and development expense	55	–	–	55
Selling, general and administrative expense	185	–	–	185
Total	240	–	–	240
Year ended 31 December 2021				
Research and development expense	1,464	–	–	1,464
Selling, general and administrative expense	603	–	18	621
Total	2,067	–	18	2,085
Year ended 31 December 2022				
Research and development expense	**95**	**–**	**–**	**95**
Selling, general and administrative expense	**64**	**82**	**(17)**	**129**
Total	**159**	**82**	**(17)**	**224**

Impairment charges and reversals

We perform a rigorous impairment trigger assessment for all our intangible assets. Intangible assets under development and not available for use are tested annually for impairment and other intangible assets are tested when there is an indication of impairment loss or reversal. Where testing is required, the recoverable amount of the assets is estimated in order to determine the extent of the impairment loss or reversal. Where it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the Cash Generating Unit (CGU) to which it belongs. The Group considers that as the intangible assets are linked to individual products and that product cash flows are considered to be largely independent of other product cash flows, the CGU for intangibles is at the product level. Group level budgets and forecasts include forecast capital investment and operational impacts related to sustainability projects, as well as inflationary impacts, and form the basis for the value in use models used for impairment testing.

An asset's recoverable amount is determined as the higher of an asset's or CGU's fair value less costs to sell or value in use, in both cases using discounted cash flow calculations where the asset's expected post-tax cash flows are risk-adjusted over their estimated remaining period of expected economic benefit. Where the value in use approach is used, the post-tax risk-adjusted cash flows are discounted using AstraZeneca's post-tax weighted average cost of capital (7% for 2022, 2021 and 2020), which is a nominal rate. There is no material difference in the approach taken to using pre-tax cash flows and a pre-tax rate compared to post-tax cash flows and a post-tax rate, as required by IAS 36. Where fair value less costs to sell is used to determine recoverable value, the discount rate is assessed with reference to a market participant; this is not usually materially different to the AstraZeneca post-tax weighted average cost of capital rate of 7%. Legacy Alexion assets have been tested for impairment at risk-adjusted post-tax discount rates ranging between 8.5% to 10.5% as they are integrated into the Group. No impairments have been recognised on these assets.

SE The estimates used in calculating the recoverable amount are considered significant estimates, highly sensitive and depend on assumptions specific to the nature of the Group's activities including:

> outcome of R&D activities
> probability of technical and regulatory success
> market volume, share and pricing (to derive peak year sales)
> amount and timing of projected future cash flows
> sales erosion curves following patent expiry.

For assets held at fair value less costs to sell, we make appropriate adjustments to reflect market participant assessments.

In 2022, the Group recorded impairment charges of $146m in respect of launched products. Impairment charges recorded against products in development totalled $172m due to decisions made to terminate the related activities.

In 2021, the Group recorded impairment charges of $603m in respect of launched products, including *Bydureon* ($469m, revised carrying amount of $50m) under value in use model, roxadustat ($121m, revised carrying amount of $215m) under value in use model and other launched products totalling $13m.

Impairment charges recorded against products in development in 2021, based on fair value less costs to sell, totalled $1,464m, principally Ardea ($1,172m) which was fully impaired following the decision to discontinue development of verinurad. The remaining impairments relate to full impairments of various products in development, due to either management's decision to discontinue development as part of a Group-wide portfolio prioritisation review, or due to the outcome of research activities.

In 2020, the Group recorded impairment charges of $350m in respect of launched products, including *Duaklir* ($200m, revised carrying amount of $210m) under fair value less costs to sell, *Bydureon* ($102m, revised carrying amount of $581m) under value in use model, and other launched products totalling $48m. The fair value less costs to sell valuation model for *Duaklir* was based on discounted cash flows, and was categorised at Level 3 in the fair value hierarchy. Key assumptions in this model were forecast future revenue and costs of production. Impairment charges recorded against products in development totalled $55m.

The Group has performed an assessment on assets which have had impairments recorded in previous periods to determine if any reversals of impairments were required. Impairment reversals of $94m were recorded in 2022, including $77m in respect of products in development. No impairment reversals were recorded in 2021. Impairment reversals of $165m were recorded in 2020 in respect of launched products, including *FluMist* ($147m, revised carrying amount of $300m, driven by expanded vaccination efforts increasing global demand), and other launched products of $18m.

When launched products, such as the ones detailed above, are partially impaired, the carrying values of these assets in future periods are particularly sensitive to changes in forecast assumptions, including those assumptions set out above, as the asset is impaired down to its recoverable amount.

Significant assets

	Carrying value $m	Remaining amortisation period
C5 franchise (*Soliris*/*Ultomiris*) intangible assets arising from the acquisition of Alexion	16,040	5 to 13 years
Intangible assets arising from the acquisition of Acerta Pharma	4,817	10 years
Strensiq, Kanuma and *Andexxa* intangible assets arising from the acquisition of Alexion	4,583	10 to 16 years
Enhertu intangible assets acquired from Daiichi Sankyo	2,960	11 years
Intangible asset products in development arising from the acquisition of Alexion[1]	2,760	Not amortised
Intangible assets arising from the acquisition of ZS Pharma	2,012	9 years
Other intangible assets (DS-1062) acquired from Daiichi Sankyo[1]	937	Not amortised
Intangible assets arising from the restructuring of a historical joint venture with MSD	569	4 to 7 years
Farxiga/*Forxiga* intangible assets acquired from BMS	528	4 years
Intangible assets arising from the acquisition of Pearl Therapeutics	462	6 to 7 years
RSV franchise assets arising from the acquisition of MedImmune	458	3 years
Monalizumab intangible assets acquired from Innate Pharma[1]	350	Not amortised

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

The acquisition of intangible assets relating to DS-1062 in 2020 was assessed under the optional concentration test in IFRS 3 and was determined to be an asset acquisition, as substantially all of the value of the gross assets acquired was concentrated in a single asset.

11 Investments in associates and joint ventures

	2022 $m	2021 $m	2020 $m
At 1 January	**69**	39	58
Additions	**26**	92	8
Share of after tax losses	**(5)**	(64)	(27)
Exchange and other adjustments	**(14)**	2	–
At 31 December	**76**	69	39

On 29 January 2021, AstraZeneca entered into an agreement with IHP Holdings Limited to create and run an online platform (iHospital) offering consultations with physicians, repeat prescriptions and e-pharmacy in China. The agreement resulted in the formation of a new entity, IHP HK Holdings Limited. AstraZeneca contributed $30m in initial funds and holds a 50% interest in the associate entity.

On 1 December 2020, AstraZeneca and China International Capital Corporation (CICC) entered into an agreement to set up a Global Healthcare Industrial Fund to drive healthcare system innovation by leveraging local capital and accelerating China-related innovation incubation. The agreement resulted in the formation of a new entity, Wuxi AstraZeneca-CICC Venture Capital Partnership (Limited Partnership). AstraZeneca holds a 22% interest in the associate entity and contributed $1m in initial funds in 2020, with contributions of $45m and $21m made in 2021 and 2022 respectively.

On 23 September 2021, AstraZeneca entered into an agreement with VaxEquity Limited to collaborate and develop self-amplifying RNA technology with the aim of generating treatments for target diseases. AstraZeneca contributed $14m in initial funds and holds a 40% interest in the associate entity.

On 23 February 2018, AstraZeneca entered into an agreement with a consortium of investors to form a new, US-domiciled standalone company called Viela Bio. In February 2021, AstraZeneca agreed to divest its 26.7% ownership in Viela Bio, as part of the acquisition of Viela by Horizon Therapeutics plc. AstraZeneca received cash proceeds and profit of $776m upon closing with the profit recorded as Other operating income. In 2021, prior to divestment, the Group provided transitional research and development services to Viela Bio, comprising $nil (2020: $3m) of services provided directly by the Group and $1m (2020: $15m) of passed-through third-party costs incurred by the Group on behalf of Viela Bio.

On 27 November 2017, AstraZeneca entered into a joint venture agreement with Chinese Future Industry Investment Fund (FIIF), to discover, develop and commercialise potential new medicines to help address unmet medical needs globally, and to bring innovative new medicines to patients in China more quickly. The agreement resulted in the formation of a joint venture entity based in China, Dizal (Jiangsu) Pharmaceutical Co., Limited (Dizal). Since its establishment, AstraZeneca has contributed $80m in cash to the joint venture entity and has a 27% interest in the joint venture.

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 (Centus). Since its establishment, AstraZeneca has contributed $135m in cash to the joint venture entity and has a 50% interest in the joint venture.

On 30 April 2014, AstraZeneca entered into a joint venture agreement with Samsung Biologics Co., Ltd. which resulted in the formation of a joint venture entity based in the UK, Archigen Biotech Limited (Archigen). On 31 March 2022, Archigen entered a voluntary liquidation process.

All investments are accounted for using the equity method. At 31 December 2022, unrecognised losses in associates and joint ventures totalled $92m (2021: $73m; 2020: $56m) which have not been recognised due to the investment carrying value reaching $nil value.

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

	2022 $m	2021 $m	2020 $m
Non-current assets	**290**	215	324
Current assets	**300**	506	552
Total liabilities	**(72)**	(99)	(105)
Net assets	**518**	622	771
Amount attributable to AstraZeneca	**91**	65	38
Exchange adjustments	**(15)**	4	1
Carrying value of investments in associates and joint ventures	**76**	69	39

A joint contractual arrangement was entered into between AstraZeneca and Daiichi Sankyo Company Limited (Daiichi Sankyo) in March 2019 for the co-development and co-commercialisation of *Enhertu*. Each party shares global pre-tax net income from the collaboration on a 50:50 basis (with the exception of Japan where Daiichi Sankyo maintains exclusive rights and AstraZeneca receives a royalty). The joint operation is not structured through a separate legal entity, and it operates from AstraZeneca and Daiichi Sankyo's respective principal places of business.

12 Other investments

	2022 $m	2021 $m	2020 $m
Non-current investments			
Equity securities at fair value through Other comprehensive income	**1,056**	1,168	1,108
Fixed income securities at fair value through profit and loss	**10**	–	–
Total	**1,066**	1,168	1,108
Current investments			
Fixed income securities at fair value through profit and loss	**13**	16	118
Cash collateral pledged to counterparties	**162**	–	–
Fixed deposits	**64**	53	42
Total	**239**	69	160

Other investments held at fair value through Other comprehensive income include equity securities which are not held for trading and which the Group has irrevocably elected at initial recognition to recognise in this category. Other investments held at fair value through profit and loss mainly comprise fixed income securities that the Group holds to sell.

The fair value of listed investments is based on year end quoted market prices. Fixed deposits and Cash collateral pledged to counterparties are held at amortised cost with carrying value being a reasonable approximation of fair value given their short-term nature.

Cash collateral pledged to counterparties relates to collateral pledged on derivatives entered into to hedge the Group's risk exposures. In 2022, following significant foreign currency volatility increasing the collateral requirements, the Group revised its presentation to Other investments. Prior year amounts of $47m in 2021 and $11m in 2020 are presented within Cash and cash equivalents.

Fair value hierarchy

The table below analyses equity securities and bonds, 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 (i.e. as prices) or indirectly (i.e. derived from prices)
> Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

	2022 FVPL $m	2022 FVOCI $m	2021 FVPL $m	2021 FVOCI $m	2020 FVPL $m	2020 FVOCI $m
Level 1	**13**	**880**	16	1,064	118	891
Level 2	**–**	**–**	–	–	–	–
Level 3	**10**	**176**	–	104	–	217
Total	**23**	**1,056**	16	1,168	118	1,108

During 2020, AstraZeneca sold a proportion of its equity portfolio receiving consideration of $1,381m, a large proportion of which related to the disposal of its full holding in Moderna Therapeutics, Inc. All related gains were accounted through Other comprehensive income.

Equity securities 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 fair value based on the cost of investment and adjusting as necessary for impairments and revaluations on new funding rounds, which approximates to fair value. Movements in Level 3 investments are detailed below:

	2022 FVPL $m	2022 FVOCI $m	2021 FVOCI $m	2020 FVOCI $m
At 1 January	**–**	**104**	217	227
Additions	**10**	**32**	1	96
Revaluations	**–**	**50**	–	63
Net transfers out	**–**	**(4)**	(113)	(103)
Disposals	**–**	**(5)**	–	(86)
Impairments and exchange adjustments	**–**	**(1)**	(1)	20
At 31 December	**10**	**176**	104	217

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

13 Derivative financial instruments

	Non-current assets $m	Current assets $m	Current liabilities $m	Non-current liabilities $m	Total $m
Interest rate swaps related to instruments designated at fair value through profit and loss	45	–	–	–	45
Cross currency swaps designated in a net investment hedge	19	–	–	(2)	17
Cross currency swaps designated in a cash flow hedge	107	43	–	–	150
Cross currency swaps designated in a fair value hedge[1]	–	43	–	–	43
Forward FX designated in a cash flow hedge[2]	–	8	(3)	–	5
Other derivatives	–	48	(30)	–	18
31 December 2020	171	142	(33)	(2)	278

	Non-current assets $m	Current assets $m	Current liabilities $m	Non-current liabilities $m	Total $m
Interest rate swaps related to instruments designated at fair value through profit and loss	25	–	–	–	25
Cross currency swaps designated in a net investment hedge	62	–	–	(2)	60
Cross currency swaps designated in a cash flow hedge	–	–	–	(43)	(43)
Forward FX designated in a cash flow hedge[2]	–	13	–	–	13
Other derivatives	15	70	(79)	–	6
31 December 2021	102	83	(79)	(45)	61

	Non-current assets $m	**Current assets $m**	**Current liabilities $m**	**Non-current liabilities $m**	**Total $m**
Interest rate swaps related to instruments designated at fair value through profit and loss	**–**	**1**	**–**	**–**	**1**
Cross currency swaps designated in a net investment hedge	**55**	**–**	**–**	**(4)**	**51**
Cross currency swaps designated in a cash flow hedge	**–**	**–**	**–**	**(160)**	**(160)**
Forward FX designated in a cash flow hedge[2]	**–**	**1**	**(13)**	**–**	**(12)**
Other derivatives	**19**	**85**	**(80)**	**–**	**24**
31 December 2022	**74**	**87**	**(93)**	**(164)**	**(96)**

[1] Cross currency swaps designated in a fair value hedge refers to a cross currency interest rate swap that hedges a designated euro 300m portion of our euro 750m 0.875% 2021 Non-callable bond against exposure to movements in the euro:US dollar exchange rate. The swap matured in November 2021 when the related bond matured.

[2] Forward FX designated in a cash flow hedge relates to contracts hedging anticipated CNY, EUR, GBP, JPY and SEK transactions occurring in the quarter immediately after the balance sheet date.

All derivatives are held at fair value and fall within Level 2 of the fair value hierarchy as defined in Note 12, except for an equity warrant which falls within Level 3 (valued at $19m (2021: $15m), held within Non-current assets). 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 the 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:

	2022	2021	2020
Derivatives	**0.1% to 4.7%**	(0.5)% to 3.6%	(0.5)% to 2.4%

14 Non-current other receivables

	2022 $m	2021 $m	2020 $m
Prepayments	**243**	391	395
Accrued income	**44**	61	56
Retirement benefit scheme surpluses (Note 22)	**90**	–	–
Other receivables	**458**	443	269
Non-current other receivables	**835**	895	720

Prepayments include $nil (2021: $92m; 2020: $121m) in relation to our research collaboration with Moderna. Other receivables include $71m (2021: $44m; 2020: $56m) owed by FibroGen for promotional activity in China pursuant to the roxadustat collaboration.

15 Inventories

	2022 $m	2021 $m	2020 $m
Raw materials and consumables	**1,422**	1,755	1,262
Inventories in process	**1,864**	5,216	1,331
Finished goods and goods for resale	**1,413**	2,012	1,431
Inventories	**4,699**	8,983	4,024

The Group recognised $9,618m (2021: $9,640m; 2020: $3,110m) of inventories as an expense within Cost of sales during the year.

Inventory write-offs in the year amounted to $479m (2021: $552m; 2020: $149m).

16 Current trade and other receivables

	2022 $m	2021 $m	2020 $m
Trade receivables	**7,271**	6,054	3,829
Less: Expected credit loss provision (Note 28)	**(59)**	(23)	(23)
	7,212	6,031	3,806
Other receivables	**1,659**	1,808	1,278
Prepayments	**1,329**	1,512	1,735
Government grants receivable	**25**	–	53
Accrued income	**296**	293	150
Trade and other receivables	**10,521**	9,644	7,022

Trade receivables include $2,470m (2021: $1,865m; 2020: $1,250m) measured at FVOCI classified 'hold to collect and sell' as they are due from customers that the Group has the option to factor, or relate to bank acceptance drafts received in settlement of trade receivables per common practice in China.

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

17 Cash and cash equivalents

	2022 $m	2021 $m	2020 $m
Cash at bank and in hand	**1,411**	1,461	1,182
Short-term deposits	**4,755**	4,868	6,650
Cash and cash equivalents	**6,166**	6,329	7,832
Unsecured bank overdrafts	**(183)**	(291)	(286)
Cash and cash equivalents in the cash flow statement	**5,983**	6,038	7,546

AstraZeneca invests in constant net asset value funds and low-volatility net asset value funds with same day access for subscription and redemption. These investments fail the 'solely payments of principal and interest' test criteria under IFRS 9. They are therefore measured at fair value through profit and loss, although the fair value is materially the same as amortised cost.

Non-cash and other movements, within operating activities in the Consolidated Statement of Cash Flows, includes:

	2022 $m	2021 $m	2020 $m
Share-based payments charge for the period	**619**	615	277
Settlement of share plan awards	**(592)**	(570)	(349)
Pension contributions	**(205)**	(174)	(172)
Pension charges recorded in operating profit	**101**	136	84
Long-term provision charges recorded in operating profit	**87**	270	66
Non-cash intangible additions	**–**	–	(120)
(Gain)/loss on disposal of tangible assets	**(112)**	4	(25)
Foreign exchange and other[1]	**(590)**	(186)	(37)
Total operating activities non-cash and other movements	**(692)**	95	(276)

[1] Foreign exchange and other includes, among other items, the foreign exchange of intercompany transactions, including dividends, across Group entities and the related impact from hedging those transactions.

18 Assets held for sale

Assets held for sale amount to $150m (2021: $368m; 2020: $nil). Current year assets comprise Property, plant and equipment assets relating to the West Chester site in Ohio, US. AstraZeneca signed a contract on 29 November 2022 to sell the site to National Resilience, Inc. subject to anti-trust clearance. The transaction closed on 30 January 2023.

In 2021, Assets held for sale comprised Intangible assets relating to the rights to certain respiratory assets acquired from Almirall and Actavis (including *Tudorza* and *Duaklir*). The transaction closed on 4 January 2022.

19 Interest-bearing loans and borrowings

		Repayment dates	**2022 $m**	2021 $m	2020 $m
Current liabilities					
Bank overdrafts		On demand	**183**	291	286
Other short-term borrowings excluding overdrafts			**78**	3	84
Collateral received from derivative counterparties			**89**	93	288
Lease liabilities			**228**	233	192
0.25% Callable bond	euros	2021	**–**	–	614
0.875% Non-callable bond	euros	2021	**–**	–	919
Floating rate notes	US dollars	2022	**–**	250	–
2.375% Callable bond	US dollars	2022	**–**	999	–
0.3% Callable bond	US dollars	2023	**1,399**	–	–
2023 Floating bank loan	US dollars	2023	**2,000**	–	–
Floating rate notes	US dollars	2023	**400**	–	–
3.5% Callable bond	US dollars	2023	**849**	–	–
7% Guaranteed debentures	US dollars	2023	**294**	–	–
Other loans (including commercial paper)		Within one year	**22**	24	3
Total			**5,542**	1,893	2,386
Non-current liabilities					
Lease liabilities			**725**	754	489
Floating rate notes	US dollars	2022	**–**	–	250
2.375% Callable bond	US dollars	2022	**–**	–	996
0.3% Callable bond	US dollars	2023	**–**	1,397	–
2023 Floating rate bank loan	US dollars	2023	**–**	1,998	–
Floating rate notes	US dollars	2023	**–**	400	400
3.5% Callable bond	US dollars	2023	**–**	848	847
7% Guaranteed debentures	US dollars	2023	**–**	320	339
0.75% Callable bond	euros	2024	**957**	1,014	1,102
0.7% Callable bond	US dollars	2024	**1,598**	1,598	–
2024 Floating rate bank loan	US dollars	2024	**1,998**	1,997	–
3.375% Callable bond	US dollars	2025	**1,992**	1,988	1,985
0.7% Callable bond	US dollars	2026	**1,195**	1,193	1,192
1.2% Callable bond	US dollars	2026	**1,246**	1,245	–
3.125% Callable bond	US dollars	2027	**746**	745	744
1.25% Callable bond	euros	2028	**845**	896	973
1.75% Callable bond	US dollars	2028	**1,245**	1,244	–
4% Callable bond	US dollars	2029	**995**	994	993
0.375% Callable bond	euros	2029	**846**	898	–
1.375% Callable bond	US dollars	2030	**1,293**	1,292	1,291
2.25% Callable bond	US dollars	2031	**747**	746	–
5.75% Non-callable bond	pounds sterling	2031	**420**	470	475
6.45% Callable bond	US dollars	2037	**2,724**	2,724	2,722
4% Callable bond	US dollars	2042	**988**	988	988
4.375% Callable bond	US dollars	2045	**981**	980	980
4.375% Callable bond	US dollars	2048	**737**	737	737
2.125% Callable bond	US dollars	2050	**487**	486	486
3% Callable bond	US dollars	2051	**735**	734	–
Other loans	US dollars		**190**	202	5
Total			**23,690**	28,888	17,994
Total interest-bearing loans and borrowings[1, 2]			**29,232**	30,781	20,380

[1] All loans and borrowings above are unsecured apart from $22m (2021: $24m) of current and $181m (2021: $188m) of non-current in 2022, both included within Other loans.

[2] The $2bn USD 2023 floating rate bank loan and $2bn USD 2024 floating rate bank loan pay interest linked to 1 month USD LIBOR. The Group has the right to switch these loans to compounded daily USD Secured Overnight Funding Rate (SOFR) with five days notice. The loans will automatically switch to compounded SOFR on 30 June 2023 if the Group has not already switched before this date. All other floating rate debt is not impacted by LIBOR reference as it either uses non-LIBOR fixings or will mature before the relevant LIBOR rate is withdrawn.

	Total loans and borrowings 2022 $m	Total loans and borrowings 2021 $m	Total loans and borrowings 2020 $m
At 1 January	**30,781**	20,380	18,227
Changes from financing cash flows			
Issue of loans and borrowings	–	12,929	2,968
Repayment of loans and borrowings	**(1,271)**	(4,759)	(1,609)
Movement in short-term borrowings	**74**	(276)	288
Repayment of obligations under leases	**(244)**	(240)	(207)
Total changes in cash flows arising on financing activities from borrowings	**(1,441)**	7,654	1,440
Movement in overdrafts	**(85)**	31	138
New lease liabilities	**253**	503	174
Additions through business combinations	**5**	2,523	–
Exchange	**(287)**	(378)	363
Other movements	**6**	68	38
At 31 December	**29,232**	30,781	20,380

Also included within cash flows arising from financing activities within the Consolidated Statement of Cash Flows is a $920m cash outflow (2021: $nil; 2020: $nil) related to the Acerta Pharma share purchase liability which has a closing liability at 31 December 2022 of $1,646m (2021: $2,458m; 2020: $2,297m) within Trade and other payables (see Note 20 and Note 26).

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 $m	Total carrying value $m	Fair value $m
2020						
Overdrafts	–	–	–	286	286	286
Lease liabilities due within one year	–	–	–	192	192	192
Lease liabilities due after more than one year	–	–	–	489	489	489
Loans and borrowings due within one year	371	–	614	923	1,908	1,922
Loans and borrowings due after more than one year	–	339	2,075	15,091	17,505	20,936
Total at 31 December 2020	371	339	2,689	16,981	20,380	23,825
2021						
Overdrafts	–	–	–	291	291	291
Lease liabilities due within one year	–	–	–	233	233	233
Lease liabilities due after more than one year	–	–	–	754	754	754
Loans and borrowings due within one year	–	–	–	1,369	1,369	1,378
Loans and borrowings due after more than one year	–	320	1,910	25,904	28,134	30,596
Total at 31 December 2021	–	320	1,910	28,551	30,781	33,252
2022						
Overdrafts	**–**	**–**	**–**	**183**	**183**	**183**
Lease liabilities due within one year	**–**	**–**	**–**	**228**	**228**	**228**
Lease liabilities due after more than one year	**–**	**–**	**–**	**725**	**725**	**725**
Loans and borrowings due within one year	**–**	**294**	**–**	**4,837**	**5,131**	**5,105**
Loans and borrowings due after more than one year	**–**	**–**	**1,802**	**21,163**	**22,965**	**21,657**
Total at 31 December 2022	**–**	**294**	**1,802**	**27,136**	**29,232**	**27,898**

[1] Instruments designated as hedged items in a fair value hedge relationship relate to a designated euro 300m portion of our euro 750m 0.875% 2021 Non-callable bond which matured on 24 November 2021. The accumulated amount of fair value hedge adjustments to the bond was a loss of $10m.
[2] Instruments designated at fair value through profit or loss include the US dollar 7% guaranteed debentures repayable in 2023.
[3] Instruments designated in cash flow hedges are our euro 500m 0.25% Callable bond which matured in 2021, our euro 900m 0.75% 2024 Callable bond and our euro 800m 1.25% 2028 Callable bond.

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 12. 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 12, with the exception of overdrafts and lease liabilities, where fair value approximates to carrying values.

19 Interest-bearing loans and borrowings *continued*

A gain of $2m was made during the year on the fair value of bonds designated as fair value through profit or loss, due to increased credit risk. A gain of $31m has been made on these bonds since designation due to increased credit risk. Under IFRS 9, the Group records the component of fair value changes relating to the component of own credit risk through Other comprehensive income. 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 $287m.

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:

	2022	2021	2020
Loans and borrowings	**4.3% to 4.9%**	0.1% to 0.6%	(0.5)% to 0.1%

20 Trade and other payables

	2022 $m	2021 $m	2020 $m
Current liabilities			
Trade payables	**2,550**	2,824	2,350
Value-added and payroll taxes and social security	**468**	463	390
Rebates, chargebacks, returns and other revenue accruals	**6,078**	5,298	4,772
Clinical trial accruals	**1,417**	1,047	699
Other accruals	**5,551**	5,649	3,905
Collaboration Revenue contract liabilities	**12**	12	12
Vaccine contract liabilities	**169**	1,003	1,616
Deferred government grant income	**1**	67	253
Contingent consideration	**757**	849	647
Acerta Pharma share purchase liability (Note 26)	**867**	920	–
Other payables	**1,170**	806	1,141
Total	**19,040**	18,938	15,785
Non-current liabilities			
Accruals	**37**	25	56
Collaboration Revenue contract liabilities	**14**	26	38
Contingent consideration	**1,465**	2,016	2,676
Acerta Pharma share purchase liability (Note 26)	**779**	1,538	2,297
Other payables	**1,975**	1,328	1,017
Total	**4,270**	4,933	6,084

Included within Rebates, chargebacks, returns and other revenue accruals are contract liabilities of $87m (2021: $99m; 2020: $77m). The revenue recognised in the year for contract liabilities is $86m, comprising $74m relating to other revenue accruals and $12m Collaboration Revenue contract liabilities. The major markets with Rebates, chargebacks, returns and other revenue accruals are the US where the liability at 31 December 2022 amounted to $3,961m (2021: $3,172m; 2020: $3,126m), of which Rare Disease comprises $139m (2021: $127m), and China where the liability at 31 December 2022 amounted to $579m (2021: $814m; 2020: $740m).

Trade payables includes $67m (2021: $44m; 2020: $248m) due to suppliers that have signed up to a supply chain financing programme, under which the suppliers can elect on an invoice-by-invoice basis to receive a discounted early payment from the relationship bank rather than being paid in line with the agreed payment terms. If the option is taken, the Group's liability is assigned by the supplier to be due to the relationship bank rather than the supplier. The value of the liability payable by the Group remains unchanged. The Group assesses the arrangement against indicators to assess if debts which vendors have sold to the funder under the supplier financing scheme continue to meet the definition of trade payables or should be classified as borrowings. At 31 December 2022, the payables met the criteria of Trade payables. The supply chain financing programme operates in the US, UK, Sweden and Germany, and as at 31 December 2022, the programme had 420 suppliers enrolled across these countries.

Vaccine contract liabilities relate to amounts received from customers, primarily government bodies, in advance of supply of product. Substantially all of the Vaccine contract liabilities are expected to be recognised as revenue during the next financial year. The revenue recognised in the year related to Vaccine contract liabilities held at the beginning of the year was $686m.

Deferred government grant income relates to government grants received or receivable but for which the related expenses have not been incurred.

Included within current Other payables are liabilities to Daiichi Sankyo totalling $100m (2021: $nil; 2020: $146m) resulting from the collaboration agreement in relation to *Enhertu* entered into in March 2019 and $nil (2021: $324m; 2020: $324m) in relation to DS-1062 entered into in July 2020. Additionally, included within non-current Other payables are liabilities totalling $1,125m (2021: $100m; 2020: $100m) as a result of the *Enhertu* collaboration agreement and $nil (2021: $nil; 2020: $323m) as a result of the DS-1062 collaboration agreement.

In November 2020, *Calquence* received marketing approval in the EU, which removed all remaining conditionality in respect of the Acerta Pharma put and call options regarding the non-controlling interest; the option was exercised in April 2021 (see Note 26). In October 2019, an amendment to the share purchase and option agreement (SPOA) with the sellers of Acerta Pharma (originally entered into in December 2015) came into effect, changing certain terms of the SPOA on both the timing and also reducing the maximum consideration that would be required to be made to acquire the remaining outstanding shares of Acerta Pharma if the options were exercised. The payments will be made in similar annual instalments in 2022 through to 2024, with the first payment of $920m made in 2022. The changes to the terms are reflected in the assumptions used to calculate the amortised cost of the liability as at 31 December 2022 of $1,646m (2021: $2,458m; 2020: $2,297m). Interest arising from amortising the liability is included within Finance Expense (see Note 3). The associated cash flows are disclosed as financing activities within the Consolidated Statement of Cash Flows.

With the exception of Contingent consideration payables of $2,222m (2021: $2,865m; 2020: $3,323m) which are held at fair value within Level 3 of the fair value hierarchy as defined in Note 12, all other financial liabilities are held at amortised cost with carrying value being a reasonable approximation of fair value.

Contingent consideration

	2022 $m	2021 $m	2020 $m
At 1 January	**2,865**	3,323	4,139
Settlements	**(772)**	(643)	(822)
Disposals[1]	**(121)**	–	–
Revaluations	**82**	14	(272)
Reclassification to Other payables	**–**	(55)	–
Discount unwind (Note 3)	**168**	226	278
At 31 December	**2,222**	2,865	3,323

[1] On 4 January 2022, AstraZeneca completed the sale of the global rights to *Tudorza* and *Duaklir* to Covis Pharma GmbH. The divestment resulted in the remaining outstanding Contingent consideration payable of $121m related to these assets being extinguished on the basis that AstraZeneca is no longer obliged to make such payments to Almirall.

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 expense and include an increase of $182m in 2022 (2021: an increase of $42m; 2020: a decrease of $51m) based on revised milestone probabilities, and revenue and royalty forecasts, relating to the acquisition of BMS's share of the Global Diabetes Alliance. Discount unwind on the liability is included within Finance expense (see Note 3).

The discount rate used for the Contingent consideration balances range from 3% to 9%. The most significant Contingent consideration balance is the Global Diabetes Alliance which is discounted at 8% and is reviewed against comparable benchmarks on a regular basis.

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 therapy 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 contingent consideration balance relating to BMS's share of Global Diabetes Alliance of $2,124m (2021: $2,544m; 2020: $2,932m) would increase/decrease by $212m with an increase/decrease in sales of 10% as compared with the current estimates.

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	180
Amplimmune	2013	Milestones	150
Almirall[1]	2014	Milestones and royalties	345

[1] These contingent consideration liabilities have been designated as the hedge instrument in a net investment hedge of foreign currency risk arising on the Group's underlying US dollar net investments held in non-US dollar denominated subsidiaries. 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.

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. The maximum amount of royalties payable in each year is with reference to net sales.

21 Provisions

	Severance $m	Environmental $m	Employee benefits $m	Legal $m	Other provisions $m	Total $m
At 1 January 2020	241	96	130	642	455	1,564
Transfers in	–	–	–	–	258	258
Charge for year	116	34	15	16	95	276
Cash paid	(62)	(30)	(48)	(295)	(56)	(491)
Reversals	(89)	–	(2)	(14)	(27)	(132)
Exchange and other movements	8	–	33	(1)	45	85
At 31 December 2020	214	100	128	348	770	1,560
Additions through business combinations (Note 27)	–	–	41	73	27	141
Charge for year	238	23	46	109	456	872
Cash paid	(172)	(32)	(49)	(285)	(84)	(622)
Reversals	(62)	–	–	(5)	(175)	(242)
Exchange and other movements	(6)	(1)	29	(1)	(6)	15
At 31 December 2021	212	90	195	239	988	1,724
Charge for year	**227**	**61**	**1**	**830**	**365**	**1,484**
Cash paid	**(223)**	**(19)**	**(41)**	**(814)**	**(185)**	**(1,282)**
Reversals	**(43)**	**–**	**(27)**	**(94)**	**(98)**	**(262)**
Exchange and other movements	**(8)**	**(1)**	**15**	**–**	**(52)**	**(46)**
At 31 December 2022	**165**	**131**	**143**	**161**	**1,018**	**1,618**

	2022 $m	2021 $m	2020 $m
Due within one year	**722**	768	976
Due after more than one year	**896**	956	584
Total	**1,618**	1,724	1,560

Provisions are often subject to substantial uncertainties with regard to the timing and final amounts of any payments. As such, once established, these amounts remain in Provisions until settlement is reached and uncertainty resolved, with no transfer to Trade and other payables prior to payment.

Severance provisions arise predominantly in connection with global restructuring initiatives, including the Post Alexion Acquisition Group Review, which involve rationalisation of the global supply chain, the sales and marketing organisation, IT and business support infrastructure, and R&D.

In conjunction with the acquisition of Alexion in 2021, the enlarged Group initiated a comprehensive Post Alexion Acquisition Group Review, aimed at integrating systems, structure and processes, optimising the global footprint and prioritising resource allocations and investments. The Group has also continued to progress other legacy restructuring programmes.

Employee costs in connection with the initiatives are recognised in severance provisions when a detailed formal plan has been communicated to those employees affected. Final severance costs are often subject to the completion of the requisite consultations on the areas impacted, with the majority of the cost expected to be paid within one year. AstraZeneca endeavours to support employees affected by restructuring initiatives to seek alternative roles within the organisation. Where the employee is successful, any severance provisions will be released.

Details of the Environmental provisions totalling $131m (2021: $90m; 2020: $100m) and ongoing matters are provided in Note 30. The legal issues are often subject to substantial uncertainties with regard to the timing and final amounts of any payments. A significant proportion of the total legal provision relates to matters settled, but not paid, in previous periods. These uncertainties can also cause reversal in previously established provisions once final settlement is reached.

The majority of Employee benefit provisions relate to Executive Deferred Compensation Plans, which include uncertainty over the ultimate timing and amount of payment to be made to the executives.

Other provisions comprise amounts relating to specific contractual or constructive obligations and disputes. Included within Other provisions are amounts associated with long-standing product liability settlements that arose prior to the merger of Astra and Zeneca, which given the nature of the provision, the amounts are expected to be settled over many years; the final settlement values and timings are uncertain. Also included in Other provisions is an amount of $165m (2021: $185m; 2020: $258m), in relation to third-party liability and other risks (including incurred but not yet reported claims); the claims are considered to be uncertain as to timing and amount. In 2022, charges to Other provisions included $301m in relation to termination fees and onerous contracts with contract manufacturing organisations and are expected to be settled within the next 12 months. Charges to Other provisions in 2022 also included $12m (2021: $243m) in relation to the Post Alexion Acquisition Group Review restructuring programme, which has a closing provision of $143m (2021: $243m), including $95m (2021: $158m) held in non-current provisions expected to be settled over time by 2025.

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

22 Post-retirement and other defined benefit schemes

Background

This section predominantly covers defined benefit arrangements like post retirement pension and medical plans which make up the vast bulk of the Group's liabilities. However, it also incorporates other benefits which fall under IAS 19 rules and which require an actuarial valuation, including but not limited to: Lump Sum plans, Long Service Awards and defined contribution pension plans which have some defined benefit characteristics (e.g. a minimum guaranteed level of benefit). In total, over 50 plans in 28 countries are covered.

The Group and most of its subsidiaries offer retirement plans which cover the majority of employees. The Group's policy is to provide defined contribution (DC) orientated pension provision to its employees unless otherwise compelled by local regulation. As a result, many of these retirement plans are DC, where the Group 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 (DB), where benefits are based on employees' length of service and linked to their salary. The major DB plans are largely legacy arrangements as they have been closed to new entrants since 2000, apart from the collectively bargained Swedish plan (which is still open to employees born before 1979). During 2010, following consultation with its UK employees' representatives, the Group introduced a freeze on pensionable pay at 30 June 2010 levels for DB members of the UK Pension Fund. The number of active members in the Fund continues to decline and is now 452 employees. In November 2017, the Group closed the qualified and non-qualified US DB pension plans to future accrual (and removed any salary link) from 31 December 2017.

The major DB plans are funded through separate, fiduciary-administered assets. The cash funding of the plans, which may from time to time involve special Group payments, is designed, in consultation with independent qualified actuaries, to ensure that the assets are sufficient to meet future obligations as and when they fall due. The funding level is monitored by the Group and local fiduciaries, who take into account the strength of the Group's covenant, local regulation, cash flows, and the solvency and maturity of the pension scheme.

With a general improvement in funding solvency over the course of 2022, three of the Group's defined benefit plans had surplus positions, with three other plans close to full funding and therefore to surplus. As a result, the Group reviewed its policy on surplus recognition, paying particular attention to the requirements of IFRIC 14 'IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction'. The Group concluded that in five instances, the surplus would be repayable, while a small surplus in Sweden was derecognised.

Financing Principles and Funding Framework

Eighty eight per cent of the Group's total DB obligations (or 56% of net obligations) at 31 December 2022 are in schemes within the UK, the US and Sweden. In these countries, the pension obligations are funded in line with the Group's financing principles, as disclosed in prior years. There were no changes to these principles during 2022.

The Group has developed a long-term funding framework to implement these principles. This framework targets either full funding on a low-risk funding measure, or buyout with an external insurer as the pension funds mature, with affordable long-term de-risking of investment strategy along the way. Unless local regulation dictates otherwise, this framework determines the cash contributions payable.

UK

The UK Pension Fund represents approximately 59% of the Group's DB obligations at 31 December 2022. The financing principles are modified in light of the UK regulatory requirements (summarised below) and resulting discussions with the Trustee.

Role of Trustee and Regulation

The UK Pension Fund is governed and administered by a corporate Trustee which is legally separate from the Group. 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 investment strategy 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.

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.

The Pension Scheme Act 2021 became effective in the UK from 1 October 2021. A section of this Act places additional legal requirements on companies who sponsor UK defined benefit pension schemes, to monitor and assess corporate activity, with a focus on the potential impact of such activity on the ongoing security of these benefits. The Group has developed a framework to ensure it meets its responsibilities under the Act.

There have been two UK High Court Rulings relating to Guaranteed Minimum Pensions (GMP) equalisation in 2018 and 2020. Following the publication of guidance around implementation in 2021, the Trustee, with input from the Group, has made significant progress in equalising benefits. Further details are set out later on in this Note. An estimate of the impact of these changes has already been recognised in 2018 and 2020, and actual experience is in line with the estimates previously recognised.

Funding requirements

UK legislation requires that DB pension schemes are funded prudently. On a triennial basis, the Trustee and the Group must agree on a set of assumptions used to value the liabilities as a part of an actuarial valuation. Together with the asset valuation, this facilitates the calculation of a funding level and of the contributions required (if any) to ensure the UK Pension Fund is fully funded over an appropriate time period and on a suitably prudent measure. The technical provisions assumptions used to value the liabilities for the triennial actuarial valuation are usually set more prudently than the assumptions used to prepare an accounting valuation of the liabilities, which are set under IAS 19 rules to be a 'best estimate'.

22 Post-retirement and other defined benefit schemes *continued*

The last full actuarial valuation of the UK Pension Fund was carried out by a qualified actuary as at 31 March 2019. It was finalised in June 2020 and in early 2021, the Pensions Regulator acknowledged the outcome and no issues were raised. The funding assumptions used in this actuarial valuation were set out in the Group's 2020 report. The actuarial valuation as at 31 March 2022 is currently in progress, with a likely timescale for completion during the second quarter of 2023. However, the value of the Fund's obligations disclosed at 31 December 2022 incorporates data from this latest actuarial valuation including updated membership information and demographic assumptions.

Aspects of the triennial actuarial valuation are governed by a long-term funding agreement, effective since October 2016 and which sets out a path to full funding on a low-risk measure. Under this agreement, if a deficit exists, the Group is required to provide security. A key element of this security is to grant a charge in favour of the Trustee over land and buildings on the Cambridge Biomedical Campus, required to be effective within three months of the practical completion of the site, or by 30 June 2023 (whichever is earlier). An extension was granted by the Trustee to this backstop date in 2022. This charge is not currently in force. When effective, the charge would only crystallise in the event of the Group's insolvency. This charge will provide long-term security in respect of future UK Pension Fund contributions and is capped at £350m.

In relation to deficit recovery contributions, a lump sum contribution of £39m was made in March 2022, with a further £39m contribution due before 31 March 2023. In addition, a contribution of £30m was also made in March 2022, which was a final instalment of a separate deferred contribution explained below.

During 2017, the Group provided a letter of credit to the Trustee, to underwrite the deferral of an additional deficit recovery contribution of approximately £126m which was due in 2017. This contribution was paid in five instalments (with interest) from March 2018 to March 2022. The letter of credit underwriting these payments reduced in value as each annual payment was made and given all payments have been made, the letter of credit has now expired.

Substantial progress was made over 2022 in equalising GMP for members of the UK Pension Fund. The method of equalisation adopted was to convert GMP to simplify the structure and administration of benefits. As at 31 December 2022, a majority of pensioner and dependent members have had their benefits equalised. Further work will be completed over 2023 to address equalisation for the remaining affected members. As part of the GMP equalisation project, a Pension Increase Exchange ("PiE") option has also been provisionally made available to the majority of pensioner members, at the Group's discretion. This option provides the member with a choice to opt for a higher pension right away, but with no (or fewer) inflation linked increases in the future. The PIE option element of the project is currently ongoing and if it proceeds, will not conclude until 2023.

Under the governing documentation of the UK Pension Fund, any future surplus in the Fund would be returnable to the Group by refund assuming gradual settlement of the liabilities over the lifetime of the Fund. In particular, the Trustee has no unilateral right to wind up the Fund without Company consent nor does it have the power to unilaterally use surplus to augment benefits prior to wind-up. 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'.

On current bases, it is expected that ongoing contributions (excluding those in respect of past service deficit contributions) during the year ending 31 December 2023 for the UK scheme will be approximately $20m.

Liquidity and liability hedging

Significant increases in UK Government bond yields over September and October created liquidity challenges for many UK defined benefit schemes with liability hedging portfolios, who needed to post collateral quickly to meet margin calls on derivative holdings. The Group's UK Pension Fund was not adversely impacted over this period due to a combination of Group and Trustee oversight and a functioning risk management policy. The UK Pension Fund did not require any financial support from the Group, was self-sufficient and operated normally throughout this period. The Fund maintained its investment strategy and funding solvency materially improved over the year. Furthermore, with the UK Pension Fund ahead of its long term plan, this improvement allowed the Trustee, with support from the Group to de-risk investment strategy ahead of plan, reducing long term investment risk both to the Group and members in an affordable manner.

United States and Sweden

The US and Sweden plans account for 13% and 16%, respectively, of the Group's defined benefit obligations. The US and Sweden pension plans are governed by Fiduciary Bodies with responsibility for the investment of the assets. These plans are funded in line with the Group's financing principles and local regulations.

The US defined benefit pension plans were actuarially revalued at 31 December 2022, when plan obligations were $907m and plan assets were $835m. This includes obligations in respect of the non-qualified plan which is unfunded. The qualified US pension plan is close to fully funded on an IAS 19 basis and has a positive funding balance on the local statutory measure. As such, no contributions are required, and the investment strategy is largely de-risked. During 2022, the Group submitted the legal documentation required to terminate the plan and move to a full buy-out and settlement of the liabilities. This process is currently ongoing and if the Group proceeds, it is not expected to complete until midway 2023 at the earliest.

The Swedish defined benefit pension plans were actuarially valued at 31 December 2022, when plan obligations were estimated to amount to $1,312m and plan assets were $946m. The local Swedish GAAP funding position can influence contribution policy. Over 2022, for the main pension fund, the Group did not request a reimbursement of benefit payments made throughout the year, which totalled approximately $44m.

On current bases, it is expected that ongoing contributions (excluding those in respect of past service deficit contributions) during the year ending 31 December 2023 for the United States and Sweden will be approximately $55m.

Other defined benefit plans

The Group provides benefit plans other than pensions which have to be reported under IAS 19. These include Lump Sum plans, Long Service Awards and defined contribution pension plans which have a guaranteed minimum benefit. However, the largest category of these 'other' non-pension plans are healthcare benefits.

In the US, and to a lesser extent in certain other countries, the Group's employment practices include the provision of healthcare and life assurance benefits for eligible retired employees. As at 31 December 2022, some 3,393 retired employees and covered dependants currently benefit from these provisions and some 2,339 current employees will be eligible on their retirement. The Group 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.

In the US, the Post Retirement Welfare Plan which provides retiree medical benefits has a surplus of $62m. As a result, the investment strategy has been fully de-risked. The Group has concluded that under current legislation, the surplus would be repayable in the future to subsidise other medical benefits offered to employees. 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'.

The cost of post-retirement benefits other than pensions for the Group in 2022 was $1m (2021: $1m; 2020: $1m). Plan assets were $173m and plan obligations were $129m at 31 December 2022. 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 for the major defined benefit schemes operated by the Group to 31 December 2022. The assumptions used may not necessarily be borne out in practice, due to the inherent financial and demographic uncertainty associated with making long-term projections. These assumptions reflect the changes which have the most material impact on the results of the Group and were as follows:

				2021
	UK	US	Sweden	Rest of Group[4]
Inflation assumption	3.3%	–	2.3%	2.2%
Rate of increase in salaries	–[1]	–	3.8%	3.7%
Rate of increase in pensions in payment	3.1%	–	2.3%	2.2%
Discount rate – defined benefit obligation	1.9%	2.8%	1.8%	1.2%
Discount rate – interest cost	1.9%	2.2%	1.6%	1.0%
Discount rate – service cost	1.9%	n/a	1.9%	1.4%

				2022
	UK	**US**	**Sweden**	**Rest of Group[4]**
Inflation assumption	**3.2%**	**–**	**1.9%**	**2.5%**
Rate of increase in salaries	**–[1]**	**–**	**3.4%**	**4.0%**
Rate of increase in pensions in payment	**3.1%**	**–**	**1.9%**	**2.5%**
Discount rate – defined benefit obligation[2]	**4.9%**	**5.0%**	**4.1%**	**3.7%**
Discount rate – interest cost[3]	**5.0%**	**4.9%**	**4.0%**	**3.8%**
Discount rate – service cost[3]	**4.8%**	**n/a**	**4.0%**	**3.7%**

[1] Pensionable pay frozen at 30 June 2010 levels following UK fund changes.
[2] Group defined benefit obligation as at 31 December 2022 calculated using discount rates based on market conditions as at 31 December 2022.
[3] 2022 interest costs and service costs calculated using discount rates based on market conditions as at 31 December 2021.
[4] Rest of Group reflects the assumptions in Germany as these have the most material impact on the Group.

The weighted average duration of the post-retirement scheme obligations is approximately 12 years in the UK, 10 years in the US, 16 years in Sweden and 14 years for the Rest of the Group (including Germany).

Demographic assumptions

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

The table below illustrates life expectancy assumptions at age 65 for male and female members retiring in 2022 and male and female members expected to retire in 2042 (2021: 2021 and 2041 respectively).

	Life expectancy assumption for a male member retiring at age 65				Life expectancy assumption for a female member retiring at age 65			
Country	**2022**	**2042**	2021	2041	**2022**	**2042**	2021	2041
UK	**22.2**	**23.2**	22.5	23.7	**23.8**	**24.9**	23.9	25.2
US	**22.0**	**23.2**	21.9	23.2	**23.4**	**25.0**	23.3	24.9
Sweden	**21.8**	**23.6**	21.9	23.6	**23.9**	**26.0**	24.5	25.6

In the UK, the Group updated the mortality tables used, reflecting analysis carried out as part of the latest actuarial valuation and adopted the CMI 2021 Mortality Projections Model with a 1% long-term improvement rate. Other demographic assumptions were updated based on analysis carried out as part of the 2022 actuarial valuation including the assumed age gap between members and their partners. The Group assumes that 25% of members (2021: 30%) will transfer out of the defined benefit section of the AstraZeneca Pension Fund at the point of retirement.

In the US and Sweden the Group continues to use the most recently published mortality tables. No update was published in the US in 2022 and MP-2021 continues to be used, but a new table, DUS21, has been used in Sweden.

22 Post-retirement and other defined benefit schemes *continued*

Risks associated with the Group's defined benefit pension schemes

The UK defined benefit plan accounts for 59% of the Group's defined benefit obligations and exposes the Group 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. Approximately 60% of the UK Pension Fund is invested in growth assets. Although these growth assets are expected to outperform AA-rated 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, the Trustee invests in a suitably diversified range of asset classes, return drivers and investment managers. The investment strategy will evolve to further improve the expected risk/return profile as opportunities arise. De-risking of the investment strategy took place over 2022, as the Fund moved ahead of its long-term target, with exposure to Growth Assets reducing from approximately 72.5% to 61.0%. The Trustee has hedged approximately 93% 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 is implemented via holding gilts (and gilt repurchase agreements or "gilt repo") of appropriate duration, set to target a hedge ratio of approximately 100% of total assets. This hedge protects to a large degree against falls in long-term interest rates and the UK Pension Fund is approximately 98% hedged as a percentage of assets at the end of 2022. Furthermore, over 2022, the liability hedging benchmark was moved to a 100% gilt-based hedging strategy to reduce funding basis risk and almost all net swap exposure was removed. Nonetheless, there remain 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 gilt repo) and the bonds analysed to set the DBO discount rate on an accounting basis (AA corporate bonds). As such, there remains some mismatching risk (albeit less than in previous years) on an accounting basis should yields on gilts diverge compared to AA corporate bonds.
Inflation risk	The majority of the DBO is indexed in line with price inflation (mainly inflation as measured by the UK Retail Price Index (RPI) but also for some members a component of pensions is indexed by the UK Consumer Price Index (CPI)) and higher inflation will lead to higher liabilities (although, in most cases, this is capped at an annual increase of 5%). It was confirmed in November 2020 the intention to align RPI with Consumer Price Index including Housing (CPIH) from 2030. Other things being equal, this will lead to lower liability valuations.	The UK Pension Fund holds RPI index-linked gilts and gilt repo. As with the interest rate hedge, the liability benchmark was changed over 2022 to facilitate hedging solely with gilts rather than the previous mix of gilts and swaps. The inflation hedge of the UK Pension Fund protects to some degree against higher-than-expected inflation increases on the DBO (approximately 93% hedged as a percentage of assets at the end of 2022). There is a framework in place to gradually increase the level of inflation hedging to 100% of assets over time.
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 75 years for around 10,000 of the UK Pension Fund's current pensioners and covers $1.9bn of the UK Pension Fund's liabilities. A one-year increase in life expectancy would result in a $191m increase in pension fund obligations, which would be partially offset by a $103m increase in the value of the longevity swap and hence the pension fund assets. The impact of the COVID-19 pandemic on long-term mortality assumptions is not yet known. The Group will conduct a mortality review once robust data is available.

Other risks

There are a number of other risks of administering the UK Pension Fund which the Trustee manages with Group input. Some of the major risks include counterparty risks from using derivatives and collateral management risk (mitigated by using a specialist investment manager to oversee a diversified range of counterparties of high standing, ensuring positions are collateralised daily and having a robust collateral management policy). Furthermore, there are operational risks (such as paying out the wrong benefits) and legislative risks (such as the pensions regulator introducing new legislation). These are mitigated so far as possible via the governance structure in place which oversees and administers the pension funds.

The Group's pension plans in the US and Sweden also manage these key risks, where they are relevant, in a similar way, with the local fiduciary bodies investing in a diversified manner and employing a framework to hedge interest rate risk.

Local fiduciary boards are aware of Environmental, Social and Governance (ESG) risks as they pertain to investment policy, and where local regulation allows, have policies in place to monitor and manage such risks and comply with local legislation and disclosure requirements.

Assets and obligations of defined benefit schemes

The assets and obligations of the defined benefit schemes operated by the Group at 31 December 2022, 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.

There has been a material fall in both asset and liability valuations over 2022, predominantly due to significant increases in long-term global bond yields. This had the impact of lowering liability and asset valuations.

Scheme assets

	UK		US		Sweden		Rest of Group		Total		2021
	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Total $m
Government bonds[1]	2,500	–	303	–	–	–	75	–	2,878	–	2,878
Corporate bonds[2]	–	–	877	–	–	–	16	–	893	–	893
Derivatives[3]	–	(237)	2	(1)	–	259	(1)	–	1	21	22
Investment funds: Listed Equities[4]	–	1,427	–	–	–	134	55	6	55	1,567	1,622
Investment funds: Absolute Return/Multi Strategy[4]	–	2,342	–	–	–	647	8	–	8	2,989	2,997
Investment funds: Corporate Bonds/Credit[4]	–	1,006	–	–	–	192	53	11	53	1,209	1,262
Cash and cash equivalents	34	261	227	–	–	2	–	2	261	265	526
Other	–	–	–	5	–	–	1	358	1	363	364
Total fair value of scheme assets[5]	2,534	4,799	1,409	4	–	1,234	207	377	4,150	6,414	10,564

	UK		US		Sweden		Rest of Group		Total		2022
	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Quoted $m	Unquoted $m	Total $m
Government bonds[1]	1,931	–	104	–	–	–	60	–	2,095	–	2,095
Corporate bonds[2]	–	–	622	–	–	–	11	–	633	–	633
Derivatives[3]	–	(608)	(2)	(3)	–	325	(2)	–	(4)	(286)	(290)
Investment funds: Listed Equities[4]	–	265	–	–	–	–	49	4	49	269	318
Investment funds: Absolute Return/Multi Strategy[4]	–	1,701	–	–	–	475	6	–	6	2,176	2,182
Investment funds: Corporate Bonds/Credit[4]	–	817	–	–	–	144	49	10	49	971	1,020
Cash and cash equivalents	52	415	285	–	–	2	–	4	337	421	758
Other	–	–	–	2	–	–	1	311	1	313	314
Total fair value of scheme assets[5]	1,983	2,590	1,009	(1)	–	946	174	329	3,166	3,864	7,030

[1] Predominantly developed markets in nature.
[2] Predominantly developed markets in nature and investment grade (AAA-BBB).
[3] Includes interest rate swaps, inflation swaps, longevity swap, equity total return swaps and other contracts. More detail is given in the section Risks associated with the Group's defined benefit pensions on page 176. Valuations are determined by independent third parties.
[4] Investment Funds are pooled, commingled vehicles, whereby the pension scheme owns units in the fund, alongside other investors. The pension schemes invest in a number of Investment Funds, including Listed Equities (primarily developed markets with some emerging markets), Corporate Bonds/Credit (a range of investment-grade and non investment-grade credit) and Absolute Return/Multi Strategy (multi-asset exposure both across and within traditional and alternative asset classes). The price of the funds is set by independent administrators/custodians employed by the investment managers and based on the value of the underlying assets held in the fund. Details of pricing methodology is set out within internal control reports provided for each fund. Prices are updated daily, weekly or monthly depending upon the frequency of the fund's dealing.
[5] Included in scheme assets is less than $1m of the Group's own assets (2021: $nil). The assets are AstraZeneca corporate debt held by the US qualified plan and amount to 0.05% of the plan's assets.

Scheme obligations

	UK $m	US $m	Sweden $m	Rest of Group $m	2021 Total $m
Present value of scheme obligations in respect of:					
Active membership	(532)	(81)	(926)	(523)	(2,062)
Deferred membership	(1,709)	(693)	(718)	(465)	(3,585)
Pensioners	(5,700)	(630)	(729)	(312)	(7,371)
Total value of scheme obligations	(7,941)	(1,404)	(2,373)	(1,300)	(13,018)

	UK $m	US $m	Sweden $m	Rest of Group $m	2022 Total $m
Present value of scheme obligations in respect of:					
Active membership	**(212)**	**(54)**	**(430)**	**(424)**	**(1,120)**
Deferred membership	**(804)**	**(437)**	**(369)**	**(299)**	**(1,909)**
Pensioners	**(3,785)**	**(531)**	**(513)**	**(250)**	**(5,079)**
Total value of scheme obligations	**(4,801)**	**(1,022)**	**(1,312)**	**(973)**	**(8,108)**

22 Post-retirement and other defined benefit schemes *continued*

Net (deficit)/surplus in the scheme

	2021				
	UK $m	US $m	Sweden $m	Rest of Group $m	Total $m
Total fair value of scheme assets	7,333	1,413	1,234	584	10,564
Total value of scheme obligations	(7,941)	(1,404)	(2,373)	(1,300)	(13,018)
Deficit in the scheme as recognised in the Consolidated Statement of Financial Position	(608)	9	(1,139)	(716)	(2,454)
Included in Non-current other receivables	–	–	–	–	–
Included in Retirement benefit obligations	(608)	9	(1,139)	(716)	(2,454)
	(608)	9	(1,139)	(716)	(2,454)

	2022				
	UK $m	**US $m**	**Sweden $m**	**Rest of Group $m**	**Total $m**
Total fair value of scheme assets	**4,573**	**1,008**	**946**	**503**	**7,030**
Total value of scheme obligations	**(4,801)**	**(1,022)**	**(1,312)**	**(973)**	**(8,108)**
Deficit in the scheme as recognised in the Consolidated Statement of Financial Position	**(228)**	**(14)**	**(366)**	**(470)**	**(1,078)**
Included in Non-current other receivables	**–**	**62**	**–**	**28**[1]	**90**
Included in Retirement benefit obligations	**(228)**	**(76)**	**(366)**	**(498)**	**(1,168)**
	(228)	**(14)**	**(366)**	**(470)**	**(1,078)**

[1] Surpluses were recognised in Ireland and Belgium.

Fair value of scheme assets

	2022					2021				
	UK $m	**US $m**	**Sweden $m**	**Rest of Group $m**	**Total $m**	UK $m	US $m	Sweden $m	Rest of Group $m	Total $m
At beginning of year	**7,333**	**1,413**	**1,234**	**584**	**10,564**	7,179	1,570	1,338	581	10,668
Interest income on scheme assets	**123**	**29**	**18**	**5**	**175**	75	27	12	4	118
Expenses	**(5)**	**(2)**	**–**	**–**	**(7)**	(7)	–	–	–	(7)
Actuarial gains/(losses)	**(1,964)**	**(295)**	**(153)**	**(55)**	**(2,467)**	372	(22)	62	3	415
Exchange and other adjustments	**(728)**	**–**	**(152)**	**(34)**	**(914)**	(77)	(5)	(132)	1	(213)
Employer contributions	**118**	**7**	**43**	**37**	**205**	122	19	5	28	174
Participant contributions	**1**	**5**	**–**	**5**	**11**	2	–	–	2	4
Benefits paid	**(305)**	**(149)**	**(44)**	**(39)**	**(537)**	(333)	(176)	(51)	(35)	(595)
Scheme assets' fair value at end of year	**4,573**	**1,008**	**946**	**503**	**7,030**	7,333	1,413	1,234	584	10,564

The actual return on the plan assets was a loss of $2,292m (2021: gain of $533m). The asset loss was driven predominantly by a fall in the value of the liability hedging portfolio in the UK and to a lesser extent, in the US and Sweden as long term bond yields increased. The asset loss was more than offset by the fall in the liability value shown in the table below.

Movement in post-retirement scheme obligations

	2022					2021				
	UK $m	**US $m**	**Sweden $m**	**Rest of Group $m**	**Total $m**	UK $m	US $m	Sweden $m	Rest of Group $m	Total $m
Present value of obligations in scheme at beginning of year	**(7,941)**	**(1,404)**	**(2,373)**	**(1,300)**	**(13,018)**	(8,425)	(1,601)	(2,525)	(1,319)	(13,870)
Current service cost	**(14)**	**(1)**	**(35)**	**(38)**	**(88)**	(18)	(2)	(69)	(34)	(123)
Past service (cost)/credit	**(5)**	**–**	**(4)**	**3**	**(6)**	(4)	–	(1)	–	(5)
Participant contributions	**(1)**	**(4)**	**–**	**(5)**	**(10)**	(2)	–	–	(2)	(4)
Benefits paid	**305**	**149**	**44**	**39**	**537**	333	176	51	35	595
Interest expense on post-retirement scheme obligations	**(132)**	**(29)**	**(31)**	**(12)**	**(204)**	(87)	(28)	(22)	(8)	(145)
Actuarial gains/(losses)	**2,243**	**268**	**806**	**268**	**3,585**	199	46	(43)	9	211
Exchange and other adjustments	**744**	**(1)**	**281**	**72**	**1,096**	63	5	236	19	323
Present value of obligations in scheme at end of year	**(4,801)**	**(1,022)**	**(1,312)**	**(973)**	**(8,108)**	(7,941)	(1,404)	(2,373)	(1,300)	(13,018)

The obligations arise from over 50 plans in 28 countries:

	2022					2021				
	UK $m	**US $m**	**Sweden $m**	**Rest of Group $m**	**Total $m**	UK $m	US $m	Sweden $m	Rest of Group $m	Total $m
Funded – pension schemes[1]	**(4,787)**	**(851)**	**(1,310)**	**(842)**	**(7,790)**	(7,927)	(1,178)	(2,371)	(1,160)	(12,636)
Funded – post-retirement healthcare	**–**	**(111)**	**–**	**–**	**(111)**	–	(143)	–	–	(143)
Unfunded – pension schemes[1]	**–**	**(60)**	**(2)**	**(122)**	**(184)**	–	(83)	(2)	(127)	(212)
Unfunded – post-retirement healthcare	**(14)**	**–**	**–**	**(9)**	**(23)**	(14)	–	–	(13)	(27)
Total	**(4,801)**	**(1,022)**	**(1,312)**	**(973)**	**(8,108)**	(7,941)	(1,404)	(2,373)	(1,300)	(13,018)

[1] Includes defined benefit pension schemes and other plans, such as Lump Sum, Long Service Award and DC plans with underpins.

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 2022, are set out below.

	2022					2021				
	UK $m	**US $m**	**Sweden $m**	**Rest of Group $m**	**Total $m**	UK $m	US $m	Sweden $m	Rest of Group $m	Total $m
Operating profit										
Current service cost	**(14)**	**(1)**	**(35)**	**(38)**	**(88)**	(18)	(2)	(69)	(35)	(124)
Past service (cost)/credit	**(5)**	**–**	**(4)**	**3**	**(6)**	(4)	–	(1)	–	(5)
Expenses	**(5)**	**(2)**	**–**	**–**	**(7)**	(7)	–	–	–	(7)
Total charge to Operating profit	**(24)**	**(3)**	**(39)**	**(35)**	**(101)**	(29)	(2)	(70)	(35)	(136)
Finance expense										
Interest income on scheme assets	**123**	**29**	**18**	**5**	**175**	75	27	12	5	119
Interest expense on post-retirement scheme obligations	**(132)**	**(29)**	**(31)**	**(12)**	**(204)**	(87)	(28)	(22)	(8)	(145)
Net interest on post-employment defined benefit plan liabilities	**(9)**	**–**	**(13)**	**(7)**	**(29)**	(12)	(1)	(10)	(3)	(26)
Charge before taxation	**(33)**	**(3)**	**(52)**	**(42)**	**(130)**	(41)	(3)	(80)	(38)	(162)
Other comprehensive income										
Difference between the actual return and the expected return on the post-retirement scheme assets	**(1,964)**	**(295)**	**(153)**	**(55)**	**(2,467)**	372	(22)	62	3	415
Experience gains/(losses) arising on the post-retirement scheme obligations	**55**	**(16)**	**(99)**	**(6)**	**(66)**	(43)	(9)	–	74	22
Changes in financial assumptions underlying the present value of the post-retirement scheme obligations	**2,272**	**284**	**896**	**275**	**3,727**	239	59	(43)	(61)	194
Changes in demographic assumptions	**(84)**	**–**	**9**	**(1)**	**(76)**	3	(4)	–	(4)	(5)
Remeasurement of the defined benefit liability	**279**	**(27)**	**653**	**213**	**1,118**	571	24	19	12	626

Past service costs include granting early retirement in UK and Sweden.

Total Group pension costs in respect of defined contribution and defined benefit schemes during the year are set out below (see Note 29).

	2022 $m	2021 $m
Defined contribution schemes	**445**	428
Defined benefit schemes – current service costs and expenses	**95**	131
Defined benefit schemes – past service cost	**6**	5
Pension costs	**546**	564

SE 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.

	2022		2021	
	+0.5%	**-0.5%**	+0.5%	-0.5%
Discount rate				
UK ($m)	**262**	**(289)**	565	(634)
US ($m)	**46**	**(49)**	79	(84)
Sweden ($m)	**95**	**(107)**	197	(226)
Total ($m)	**403**	**(445)**	841	(944)

	2022		2021	
	+0.5%	**-0.5%**	+0.5%	-0.5%
Inflation rate[1]				
UK ($m)	**(173)**	**165**	(386)	375
US ($m)	**n/a**	**n/a**	n/a	n/a
Sweden ($m)	**(104)**	**93**	(207)	196
Total ($m)	**(277)**	**258**	(593)	571

	2022		2021	
	+0.5%	**-0.5%**	+0.5%	-0.5%
Rate of increase in salaries				
UK ($m)	**n/a**	**n/a**	n/a	n/a
US ($m)	**n/a**	**n/a**	n/a	n/a
Sweden ($m)	**(47)**	**43**	(90)	82
Total ($m)	**(47)**	**43**	(90)	82

22 Post-retirement and other defined benefit schemes *continued*

	2022		2021	
	+1 year	**–1 year**	+1 year	–1 year
Mortality rate				
UK ($m)	**(191)**[2]	**193**[3]	(390)	388
US ($m)	**(20)**	**20**	(29)	29
Sweden ($m)	**(44)**	**44**	(94)	93
Total ($m)	**(255)**	**257**	(513)	510

[1] Rate of increase in pensions in payment follows inflation.
[2] Of the $191m increase, $103m is covered by the longevity swap.
[3] Of the $193m decrease, $103m 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 inflation sensitivity allows for the impact of a change in inflation on salary increases and pension increases (where these assumptions are inflation-linked).

The salary increase sensitivity reflects the impact of an increase of only salary relative to inflation.

The sensitivity to the life expectancy assumption is estimated based on a revised mortality assumption that extends/reduces the current life expectancy by one year for a particular age.

23 Reserves

Retained earnings

The cumulative amount of goodwill written off directly to reserves resulting from acquisitions, net of disposals, amounted to $591m (2021: $615m; 2020: $636m) using year-end rates of exchange.

At 31 December 2022, 1,671,446 shares, at a cost of $112m, have been deducted from Retained earnings (2021: 3,922,122 shares, at a cost of $239m; 2020: 556,108 shares, at a cost of $51m) to satisfy future vesting of employee share plans.

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).

	2022 $m	2021 $m	2020 $m
Cumulative translation differences included within Retained earnings			
At 1 January	**(1,934)**	(1,143)	(2,189)
Foreign exchange arising on consolidation	**(1,446)**	(483)	443
Exchange adjustments on goodwill (recorded against other reserves)	**(24)**	(21)	22
Foreign exchange arising on designated liabilities in net investment hedges[1]	**(282)**	(321)	573
Fair value movements on derivatives designated in net investment hedges	**(8)**	34	8
Net exchange movement in Retained earnings	**(1,760)**	(791)	1,046
At 31 December	**(3,694)**	(1,934)	(1,143)

[1] Foreign exchange arising on designated liabilities in net investment hedges includes $102m in respect of designated bonds and $(384)m in respect of designated contingent consideration and other liabilities. The change in value of designated contingent consideration liabilities relates to $(369)m in respect of BMS' share of Global Diabetes Alliance, and $(15)m in respect of Almirall.

The cumulative loss with respect to costs of hedging is $3m (2021: gain of $4m; 2020: gain of $9m) and the loss during the year was $7m (2021: loss of $6m; 2020: gain of $9m).

The balance remaining in the foreign currency translation reserve from net investment hedging relationships for which hedge accounting no longer applied is a gain of $527m.

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 of $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.

24 Share capital

	Allotted, called-up and fully paid		
	2022 $m	2021 $m	2020 $m
Issued Ordinary Shares ($0.25 each)	**387**	387	328
Redeemable Preference Shares (£1 each – £50,000)	**–**	–	–
At 31 December	**387**	387	328

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 Company does not have a limited amount of authorised share capital.

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

			No. of shares
	2022	2021	2020
At 1 January	**1,549,400,665**	1,312,668,724	1,312,137,976
Issue of share capital (business combinations)	**–**	236,321,411	–
Issue of shares (share schemes)	**399,365**	410,530	530,748
At 31 December	**1,549,800,030**	1,549,400,665	1,312,668,724

Share issues
Issue of share capital (business combinations) represents share capital issued as part of the acquisition of Alexion (see Note 27).

Share repurchases
No Ordinary Shares were repurchased by the Company in 2022 (2021: nil; 2020: nil).

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

25 Dividends to shareholders

	2022 Per share	2021 Per share	2020 Per share	**2022 $m**	2021 $m	2020 $m
Second interim (March 2022)	**$1.97**	$1.90	$1.90	**3,046**	2,490	2,489
First interim (September 2022)	**$0.93**	$0.90	$0.90	**1,440**	1,392	1,180
Total	**$2.90**	$2.80	$2.80	**4,486**	3,882	3,669

The Company has exercised its authority in accordance with the provisions set out in the Company's Articles of Association, that the balance of unclaimed dividends outstanding past 12 years be forfeited. Unclaimed dividends of $1m (2021: $nil; 2020: $1m) have been adjusted for in Retained earnings in 2022.

The 2021 second interim dividend of $1.97 per share was paid on 28 March 2022. The 2022 first interim dividend of $0.93 per share was paid on 12 September 2022.

Reconciliation of dividends charged to equity to cash flow statement:

	2022 $m	2021 $m	2020 $m
Dividends charged to equity	**4,486**	3,882	3,669
Exchange losses on payment of dividend	**5**	3	4
Hedge contracts relating to payment of dividends (cash flow statement)	**(127)**	(29)	(101)
Dividends paid (cash flow statement)	**4,364**	3,856	3,572

26 Non-controlling interests
The Group Financial Statements at 31 December 2022 reflect equity of $21m (2021: $19m; 2020: $16m) and total comprehensive income of $2m (2021: $3m; 2020: $3m) attributable to the non-controlling interests in AstraZeneca Pharma India Limited, P.T. AstraZeneca Indonesia and Beijing Falikang Pharmaceutical (China) Co. Limited.

In addition to the non-controlling interests in AstraZeneca Pharma India Limited, P.T. AstraZeneca Indonesia and Beijing Falikang Pharmaceutical (China) Co. Limited, the Group Financial Statements at 31 December 2022 also reflect total comprehensive losses of $nil (2021: $nil; 2020: $55m) attributable to the non-controlling interest in Acerta Pharma, resulting in reported total comprehensive income of $2m (2021: income of $3m, 2020: losses of $52m).

In February 2016, AstraZeneca acquired a 55% controlling stake in Acerta Pharma where the non-controlling interest was subject to put and call options. The put option gave rise to a liability (see Note 20). The ability of the parties to exercise their respective put and call options, as well as the timing and amount of exercise, was dependent on certain conditions, the last of which was based on regulatory outcomes of *Calquence* in the EU. In November 2020, *Calquence* received marketing approval in the EU, which removed all remaining conditionality in respect of the options. From November 2020, the minority shareholders were considered to have no further substantive variability in risk and reward related to their shares as it was considered highly likely that one of the options would be exercised, and the price of the options was fixed. Therefore, from November 2020, no further amounts of the consolidated AstraZeneca result were attributed to the minority shareholders of Acerta Pharma. The Non-controlling interests reserve relating to the minority shareholders of Acerta Pharma, totalling $1,401m, was reclassified into Retained earnings (see Consolidated Statement of Changes in Equity) in 2020. AstraZeneca exercised its option to acquire the remaining 45% of shares in Acerta Pharma in April 2021.

As part of the acquisition of Alexion in July 2021, a pre-existing non-controlling interest in Caelum Biosciences was recognised (Note 27). This was valued at $150m, the agreed-upon exercise price for the exclusive option to acquire the remaining equity. The option was exercised on 28 September 2021 and the acquisition of Caelum Biosciences closed shortly thereafter on 5 October 2021.

27 Acquisition of business operations

Acquisitions of business operations in 2022

On 16 November 2022, AstraZeneca completed the acquisition of 100% of the issued shares of LogicBio Therapeutics, Inc. (LogicBio) based in Lexington, MA, US. LogicBio is a clinical-stage genetic medicine company pioneering genome editing and gene delivery platforms to address rare and serious diseases from infancy through adulthood. The total consideration was $72m. Cash of $68m was paid on the completion date, with $4m of outstanding options, which will be settled in cash, recorded in current Trade and other payables. Goodwill of $15m, assets of $82m, including $46m of intangible assets, and liabilities of $25m were recognised on acquisition. LogicBio's results have been consolidated into the Group's results from 16 November 2022.

Acquisitions of business operations in 2021

On 21 July 2021, AstraZeneca completed the acquisition of 100% of the issued shares of Alexion Pharmaceuticals, Inc (Alexion), based in Boston, MA, US. Alexion is a global biopharmaceutical company focused on serving patients and families affected by rare diseases and devastating conditions through the discovery, development and commercialisation of life-changing medicines.

At closing, Alexion shareholders received 2.1243 AstraZeneca American Depository Shares (ADSs) and $60 in cash for each of their Alexion shares. Unvested Alexion employee share awards were converted to equivalent AstraZeneca share awards. The fair value of the purchase consideration was $41,058m, comprising AstraZeneca ADSs of $27,196m, cash of $13,349m and replacement employee share awards of $513m.

The Group funded the cash element of the acquisition with $8bn of new long-term debt, issued in May and June 2021, $4bn of term loans drawn in July 2021 under the $17.5bn committed bank facilities entered into in December 2020 to secure the acquisition financing, and existing cash balances. The Group cancelled the remaining $13.5bn of the facilities in June, July and October 2021. Loans and borrowings of $2.3bn acquired with Alexion were repaid in full shortly following completion of the acquisition.

The acquisition was accounted for as a business combination using the acquisition method of accounting in accordance with IFRS 3 'Business Combinations' and consequently the Alexion assets acquired, and liabilities assumed were recorded by AstraZeneca at fair value, with the excess of the purchase price over the fair value of the identifiable assets and liabilities being recognised as goodwill.

KJ As part of the Alexion acquisition in 2021, we identified the assets (comprising principally launched products and IPR&D post pre-clinical stage) and liabilities acquired. Attributing fair values to assets acquired and liabilities assumed as part of business combinations is considered to be a key judgement. The purchase price allocation was performed with assistance from an independent valuer to advise on the valuation techniques and key assumptions in the valuation, in particular in respect of the valuation of the intangible assets and inventory.

The fair values assigned to the Alexion business combination in 2021 were:

	Fair value $m
Non-current assets	
Property, plant and equipment	1,135
Right-of-use assets	263
Intangible assets	26,855
Other non-current assets	301
	28,554
Current assets	
Inventories	6,769
Trade and other receivables	2,096
Intangible assets	100
Cash and cash equivalents	4,086
	13,051
Current liabilities	
Interest-bearing loans and borrowings	(2,336)
Trade and other payables	(1,192)
Other current liabilities	(40)
	(3,568)
Non-current liabilities	
Lease liabilities	(228)
Deferred tax liabilities	(4,191)
Other non-current liabilities	(697)
	(5,116)
Total net assets acquired	32,921
Less: non-controlling interests	(150)
Goodwill	8,287
Total fair value of consideration	41,058
Less: fair value of equity consideration	(27,196)
Less: fair value of replacement employee share awards	(513)
Less: cash and cash equivalents acquired	(4,086)
Net cash outflow	9,263

The estimated fair value and useful lives of intangible assets were as follows:

	Fair value $m	Useful lives Years
Launched products – C5 franchise (*Soliris*/*Ultomiris*)	18,480	6 to 15
Launched products – *Strensiq*, *Kanuma*, *Andexxa*	5,215	11 to 17
Products in development	2,760	Not amortised
Other intangibles	500	5 to 10
	26,955	

The fair value attributed to intangible assets was $26,955m and primarily represents intellectual property rights over launched products of $23,695m and products under development of $2,760m. These were fair valued using the multi-period excess earnings method, which uses a number of estimates regarding the amount and timing of future cash flows. The key assumptions in the cash flows are PTRS, peak year sales and revenue erosion curves. In accordance with the Group's policy on impairment assessments as set out on page 148, the assets were assessed for impairment in the final quarter of 2022 and 2021. Future milestones have been included in the valuation of the intangible assets (as a deduction of cash flows).

The fair value of inventory, which includes raw materials, work in progress and finished goods related to the launched products was estimated at $6,769m, an uplift of $5,635m on the carrying value prior to the acquisition. The fair value adjustment relates only to work in progress and finished goods and was calculated as the estimated selling price less costs to complete and sell the inventory, associated margins on these activities and holding costs. The vast majority of the fair value uplift has been unwound by 31 December 2022, with the unwind of the remaining inventory fair value uplift expected in 2023.

Property, plant and equipment principally comprises the manufacturing facilities in Dublin and Athlone, Ireland and was fair valued using a cost approach. The estimated fair value of $1,135m represents an uplift of $111m over carrying value.

The estimated fair value of contingent liabilities was $76m, relating to various claims and disputes in each case where there is a possible, but not probable, future financial exposure, and involve an assessment of the likelihood of a number of scenarios in relation to those matters. This amount has been included within other non-current liabilities of $697m.

The estimated fair value of trade and other receivables was $2,096m, which approximated the contractual cash flows.

The net deferred tax position reflected an adjustment of $5,215m related to the deferred tax impact of the fair value uplifts on intangible assets, inventories, property, plant and equipment and contingent liabilities as described above.

Goodwill amounting to $8,287m was recognised on acquisition and is underpinned by a number of elements, which individually could not be quantified. Most significant among these is the premium attributable to a pre-existing, well-positioned business in the innovation-intensive, high-growth rare diseases market with a highly skilled workforce and established reputation. Other important elements include the potential unidentified products that future research and development may yield and the core technological capabilities and knowledge base of the company. Goodwill is not expected to be deductible for tax purposes.

Non-controlling interests reflect Alexion's pre-existing minority equity interest in Caelum Biosciences and have been valued at $150m, the agreed-upon exercise price for the exclusive option to acquire the remaining equity. The option was exercised on 28 September 2021 and the acquisition of Caelum Biosciences closed shortly thereafter on 5 October 2021 (Note 26).

Alexion's results have been consolidated into the Group's results from 21 July 2021. For the period from acquisition to 31 December 2021, before reflecting the fair value adjustments arising on the acquisition, Alexion's Total Revenues were $3,071m and Profit after tax was $889m. If the acquisition had taken effect at the beginning of the reporting period in which the acquisition occurred (1 January 2021), on a pro forma basis, after reflecting the fair value adjustments arising on the acquisition, the Total Revenue of the combined Group for the year ended 31 December 2021 would have been $41,132m and the Loss after tax would have been $1,152m. 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 2021 and should not be taken to be representative of future results.

Total acquisition-related costs of $4m (2021: $171m) have been incurred by the Group, which include advisory, legal and other professional fees. These costs are presented in the Statement of Comprehensive Income within Selling, general and administrative expense.

The terms of the acquisition include a retention bonus plan for legacy Alexion employees whereby up to $50m may be used for retention bonus awards to employees at the level of Vice President or below. These bonuses vested and were paid six months after the acquisition, or earlier. In 2022, a cost of $3m (2021: $24m) has been recorded in the Statement of Comprehensive Income.

Upon completion of the acquisition, all unvested Alexion employee share awards were converted into AstraZeneca restricted stock awards that continue to have, and shall be subject to, the same terms and conditions as applied in the corresponding Alexion awards immediately prior to completion. Alexion Performance Stock Plan (PSU) awards that included performance-based vesting conditions were converted using the greater of the original target level and Alexion's assessment of the level of achievement immediately prior to completion (subject to a limit of 175 per cent. for the awards granted in 2019 and a limit of 150 per cent. for the awards granted in 2020). In the year, a cost of $257m (2021: $257m) has been recorded in the Statement of Comprehensive Income ($9m (2021: $9m)) in Cost of sales, $92m (2021: $73m) in Research and development expense and $156m (2021: $175m) in Selling, general and administrative expense). Payments made to the Employee Benefit Trust upon vesting of share awards recognised as part of the consideration for the acquisition of Alexion are recognised within investing activities in the Group's Statement of Cash Flows as the cash payment relates to the settlement of the obligation that arose on the acquisition of Alexion that was included as part of the consideration for the acquisition.

There were no acquisitions of business operations in 2020.

28 Financial risk management objectives and policies

The Group's principal financial instruments, other than derivatives, comprise bank overdrafts, loans and other borrowings, lease liabilities, 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, together with the Group's approach to capital management, are set out below.

Capital management

The capital structure of the Group consists of Shareholders' equity (Note 24), Debt (Note 19), Other current investments (Note 12) and Cash (Note 17). 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 IFRS 9. Amounts due on invoices that have not been factored at year end, from customers that are subject to factoring arrangements are disclosed in Note 16.

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

The Board regularly reviews its shareholders' distribution policy, which comprises a regular cash dividend and potentially a share repurchase component. No share repurchases have been made since 2012.

The Group's net debt position (loans and borrowings net of Cash and cash equivalents, Other investments and Derivative financial instruments) has decreased by $1,399m from a net debt position of $24,322m at the beginning of the year to a net debt position of $22,923m at 31 December 2022. Gross debt reduced from $30,781m to $29,232m, principally due to the repayment of the $1,000m 2.75% bond and a $250m floating rate note.

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 and European commercial paper, bank loans, committed bank facilities and cash resources to manage short-term liquidity and manages long-term liquidity by raising funds through the capital markets. At 31 December 2022, the Group was assigned short-term credit ratings of P-2 by Moody's and A-1 by Standard and Poor's. The Group's long-term credit rating was A3 Stable outlook by Moody's and A Stable outlook by Standard and Poor's.

In addition to Cash and cash equivalents of $6,166m, short-term fixed income investments of $13m, fixed deposits of $64m, less overdrafts of $183m at 31 December 2022, the Group has committed bank facilities of $4,875m available to manage liquidity. These committed bank facilities have no financial covenants and mature in April 2026. The Group regularly monitors the credit standing of the banks providing the facilities and currently does not anticipate any issue with drawing on the committed facilities should this be necessary. Advances under these facilities currently bear an interest rate per annum based on US dollar LIBOR (or other relevant benchmark rate) plus a margin. The facilities contain arrangements to switch to alternative risk free rate benchmarks before June 2023.

At 31 December 2022, the Group has $3,068m outstanding from debt issued under a Euro Medium Term Note programme and $20,651m under an SEC-registered programme. The funds made available under these facility agreements may be used for the general corporate purposes of the Group.

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 and bank loans $m	Lease liability $m	Trade and other payables $m	Total non-derivative financial instruments $m	Derivative financial instruments receivable $m	Derivative financial instruments payable $m	Total derivative financial instruments $m	Total $m
Within one year	667	2,136	207	15,812	18,822	(9,719)	9,620	(99)	18,723
In one to two years	–	1,839	168	2,584	4,591	(60)	67	7	4,598
In two to three years	–	2,101	120	1,658	3,879	(59)	67	8	3,887
In three to four years	–	1,617	82	1,728	3,427	(1,151)	1,080	(71)	3,356
In four to five years	–	2,502	53	722	3,277	(36)	40	4	3,281
In more than five years	–	16,921	108	1,435	18,464	(1,707)	1,652	(55)	18,409
	667	27,116	738	23,939	52,460	(12,732)	12,526	(206)	52,254
Effect of interest	–	(7,974)	–	–	(7,974)	379	(405)	(26)	(8,000)
Effect of discounting, fair values and issue costs	(1)	(109)	(57)	(2,070)	(2,237)	(70)	24	(46)	(2,283)
31 December 2020	666	19,033	681	21,869	42,249	(12,423)	12,145	(278)	41,971

	Bank overdrafts and other loans $m	Bonds and bank loans $m	Lease liability $m	Trade and other payables $m	Total non-derivative financial instruments $m	Derivative financial instruments receivable $m	Derivative financial instruments payable $m	Total derivative financial instruments $m	Total $m
Within one year	387	1,981	256	19,007	21,631	(11,766)	11,774	8	21,639
In one to two years	–	5,647	210	2,521	8,378	(55)	66	11	8,389
In two to three years	–	5,242	163	1,669	7,074	(1,060)	1,079	19	7,093
In three to four years	–	2,591	130	862	3,583	(35)	39	4	3,587
In four to five years	–	2,970	96	233	3,299	(118)	111	(7)	3,292
In more than five years	–	19,727	221	2,212	22,160	(1,521)	1,480	(41)	22,119
	387	38,158	1,076	26,504	66,125	(14,555)	14,549	(6)	66,119
Effect of interest	–	(8,609)	–	–	(8,609)	299	(325)	(26)	(8,635)
Effect of discounting, fair values and issue costs	–	(142)	(89)	(2,633)	(2,864)	(36)	7	(29)	(2,893)
31 December 2021	387	29,407	987	23,871	54,652	(14,292)	14,231	(61)	54,591

	Bank overdrafts and other loans $m	**Bonds and bank loans $m**	**Lease liability $m**	**Trade and other payables $m**	**Total non-derivative financial instruments $m**	**Derivative financial instruments receivable $m**	**Derivative financial instruments payable $m**	**Total derivative financial instruments $m**	**Total $m**
Within one year	**365**	**5,777**	**249**	**19,065**	**25,456**	**(12,445)**	**12,478**	**33**	**25,489**
In one to two years	**–**	**5,233**	**208**	**2,086**	**7,527**	**(1,012)**	**1,078**	**66**	**7,593**
In two to three years	**–**	**2,608**	**172**	**872**	**3,652**	**(34)**	**38**	**4**	**3,656**
In three to four years	**–**	**2,983**	**128**	**595**	**3,706**	**(103)**	**103**	**–**	**3,706**
In four to five years	**–**	**1,267**	**84**	**814**	**2,165**	**(32)**	**35**	**3**	**2,168**
In more than five years	**–**	**18,156**	**184**	**3,177**	**21,517**	**(1,436)**	**1,378**	**(58)**	**21,459**
	365	**36,024**	**1,025**	**26,609**	**64,023**	**(15,062)**	**15,110**	**48**	**64,071**
Effect of interest	**(15)**	**(7,982)**	**–**	**–**	**(7,997)**	**227**	**(249)**	**(22)**	**(8,019)**
Effect of discounting, fair values and issue costs	**–**	**(113)**	**(72)**	**(3,299)**	**(3,484)**	**63**	**7**	**70**	**(3,414)**
31 December 2022	**350**	**27,929**	**953**	**23,310**	**52,542**	**(14,772)**	**14,868**	**96**	**52,638**

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.

The Group has $2bn of bank loans that mature in July 2023 and $2bn of bank loans that mature in July 2024, which the Group can repay before maturity at face value. Other than that, 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 $2,222m of contingent consideration held within Trade and other payables (see Note 20).

Market risk

Interest rate risk

The Group maintains a Board-approved mix of fixed and floating rate debt and uses underlying debt, interest rate swaps and forward rate agreements to manage this mix.

At 31 December 2022, interest rate swaps with a notional value of $288m are fair valued through profit or loss and this has effectively converted the 7% guaranteed debentures payable in 2023 to floating rates. No new interest rate swaps were entered into during 2022.

The majority of surplus cash is currently invested in US dollar liquidity funds and investment-grade fixed income securities.

The interest rate profile of the Group's interest-bearing financial instruments are 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.

			2022			2021			2020
	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	**2,476**	**3,066**	**5,542**	1,232	661	1,893	1,357	1,029	2,386
Non-current	**21,511**	**2,179**	**23,690**	23,985	4,903	28,888	17,005	989	17,994
Total	**23,987**	**5,245**	**29,232**	25,217	5,564	30,781	18,362	2,018	20,380
Financial assets									
Fixed deposits	**64**	**–**	**64**	53	–	53	42	–	42
Cash collateral pledged to counterparties	**–**	**162**	**162**	–	–	–	–	–	–
Cash and cash equivalents	**250**	**5,916**	**6,166**	–	6,329	6,329	–	7,832	7,832
Total	**314**	**6,078**	**6,392**	53	6,329	6,382	42	7,832	7,874

In addition to the financial assets above, there are $9,546m (2021: $8,765m; 2020: $6,328m) of other current and non-current asset investments and other financial assets. Of these, $nil receive floating rate interest (2021: $nil; 2020: $nil).

28 Financial risk management objectives and policies *continued*

The Group is also exposed to market risk on other investments.

	2022 $m	2021 $m	2020 $m
Equity securities at fair value through Other comprehensive income (Note 12)	**1,056**	1,168	1,108
Non-current fixed income securities at fair value through profit and loss (Note 12)	**10**	–	–
Total	**1,066**	1,168	1,108

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 61% of Group external sales in 2022 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 2022, before the impact of derivatives, 2% of interest-bearing loans and borrowings were denominated in pounds sterling and 9% 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. For details of non-US dollar debt in a designated hedging relationship please see the Hedge accounting section within this Note 28 from page 188.

The Group holds cross-currency swaps to hedge against the impact of fluctuations in foreign exchange rates. 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, with any ineffectiveness taken to profit.

As at 31 December 2022, the Group operates in three countries designated as hyperinflationary, being Argentina, Venezuela and Turkey. The foreign exchange risk of these markets has been assessed and deemed to be immaterial.

Transactional

The Group aims to hedge all its forecasted major transactional currency exposures on working capital balances, which typically extend for up to three months. Where practicable, these are hedged using forward foreign exchange contracts. In addition, external dividend payments in pounds sterling to UK shareholders and in Swedish krona to Swedish shareholders are fully hedged from announcement date to payment date. Foreign exchange gains and losses on forward contracts transacted for transactional hedging are taken to profit or to Other comprehensive income if the contract is in a designated cashflow hedge.

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 2022, with all other variables held constant. Based on the composition of our long-term debt portfolio and cash reserves as at 31 December 2022, a 1% increase in interest rates would result in an additional $52m in interest expense on the debt and an additional $59m interest income on the cash reserves. The exchange rate sensitivity analysis assumes an instantaneous 10% change in foreign currency exchange rates from their levels at 31 December 2022, 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 incremental 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 2020	+1%	-1%	+10%	-10%
Increase/(decrease) in fair value of financial instruments ($m)	1,696	(1,758)	114	(132)
Impact on profit: (loss)/gain ($m)	–	–	(57)	74
Impact on equity: gain/(loss) ($m)	–	–	171	(206)

	Interest rates		Exchange rates	
31 December 2021	+1%	-1%	+10%	-10%
Increase/(decrease) in fair value of financial instruments ($m)	1,978	(2,106)	82	(85)
Impact on profit: gain/(loss) ($m)	–	–	24	(9)
Impact on equity: gain/(loss) ($m)	–	–	58	(76)

	Interest rates		Exchange rates	
31 December 2022	**+1%**	**-1%**	**+10%**	**-10%**
Increase/(decrease) in fair value of financial instruments ($m)	**1,317**	**(1,490)**	**81**	**(89)**
Impact on profit: gain/(loss) ($m)	**–**	**–**	**26**	**(15)**
Impact on equity: gain/(loss) ($m)	**–**	**–**	**55**	**(74)**

Credit risk

The Group is exposed to credit risk on financial assets, such as cash investments, derivative instruments, and 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. Under IFRS 9, the effect of the losses and gains arising from own credit risk on the fair value of bonds designated at fair value through profit or loss are recorded in Other comprehensive income.

Financial counterparty credit risk

The majority of the AstraZeneca Group's cash is centralised within the Group treasury entity and is subject to counterparty risk on the principal invested. The level of the Group's cash investments and hence credit risk will depend on the cash flow generated by the Group and the timing of the use of that cash. The credit 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 Group's principal financial counterparty credit risks at 31 December 2022 were as follows:

Current assets

	2022 $m	2021 $m	2020 $m
Cash at bank and in hand	**1,411**	1,461	1,182
Money market liquidity funds	**4,486**	4,772	6,602
Other short-term cash equivalents	**269**	96	48
Total Cash and cash equivalents (Note 17)	**6,166**	6,329	7,832
Fixed income securities at fair value through profit and loss (Note 12)	**13**	16	118
Cash collateral pledged to counterparties (Note 12)	**162**	–	–
Fixed deposits (Note 12)	**64**	53	42
Total derivative financial instruments (Note 13)	**87**	83	142
Current assets subject to credit risk	**6,492**	6,481	8,134

Non-current assets

	2022 $m	2021 $m	2020 $m
Derivative financial instruments (Note 13)	**74**	102	171
Non-current assets subject to credit risk	**74**	102	171

The majority of the Group's cash is invested in US dollar AAA rated money market liquidity funds. The money market liquidity fund portfolios are managed by five external third-party fund managers to maintain an AAA rating. The Group's investments represent no more than 10% of each overall fund value. There were no other significant concentrations of financial credit risk at the reporting date.

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 2022 was $89m (2021: $93m; 2020: $288m) and the carrying value of such cash collateral posted by the Group at 31 December 2022 was $162m (2021: $47m; 2020: $11m).

The impairment provision for other financial assets at 31 December 2022 was immaterial.

Trade 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 applies the expected credit loss approach to establish an allowance for impairment that represents its estimate of expected losses in respect of Trade receivables.

The Group applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all Trade receivables. To measure expected credit losses, Trade receivables have been grouped based on shared credit characteristics and the days past due.

The expected loss rates are based on payment profiles over a period of 36 months before 31 December 2022, 31 December 2021 or 31 December 2020 respectively and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customer to settle the receivables.

On that basis, the loss allowance was determined as follows:

31 December 2020	Current	0-90 days past due	90-180 days past due	Over 180 days past due	Total
Expected loss rate	0.1%	1.6%	19.4%	60.6%	
Gross carrying amount ($m)	3,659	124	21	25	3,829
Loss allowance ($m)	2	2	4	15	23

28 Financial risk management objectives and policies *continued*

31 December 2021	Current	0-90 days past due	90-180 days past due	Over 180 days past due	Total
Expected loss rate	0.1%	1.2%	22.6%	11.0%	
Gross carrying amount ($m)	5,617	328	18	91	6,054
Loss allowance ($m)	5	4	4	10	23

31 December 2022	**Current**	**0-90 days past due**	**90-180 days past due**	**Over 180 days past due**	**Total**
Expected loss rate	**0.03%**	**0.3%**	**32.0%**	**40.6%**	
Gross carrying amount ($m)	**6,791**	**331**	**50**	**99**	**7,271**
Loss allowance ($m)	**2**	**1**	**16**	**40**	**59**

Trade receivables are written off where there is no reasonable expectation of recovery.

Impairment losses on Trade receivables are presented as net impairment losses within Operating profit, any subsequent recoveries are credited against the same line.

In the US, sales to three wholesalers accounted for approximately 73% of US sales (2021: three wholesalers accounted for approximately 94%; 2020: three wholesalers accounted for approximately 95%).

The movements of the Group expected credit losses provision are follows:

	2022 $m	2021 $m	2020 $m
At 1 January	**23**	23	21
Net movement recognised in income statement	**37**	(2)	3
Amounts utilised, exchange and other movements	**(1)**	2	(1)
At 31 December	**59**	23	23

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 credit or charge is recorded in Operating profit.

Hedge accounting

The Group uses foreign currency borrowings, foreign currency forwards and swaps, currency options, interest rate swaps and cross-currency 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 IFRS 9. Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument. Sources of hedge effectiveness will depend on the hedge relationship designation but may include:

- a significant change in the credit risk of either party to the hedging relationship
- a timing mismatch between the hedging instrument and the hedged item
- movements in foreign currency basis spread for derivatives in a fair value hedge
- a significant change in the value of the foreign currency denominated net assets of the Group in a net investment hedge.

The hedge ratio for each designation will be established by comparing the quantity of the hedging instrument and the quantity of the hedged item to determine their relative weighting; for all of the Group's existing hedge relationships the hedge ratio has been determined as 1:1. 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 following table represents the Group's continuing designated hedge relationships under IFRS 9.

2020

			Other comprehensive income						
	Nominal amounts in local currency	Carrying value $m	Opening balance 1 January 2020 $m	Fair value (gain)/loss deferred to OCI $m	Fair value loss recycled to the Income statement $m	Closing balance 31 December 2020 $m	Average maturity year	Average USD FX rate	Average pay interest rate
Fair value hedge – foreign currency and interest rate risk[1]									
Cross currency interest rate swap – Euro bond	EUR 300m	43	–	–	–	–	2021	1.09	USD LIBOR + 1.27%
Cash flow hedges – foreign currency and interest rate risk[2, 4, 5]									
Cross currency interest rate swaps – Euro bonds	EUR 2,200m	150	(30)	(163)	239	46	2025	1.14	USD 2.69%
FX Forwards – short term FX risk	USD 618m	5	–	(20)	15	(5)	2021	–	–
Net investment hedge – foreign exchange risk[3, 4]									
Transactions matured pre-2020		–	(565)	–	–	(565)	–	–	–
Cross currency interest rate swap – JPY investment	JPY 58.5bn	19	(4)	(15)	–	(19)	2029	108.03	JPY 1.53%
Cross currency interest rate swap – CNY investment	CNY 458m	(2)	1	1	–	2	2026	6.68	CNY 4.80%
Foreign currency borrowing – GBP investment	GBP 350m	(475)	(251)	18	–	(233)	2031	n/a	GBP 5.75%
Foreign currency borrowing – EUR investment[6]	EUR 450m	(548)	34	51	–	85	2021	n/a	EUR 0.88%
Contingent consideration liabilities and Acerta Pharma put option liability – AZUK and AZAB USD investments	USD 5,252m	(5,252)	2,053	(642)	–	1,411	–	–	–

2021

			Other comprehensive income						
	Nominal amounts in local currency	Carrying value $m	Opening balance 1 January 2021 $m	Fair value (gain)/loss deferred to OCI $m	Fair value loss recycled to the Income statement $m	Closing balance 31 December 2021 $m	Average maturity year	Average USD FX rate	Average pay interest rate
Cash flow hedges – foreign currency and interest rate risk[2, 4, 5]									
Cross currency interest rate swaps – Euro bonds	EUR 1,700m	(43)	46	182	(201)	27	2026	1.14	USD 2.85%
FX Forwards – short term FX risk	USD 1,220m	12	(5)	–	(7)	(12)	2022	–	–
Net investment hedge – foreign exchange risk[3, 4]									
Transactions matured pre-2021		–	(565)	–	–	(565)	–	–	–
Cross currency interest rate swap – JPY investment	JPY 58.3bn	62	(19)	(43)	–	(62)	2029	108.03	JPY 1.53%
Cross currency interest rate swap – CNY investment	CNY 458m	(2)	2	–	–	2	2026	6.68	CNY 4.80%
Foreign currency borrowing – GBP investment	GBP 350m	470	(233)	(5)	–	(238)	2031	n/a	GBP 5.75%
Foreign currency borrowing – EUR investment[6]	EUR 450m	–	85	(47)	–	38	2021	n/a	EUR 0.88%
Foreign currency borrowing – EUR investment[7]	EUR 800m	898	–	(50)	–	(50)	2029	n/a	EUR 0.38%
Contingent consideration liabilities and Acerta Pharma share purchase liability – AZUK and AZAB USD investments	USD 2,658m	(2,658)	1,411	421	–	1,832	–	–	–

2022

			Other comprehensive income						
	Nominal amounts in local currency	**Carrying value $m**	**Opening balance 1 January 2022 $m**	**Fair value (gain)/loss deferred to OCI $m**	**Fair value (gain)/loss recycled to the Income statement $m**	**Closing balance 31 December 2022 $m**	**Average maturity year**	**Average USD FX rate**	**Average pay interest rate**
Cash flow hedges – foreign currency and interest rate risk[2, 4, 5]									
Cross currency interest rate swaps – Euro bonds	**EUR 1,700m**	**(160)**	**27**	**118**	**(111)**	**34**	**2026**	**1.14**	**USD 2.85%**
FX Forwards – short term FX risk	**USD 1,126m**	**(12)**	**(12)**	**(14)**	**38**	**12**	**2023**	**–**	**–**
Net investment hedge – foreign exchange risk[3, 4]									
Transactions matured pre-2022		**–**	**(527)**	**–**	**–**	**(527)**	**–**	**–**	**–**
Cross currency interest rate swap – JPY investment	**JPY 58.3bn**	**55**	**(62)**	**7**	**–**	**(55)**	**2029**	**108.03**	**JPY 1.53%**
Cross currency interest rate swap – CNY investment	**CNY 458m**	**(4)**	**2**	**2**	**–**	**4**	**2026**	**6.68**	**CNY 4.80%**
Foreign currency borrowing – GBP investment	**GBP 350m**	**420**	**(238)**	**(50)**	**–**	**(288)**	**2031**	**n/a**	**GBP 5.75%**
Foreign currency borrowing – EUR investment[7]	**EUR 800m**	**846**	**(50)**	**(52)**	**–**	**(102)**	**2029**	**n/a**	**EUR 0.38%**
Contingent consideration liabilities and Acerta Pharma share purchase liability – AZUK and AZAB USD investments	**USD 2,093m**	**(2,093)**	**1,832**	**384**	**–**	**2,216**	**–**	**–**	**–**

[1] Swaps designated in a fair value hedge matured on 24 November 2021 and hedge ineffectiveness during 2022 was $nil (2021: $nil; 2020: gain of $1m).
[2] Hedge ineffectiveness recognised on swaps designated in a cash flow hedge during the period was $nil (2021: $nil; 2020: $nil).
[3] Hedge ineffectiveness recognised on swaps designated in a net investment hedge during the period was $nil (2021: $nil; 2020: $nil).
[4] Fair value movements on cross-currency interest rate swaps in cash flow hedge and net investment hedge relationships are shown inclusive of the impact of costs of hedging.
[5] Nominal amount of FX forwards in a cash flow hedge of $1,710m represents the USD equivalent notional of the FX forwards. By currency, the nominal amounts were SEK 8,148m at FX rate 10.4568, JPY 18,963m at 132.15, GBP 455m at 0.8288 and EUR 224m at 0.9389. All FX forwards in a cash flow hedge mature on 25 January 2023.
[6] The EUR 450m NIH matured in November 2021, when the hedging instrument, a EUR bond matured.
[7] On 3 June 2021, upon issuance of the EUR 800m 0.375% 2029 Non-callable bond, EUR 550m was designated in a net investment hedge of the foreign currency exposure in relation of an equivalent amount of EUR-denominated net assets. The remaining EUR 250m was subsequently designated in a net investment hedge upon maturity of the EUR 450m bond on 24 November 2021.

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. The Group held no options during the reporting period.

29 Employee costs and share plans for employees

Employee costs

The monthly 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.

	2022	2021	2020
Employees			
UK	**9,800**	8,900	7,900
Rest of Europe	**20,600**	18,300	16,600
The Americas	**20,900**	18,800	17,300
Asia, Africa & Australasia	**30,700**	33,600	33,000
Continuing operations	**82,000**	79,600	74,800

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

The number of people employed by the Group at the end of 2022 was 83,500 (2021: 83,100; 2020: 76,100).

29 Employee costs and share plans for employees *continued*

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

	2022 $m	2021 $m	2020 $m
Wages and salaries	**8,656**	7,633	6,273
Social security costs	**991**	886	726
Pension costs	**546**	564	435
Other employment costs	**1,338**	1,192	813
Total	**11,531**	10,275	8,247

Severance costs of $227m are not included above (2021: $238m; 2020: $116m).

The charge for share-based payments in respect of share plans is $619m (2021: $615m; 2020: $277m). Payments made to the Employee Benefit Trust upon vesting of share awards are recognised within operating cash flows, reflecting the substance of the arrangement in place between the group and the Trust. The plans are equity settled.

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 US, UK and Swedish schemes are described below, other arrangements apply elsewhere.

Bonus and share plans

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 190 participants may be eligible for awards granted as AstraZeneca ADRs. AstraZeneca ADRs 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.

UK

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 UK All-Employee Share Plan

The Company offers UK employees the opportunity to buy Partnership Shares (Ordinary Shares). Employees may invest up to £150 a month to purchase Partnership Shares in the Company at the current market value. 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.

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.

Other bonus and share plans that operate across the Group are described below.

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 (with awards granted as AstraZeneca ADRs for members of SET employed within the US). Awards of shares under this plan are typically made in March each year, the first award having been made in February 2006.

The AstraZeneca Performance Share Plan

This plan was approved by shareholders in 2020 for a period of 10 years (subsequently amended by approval of shareholders in 2021) and replaces the 2014 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 Performance Share Plan awards was made in May 2014 under the 2014 AstraZeneca Performance Share Plan. Awards granted under the plan vest after three years, or in the case of Executive Directors and members of the SET, after an additional two-year holding period, and is subject to the achievement of performance conditions. For awards granted to all participants in 2022, vesting is subject to a combination of measures focused on science and innovation, revenue growth, financial performance and carbon reduction. 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.

The AstraZeneca Investment Plan

This plan was introduced in 2010 and approved by shareholders at the 2010 AGM. The final grant of awards under this plan took place in March 2016. Awards granted under the plan vest after eight years and are subject to performance conditions measured over a period of four years.

The AstraZeneca Global Restricted Stock Plan

This plan was introduced in 2010. 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.

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 2022 to make awards to 112 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.

The AstraZeneca Extended Incentive Plan

This plan was introduced in 2018 and provides for the grant of awards to key employees, excluding Executive Directors. Awards are made on an ad hoc basis and 50% of the award will normally vest on the fifth anniversary of grant, with the balance vesting on the tenth anniversary of grant. The award 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 (if any) and which employees should be invited to participate.

Details of share options outstanding during the year for the main share plans are shown below.

	The AstraZeneca Performance Share Plan		The AstraZeneca Global Restricted Stock Plan		The AstraZeneca Restricted Share Plan		The AstraZeneca Extended Incentive Plan	
	Ordinary Shares '000	ADR Shares '000	Ordinary Shares '000	ADR Shares[1] '000	Ordinary Shares '000	ADR Shares '000	Ordinary Shares '000	ADR Shares '000
Outstanding at 1 January 2020	2,859	5,206	1,328	9,770	176	649	282	65
Granted	932	1,767	689	3,671	80	295	18	–
Forfeited	(191)	(478)	(113)	(1,077)	(6)	(79)	–	–
Cancelled	(3)	–	–	(9)	–	–	–	–
Exercised	(552)	(1,704)	(278)	(3,180)	(89)	(359)	–	–
Outstanding at 31 December 2020	3,045	4,791	1,626	9,175	161	506	300	65
Granted	1,275	2,082	902	4,509	139	481	–	175
Forfeited	(220)	(494)	(158)	(1,254)	(18)	(42)	(18)	(45)
Cancelled	(9)	–	(1)	(8)	–	–	–	–
Exercised	(632)	(1,201)	(341)	(2,881)	(27)	(182)	–	–
Outstanding at 31 December 2021	3,459	5,178	2,028	9,541	255	763	282	195
Granted	**1,059**	**2,339**	**1,237**	**6,478**	**75**	**216**	**–**	**–**
Forfeited	**(132)**	**(570)**	**(190)**	**(1,627)**	**(25)**	**(136)**	**(23)**	**–**
Cancelled	**–**	**–**	**–**	**(3)**	**–**	**–**	**–**	**–**
Exercised	**(756)**	**(1,223)**	**(606)**	**(2,706)**	**(72)**	**(165)**	**–**	**–**
Outstanding at 31 December 2022	**3,630**	**5,724**	**2,469**	**11,683**	**233**	**678**	**259**	**195**

[1] Shares issued to Alexion employees under the GRSP are covered under the Alexion employee share award below.

	The AstraZeneca Performance Share Plan		The AstraZeneca Global Restricted Stock Plan		The AstraZeneca Restricted Share Plan		The AstraZeneca Extended Incentive Plan	
	WAFV[1] pence	WAFV $	WAFV pence	WAFV $	WAFV pence	WAFV $	WAFV pence	WAFV $
WAFV of 2020 grants	6664	43.24	7408	47.71	7931	52.92	8386	–
WAFV of 2021 grants	6012	41.56	6893	47.75	7415	53.96	–	56.83
WAFV of 2022 grants	**8328**	**55.73**	**9167**	**61.21**	**9894**	**63.35**	**–**	**–**

[1] Weighted average fair value.

Alexion employee share award plan

At acquisition in 2021, Alexion employee share awards were converted into AstraZeneca restricted stock awards that continue to have, and shall be subject to, the same terms and conditions as applied in the corresponding Alexion awards immediately prior to completion. The fair value at the grant date was $57.54 and of the 15,220,000 ADR shares outstanding at 31 December 2021, 8,627,000 were exercised during 2022 and 980,000 were forfeited. During 2022, Alexion employees had the option to defer awards due to vest in July 2022 until February 2023 when they would also receive an additional vest equivalent to 15% of the shares deferred. As a result, 1,780,000 shares were deferred, resulting in an additional 267,000 ADR shares being issued under the Global Restricted Stock Plan, under original Alexion terms and conditions, with a grant date fair value of $65.62.

The weighted average fair value for awards granted under the AstraZeneca Performance Share Plan is primarily based on the market price at the point of grant adjusted for the market-based performance elements which are valued using a modified version of the Monte Carlo method. The fair values of all other plans are set using the market price at the point of award. These awards are settled in equity including dividends accumulated from the date of award to vesting.

30 Commitments, contingent liabilities and contingent assets

Commitments	**2022 $m**	2021 $m	2020 $m
Contracts placed for future capital expenditure on Property, plant and equipment and software development costs not provided for in these financial statements	**502**	388	689

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 an intangible asset 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	**11,729**	**1,320**	**2,662**	**2,698**	**5,049**
Future potential revenue milestone payments	**17,499**	**65**	**368**	**1,859**	**15,207**

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 (e.g. 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 2022.

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 56, 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 2020, 2021 or 2022.

In addition to expenditure for meeting current and foreseen environmental protection requirements, the Group incurs costs in investigating and cleaning up legacy 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 a number of 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 a number of 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 in progress. 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 2022 in the aggregate of $131m (2021: $90m; 2020: $100m), 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: (i) the nature and extent of claims that may be asserted in the future; (ii) whether AstraZeneca has or will have any legal obligation with respect to asserted or unasserted claims; (iii) the type of remedial action, if any, that may be selected at sites where the remedy is presently not known; (iv) the potential for recoveries from or allocation of liability to third parties; and (v) the length of time that the environmental investigation, remediation and liability allocation process can take. As per our accounting policy on page 148, 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. 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 $113m and $188m (2021: $99m and $165m; 2020: $95m and $158m) which relates mainly to the US.

Legal proceedings

AstraZeneca is involved in various legal proceedings considered typical to its business, including actual or threatened litigation and 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/or an estimate of the amount of any loss is difficult to ascertain.

There is one matter, which is considered probable that an outflow will be required, but for which we are unable to make an estimate of the possible loss or range of possible losses at this stage.

We do not believe that disclosure of the amounts sought by plaintiffs, if known, would be meaningful with respect to these legal proceedings. This is due to a number of factors, including (i) the stage of the proceedings (in many cases trial dates have not been set) and the overall length and extent of pre-trial discovery; (ii) the entitlement of the parties to an action to appeal a decision; (iii) clarity as to theories of liability, damages and governing law; (iv) uncertainties in timing of litigation; and (v) 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 30, 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 including within the next financial year. 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 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.

KJ 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 abbreviated new drug applications (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 2022, 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

Legal proceedings brought against AstraZeneca considered to be contingent liabilities

Enhertu

US patent proceedings

In October 2020, Seagen Inc. (Seagen) filed a complaint against Daiichi Sankyo Company, Limited in the US District Court for the Eastern District of Texas alleging that *Enhertu* infringes US Patent No. 10,808,039 (the '039 patent). AstraZeneca Pharmaceuticals LP co-commercialises *Enhertu* with Daiichi Sankyo, Inc. in the US. After trial in April 2022, the jury found that the patent was infringed and awarded Seagen $41.82m in past damages. In July 2022, the District Court entered final judgment and declined to enhance damages on the basis of willfulness. The parties await consideration of post-trial motions.

In December 2020 and January 2021, AstraZeneca and Daiichi Sankyo, Inc. filed post-grant review (PGR) petitions with the US Patent and Trademark Office (USPTO) alleging, inter alia, that the Seagen patent is invalid for lack of written description and enablement. The USPTO initially declined to institute the PGRs, but, in April 2022, the USPTO granted the rehearing requests, instituting both PGR petitions. Seagen subsequently disclaimed all patent claims at issue in one of the PGR proceedings. In July 2022, the USPTO reversed its institution decision and declined to institute the other PGR petition. AstraZeneca and Daiichi Sankyo, Inc. have requested reconsideration of the decision not to institute review of the patent.

Imfinzi

US patent proceedings

In March 2022, Bristol-Myers Squibb Co. and E.R. Squibb & Sons, LLC filed a lawsuit in US District Court for the District of Delaware against AstraZeneca alleging that AstraZeneca's marketing of *Imfinzi* infringes several of their patents. Trial has been scheduled for April 2024.

Patent proceedings outside the US

In February 2022, in Japan, Ono Pharmaceuticals filed a lawsuit in Tokyo District Court, Civil Division against AstraZeneca alleging that AstraZeneca's marketing of *Imfinzi* in Japan infringes several of their patents.

Imjudo

US patent proceedings

In January 2023, Bristol-Myers Squibb Co. and E.R. Squibb & Sons, LLC filed a lawsuit in US District Court for the District of Delaware against AstraZeneca alleging that AstraZeneca's marketing of *Imjudo* infringes two of their patents.

Tagrisso

US patent proceedings

In September 2021, Puma Biotechnology, Inc. and Wyeth LLC filed a patent infringement lawsuit in the US District Court for the District of Delaware against AstraZeneca relating to *Tagrisso*. Trial has been scheduled for May 2024.

Movantik

US patent proceedings

In March 2020, Aether Therapeutics, Inc. filed a patent infringement lawsuit in the US District Court for the District of Delaware against AstraZeneca, Nektar Therapeutics and Daiichi Sankyo, Inc., relating to *Movantik*. Trial has been scheduled for March 2023.

30 Commitments, contingent liabilities and contingent assets *continued*

Legal proceedings brought against AstraZeneca which have been concluded

Roxadustat

US patent proceedings

In April 2021, Akebia Therapeutics, Inc. (Akebia) and Otsuka America Pharmaceutical, Inc. (Otsuka) served AstraZeneca with a complaint seeking a declaration of invalidity and non-infringement for several of FibroGen, Inc's (FibroGen) method of use patents related to HIF prolylhydroxylase inhibitors. AstraZeneca is the exclusive licensee of FibroGen in the United States. In April 2022, this matter was dismissed and is now concluded.

Ultomiris

US patent proceedings

In November and December of 2018, Chugai Pharmaceutical Co., Ltd. (Chugai) filed lawsuits against Alexion in the Delaware District Court as well as in Tokyo District Court, alleging that *Ultomiris* infringed US and Japanese patents held by Chugai. In March 2022, Alexion entered into a settlement agreement with Chugai for $775m that resolved all patent disputes between the two companies related to *Ultomiris*. This matter is now concluded.

Legal proceedings brought by AstraZeneca considered to be contingent assets

Brilinta

US patent proceedings

In 2015 and subsequently, in response to Paragraph IV notices from ANDA filers, AstraZeneca filed patent infringement lawsuits in the US District Court for the District of Delaware (the District Court) relating to patents listed in the FDA Orange Book with reference to *Brilinta*. In 2022, AstraZeneca entered into several separate settlements and the District Court entered consent judgments to dismiss each of the corresponding litigations. Additional proceedings are ongoing in the District Court. No trial date has been set.

Calquence

US patent proceedings

In February 2022, in response to Paragraph IV notices from multiple ANDA filers, AstraZeneca filed patent infringement lawsuits in the US District Court for the District of Delaware. In its complaint, AstraZeneca alleges that a generic version of *Calquence*, if approved and marketed, would infringe patents listed in the US FDA Orange Book with reference to *Calquence* that are owned or licensed by AstraZeneca. Trial has been scheduled for March 2025.

In February 2023, Sandoz Inc. filed a petition for inter partes review with the US Patent and Trademark Office (USPTO) of certain *Calquence* patent claims in US Patent No. 10,272,083 (the '083 patent). AstraZeneca has asserted claims for infringement of the '083 patent against Sandoz and other defendants in the US ANDA litigation. AstraZeneca is considering its response to Sandoz's petition before the USPTO.

Daliresp

US patent proceedings

In 2015 and subsequently, in response to Paragraph IV notices from ANDA filers, AstraZeneca filed patent infringement lawsuits in the US District Court for the District of New Jersey (the District Court) relating to patents listed in the FDA Orange Book with reference to *Daliresp*. In 2022, AstraZeneca entered into a settlement and the District Court entered a consent judgment to dismiss the corresponding litigation. Additional ANDA challenges are pending.

Faslodex

Patent proceedings outside the US

In 2021 in Japan, AstraZeneca received notice from the Japan Patent Office (JPO) that Sandoz K.K. and Sun Pharma Japan Ltd. (Sun) were seeking to invalidate the *Faslodex* formulation patent. AstraZeneca defended the challenged patent, and Sun withdrew from the JPO patent challenge. In May 2022, the JPO held the hearing in the matter and issued its preliminary decision in September 2022 upholding various claims of the challenged patent and determining that other patent claims were invalid. A final JPO decision is forthcoming.

Tagrisso

Patent proceedings outside the US

In Russia in October 2021, AstraZeneca filed a lawsuit in the Arbitration Court of the Moscow Region (the Court) against Axelpharm, LLC to prevent it from obtaining authorisation to market a generic version of *Tagrisso* prior to the expiration of AstraZeneca's patents covering *Tagrisso*. The lawsuit also names the Ministry of Health of the Russian Federation as a third party. In March 2022, the Court dismissed the lawsuit. In June 2022, the dismissal was affirmed on appeal. In January 2023, the dismissal was affirmed on further appeal. AstraZeneca is considering its option.

Farxiga/Forxiga

US patent proceedings

In 2018, in response to Paragraph IV notices, AstraZeneca initiated ANDA litigation against Zydus Pharmaceuticals (USA) Inc. (Zydus) in the US District Court for the District of Delaware (the District Court). In May 2021, trial against Zydus proceeded in the District Court and in October 2021, the District Court issued a decision finding the asserted claims of AstraZeneca's patent as valid and infringed by Zydus's ANDA product. In August 2022, Zydus appealed the District Court's decision. In November 2022, Zydus's appeal was dismissed. Additional ANDA challenges are pending.

Lokelma

US patent proceedings

In August 2022, in response to Paragraph IV notices, AstraZeneca initiated ANDA litigation against multiple generic filers in the US District Court for the District of Delaware. Trial has been scheduled for March 2025.

Symbicort

US patent proceedings

AstraZeneca is involved in ongoing ANDA litigations with Mylan Pharmaceuticals Inc. (Mylan) and Kindeva Drug Delivery L.P. (Kindeva) brought in the US District Court for the Northern District of West Virginia (the District Court). In the actions, AstraZeneca alleges that the defendants' generic versions of *Symbicort*, if approved and marketed, would infringe various AstraZeneca patents.

In one of those matters, in November 2022, the District Court determined that the asserted patent was invalid. In November 2022, AstraZeneca appealed that decision to the United States Court of Appeals for the Federal Circuit (the Federal Circuit). With respect to the other matter, following a stipulation of infringement and validity by Mylan and Kindeva that was subject to certain appeal issues, in December 2022, the District Court issued a Final Judgment in favour of AstraZeneca. In December 2022, Mylan and Kindeva appealed the Final Judgment to the Federal Circuit. Both appeals are scheduled to be heard in March 2023.

Lynparza

US patent proceedings

In December 2022, AstraZeneca received a Paragraph IV notice letter from an ANDA filer relating to patents listed in the FDA Orange Book with reference to *Lynparza*. AstraZeneca is reviewing the notice letter.

Legal proceedings brought by AstraZeneca which have been concluded

Tagrisso

US patent proceedings

In February 2020, in response to Paragraph IV notices from multiple ANDA filers, AstraZeneca filed patent infringement lawsuits in the US District Court for the District of Delaware. In its complaint, AstraZeneca alleges that a generic version of *Tagrisso*, if approved and marketed, would infringe a US Orange Book-listed *Tagrisso* patent. In the fourth quarter of 2021 and April 2022, AstraZeneca entered into settlement agreements with Zydus Pharmaceuticals (USA) Inc., Cadila Healthcare Limited, MSN Laboratories Pvt. Ltd., MSN Pharmaceuticals Inc. and Alembic Pharmaceuticals Limited. These settlements resolve all US patent litigation between the parties relating to *Tagrisso*.

Product liability litigation

Legal proceedings brought against AstraZeneca considered to be contingent liabilities

Farxiga and *Xigduo* XR

US proceedings

In several jurisdictions in the US, AstraZeneca has been named as a defendant in lawsuits involving plaintiffs claiming physical injury, including Fournier's Gangrene and necrotising fasciitis, from treatment with *Farxiga* and/or *Xigduo* XR. A majority of these claims are filed in Delaware state court and remain pending. One case, filed in state court in Minnesota, is scheduled for trial in October 2023.

Nexium and *Losec/Prilosec*

US proceedings

In the US, AstraZeneca is defending various lawsuits brought in federal and state courts involving multiple plaintiffs claiming that they have been diagnosed with various injuries following treatment with proton pump inhibitors (PPIs), including *Nexium* and *Prilosec*. The vast majority of those lawsuits relate to allegations of kidney injuries. In May 2017, counsel for a group of such plaintiffs claiming that they have been diagnosed with kidney injuries filed a motion with the Judicial Panel on Multidistrict Litigation (JPML) seeking the 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 (MDL) proceeding. In August 2017, the JPML granted the motion and consolidated the pending federal court cases in an MDL proceeding in District Court in New Jersey for pre-trial purposes. A bellwether trial has been scheduled for June 2023, with subsequent bellwether trials scheduled for July and September 2023. In addition to the MDL cases, there are cases filed in several state courts around the US; a case that was previously set to go to trial in Delaware state court was dismissed in October 2022.

In addition, AstraZeneca has been defending lawsuits involving allegations of gastric cancer following treatment with PPIs. One such claim is filed in the US District Court for the Middle District of Louisiana and was scheduled to go to trial in January 2023. That case has been postponed and a new trial date has not yet been set.

Canada proceedings

In Canada, in July and August 2017, AstraZeneca was served with three putative class action lawsuits. Two of the lawsuits have been dismissed, one in 2019 and one in 2021. The third lawsuit seeks authorisation to represent individual residents in Canada who allegedly suffered kidney injuries from the use of proton pump inhibitors, including *Nexium* and *Losec*.

Onglyza and *Kombiglyze*

US proceedings

In the US, AstraZeneca is defending various lawsuits alleging heart failure, cardiac injuries, and/or death from treatment with *Onglyza* or *Kombiglyze*. In February 2018, the Judicial Panel on Multidistrict Litigation ordered the transfer of various pending federal actions to the US District Court for the Eastern District of Kentucky (the District Court) for consolidated pre-trial proceedings with the federal actions pending in the District Court. In the California State Court coordinated proceeding, AstraZeneca's motion for summary judgment was granted in March 2022. The District Court granted AstraZeneca's motion for summary judgment in August 2022. Plaintiffs are in the process of appealing both decisions.

Legal proceedings brought against AstraZeneca which have been concluded

Byetta/Bydureon

US proceedings

In the US, Amylin Pharmaceuticals, LLC (a wholly owned subsidiary of AstraZeneca) and AstraZeneca are among multiple defendants in various lawsuits filed in federal and state courts involving claims of physical injury from treatment with *Byetta* and/or *Bydureon*. The lawsuits allege several types of injuries including pancreatic cancer and thyroid 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 Superior Court in Los Angeles, California (the California Court) for cases in California state courts. In March and April 2021, the District Court and the California Court respectively granted the Defendants' summary judgment motions, dismissing all cases alleging pancreatic cancer with prejudice. All remaining claims in both courts, including those alleging thyroid cancer, have since been dismissed. This matter is now concluded.

Commercial litigation

Legal proceedings brought against AstraZeneca considered to be contingent liabilities

Alexion Shareholder Litigation (US)

In December 2016, putative securities class action lawsuits were filed in the US District Court for the District of Connecticut (the District Court) against Alexion and certain officers and directors, on behalf of purchasers of Alexion publicly traded securities during the period 30 January 2014 through 26 May 2017. The amended complaint alleges that defendants engaged in securities fraud, including by making misrepresentations and omissions in its public disclosures concerning Alexion's *Soliris* sales practices, management changes, and related investigations. In August 2021, the District Court issued a decision denying in part Defendants' motion to dismiss the matter. Plaintiffs' motion for class certification, which Alexion opposed in April 2022, remains pending.

Anti-Terrorism Act Civil Lawsuit

In the US, in October 2017, AstraZeneca and certain other pharmaceutical and/or medical device companies were named as defendants in a complaint filed in US District Court for the District of Columbia (the District Court) by US nationals (or their estates, survivors, or heirs) who were killed or wounded in Iraq between 2005 and 2013. The plaintiffs allege that the defendants violated the US Anti-Terrorism Act and various state laws by selling pharmaceuticals and medical supplies to the Iraqi Ministry of Health. In July 2020, the District Court granted AstraZeneca's and the other defendants' motion and dismissed the lawsuit, and the plaintiffs appealed to the DC Circuit Court of Appeals (the Appellate Court). In January 2022, a panel of the Appellate Court reversed the dismissal and remanded the case back to the District Court. AstraZeneca and the other defendants have filed petitions requesting en banc review by the entire Appellate Court, which were denied in February 2023.

AZD1222 Securities Litigation

In January 2021, putative securities class action lawsuits were filed in the US District Court for the Southern District of New York (the District Court) against AstraZeneca PLC and certain officers, on behalf of purchasers of AstraZeneca publicly traded securities during a period later amended to cover 15 June 2020 through 29 January 2021. The Amended Complaint alleges that defendants made materially false and misleading statements in connection with the development of AZD1222, AstraZeneca's vaccine for the prevention of COVID-19. In September 2022, the District Court granted AstraZeneca's motion to dismiss the Amended Complaint with prejudice, disallowing any further amendments. Plaintiffs have appealed this decision.

Definiens

In Germany, in July 2020, AstraZeneca received a notice of arbitration filed with the German Institution of Arbitration from the sellers of Definiens AG (the Sellers) regarding the 2014 Share Purchase Agreement (SPA) between AstraZeneca and the Sellers. The Sellers claim that they are owed approximately $140m in earn-outs under the SPA. The arbitration hearing has been scheduled for March 2023.

Employment Litigation (US)

In December 2022, AstraZeneca was served with a lawsuit filed by seven former employees in the US District Court for the District of Delaware asserting age, religion, and disability discrimination claims related to AstraZeneca's COVID-19 vaccine mandate. These claims are pled on a single-plaintiff and class action basis.

Equity Litigation (US)

AstraZeneca was defending a putative class and collective action matter in the US District Court for the Northern District of Illinois brought by three named plaintiffs, who are former AstraZeneca pharmaceutical sales representatives. The case involved claims under the federal and Illinois Equal Pay Acts, with the plaintiffs alleging they were paid less than male employees who performed substantially similar and/or equal work. The plaintiffs sought various damages on behalf of themselves and the putative class and/or collective, including without limitation backpay, liquidated damages, compensatory and punitive damages, attorneys' fees, and interest. In January 2023, the District Court granted AstraZeneca's motion to dismiss plaintiffs' complaint.

30 Commitments, contingent liabilities and contingent assets *continued*

Portola Shareholder Litigation

In the US, in connection with Alexion's July 2020 acquisition of Portola Pharmaceuticals, Inc (Portola), Alexion assumed litigation to which Portola is a party. In January 2020, putative securities class action lawsuits were filed in the US District Court for the Northern District of California against Portola and certain officers and directors, on behalf of purchasers of Portola publicly traded securities during the period 8 January 2019 through 26 February 2020. The operative complaints allege that defendants made materially false and/or misleading statements or omissions with regard to *Andexxa*. In June 2022, the parties reached a settlement in principle of this matter, which is subject to court approval.

Seroquel XR (Antitrust Litigation)

In the US in 2019, AstraZeneca was named in several related complaints brought in the US District Court for the Southern District of New York (the District Court), including several putative class action lawsuits that were purportedly brought on behalf of classes of direct purchasers or end payors of *Seroquel XR*, that allege AstraZeneca and generic drug manufacturers violated US antitrust laws when settling patent litigation related to *Seroquel XR*. In July 2022, in response to AstraZeneca's motion, the District Court dismissed all claims relating to the settlement with one of the generic manufacturers but denied the motion with respect to all claims relating to the second generic manufacturer and allowed those claims to proceed.

Syntimmune

In connection with Alexion's prior acquisition of Syntimmune, Inc., (Syntimmune) in December 2020, Alexion was served with a lawsuit filed by the stockholders' representative for Syntimmune in Delaware State Court that alleged, among other things, breaches of contractual obligations relating to the 2018 merger agreement. The stockholders' representative alleges that Alexion failed to meet its obligations under the merger agreement to use commercially reasonable efforts to achieve the milestones. Alexion also filed a claim for breach of the representations in the 2018 merger agreement.

Legal proceedings brought against AstraZeneca which have been concluded

Array BioPharma

In December 2017, AstraZeneca was served with a complaint filed in New York State court by Array BioPharma, Inc. (Array) alleging breaches of contractual obligations relating to a 2003 collaboration agreement between AstraZeneca and Array. In May 2022, the parties resolved this dispute. This matter is now concluded.

Legal proceedings brought by AstraZeneca considered to be contingent assets

PARP Inhibitor Royalty Dispute

In October 2012, Tesaro, Inc. (now wholly owned by GlaxoSmithKline plc, 'GSK') entered into two worldwide, royalty-bearing patent license agreements with AstraZeneca related to GSK's product niraparib. In May 2021, AstraZeneca filed a lawsuit against GSK in the Commercial Court of England and Wales alleging that GSK has failed to pay all of the royalties due on niraparib sales under the license agreements. The case has been transferred to the Chancery Division and the trial has been scheduled for March 2023.

Government investigations/proceedings

Legal proceedings brought against AstraZeneca considered to be contingent liabilities

Brazilian tax assessment matter

In connection with an ongoing matter, in August 2019, the Brazilian Federal Revenue Service provided a Notice of Tax and Description of the Facts (the Tax Assessment) to two Alexion subsidiaries (the Brazil Subsidiaries), as well as to two additional entities, a logistics provider utilised by Alexion and a distributor. The Tax Assessment focuses on the importation of *Soliris* vials pursuant to Alexion's free drug supply to patients programme in Brazil.

Alexion prevailed in the first level of administrative appeals in the Brazilian federal administrative proceeding system based on a deficiency in the Brazil Tax Assessment. The decision was subject to an automatic (ex officio) appeal to the second level of the administrative courts, which is pending.

COVID-19 vaccine supply and manufacturing inquiries

In February 2022, a Brazilian Public Prosecutor filed a lawsuit against several defendants including the Brazilian Federal Government, AstraZeneca, and other COVID-19 vaccine manufacturers. In April 2022, a Brazilian Court issued an order dismissing the lawsuit. An appeal is pending.

Turkish Ministry of Health matter

In Turkey, in July 2020, the Turkish Ministry of Health (Ministry of Health) initiated an investigation regarding payments to healthcare providers by Alexion Turkey and former employees and consultants. The investigation arose from Alexion's disclosure of a $21.5m civil settlement with the US Securities & Exchange Commission (SEC) in July 2020 fully resolving the SEC's investigation into possible violations of the FCPA. In September 2021, the Ministry of Health completed its draft investigation report, and referred the matter to the Ankara Public Prosecutor's Office with a recommendation for further proceedings against certain former employees.

Texas Qui Tam

US proceedings

In December 2022, AstraZeneca was served with an unsealed civil lawsuit brought by a qui tam relator on behalf of the State of Texas in Texas state court, which alleges that AstraZeneca engaged in unlawful marketing practices.

Vermont US Attorney investigation

US proceedings

In April 2020, AstraZeneca received a Civil Investigative Demand from the US Attorney's Office in Vermont and the Department of Justice, Civil Division, seeking documents and information relating to AstraZeneca's relationships with electronic health-record vendors. AstraZeneca is cooperating with this enquiry.

Legal proceedings brought against AstraZeneca which have been concluded

Brazilian operations investigation

In May 2017, Brazilian authorities seized records and data from Alexion's Brazil offices as part of an investigation being conducted into Alexion's Brazilian operations. AstraZeneca cooperated with this enquiry. The prosecutor recommended discontinuance in September 2022 after determining that there was insufficient evidence to support a legal claim. The judicial authority approved discontinuance of the investigation, without any further enforcement action, in November 2022. This matter is now concluded.

COVID-19 vaccine supply and manufacturing inquiries

In June 2021, Argentina's Federal Criminal Prosecutor's Office (the Prosecutor) contacted AstraZeneca Argentina seeking documents and electronic records in connection with a local criminal investigation relating to the public procurement and supply of *Vaxzevria* in that country. In October 2021, the Prosecutor filed a submission with the presiding court requesting dismissal of the criminal investigation, and that request was granted by the court in February 2022. This matter is now closed.

Legal proceedings brought by AstraZeneca which have been concluded

Canadian pricing matter

In October 2017, Alexion filed proceedings in the Federal Court of Canada to seek judicial review of a determination by the Canadian Patented Medicine Prices Review Board (PMPRB) that Alexion had excessively priced *Soliris* in a manner inconsistent with the Canadian pricing rules and guidelines. In June 2022, the parties resolved this matter. This matter is now concluded.

Other

US 340B litigations and proceedings

US proceedings

AstraZeneca is involved in several matters relating to its contract pharmacy recognition policy under the 340B Drug Pricing Program in the US. AstraZeneca has sought to intervene in three lawsuits against several US government agencies and their officials relating to the appropriate interpretation of the governing statute for the 340B Drug Pricing Program. Two of the three cases are currently stayed pending further proceedings and the third case has been dismissed.

Administrative Dispute Resolution proceedings have also been initiated against AstraZeneca before the US Health Resources and Services Administration.

As previously disclosed, in January 2021, AstraZeneca filed a separate lawsuit in the US District Court for the District of Delaware alleging that an Advisory Opinion issued by the Department of Health and Human Services violates the Administrative Procedure Act. In June 2021, the District Court found in favour of AstraZeneca, invalidating the Advisory Opinion. Prior to the District Court's ruling, however, in May 2021, the US government issued new and separate letters to AstraZeneca (and other companies) asserting that our contract pharmacy policy violates the 340B statute. AstraZeneca amended the complaint to include allegations challenging the letter sent in May, and in February 2022, the District Court ruled in favour of AstraZeneca invalidating those letters sent by the US Government. In January 2023, the Court of Appeals affirmed the District Court decision in AstraZeneca's favour.

In September 2021, AstraZeneca was served with a class-action antitrust complaint filed in the US District Court for the Western District of New York (the District Court) by Mosaic Health alleging a conspiracy to restrict access to 340B discounts in the diabetes market through contract pharmacies. In September 2022, the District Court granted Defendants' motion to dismiss the Complaint. Plaintiffs are now seeking leave to amend their complaint.

Additional government inquiries

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

Tax

AstraZeneca considers whether it is probable that a taxation authority will accept an uncertain tax treatment. If it is concluded that it is not probable that the taxation authority will accept an uncertain tax treatment, where tax exposures can be quantified, a tax liability is recognised based on either the most likely amount method or the expected value method depending on which method management expects to better predict the resolution of the uncertainty. Tax liabilities for uncertain tax treatments can be built up over a long period of time but the resolution of such 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 the liabilities recognised in respect of uncertain tax treatments that have a material positive or negative effect on our results in any particular period. Details of the movements in relation to material uncertain tax treatments are discussed below.

KJ AstraZeneca faces a number of audits and reviews 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. Tax liabilities recognised for uncertain tax treatments require management to make key judgements with respect to the outcome of current and potential future tax audits, and actual results could vary from these estimates.

The total net tax liability recognised in the Group Financial Statements in respect of uncertain tax positions is $830m (2021: $768m; 2020: $1,014m). The net tax liability consists of $632m (2021: $702m; 2020: $852m) included within income tax payable, $20m (2021: $17m; 2020: $nil) included within deferred tax liability and $291m (2021: $(33)m; 2020: $76m) included within deferred tax asset, partially offset by $113m (2021: additional $82m; 2020: additional $86m) included within income tax receivable.

Transfer pricing

The net tax liability included in the Group Financial Statements to cover the worldwide exposure to uncertain tax treatments is $260m (2021: $77m; 2020: $287m). These matters can be complex and judgemental. The liability includes uncertain tax treatments which are estimated using the expected value method and depend on AstraZeneca's assessment of the likelihood of the approach taken by the tax authorities and could change in the future to reflect progress in tax authority reviews, the extent that any tax authority challenge is concluded, or matters lapse including following expiry of the relevant statutes of limitation resulting in a reduction in the tax charge in future periods.

For transfer pricing matters, including items under tax audit, AstraZeneca estimates the potential for additional tax liabilities above the amount provided where the possibility of the additional liabilities falling due is more than remote, to be up to $245m (2021: $48m; 2020: $251m) including associated interest.

There were no uncertain tax treatments relating to transfer pricing which give rise to potential for additional tax liabilities where the possibility of the additional liabilities falling due is more than remote.

Management believes that it is unlikely that these additional liabilities will arise. It is possible that some of these contingencies may change in the future to reflect progress in tax authority reviews, to the extent that any tax authority challenge is concluded, or matters lapse including following expiry of the relevant statutes of limitation resulting in a reduction in the tax charge in future periods. Management continues to believe that AstraZeneca's positions on all its transfer pricing positions, audits and disputes are robust, and that AstraZeneca has recognised appropriate tax balances, including consideration of whether corresponding relief will be available under Mutual Agreement procedures or unilaterally.

The increase in the net tax liability for uncertain tax positions relating to transfer pricing of $183m compared with 2021 is mainly as a result of an increase of tax liabilities arising from updates to estimates of prior period tax liabilities following progression of tax authority reviews.

Other uncertain tax treatments

Included in the net tax liability is $570m (2021: $691m; 2020: $727m) relating to a number of other uncertain tax treatments. The decrease of $121m in the net tax liability relating to the other uncertain tax treatments mainly relates to releases of tax liabilities following the expiry of the relevant statute of limitations and exchange rate effects. The majority of the liability relates to tax liabilities in respect of uncertain tax treatments which are estimated using the expected value method and depend on AstraZeneca's assessment of the likelihood of the approach taken by the tax authorities and could change in the future to reflect progress in tax authority reviews, the extent that any tax authority challenge is concluded, or matters lapse including following expiry of the relevant statutes of limitation resulting in a reduction in the tax charge in future periods.

For these other tax liabilities in respect of uncertain tax treatments, AstraZeneca estimates the potential for additional liabilities above the amount provided where the possibility of the additional liabilities falling due is more than remote, to be up to $209m (2021: $273m; 2020: $293m) including

30 Commitments, contingent liabilities and contingent assets *continued*

associated interest. It is possible that some of these liabilities may reduce in the future if any tax authority challenge is concluded or matters lapse following expiry of the relevant statutes of limitation, resulting in a reduction in the tax charge in future periods.

For uncertain tax treatments relating to other tax matters for which no tax liability has been recognised, AstraZeneca estimates the potential for additional tax liabilities where the possibility of the additional liabilities falling due is more than remote to be up to $280m (2021: $325m; 2020: $224m) including associated interest.

Timing of cash flows and interest

The Group is currently under audit in several countries and the timing of any resolution of these audits is uncertain.

It is not possible to estimate the timing of tax cash flows in relation to each outcome. It is anticipated that tax payments may be required in relation to a number of significant disputes which may be resolved over the next one to two years. AstraZeneca considers the tax liabilities set out above to appropriately reflect the expected value of any final settlement. Some of the items discussed above are not currently within the scope of tax authority audits and may take longer to resolve.

Included within other payables is a net amount of interest arising on tax contingencies of $106m (2021: $85m; 2020: $82m).

31 Statutory and other information

	2022 $m	2021 $m	2020 $m
Fees payable to PricewaterhouseCoopers LLP and its associates:			
Group audit fee	**9.9**	10.5	6.3
Fees payable to PricewaterhouseCoopers LLP and its associates for other services:			
The audit of subsidiaries pursuant to legislation	**15.1**	15.2	10.8
Attestation under s404 of Sarbanes-Oxley Act 2002	**3.1**	2.0	2.0
Audit-related assurance services	**0.7**	4.5	0.7
Other assurance services	**0.2**	3.4	0.2
Fees payable to PricewaterhouseCoopers Associates in respect of the Group's pension schemes:			
The audit of subsidiaries' pension schemes	**0.3**	0.3	0.3
	29.3	35.9	20.3

$0.6m of fees payable in 2022 are in respect of the Group audit and audit of subsidiaries related to prior years (2021: $0.4m in respect of the Group audit and audit of subsidiaries related to prior years).

$0.3m of 2021 Group audit fees and $0.7m of 2021 Audit-related assurance services and Other assurance services relate to pre-acquisition fees incurred by Alexion.

Included in the 2021 Audit-related assurance services and Other assurance services are $6.1m of services provided in relation to the acquisition of Alexion and related debt issuance.

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.

	2022 $'000	2021 $'000	2020 $'000
Short-term employee benefits	**38,632**	32,985	29,126
Post-employment benefits	**1,388**	1,378	1,602
Share-based payments	**56,297**	45,234	27,666
	96,317	79,597	58,394

Total remuneration is included within employee costs (see Note 29).

32 Subsequent events

On 9 January 2023, it was announced that AstraZeneca had entered into a definitive agreement to acquire CinCor Pharma, Inc. (CinCor), a US-based clinical-stage biopharmaceutical company, focused on developing novel treatments for resistant and uncontrolled hypertension as well as chronic kidney disease. On 23 January 2023, AstraZeneca initiated a tender offer to acquire all of CinCor's outstanding shares for a price of $26 per share in cash at closing, plus a non-tradable contingent value right of $10 per share in cash payable upon a specified regulatory submission of a baxdrostat product. Combined, the upfront and maximum potential contingent value payments represent, if achieved, a transaction value of approximately $1.8bn. As part of the transaction, AstraZeneca will acquire the cash and marketable securities on CinCor's balance sheet, which totalled approximately $522m as of 30 September 2022. The transaction is expected to close in the first quarter of 2023.

On 16 January 2023, AstraZeneca completed the acquisition of Neogene Therapeutics Inc. (Neogene). AstraZeneca acquired all outstanding equity of Neogene for a total consideration of up to $320m, on a cash and debt free basis. This includes an initial payment of $200m on deal closing, and a further up to $120m in both contingent milestones-based and non-contingent consideration.

On 30 January 2023, AstraZeneca completed the sale of its West Chester site in Ohio, US, to National Resilience, Inc. On completion of the sale, the Property, plant and equipment assets associated with this transaction of $150m which were recorded as Assets held for sale as at 31 December 2022 have been disposed of, with no net impact recorded in the Consolidated Statement of Comprehensive Income.

On 2 February 2023, the Group entered into an additional $2.0bn of two-year committed bank facilities.

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 place of incorporation, registered office address, and the effective percentage of equity owned as at 31 December 2022 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 2022.

At 31 December 2022	Group Interest
Wholly owned subsidiaries	
Algeria	
AAPM SARL	100%
Number 20, Micro-Economic Zone, Hydra Business Center, Dar El Medina, Algiers, Algeria	
Argentina	
AstraZeneca S.A.	100%
Nicolas de Vedia 3616, Piso 8, Ciudad Autónoma de Buenos Aires, Argentina	
Alexion Pharma Argentina SRL	100%
Avenida Leandro N. Alem 592 Piso 6, Buenos Aires, Argentina	
Australia	
AstraZeneca Holdings Pty Limited	100%
AstraZeneca Pty Limited	100%
Alexion Pharmaceuticals Australasia Pty Ltd	100%
66 Talavera Road, Macquarie Park, NSW 2113, Australia	
LogicBio Australia Pty Limited	100%
Level 40, 2-26 Park Street, Sydney, NSW 2000, Australia	
Austria	
AstraZeneca Österreich GmbH	100%
Landstraßer Hauptstraße 1A, A-1030 Wien, Austria	
Alexion Pharma Austria GmbH	100%
Donau-City-Straße 7, 30. Stock, DC Tower, Vienna 1220, Austria	
Portola Österreich GmbH (in liquidation)	100%
Mooslackengasse 17, 1190 Wien, Austria	
Belgium	
AstraZeneca S.A. / N.V.	100%
Alfons Gossetlaan 40 bus 201 at 1702 Groot-Bijgaarden, Belgium	
Alexion Pharma Belgium Sprl	100%
Alexion Services Europe Sprl	100%
de Meeûssquare 37, Bruxelles 1000, Belgium	
Bermuda	
Alexion Bermuda Holding ULC	100%
Alexion Bermuda Limited	100%
Alexion Bermuda Partners LP	100%
Canon's Court, 22 Victoria St., Hamilton Bermuda	
Brazil	
AstraZeneca do Brasil Limitada	100%
Rod. Raposo Tavares, KM 26, 9, Cotia, Brazil	
Alexion Farmacêutica América Latina Serviços de Administração de Vendas Ltda.	100%
Alexion Serviços e Farmacêutica do Brasil Ltda	100%
Av. Dr Chucri Zaidan, 1240, 15° andar, CEP 04711-130, Ed. Morumbi Corporate – Golden Tower Vila São Francisco, São Paulo, Brazil	
Bulgaria	
AstraZeneca Bulgaria EOOD	100%
1057 Sofia, Izgrev Region, 36 Dragan Tsankov Blvrd, Bulgaria	
Canada	
AstraZeneca Canada Inc.[1]	100%
Suite 5000, 1004 Middlegate Road, Ontario, L4Y 1M4, Canada	
Alexion Pharma Canada Corporation	100%
1300-1969 ST Upper Water, Halifax, NS B3J3R7, Canada	
Cayman Islands	
AZ Reinsurance Limited	100%
18 Forum Lane, 2nd Floor, Camana Bay, Grand Cayman, P.O. BOX 69, Cayman Islands	
Chile	
AstraZeneca S.A.	100%
AstraZeneca Farmaceutica Chile Limitada	100%
Av. Isidora Goyenechea 3477, 2nd Floor, Las Condes, Santiago, Chile	
China	
AstraZeneca Pharmaceutical Co., Limited	100%
No. 2, Huangshan Road, Wuxi, Jiangsu Province, China	
AstraZeneca (Wuxi) Trading Co. Ltd	100%
Building E, Huirong Plaza, Jinghui Road East, Xinwu District, Wuxi, Jiangsu Province, China	
AstraZeneca Investment (China) Co., Ltd	100%
199 Liangjing Road, China (Shanghai) Pilot Free Trade Zone, Shanghai, China	
AstraZeneca Pharmaceutical (China) Co. Ltd	100%
No 9 Medical Avenue, , Jiangsu Province, Taizhou, China	
AstraZeneca Pharmaceutical (Beijing) Co., Ltd	100%
1F, Building No.4, No.8 Courtyard, No.1 Kegu Street, Beijing Economic-Technological Development Area, Beijing 100176, China	
AstraZeneca (Guangzhou) Pharmaceutical Co., Ltd	100%
Room 406-178, No. 1, Yichuang Street, (China-Singapore Guangzhou Knowledge City) Huangpu District, Guangzhou City, China	
AstraZeneca Investment Consulting (Wuxi) Co., Ltd	100%
Room 808, 8F, Building 99-2 Linghu Avenue, Xinwu District, Wuxi, Jiangsu, China	
AstraZeneca Pharmaceutical (Hangzhou) Co., Ltd	100%
12F & 14F, Building 1, Shuli Plaza, 758 Fei Jia Tang Road, Gongshu District, Hangzhou, Zhejiang Province, China	
AstraZeneca Global R&D (China) Co., Ltd	100%
16F, 88 Xizang North Road, Jing'an District, Shanghai, China	
AstraZeneca Pharmaceutical (Chengdu) Co., Ltd.	100%
10th Floor, Building 11 (Building E11), No. 366, Hemin Street, Chengdu High-tech Zone, China (Sichuan) Pilot Free Trade Zone, China	
AstraZeneca Pharmaceutical (Shanghai) Co., Ltd	100%
B1F, 8F & 9F, 88 Xizang North Road, Jing'an District, Shanghai, China	
Alexion Pharmaceuticals (Shanghai) Company Limited	100%
Room 702 , No 1539 West Nanjing Road, Jing'an District, Shangai, China	
Colombia	
AstraZeneca Colombia S.A.S.	100%
Av Carrera 9 No. 101-67 Office 601, Bogotá, 110231, Colombia	
Alexion Pharma Colombia S.A.S.	100%
Carrera 9 # 115 - 06 /30 Edificio Tierra Firme Oficina 2904 Bogota D.C., Colombia	
Costa Rica	
AstraZeneca CAMCAR Costa Rica, S.A.	100%
San José, Escazú, Roble Corporate Center, 5to piso, Costa Rica	
Croatia	
AstraZeneca d.o.o.	100%
Radnicka cesta 80, 10000 Zagreb, Croatia	
Czech Republic	
AstraZeneca Czech Republic, s.r.o.	100%
U Trezorky 921/2, 158 00 Prague 5, Czech Republic	
Alexion Pharma Czech s.r.o.	100%
Novodvorská 994/138, Braník, 142 00 Prague, Czech Republic	

Group Subsidiaries and Holdings
continued

At 31 December 2022	Group Interest
Denmark	
AstraZeneca A/S	100%
World Trade Center Ballerup, Borupvang 3, DK- 2750 Ballerup, Denmark	
Egypt	
AstraZeneca Egypt for Pharmaceutical Industries SAE	100%
6th of October City, 6th Industrial Zone, Plot 2, Giza, Egypt	
AstraZeneca Egypt LLC	100%
47 St. 270 New Maadi, Maddi, Cairo, Egypt	
Drimex LLC	100%
Plot 133, Banks' District, 5th Settlement, New Cairo, Cairo, Egypt	
Estonia	
AstraZeneca Eesti OÜ	100%
Harju maakond, Tallinn, Lasnamäe linnaosa, Valukoja tn 8/1, 11415, Estonia	
Finland	
AstraZeneca OY.	100%
Itsehallintokuja 4, Espoo, 02600, Finland	
France	
AstraZeneca S.A.S	100%
AstraZeneca Reims Production SAS	100%
Tour Carpe Diem-31, Place des Corolles, 92400 Courbevoie, France	
AstraZeneca Dunkerque Production SCS	100%
224 Avenue de la Dordogne, 59640 Dunkerque, France	
Alexion Europe S.A.S.	100%
Alexion Pharma France S.A.S.	100%
103-105 Rue Anatole France 92300 Levallois-Perret, France	
Germany	
AstraZeneca Holding GmbH	100%
AstraZeneca GmbH	100%
Friesenweg 26, 22763, Hamburg, Germany	
Sofotec GmbH	100%
Benzstrasse 1-3, 61352, Bad Homburg v.d. Hohe, Germany	
AstraZeneca Computational Pathology GmbH[2]	100%
Bernhard-Wicki-Straße 5, 80636, Munich, Germany	
Portola FRG GmbH	100%
Fraunhoferstraße 12, Planegg, 82152, Germany	
Alexion Pharma Germany GmbH	100%
Landsberger Straße 300, 80687 Munich, Germany	
Greece	
AstraZeneca S.A.	100%
Agisilaou 6-8 Marousi, Athens, Greece	
Hong Kong	
AstraZeneca Hong Kong Limited	100%
Unit 1 – 3, 11/F., 18 King Wah Road, North Point, Hong Kong	

At 31 December 2022	Group Interest
Hungary	
AstraZeneca Kft	100%
1st floor, 4 building B, Alíz str., Budapest, 1117, Hungary	
India	
AstraZeneca India Private Limited[3]	100%
Block A, Neville Tower, 11th Floor, Ramanujan IT SEZ, Taramani, Chennai, Tamil Nadu, PIN 600113, India	
Alexion Business Services Private Limited	100%
9th Floor, Platina, G BlockPlot No. C-59, Bandra-Kurla Complex Bandra (East), Mumbai 400051, India	
Iran	
AstraZeneca Pars Company	100%
Suite 1, 1st Floor No. 39, Alvand Ave., Argantin Sq., Tehran 1516673114, Iran	
Ireland	
AstraZeneca Pharmaceuticals (Ireland) Designated Activity Company	100%
4th Floor, South Bank House, Barrow Street, Dublin, 4, Republic of Ireland	
Alexion Pharma Holding Limited	100%
Alexion Pharma International Operations Limited	100%
Alexion Pharma Development Limited	100%
College Business & Technology Park Blanchardstown Road North Dublin 15, Republic of Ireland	
Israel	
AstraZeneca (Israel) Ltd	100%
Atirei Yeda 1, Building O-Tech 2, POB 8044, Kfar Saba, 4464301, Israel	
Alexion Pharma Israel Ltd	100%
4 Weizmann Str., Tel-Aviv-Jaffa, Israel	
Italy	
Simesa SpA	100%
AstraZeneca SpA	100%
Alexion Pharma Italy Srl	100%
Viale Decumano 39, 20157, Milan, Italy	
Japan	
AstraZeneca K.K.	100%
Grand Front Osaka Tower B, 3-1, Ofuka-cho, Kita-ku, Osaka, 530-0011, Japan	
Alexion Pharma GK	100%
Ebisu First Square, 18-14, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan	
Kenya	
AstraZeneca Pharmaceuticals Limited	100%
L.R. No.1/1327, Avenue 5, 1st Floor, Rose Avenue, Nairobi, Kenya	
Latvia	
AstraZeneca Latvija SIA	100%
Skanstes iela 50, Riga, LV-1013, Latvia	
Lithuania	
AstraZeneca Lietuva UAB	100%
Spaudos g., Vilnius, LT-05132, Lithuania	

At 31 December 2022	Group Interest
Luxembourg	
AstraZeneca Luxembourg S.A.	100%
Rue Nicolas Bové 2A – L-1253, Luxembourg	
Malaysia	
AstraZeneca Asia-Pacific Business Services Sdn Bhd	100%
12th Floor, Menara Symphony, No 5 Jalan Prof, Khoo Kay Kim, Seksyen 13, 46200 Petaling Jaya, Selangor Darul Ehsan, Malaysia	
AstraZeneca Sdn Bhd	100%
Nucleus Tower, Level 11 & 12, No. 10 Jalan PJU 7/6, Mutiara Damansara, 47800 Petaling Jaya, Selangor Darul Ehsan, Malaysia	
Mexico	
AstraZeneca Health Care Division, S.A. de C.V.	100%
AstraZeneca, S.A. de C.V.	100%
Av. Periferico Sur 4305 interior 5, Colonia Jardines en la Montaña, Mexico City, Tlalpan Distrito Federal, CP 14210, Mexico	
Alexion Pharma Mexico S. de R.L. de C.V.	100%
Paseo de los Tamarindos 90, Torre 1 piso 6 - ACol., Bosques de la Lomas, CP 05120 D.F, 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 Treasury B.V.	100%
AstraZeneca Zeta B.V.	100%
Prinses Beatrixlaan 582, 2595BM, The Hague, The Netherlands	
AstraZeneca Nijmegen B.V.	100%
Lagelandseweg 78, 6545 CG Nijmegen, The Netherlands	
Acerta Pharma B.V.	100%
Aspire Therapeutics B.V.	100%
Kloosterstraat 9, 5349 AB, Oss, The Netherlands	
Portola Netherlands B.V.	100%
Prins Bernhardplein 200JB Amsterdam 1097, The Netherlands	
Alexion Pharma Netherlands B.V.	100%
Herengracht 282 Amsterdam 1016BX, The Netherlands	
Alexion Holding B.V.	100%
Alexion Pharma Foreign Holdings, B.V.	100%
Prinses Beatrixlaan 582, 5895 BM, The Hague, The Netherlands	

At 31 December 2022	Group Interest
New Zealand	
AstraZeneca Limited	100%
Pharmacy Retailing (NZ) Limited t/a Healthcare Logistics, 58 Richard Pearse Drive, Mangere, Auckland, 1142, New Zealand	
Nigeria	
AstraZeneca Nigeria Limited	100%
11A, Alfred Olaiya Street, Awuse Estate, Off Salvation Street, Opebi, Ikeja, Lagos, Nigeria	
Norway	
AstraZeneca AS	100%
Karvesvingen 7, 0579 Oslo, Norway	
Pakistan	
AstraZeneca Pharmaceuticals Pakistan (Private) Limited[4]	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%
Calle Las Orquídeas N° 675, Int. 802, Edificio Pacific Tower, San Isidro, Lima, Peru	
Philippines	
AstraZeneca Pharmaceuticals (Phils.) Inc.	100%
16th Floor, Inoza Tower, 40th Street, Bonifacio Global City, Taguig 1634, Philippines	
Poland	
AstraZeneca Pharma Poland Sp.z.o.o.	100%
Alexion 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, Unipessoal Lda	100%
Rua Humberto Madeira, No 7, Queluz de Baixo, 2730-097, Barcarena, Portugal	
Puerto Rico	
IPR Pharmaceuticals, Inc.	100%
Road 188, San Isidro Industrial Park, Canóvanas, 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	

At 31 December 2022	Group Interest
Russia	
AstraZeneca Industries, LLC	100%
8 1st Vostochniy lane, Dobrino village, Borovskiy district, Kaluga region 249006, Russian Federation	
AstraZeneca Pharmaceuticals, LLC	100%
Building 1, 21 First Krasnogvardeyskiy lane, floor 30,rooms 13 and 14, Moscow, 123112, Russian Federation	
Alexion Pharma OOO LLC	100%
Building 1, 21 First Krasnogvardeyskiy lane, floor 29, Moscow, 123112, Russian Federation	
Singapore	
AstraZeneca Singapore Pte Limited	100%
10 Kallang Avenue #12-10, Aperia Tower 2, 339510, Singapore	
South Africa	
AstraZeneca Pharmaceuticals (Pty) Limited	100%
17 Georgian Crescent West, Northdowns Office Park, Bryanston, 2191, South Africa	
South Korea	
AstraZeneca Korea Co. Ltd	100%
21st Floor, Asem Tower, 517, Yeongdong-daero, Gangnam-gu, Seoul, 06164, Republic of Korea	
Alexion Pharma Korea LLC	100%
41 FL.,152 Teheran-ro (Yeoksam-dong Gangam Finance Center), Gangnam-gu, Seoul, Republic of Korea	
Spain	
AstraZeneca Farmaceutica Holding Spain, S.A.	100%
AstraZeneca Farmaceutica Spain S.A.	100%
Laboratorio Beta, S.A.	100%
Laboratorio Lailan, S.A.	100%
Laboratorio Tau S.A.	100%
Fundación AstraZeneca	100%
Parque Norte, Edificio Álamo, C/Serrano Galvache no 56., 28033 Madrid, Spain	
Alexion Pharma Spain S.L.	100%
Av Diagonal Num.601 P.1, Barcelona 08028, 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[5]	100%
AstraZeneca International Holdings Aktiebolag[6]	100%
AstraZeneca Nordic AB	100%
AstraZeneca Pharmaceuticals Aktiebolag	100%
AstraZeneca Södertälje 2 AB	100%
Stuart Pharma Aktiebolag	100%
Tika Lakemedel Aktiebolag	100%
SE-151 85 Södertälje, Sweden	
Aktiebolaget Hassle	100%
Symbicom Aktiebolag[6]	100%
431 83 Molndal, Sweden	

At 31 December 2022	Group Interest
Astra Tech International Aktiebolag	100%
Box 14, 431 21 Molndal, Sweden	
Alexion Pharma Nordics Holding AB	100%
Alexion Pharma Nordics AB	100%
Kungsgatan 3, Stockholm 111 43, Sweden	
Switzerland	
AstraZeneca AG	100%
Neuhofstrasse 34, 6340 Baar, Switzerland	
Spirogen Sarl[6]	100%
Rue du Grand-Chêne 5, CH-1003 Lausanne, Switzerland	
Portola Schweiz GmbH (in liquidation)	100%
c/o Tom Schaffner Schärer Rechtsanwälte Hintere Bahnhofstrasse 6, 5000 Aarau, Switzerland	
Alexion Pharma GmbH	100%
Giesshübelstrasse 30, Zürich 8045, Switzerland	
Taiwan	
AstraZeneca Taiwan Limited	100%
21st Floor, Taipei Metro Building 207, Tun Hwa South Road, SEC 2 Taipei, Taiwan	
Alexion Pharma Taiwan Ltd	100%
Room 1153, 11F, No1, SongZhi Rd Taipei, 11047 Taiwan	
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/ Besiktas, Istanbul, Turkey	
Zeneca Ilac Sanayi Ve Ticaret Anonim Sirketi	100%
Büyükdere Cad., Y.K.B. Plaza, B Blok, Kat:4, Levent/Besiktas, Istanbul, Turkey	
Alexion Ilac Ticaret Limited Sirketi	100%
Içerenköy Mahallesi Umut Sk. and Ofi SIT. No: 1012/73 Atasehir Istanbul 10-12/73 Turkey	
Ukraine	
AstraZeneca Ukraina LLC	100%
54 Simi Prakhovykh street, Kiev, 01033, Ukraine	
United Arab Emirates	
AstraZeneca FZ-LLC	100%
P.O. Box 505070, Block D, Dubai Healthcare City, Oud Mehta Road, Dubai, United Arab Emirates	
Alexion Pharma Middle East FZ-LLC	100%
Dubai Science Park, 501, Floor 5, EIB Building No. 2, Dubai, United Arab Emirates	

Group Subsidiaries and Holdings
continued

At 31 December 2022	Group Interest
United Kingdom	
Ardea Biosciences Limited	100%
Arrow Therapeutics Limited	100%
Astra Pharmaceuticals Limited	100%
AstraPharm[6]	100%
AstraZeneca China UK Limited	100%
AstraZeneca Death In Service Trustee Limited	100%
AstraZeneca Employee Share Trust Limited	100%
AstraZeneca Finance Limited	100%
AstraZeneca Intermediate Holdings Limited[5]	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%
AstraZeneca Treasury Limited[6]	100%
AstraZeneca UK Limited	100%
AstraZeneca US Investments Limited[5]	100%
AZENCO2 Limited	100%
AZENCO4 Limited	100%
Cambridge Antibody Technology Group Limited	100%
KuDOS Horsham Limited	100%
KuDOS Pharmaceuticals Limited	100%
Zenco (No. 8) Limited	100%
Zeneca Finance (Netherlands) Company	100%
MedImmune Limited	100%
1 Francis Crick Avenue, Cambridge Biomedical Campus, Cambridge, CB2 0AA, United Kingdom	100%
MedImmune U.K. Limited	100%
Plot 6, Renaissance Way, Boulevard Industry Park, Liverpool, L24 9JW, United Kingdom	
Syntimmune Limited	100%
21 Holborn Viaduct, London, EC1A 2DY United Kingdom	
Alexion Pharma UK Limited	100%
Portola Pharma UK Limited (in liquidation)	100%
3 Furzeground Way, Stockley Park, Uxbridge, Middlesex UB11 1EZ United Kingdom	

At 31 December 2022	Group Interest
United States	
Amylin Ohio LLC[7]	100%
Amylin Pharmaceuticals, LLC[7]	100%
AstraZeneca Collaboration Ventures, LLC[7]	100%
AstraZeneca Pharmaceuticals LP[8]	100%
Atkemix Nine Inc.	100%
Atkemix Ten Inc.	100%
BMS Holdco, Inc.	100%
Corpus Christi Holdings Inc.	100%
Omthera Pharmaceuticals, Inc.	100%
Optein, Inc.	100%
Stauffer Management Company LLC[7]	100%
Zeneca Holdings Inc.	100%
Zeneca Inc.	100%
Zeneca Wilmington Inc.[5]	100%
AstraZeneca Finance LLC[7]	100%
AstraZeneca Finance and Holdings Inc.	100%
Namor Merger Sub, Inc[9]	100%
Ardea Biosciences, Inc	100%
1800 Concord Pike, Wilmington, DE 19803, United States	
ZS Pharma Inc.	100%
1100 Park Place, Suite 300, San Mateo, CA 94403, United States	
AlphaCore Pharma, LLC[7]	100%
333 Parkland Plaza, Suite 5, Ann Arbor, MI 48103, United States	
AZ-Mont Insurance Company	100%
76 St Paul Street, Suite 500, Burlington, VT 05401, United States	
MedImmune, LLC[7]	100%
MedImmune Ventures, Inc.	100%
One MedImmune Way, Gaithersburg, MD 20878, United States	
Pearl Therapeutics, Inc.	100%
200 Cardinal Way, Redwood City, CA 94063, United States	
Caelum Biosciences Inc.	100%
1200 Florence Columbus Road, Bordentown, NJ 08505, United States	
Alexion Services Latin America Inc.	100%
600 Brickell Ave, Miami, FL 33131, United States	

At 31 December 2022	Group Interest
Portola USA, Inc	100%
Portola Pharmaceuticals LLC	100%
270 East Grand Avenue, South San Francisco, CA 94080, United States	
Achillion Pharmaceuticals Inc,	100%
Alexion Delaware Holding LLC	100%
Alexion Pharma LLC	100%
Alexion Pharmaceuticals, Inc.	100%
Syntimmune, Inc.	100%
Alexion US1 LLC	100%
Savoy Therapeutics Corp	100%
Wilson Therapeutics USA, Inc.	100%
TeneoTwo, Inc	100%
LogicBio Therapeutics, Inc	100%
121 Seaport BoulevardBoston, MA 02210, United States	
Acerta Pharma LLC[7]	100%
121 Oyster Point Boulevard, South San Francisco, CA 94080, United States	
LogicBio Securities Corporation	100%
65 Hayden Avenue, Lexington, MA 92421, United States	
Uruguay	
AstraZeneca S.A.	100%
Yaguarón 1407 of 1205, 11.100, Montevideo, Uruguay	
Venezuela	
AstraZeneca Venezuela S.A.	100%
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	
Vietnam	
AstraZeneca Vietnam Company Limited	100%
18th Floor, A&B Tower, 76 Le Lai, Ben Thanh Ward, District 1, Ho Chi Minh City, Vietnam	

At 31 December 2022	Group Interest
Subsidiaries where the effective interest is less than 100%	
India	
AstraZeneca Pharma India Limited[3]	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, South Jakarta, 12520, Indonesia	
Joint Ventures	
China	
WuXi MedImmune Biopharmaceutical Co., Limited (in liquidation)	50%
Room 1902, 19/F, Lee Garden One, 33 Hysan Avenue, Causeway Bay, Hong Kong	
IHP HK Holdings Limited	50%
Unit 5805, 58/F., Two International Finance Centre 8 Finance Street, Central, China	
United Kingdom	
Archigen Biotech Limited (in liquidation)	50%
Centus Biotherapeutics Limited	50%
1 Francis Crick Avenue, Cambridge Biomedical Campus, Cambridge, CB2 0AA, United Kingdom	
Ireland	
Centus Biotherapeutics Europe Limited (in liquidation)	50%
6th Floor, South Bank House, Barrow Street, Dublin 4, Republic of Ireland	
United States	
Montrose Chemical Corporation of California	50%
Suite 380, 600 Ericksen Ave N/E, Bainbridge Island, United States	

At 31 December 2022	Group Interest
Significant Holdings	
China	
Dizal (Jiangsu) Pharmaceutical Co., Ltd.	26.95%
199 Liangjing Rd, Zhangjiang Hi-Tech Park, Pudong District, Shanghai, 201203, China	
Wuxi AstraZeneca-CICC Venture Capital Partnership (Limited Partnership)	22.13%
Room 808, 8F, Building 99-2 Linghu Avenue, Xinwu District, Wuxi, Jiangsu, China	
Beijing Falikang Pharmaceutical (China) Co. Ltd	49%
No. 69 Fushi Road, Haidian District, Beijing, 100143, China	
United Kingdom	
VaxEquity	40%
Lab 4 Cambridge Science Park, Unit 204 Milton Road, Cambridge CB4 0GZ, United Kingdom	
United States	
C.C. Global Chemicals Company	37.50%
PO Box 7, MS2901, Texas, TX76101-0007, United States	

At 31 December 2022	Group Interest
Associated Holdings	
France	
Medetia SAS	10%
Institute Imagine 24, Boulevard du Montparnasse 75015, Paris, France	
Israel	
AION Labs	19.23%
Oppenheimer 4 Rehovot, 7670104, Israel	
Sweden	
Swedish Orphan Biovitrum AB (publ)	9.90%
Tomtebodavägen 23A, Stockholm, Sweden	
Ondosis	19.30%
BioVentureHub, Pepparedsleden 1, 431 83 Mölndal, Sweden	
United Kingdom	
Niox Group plc	16.97%
Hayakawa Building, Edmund Halley Road, Oxford Science Park, Oxford, OX4 4GB, United Kingdom	
United States	
AbMed Corporation	18%
68 Cummings Park Drive, Woburn, MA 01801, United States	
Aristea Therapeutics, Inc.	11.85%
122770 High Bluff Drive, #380, San Diego, CA 92130, United States	
Baergic Bio, Inc.	19.95%
1111 Kane Concourse, Suite 301 Bay Harbor Islands, FL 33154, United States	
Regio Biosciences	19.95%
2277 Research Blvd, Suite 225, Rockville, MD 20850, United States	

Employee Benefit Trust
The AstraZeneca Employee Benefit Trust

[1] Ownership held in ordinary and class B special shares.
[2] Ownership held in common shares, preferred shares 2003, preferred shares 2003 ex (A), preferred shares 2003 ex (B), preferred shares Series D, preferred shares Series E and preferred shares Series F.
[3] Accounting year end is 31 March.
[4] Accounting year end is 30 June.
[5] Directly held by AstraZeneca PLC.
[6] Ownership held in Ordinary A shares and Ordinary B shares.
[7] Ownership held as membership interest.
[8] Ownership held as partnership interest.
[9] With effect from 13 January 2023, Namor Merger Sub Inc. was merged with and into Neogene Therapeutics, Inc., with Neogene Therapeutics, Inc. being the surviving corporation.

Company Balance Sheet
at 31 December

AstraZeneca PLC

	Notes	2022 $m	2021 $m
Fixed assets			
Fixed asset investments	1	**63,555**	65,624
		63,555	65,624
Current assets			
Debtors – other		**4**	9
Debtors – amounts owed by Group undertakings		**2,608**	6,321
		2,612	6,330
Creditors: Amounts falling due within one year			
Other payables	2	**(194)**	(198)
Amounts owed to Group undertakings	3	**(283)**	–
Interest-bearing loans and borrowings	3	**(2,648)**	(1,249)
		(3,125)	(1,447)
Net current (liabilities)/assets		**(513)**	4,883
Total assets less current liabilities		**63,042**	70,507
Creditors: Amounts falling due after more than one year			
Amounts owed to Group undertakings	3	**–**	(283)
Interest-bearing loans and borrowings	3	**(17,939)**	(20,781)
Other payables	2	**(23)**	(32)
		(17,962)	(21,096)
Net assets		**45,080**	49,411
Capital and reserves			
Called-up share capital	4	**387**	387
Share premium account		**35,155**	35,126
Capital redemption reserve		**153**	153
Other reserves		**1,927**	2,182
Profit and loss account		**7,458**	11,563
Shareholders' funds		**45,080**	49,411

$m means millions of US dollars.

The Company's profit for the year was $380m (2021: $5,141m).

The Company Financial Statements from pages 204 to 210 were approved by the Board and were signed on its behalf by

Pascal Soriot
Director
9 February 2023

Aradhana Sarin
Director

Company's registered number 02723534

Company Statement of Changes in Equity

for the year ended 31 December

	Share capital $m	Share premium account $m	Capital redemption reserve $m	Other reserves[1] $m	Profit and loss account[2] $m	Total equity $m
At 1 January 2021	328	7,971	153	2,382	10,304	21,138
Total comprehensive income for the period						
Profit for the period	–	–	–	–	5,141	5,141
Total comprehensive income for the period	–	–	–	–	5,141	5,141
Transactions with owners, recorded directly in equity						
Dividends	–	–	–	–	(3,882)	(3,882)
Capital contributions for share-based payments	–	–	–	(200)	–	(200)
Issue of Ordinary Shares	59	27,155	–	–	–	27,214
Total contributions by and distributions to owners	59	27,155	–	(200)	(3,882)	23,132
At 31 December 2021	387	35,126	153	2,182	11,563	49,411
Total comprehensive income for the period						
Profit for the period	**–**	**–**	**–**	**–**	**380**	**380**
Total comprehensive income for the period	**–**	**–**	**–**	**–**	**380**	**380**
Transactions with owners, recorded directly in equity						
Dividends	**–**	**–**	**–**	**–**	**(4,485)**	**(4,485)**
Capital contributions for share-based payments	**–**	**–**	**–**	**(255)**	**–**	**(255)**
Issue of Ordinary Shares	**–**	**29**	**–**	**–**	**–**	**29**
Total contributions by and distributions to owners	**–**	**29**	**–**	**(255)**	**(4,485)**	**(4,711)**
At 31 December 2022	**387**	**35,155**	**153**	**1,927**	**7,458**	**45,080**

[1] The Other reserves arose from the cancellation of £1,255m share premium by the Company in 1993 and the redenomination of share capital of $157m in 1999. Included within Other reserves at 31 December 2022 is $86m (31 December 2021: $341m) in respect of cumulative share-based payment awards, which are not available for distribution.

[2] At 31 December 2022, the Profit and loss account reserve of $7,458m (31 December 2021: $11,563m) was available for distribution, subject to filing these Financial Statements with Companies House. When making a distribution to shareholders, the Directors determine profits available for distribution by reference to guidance on realised and distributable profits under the Companies Act 2006 issued by the Institute of Chartered Accountants in England and Wales and the Institute of Chartered Accountants of Scotland in April 2017. The profits of the Company have been received in the form of receivables due from subsidiaries. The availability of distributable reserves in the Company is dependent on those receivables meeting the definition of qualifying consideration within the guidance, and in particular on the ability of subsidiaries to settle those receivables within a reasonable period of time. The Directors consider that, based on the nature of these receivables and the available cash resources of the Group and other accessible sources of funds, at 31 December 2022, all (31 December 2021: all) of the Company's profit and loss reserves were 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 UK (UK-adopted International Accounting Standards), but made amendments where necessary in order to comply with the Companies Act 2006 and to take advantage of FRS 101 disclosure exemptions.

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
- 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 203) 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
- certain disclosures required by IFRS 13 'Fair Value Measurement' and the disclosures required by IFRS 7 'Financial Instruments: Disclosures'.

No individual profit and loss account is prepared as provided by section 408 of the Companies Act 2006.

Basis of accounting

The Company Financial Statements are prepared under the historical cost convention and on a going concern basis, in accordance with the Companies Act 2006.

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

Estimates and judgements

The preparation of the Company 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. There are no key judgements or significant estimates.

Foreign currencies

Foreign currency transactions, being transactions denominated in a currency other than the Company's functional currency, are translated into US dollars 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.

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

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 there are future taxable temporary differences or it is probable that future 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.

Liabilities for uncertain tax positions require management to make judgements of potential exposures in relation to tax audit issues. Tax benefits are not recognised unless the tax positions will probably be accepted by the tax authorities. This is based upon management's interpretation of applicable laws and regulations and the expectation of how the tax authority will resolve the matter. Once considered probable of not being accepted, management reviews each material tax benefit and reflects the effect of the uncertainty in determining the related taxable result.

Liabilities for uncertain tax positions are measured using either the most likely amount or the expected value amount depending on which method the Company expects to better predict the resolution of the uncertainty.

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.

Debtors

Amounts owed by Group undertakings are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses.

The recoverability of these balances has been assessed in accordance with IFRS 9 and no impairment has been identified. The amounts owed by Group undertakings are considered to have low credit risk, due to timely payment of interest and settlement of principal amount on agreed due dates, limiting the loss allowance to 12-month expected credit losses.

Amounts owed by Group undertakings are written off where there is no reasonable expectation of recovery. Impairment losses are presented as net impairment losses within Operating profit, any subsequent recoveries are credited against the same line.

Other payables

Liabilities included in Other payables are recognised initially at fair value. Subsequent to initial recognition they are re-measured at either amortised cost using the effective interest rate method or at fair value using an expected credit loss model.

Financial instruments

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

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.

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, including related legal costs, can be estimated reliably. In other cases, appropriate disclosures are included.

1 Fixed asset investments

	Investments in subsidiaries		
	Shares $m	Loans $m	Total $m
At 1 January 2021	15,817	17,451	33,268
Additions during the year	33,745	290	34,035
Transfer to Debtors – amounts owed by Group undertakings	–	(1,249)	(1,249)
Capital reimbursement	(13)	–	(13)
Exchange	–	(172)	(172)
Amortisation	–	13	13
Disposals and other movements	32	(290)	(258)
At 31 December 2021	49,581	16,043	65,624
Transfer to Debtors – amounts owed by Group undertakings	**–**	**(1,531)**	**(1,531)**
Capital reimbursement	**(380)**	**–**	**(380)**
Exchange	**–**	**(161)**	**(161)**
Amortisation	**–**	**12**	**12**
Disposals and other movements	**(9)**	**–**	**(9)**
At 31 December 2022	**49,192**	**14,363**	**63,555**

Loans to subsidiaries consists of bonds which are issued externally and are issued back to Group undertakings with comparable terms on interest rates and are repayable on maturity, details of which are disclosed in Note 2. The recoverability of these inter-company loans has been assessed in accordance with IFRS 9 with no impairment identified. The inter-company balances are considered to have low credit risk due to timely payment of interest and settlement of principal amount on agreed due dates, limiting the loss allowance to 12-month expected credit losses. In 2022, there have been no credit losses (2021: $nil).

The other movements comprise $9m representing revaluation of fair value of a guarantee provided to Group companies as explained in Notes 2 and 3.

2 Other payables

	2022 $m	2021 $m
Amounts due within one year		
Other creditors	**184**	187
Deferred income	**3**	4
Amounts owed to Group undertakings	**7**	7
	194	198
Amounts due after more than one year		
Other creditors	**23**	32
	23	32

Non-current other creditors include an amount representing the fair value of the guarantee provided by the Company to its subsidiary for the bonds issued externally as explained in Note 3. As at 31 December 2022, the fair value of the guarantee was $23m (2021: $32m).

3 Loans and borrowings

		Repayment dates	2022 $m	2021 $m
Amounts due within one year				
Amounts owed to Group undertakings (unsecured)				
7.2% Loan		2023	**283**	–
Interest-bearing loans and borrowings (unsecured)				
Floating rate notes	US dollars	2022	**–**	250
2.375% Callable bond	US dollars	2022	**–**	**999**
0.3% Callable bond	US dollars	2023	**1,399**	–
Floating rate notes	US dollars	2023	**400**	–
3.5% Callable bond	US dollars	2023	**849**	–
			2,931	1,249
Amounts due after more than one year				
Amounts owed to Group undertakings (unsecured)				
7.2% Loan	US dollars	2023	**–**	283
Interest-bearing loans and borrowings (unsecured)				
Floating rate notes	US dollars	2023	–	400
0.3% Callable bond	US dollars	2023	**–**	1,397
3.5% Callable bond	US dollars	2023	**–**	848
0.75% Callable bond	euros	2024	**957**	1,014
2024 Floating rate bank loan	US dollars	2024	**1,998**	1,997
3.375% Callable bond	US dollars	2025	**1,992**	1,988
0.7% Callable bond	US dollars	2026	**1,195**	1,193
3.125% Callable bond	US dollars	2027	**746**	745
1.25% Callable bond	euros	2028	**845**	896
4% Callable bond	US dollars	2029	**995**	994
0.375% Callable bond	euros	2029	**846**	898
1.375% Callable bond	US dollars	2030	**1,293**	1,292
5.75% Non-callable bond	pounds sterling	2031	**420**	470
6.45% Callable bond	US dollars	2037	**2,724**	2,724
4% Callable bond	US dollars	2042	**988**	988
4.375% Callable bond	US dollars	2045	**981**	980
4.375% Callable bond	US dollars	2048	**737**	737
2.125% Callable bond	US dollars	2050	**487**	486
3% Callable bond	US dollars	2051	**735**	734
Total amounts due after more than one year			**17,939**	21,064
Total loans and borrowings			**20,870**	22,313

	2022 $m	2021 $m
Loans and borrowings are repayable:		
After five years from balance sheet date	**11,051**	11,944
From two to five years	**3,933**	6,192
From one to two years	**2,955**	2,928
Within one year	**2,931**	1,249
Total unsecured	**20,870**	22,313

All borrowings are issued with fixed interest rates with the exception of two borrowings, the 2023 floating rate notes and the $2bn USD 2024 floating rate loan pay interest linked to 1 month LIBOR. The Company has the right to switch these loans to compounded daily USD Secured Overnight Funding Rate (SOFR) with five days notice. The loans will automatically switch to compounded SOFR on 30 June 2023 if the Group has not already switched before this date. All other floating rate debt is not impacted by LIBOR references it either uses non-LIBOR fixing or will mature before the relevant LIBOR rate is withdrawn.

In addition, the Company acts as guarantor for bonds and loans issued by its wholly owned subsidiaries, AstraZeneca Finance LLC and AstraZeneca Finance and Holdings Inc., AstraZeneca Finance LLC is the issuer of $1,600m 0.700% Notes due 2024, $1,250m 1.200% Notes due 2026, $1,250m 1.750% Notes due 2028 and $750m 2.250% Notes due 2031 (the "AstraZeneca Finance Notes") and AstraZeneca Finance and Holdings Inc. has a $2bn bank loan due 2023. Each series of AstraZeneca Finance Notes and the bank loan has been fully and unconditionally guaranteed by the Company. Each of the guarantees by AstraZeneca PLC is full and unconditional and joint and several.

The guarantee by AstraZeneca PLC of the AstraZeneca Finance Notes is the senior unsecured obligation of AstraZeneca PLC and ranks equally with all of AstraZeneca PLC's existing and future senior unsecured and unsubordinated indebtedness. Each guarantee by AstraZeneca PLC is effectively subordinated to any secured indebtedness of AstraZeneca PLC to the extent of the value of the assets securing such indebtedness. The AstraZeneca Finance Notes are structurally subordinated to indebtedness and other liabilities of the subsidiaries of AstraZeneca PLC, none of which guarantee the AstraZeneca Finance Notes.

4 Called-up share capital
Details of share capital movements in the year are included in Note 24 to the Group Financial Statements.

5 Contingent liabilities
The Company has guaranteed the external borrowing of a subsidiary in the amount of $286m (2021: $286m).

Vermont US Attorney Investigation
In April 2020, AstraZeneca received a Civil Investigative Demand from the US Attorney's Office in Vermont and the Department of Justice, Civil Division, seeking documents and information relating to AstraZeneca's relationships with electronic health-record vendors. AstraZeneca is cooperating with this enquiry.

AZD1222 Securities Litigation
In January 2021, putative securities class action lawsuits were filed in the US District Court for the Southern District of New York (the District Court) against AstraZeneca PLC and certain officers, on behalf of purchasers of AstraZeneca publicly traded securities during a period later amended to cover 15 June 2020 through 29 January 2021. The Amended Complaint alleges that defendants made materially false and misleading statements in connection with the development of AZD1222, AstraZeneca's vaccine for the prevention of COVID-19. In September 2022, the District Court granted AstraZeneca's motion to dismiss the Amended Complaint with prejudice, disallowing any further amendments. Plaintiffs have appealed this decision.

6 Statutory and other information
The Directors of the Company were paid by another Group company in 2022 and 2021.

7 Subsequent events
On 2 February 2023, the Group entered into an additional $2.0bn of two-year committed bank facilities.

Group Financial Record

For the year ended 31 December	2018 $m	2019 $m	2020 $m	2021 $m	**2022 $m**
Revenue and profits					
Product Sales	21,049	23,565	25,890	36,541	**42,998**
Collaboration Revenue	1,041	819	727	876	**1,353**
Cost of sales	(4,936)	(4,921)	(5,299)	(12,437)	**(12,391)**
Distribution expense	(331)	(339)	(399)	(446)	**(536)**
Research and development expense	(5,932)	(6,059)	(5,991)	(9,736)	**(9,762)**
Selling, general and administrative expense	(10,031)	(11,682)	(11,294)	(15,234)	**(18,419)**
Other operating income and expense	2,527	1,541	1,528	1,492	**514**
Operating profit	3,387	2,924	5,162	1,056	**3,757**
Finance income	138	172	87	43	**95**
Finance expense	(1,419)	(1,432)	(1,306)	(1,300)	**(1,346)**
Share of after tax losses in associates and joint ventures	(113)	(116)	(27)	(64)	**(5)**
Profit/(loss) before tax	1,993	1,548	3,916	(265)	**2,501**
Taxation	57	(321)	(772)	380	**792**
Profit for the period	2,050	1,227	3,144	115	**3,293**
Other comprehensive income/(loss) for the period, net of tax	(1,059)	(611)	1,608	(145)	**(878)**
Total comprehensive income/(loss) for the period	991	616	4,752	(30)	**2,415**
Profit attributable to:					
Owners of the Parent	2,155	1,335	3,196	112	**3,288**
Non-controlling interests	(105)	(108)	(52)	3	**5**
Earnings per share					
Basic earnings per $0.25 Ordinary Share	$1.70	$1.03	$2.44	$0.08	**$2.12**
Diluted earnings per $0.25 Ordinary Share	$1.70	$1.03	$2.44	$0.08	**$2.11**
Dividends	$2.80	$2.80	$2.80	$2.80	**$2.90**