Other income. Other operating income mainly consists of freight recharges, sub-rights and licensing income, distribution commissions, investment income and gains on minor asset disposals together with service fee income from Penguin Random House. Other operating income decreased to £54m in 2019 compared to £69m in 2018 mainly due to decreased rights income, the absence of recoveries following legal settlements in 2018 and fewer asset gains in 2019.

Other net gains and losses. In 2019 gains of £16m largely relate to the sale of the K12 school courseware business in the US. In 2018 a £230m gain from the sale of businesses related to the sale of the Wall Street English language teaching business (WSE), realizing a gain of £207m, the disposal of the Group’s equity interest in UTEL, the online University partnership in Mexico, realizing a gain of £19m, and various other smaller disposal items realizing a net gain of £4m.

Share of results of joint ventures and associates

The contribution from the Group’s joint ventures and associates increased by £10m to £54m in 2019 from £44m in 2018. The increase is mainly due to reduced intangible and restructuring charges in PRH in 2019 and in addition, there were restructuring costs incurred in respect of the Group’s ACT Aspire joint venture in 2018 that were absent in 2019.

Operating profit

In 2019, the Group reported an operating profit of £275m compared to an operating profit of £553m in 2018. The decrease in profit of £278m mainly reflects the absence of significant gains on disposal in 2019 compared to 2018, an increase in intangible charges and restructuring costs and the lost contribution from businesses disposed which more than offset a favorable impact from currency movements and the adoption of IFRS 16 ‘Leases’. Excluding out the effect of the sale of businesses, intangible charges, restructuring costs, one-off pension related charges and the impact of currency movements and IFRS 16, profits from trading increased by around £30m. This underlying trading increase was primarily due to savings from restructuring and lower staff incentives which offset the impact on profits of lower sales in North America higher education courseware and inflationary pressures.

Net finance costs

Net finance costs decreased from £55m in 2018 to £43m in 2019. Net interest payable increased from £24m in 2018 to £41m in 2019. The increase is due to the adoption of IFRS 16 which resulted in an additional £34m of net interest payable in 2019. After excluding the impact of IFRS 16 there was a reduction in net interest payable due to lower levels of average net debt together with favorable movements in interest on tax and the absence of one-off costs relating to the redemption of bonds. Also included in net finance costs are net finance costs relating to employee benefit plans, foreign exchange and other gains and losses. In 2019 the total of these items was a loss of £2m compared to a loss of £31m 2018. Income relating to employee benefit plans was £2m higher in 2019 than in 2018 reflecting the higher net surplus on pension balances at the beginning of 2019 compared to the beginning of 2018. Other losses in both 2019 and 2018 primarily relate to foreign exchange differences on un-hedged cash and cash equivalents, and other financial instruments although these losses were much lower in 2019.

For a more detailed discussion of the Group’s borrowings and interest expenses see “— Liquidity and Capital Resources — Capital Resources” and “— Borrowings” below and “Item 11. Quantitative and Qualitative Disclosures about Market Risk”.

Taxation

The reported tax credit in 2019 was £34m (14.7%) compared to a credit of £92m (18.5%) in 2018. The movement in the tax rate reflects several one-off benefits in 2018 including provision releases due to the expiry of relevant statutes of limitation and due to the reassessment of historical positions, as well as a one-off benefit from a reassessment of the tax treatment of certain items of income and expenditure. In 2019, the credit is primarily due to US tax losses generated on the disposal of the K12 business.

Discontinued operations

There were no discontinued operations in either 2018 or 2019.

Profit for the year

The profit for the financial year in 2019 was £266m compared to a profit in 2018 of £590m. The decreased profit reflects decreased operating profit and reduced tax credits partially offset by lower net finance costs as set out above.

Earnings per ordinary share

The basic earnings per ordinary share, which is defined as the profit for the financial year divided by the weighted average number of shares in issue, was 34.0p in 2019 compared to 75.6p in 2018 based on a weighted average number of shares in issue of 777.0m in 2019 and 778.1m in 2018. The decrease in earnings per share was due to the decrease in profit for 2019 as described above and was not significantly impacted by the small decrease in the number of weighted average number of shares in 2019 compared to 2018.

The diluted earnings per ordinary share was 34.0p in 2019 and 75.5p in 2018, with the dilutive effect of options being minimal.

Exchange rate fluctuations

Currency movements increased sales by £97m and increased operating profit by £15m. See “Item 11. Quantitative and Qualitative Disclosures about Market Risk” for a discussion regarding the Group’s management of exchange rate risks.

Sales and operating profit by segment

The following tables summarize the Group’s sales and adjusted operating profit for each of the Group’s business segments. Adjusted operating profit is included as it is the key financial measure used by management to evaluate the performance of the Group and allocate resources to business segments over time by separating out those items of income and expenditure relating to acquisitions and disposals, major restructuring programs and certain other items that are not representative of underlying performance. Reconciliations of adjusted operating profit to statutory operating profit are included below and in note 2 within Item 18 — Financial Statements.

In the Group’s adjusted operating profit, it has excluded other net gains and losses, acquisition related costs, amortization and impairment of acquired intangibles and the cost of major restructuring programs. In 2018, the Group also excluded the impact of adjustments arising from clarification of guaranteed minimum pension (GMP) equalization legislation in the UK. The intangible charges relate only to intangible assets acquired through business combinations and acquisition costs are the direct costs of acquiring those businesses. The Group does not believe these charges are relevant to an understanding of the underlying performance. Charges relating to acquired intangible assets are non-cash charges that reflect the historical expenditure of the acquired business. These acquired intangible assets continue to be supported by ongoing expenditure that is reported within adjusted operating profit. Other net gains and losses that represent profits and losses on the sale of subsidiaries, joint ventures, associates and other financial assets are also excluded from adjusted operating profit as it is important to highlight their impact on operating profit, as reported, in the period in which the disposal transaction takes place in order to understand the underlying trend in the performance of the Group. The GMP equalization charge arises from the ruling in the Lloyds Bank High Court case in the UK in October 2018 that provided clarity on how pension plans should equalize GMP between males and females. The case ruling results in an income statement charge, an additional liability and the potential requirement to make back-payments to pensioners who may have been retired for some years. The Group excluded this charge from adjusted earnings as it related to historical circumstances.

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A reconciliation of operating profit to adjusted operating profit for continuing operations is included in the tables below:

	Year ended December 31, 2019				
	North America £m	Core £m	Growth £m	PRH £m	Total £m
Sales	2,534	838	497	—	3,869
	65%	*22%*	*13%*	—	*100%*
Total operating profit / (loss)	202	65	(43)	51	275
Add back:					
Cost of major restructuring	110	28	19	2	159
Intangible charges	62	7	82	12	163
Other net gains and losses	(13)	(8)	5	—	(16)
UK pension GMP equalization	—	—	—	—	—
Total adjusted operating profit	361	92	63	65	581
	62%	*16%*	*11%*	*11%*	*100%*

	Year ended December 31, 2018				
	North America £m	Core £m	Growth £m	PRH £m	Total £m
Sales	2,784	806	539	—	4,129
	67%	*20%*	*13%*	—	*100%*
Total operating profit	216	25	266	46	553
Add back:					
Cost of major restructuring	78	16	—	8	102
Intangible charges	72	8	19	14	113
Other net gains and losses	(4)	—	(226)	—	(230)
UK pension GMP equalization	—	8	—	—	8
Total adjusted operating profit	362	57	59	68	546
	66%	*10%*	*11%*	*13%*	*100%*

North America

Sales in North America decreased by £250m or 9% from £2,784m in 2018 to £2,534m in 2019 and adjusted operating profit decreased by £1m, from £362m in 2018 to £361m in 2019. The Group estimates that after excluding the impact of exchange, the contribution from businesses disposed in 2019 and 2018 and the impact of adopting IFRS 16 on profits, North America sales declined by 3% in 2019 compared to 2018 and adjusted operating profit also decreased by 3%. The sales decline was primarily due to North American Higher Education Courseware which declined 12% with print declining by close to 30%, partially offset by modest growth in digital. In US School Assessment revenue declined slightly with continued contraction in revenue associated with the PARCC and ACT-Aspire multi state contracts and contract losses were partially offset by new contract wins. In Professional Certification (Pearson VUE) revenue grew driven by increases in test volumes. Revenue at Virtual Schools and OPM grew at 6% and 4% respectively due to increased enrolment and course registrations. The decrease in adjusted operating profit reflected the sales shortfall, inflation and investment in strategic growth areas which offset the impact of restructuring savings and lower staff incentives.

The North America results also include costs of £110m in 2019 and £78m in 2018 in respect of the 2017-2019 restructuring program. Amortization relating to acquired intangibles was £62m in 2019 compared to £72m in 2018 reflecting lower acquisition activity in recent years. Net gains on business disposals of £13m in 2019 relate to the K12 sale with £4m of profits on several small disposals in 2018. Overall adjusted operating margins in the North America business increased in 2019 to 14.2% compared to 13.0% in 2018 primarily due to restructuring savings and the disposal of the K12 business, as noted below, which generally had lower margins.

On March 29, 2019 the Group completed the sale of the US K12 school courseware business to Nexus Capital Management LP for headline consideration of $250m comprising an initial cash payment of $25m and an unconditional vendor note for $225m expected to be repaid in three to seven years.

North America — courseware

In US Higher Education Courseware, the revenue decline of 12% with print declining close to 30% was partially offset by modest growth in digital. In 2019 the weaker performance was driven by several factors: Premium-priced print and digital products were substituted for digital only formats and sales of bundle units declined 45% during 2019; Campus bookstores bought less physical inventory due to changing student behavior, with over 50% of learners now preferring an eBook to a physical text with offsetting eBook growth of 18% during 2019 and; There were modest adoption share losses caused by delivery issues due to the implementation of the new ERP system in the second half of 2018 as well as the re-organization of the sales force.

The business is focused on regaining share over time as it builds traction from the rollout of our next wave of digital products on the Pearson Learning Platform (PLP), which launched in September 2019. 60% of all Revel titles will migrate onto the PLP in 2020 enhancing the faculty and student experience. The business is also launching a direct-to-learner version of the Pearson eBook in 2020, with enhanced features and AI-driven text-to-speech.

US Higher Education Courseware digital registrations, including eBooks, declined 2%. Good registration growth in Revel, up 9%, was offset by continued market pressure in Developmental Mathematics and the planned retirement and reprioritization of niche products with lower demand. There was continued good progress with Inclusive Access signing 162 new institutions in 2019, taking the total not-for-profit and public institutions served to 779. The business now has direct relationships with over 850 institutions, including 80 longer-standing contracts with for-profit colleges. In 2019, 1.8m Inclusive Access enrolments were served up from 1.4m in 2018, making up 9% of 2019 US Higher Education Courseware revenue, up 19% on 2018 on a like-for-like basis, excluding the 80 for-profit colleges.

North America — assessment

In Student Assessment, revenue declined slightly in 2019 with continued contraction in revenue associated with PARCC and ACT-Aspire multi-state contracts and contract losses which were partially offset by new contract wins. During 2019, Pearson won new contracts or signed renewals in several key incumbent states including Kentucky, Maryland, Colorado and New Jersey, as well as the federal NCES contract for delivering the National Assessment of Educational Progress (NAEP). Pearson also won back the testing contract in the state of Tennessee. Automated scoring continues to be a competitive strength for Pearson. In 2019, we scored 39 million responses with AI, up 8% from 2018.

In Professional Certification (VUE), global test volume rose 8% to c.16.5 million tests. Revenue in North America was up a high single-digit percentage, mostly driven by the IT sector with increased demand for cloud technology certifications through Microsoft and Amazon, and volume growth in an education contract launched at the end of 2018 which is now operating at its full run-rate. VUE signed over 40 new contracts in 2019, including the Project Management Institute (PMI) and our renewal rate on existing contracts continues to be over 95%.

Clinical Assessment declined as demand for new product only partially offset normal declines in products in the later stages of their lifecycle.

North America — services

School Services (Virtual Schools) grew revenue 6% and served 76,000 full time equivalent students through 42 continuing full-time virtual partner schools in 28 states, up 5% on last year. Six new full-time online, state-wide partner schools opened in the 2019-20 school year in the states of Oregon, Washington, Tennessee, Minnesota and California, while a contract was exited in North Carolina.

Higher Education Services (including OPM and Learning Studio) grew revenue 4%, due to growth in OPM, partially offset by a small drag from Learning Studio revenue, a learning management system, which was fully retired in 2019. In OPM, revenue grew 9%, with growth in course registrations of 5% and new programs launched more than offsetting programs terminated. The overall active program count grew to 347 from 325 in 2018.

During 2019, the OPM business continued to optimize its portfolio and reduced the number of partners to 25 from 35. This will allow the business to shift towards enterprise models where it has a number of programs with a single partner and can benefit from economies of scale in marketing and recruitment and integrate more content and assessment services into these partnerships.

Core

Sales in Core markets increased by £32m, or 4%, from £806m in 2018 to £838m in 2019 while adjusted operating profit increased by £35m, or 61%, from £57m in 2018 to £92m in 2019. At constant exchange and after excluding the contribution from disposals and the impact of adoption of IFRS 16 on profit, Core sales were up 5% year on year and adjusted operating profit increased by 58%. Although Courseware sales declined moderately, there was strong growth in Student Assessment and Qualifications due to price and volume increases for A levels and GCSEs in the UK and the delivery of a new digital assessment contract in Egypt. In addition, there was good growth in Pearson Test of English Academic, OPM in the UK and Australia and Professional Certification.

The increase in adjusted operating profit was mainly due to trading growth and restructuring savings. Also included in the Core statutory operating profit were restructuring costs of £28m in 2019 and £16m in 2018 and amortization of acquired intangibles of £7m in 2019 and £8m in 2018. The statutory operating profit in 2018 also includes the one-off £8m charge in respect of guaranteed minimum pension (GMP) equalization in the UK.

Core — courseware

Courseware revenue declined moderately. Declines in School Courseware in the UK and Australia offset growth in Italy. In Higher Education Courseware, revenue declines in the UK and Europe more than offset growth in Australia.

Core — assessments

In Student Assessment and Qualifications, revenue grew strongly, due to price and volume increases for A levels and GCSE qualifications in the UK and the delivery of a new digital assessment contract in Egypt. This was partially offset by continued market declines in Apprenticeships. In 2019, the business successfully delivered the UK’s National Curriculum Test (NCT), marking 3.8m scripts, up slightly from 2018. The NCT will be delivered by another provider in 2020.

In Professional Certification (VUE), revenue was up due to good growth in the DVSA test in the UK (UK driving test), an additional exam series added to the ICAEW (Institute of Chartered Accountants in England and Wales) contract and good growth in the MOI (French driving test) which launched in late 2017. Clinical Assessment sales declined primarily in France and the Netherlands due to an absence of new major product introductions.

PTE Academic saw continued strong growth in test volumes in Australia and New Zealand up 14% from 2018. This was driven by its use to support visa applications to the Australian Department of Home Affairs as well as good growth in New Zealand. The business recently announced the win of the UK Secure English Language Test (SELT) contract with the UK Home Office which is expected to drive future growth.

Core — services

In Higher Education Services (OPM), revenue growth was driven by course enrolment growth in the UK. During the year, the business also announced new OPM partnerships in Australia with the University of Adelaide and University of Wollongong.

Growth

Growth sales decreased by £42m or 8%, to £497m in 2019 from £539m in 2018. Adjusted operating profit increased by £4m or 7% to £63m in 2019 from £59m in 2018. The Group estimates that, after excluding the impact of exchange rates, the incremental contribution from businesses disposed in 2019 and 2018 and the impact of adoption of IFRS 16 on profits, sales were up 4% year on year and adjusted operating profit was up 24%. Strong sales growth in China and good growth in Brazil and the Middle East was partially offset by declines in South Africa.

Adjusted operating profit benefitted from higher revenue together with the benefits of restructuring. The Group’s statutory operating profit included restructuring costs of £19m in 2019 and in 2018 restructuring costs were offset by credits to leave a net charge of nil. Also included in the statutory operating profit is amortization and impairment of acquired intangibles and gains and losses on disposal of businesses. In 2019 intangible charges of £82m compare to a charge of £19m in 2018 and this increase was due to an additional £65m impairment charge relating to acquired intangibles in the Brazil business following a reassessment of the relative risk in that market. In 2018 gains on the disposal of businesses amounted to £226m and result from the sale of the Wall Street English language teaching business (WSE), realizing a gain of £207m and the disposal of the equity interest in UTEL, the online University partnership in Mexico, realizing a gain of £19m. Losses on disposals in 2019 of £5m relate to adjustments to prior year disposals.

Growth — courseware

After taking account of currency movements courseware revenue was flat, with growth in English Language Courseware in China and School Courseware in the Middle East and Hispano America, offset by declines in school courseware in India and Higher Education courseware in South Africa following a change in government funding.

Growth — assessments

Professional Certification grew well due to a large ICT infrastructure certification contract, and several new smaller contract launches in China. PTE Academic saw strong growth in revenue with test volumes up 25% in India and China.

Growth — services

In English Services, underlying revenue grew slightly in our English Language School franchise in Brazil due to new product launches. In School Services, underlying revenue grew slightly due to price increases and new product launches in our private sistemas in Brazil. In Higher Education Services, enrolments grew 3% at the Pearson Institute of Higher Education (formerly CTI), however revenue declined modestly due to changes in mix.

Penguin Random House

The Group owns 25% of Penguin Random House, the first truly global consumer book publishing company. The Group’s share of Penguin Random House adjusted operating profits were £65m in 2019 compared to £68m in 2018. Penguin Random House performed solidly in 2019 with underlying revenue growth from a rise in audio sales, stable print sales, and the industry’s top bestsellers, including “Where the Crawdads Sing” by Delia Owen, “Becoming” by Michelle Obama, and bestselling books by Margaret Atwood, Tara Westover, Lee Child, Jamie Oliver, Jeff Kinney, and Dr. Seuss.

In December 2019, the Group announced the sale of its remaining 25% interest in PRH. The sale is expected to complete in the first half of 2020. At the end of December our share of the assets of PRH has been classified as held for sale on the balance sheet.

Results of operations

Year ended December 31, 2018 compared to year ended December 31, 2017

Consolidated results of operations

Sales

The Group’s total sales decreased from £4,513m in 2017 to £4,129m in 2018, a decrease of £384m or 9%. The year on year movement was impacted by exchange rates, primarily the comparative strength of the US dollar relative to sterling during the year. In 2018, currency movements decreased sales by £134m when compared to the equivalent figures at constant 2017 rates. When measured at 2017 constant exchange rates, the Group’s sales declined by 6%. Part of the decrease is due to the absence of sales from businesses sold during the year offset by the £9m additional sales recorded as a result of adopting IFRS 15. The Group estimates that after excluding the impact of disposals and the adoption of IFRS 15, sales declined by 1% at constant exchange rates.

North America sales decreased by £145m or 5% from £2,929m in 2017 to £2,784m in 2018. The Group estimates that after excluding the impact of exchange, the contribution from businesses disposed in 2017 and 2018, and the impact of adopting IFRS 15, North America sales declined by 1% in 2018 compared to 2017. This decline was primarily due to North American Higher Education Courseware which declined 5%, School Courseware which was down 4%, impacted by weak Open Territory sales in the second half of the year, the continued decline in Learning Studio as that product moved towards retirement in 2019 and Student Assessment which declined moderately. Offsetting that, was good growth in Virtual Schools, Online Program Management (OPM) and Professional Certification revenue. North America was the most significant source of the Group’s sales and as a proportion of sales contributed 67% in 2018 and 65% in 2017.

Core sales decreased by £9m or 1% from £815m in 2017 to £806m in 2018. The Group estimates that after excluding the impact of exchange rates, the contribution from businesses disposed in 2018 and the impact of adoption of IFRS 15, Core sales were flat when comparing 2018 and 2017. Sales growth in Pearson Test of English Academic, OPM in the UK and Australia and Professional Certification were offset by declines in Higher Education and Student Assessment and Qualifications.

Growth sales decreased by £230m from £769m in 2017 to £539m in 2018 principally due to the lost contribution in China following the disposal of GEDU in 2017 and WSE in 2018. The Group estimates that after excluding the impact of exchange rates, the contribution from businesses disposed and the impact of adoption of IFRS 15, Growth sales increased by 1% when comparing 2018 and 2017. Strong growth in China and modest growth in Brazil and Hispano-America were partially offset by declines in South Africa following a large one-off order in 2017.

Cost of goods sold and operating expenses

The following table summarizes the Group’s cost of sales, net operating expenses and impairment of intangible assets:

	Year ended December 31	
	2018	2017
	£m	£m
Cost of goods sold	1,943	2,066
Operating expenses:		
Distribution costs	88	84
Selling, marketing and product development costs	759	896
Administrative and other expenses	1,039	1,207
Restructuring costs	90	79
Other income	(69)	(64)
Total net operating expenses	1,907	2,202
Other net gains	(230)	(128)
Total continuing operations	3,620	4,140

Cost of goods sold. Cost of sales consists of costs for raw materials, primarily paper, printing and binding costs, amortization of pre-publication costs, royalty charges, the cost of service provision in the assessment and testing business and the cost of teaching and facilities in direct delivery businesses. The Group’s cost of sales decreased by £123m, or 6%, from £2,066m in 2017, to £1,943m in 2018. The decrease largely reflects the decrease in sales but also includes some continuing benefit from restructuring. Cost of sales as a percentage of sales increased largely as a result of the mix effect caused by the disposal of businesses with generally higher gross margins than Pearson as a whole. Cost of sales was 47.1% of sales in 2018 compared to 45.8% in 2017.

Distribution costs. Distribution costs consist primarily of shipping costs, postage and packing. Distribution costs increased by £4m reflecting some one-off costs in the Core business relating to a change in distribution arrangements in 2018.

Selling, marketing and product development costs. The Group’s selling, marketing and product development costs decreased by £137m or 15% from £896m in 2017 to £759m in 2018. The decrease is partly explained by the absence of costs from businesses disposed and restructuring savings realized in the year. As a percentage of sales, these costs decreased in 2018 from 19.9% in 2017 to 18.4% in 2018.

Administrative and other expenses. The Group’s administrative and other expenses decreased by £168m or 13.9% from £1,207m in 2017 to £1,039m in 2018. This decrease is explained by reductions in intangible amortization relating to past acquisitions, the absence of costs from businesses disposed and the impact of restructuring savings particularly in enabling functions partly offset by continuing investment in technology.

Restructuring costs. Restructuring costs of £90m in 2018 and £79m in 2017 relate to the 2017-2019 restructuring program announced in May 2017. This program began in the second half of 2017 and costs incurred were £79m in 2017 and £90m (excluding restructuring costs related to associates) in 2018 relating to delivery of cost efficiencies in enabling functions and the US higher education courseware business together with further rationalization of the property and supplier portfolio. The restructuring costs in 2018 relate predominantly to staff redundancies and the net cost of property rationalization. Included in the property rationalization in 2018 is the impact of the consolidation of the Group’s property footprint in London which resulted in a charge for onerous leases of £91m partially offset by profit from the sale of property of £81m.

Other income. Other operating income mainly consists of freight recharges, sub-rights and licensing income, distribution commissions, investment income and gains on minor asset disposals together with the service fee income from Penguin Random House. Other operating income increased to £69m in 2018 compared to £64m in 2017 mainly due to increased rights income and recoveries following legal settlements.

Other net gains and losses. Other net gains and losses relate to the sale of businesses and in 2018 these gains amounted to £230m and result from the sale of the Wall Street English language teaching business (WSE), realizing a gain of £207m, the disposal of the equity interest in UTEL, the online University partnership in Mexico, realizing a gain of £19m, and various other smaller disposal items realizing a net gain of £4m. Other net gains and losses in 2017 include the sale of the Group’s test preparation business in China, which resulted in a pre-tax profit on sale of £44m, the sale of a 22% share in PRH, which resulted in a pre-tax profit on sale of £96m and net losses of £12m relating to other smaller disposals.

Share of results of joint ventures and associates

The contribution from the Group’s joint ventures and associates decreased by £34m to £44m in 2018 from £78m in 2017. The decrease is mainly due to the sale of 22% of PRH in 2017 which resulted in a lower share of profits for the final quarter of 2017 and the whole of 2018. In addition, there were restructuring costs incurred at PRH and in respect of the Group’s ACT Aspire joint venture in 2018 that were absent in 2017.

Operating profit

In 2018, the Group reported an operating profit of £553m compared to an operating profit of £451m in 2017. The increase in profit of £102m mainly reflects an increase in gains on disposal and reduced intangible charges which more than offset increased restructuring, the lost contribution from businesses disposed and the impact of currency movements. After stripping out the effect of gains on the sale of businesses, reduced intangible charges, increased restructuring costs and one-off pension related charges, profits from trading declined by around £30m. This trading decline was primarily due to currency movements and the lost contribution from businesses disposed which offset the increased year on year benefit from restructuring savings.

Net finance costs

Net interest payable decreased from £79m in 2017 to £24m in 2018. The decrease was primarily due to a reduction in gross debt achieved through the early redemption of bonds in 2017 and in early 2018. Charges relating to early redemptions increased finance charges in 2017 but were not as significant in 2018. Additionally, there was a reduction in interest on tax provisions following reassessment of those provisions in 2018. In February 2018, the Group bought back an aggregate nominal amount of €450,000,000 of 2021 and 2025 notes. There was a charge in respect of these early redemptions however there were partial year savings as a result which have flowed through the income statement in the period since redemption. In March and November 2017 respectively, the Group redeemed the $550m 6.25% Global dollar bonds and $300m 4.625% US dollar notes, both originally due in 2018. In addition, in August 2017, the Group redeemed $383m out of the $500m 3.75% US dollar notes due in 2022 and $406m out of the $500m 3.25% US dollar notes due in 2023. The charge in respect of these early redemptions was booked in 2017 with partial year savings in 2017 and the full annualized savings coming through in 2018.

Other net finance costs are finance income and costs on retirement benefits, foreign exchange, interest costs relating to acquisition consideration and other gains and losses on derivative financial instruments. In 2017 the total of these items was a gain of £49m compared to a loss of £31m in 2018. Income relating to employee benefit plans was £8m higher in 2018 than in 2017 reflecting the higher net surplus on pension balances at the beginning of 2018 compared to the beginning of 2017. Other losses in 2018 primarily relate to foreign exchange differences on un-hedged cash and cash equivalents, and other financial instruments that generated gains in 2017.

For a more detailed discussion of the Group’s borrowings and interest expenses see “— Liquidity and Capital Resources — Capital Resources” and “— Borrowings” below and “Item 11. Quantitative and Qualitative Disclosures about Market Risk”.

Taxation

The reported tax credit in 2018 was £92m (18.5%) compared to a charge of £13m (3.1%) in 2017. The movement in the tax rate mainly reflects several one-off benefits in 2018 including provision releases due to the expiry of relevant statutes of limitation and due to the reassessment of historical positions including those relating to prior year disposals (£111m), as well as a one off benefit from a reassessment of the tax treatment of certain items of income and expenditure (£25m). The provision releases in 2018 were more significant than they had been in 2017 although in 2017 these releases partly explain a lower tax rate than might be expected given the national tax rates that the group is exposed to. As a result of US tax reform, the reported tax charge in 2017 includes a benefit from revaluation of deferred tax balances to the reduced federal rate of £5m and a repatriation tax charge of £6m.

Discontinued operations

There were no discontinued operations in either 2017 or 2018.

Profit for the year

The profit for the financial year in 2018 was £590m compared to a profit in 2017 of £408m. The increased profit reflects increased operating profit and tax credits offset by higher net finance costs as set out above.

Earnings per ordinary share

The basic earnings per ordinary share, which is defined as the profit for the financial year divided by the weighted average number of shares in issue, was 75.6p in 2018 compared to 49.9p in 2017 based on a weighted average number of shares in issue of 778.1m in 2018 and 813.4m in 2017. The increase in earnings per share was due to the increase in profit for 2018 as described above and was also due to the decrease in the number of weighted average number of shares following the share buyback during late 2017 and early 2018.

The diluted earnings per ordinary share was 75.5p in 2018 and 49.9p in 2017, with the dilutive effect of options being minimal.

Exchange rate fluctuations

Currency movements decreased sales by £134m and decreased the operating profit by £17m. See “Item 11. Quantitative and Qualitative Disclosures about Market Risk” for a discussion regarding the Group’s management of exchange rate risks.

Sales and operating profit by segment

The following tables summarize the Group’s sales and adjusted operating profit for each of the Group’s business segments. Adjusted operating profit is included as it is the key financial measure used by management to evaluate the performance of the Group and allocate resources to business segments over time by separating out those items of income and expenditure relating to acquisitions and disposals, major restructuring programs and certain other items that are not representative of underlying performance. Reconciliations of adjusted operating profit to statutory operating profit are included below and in note 2 within Item 18 — Financial Statements.

In the Group's adjusted operating profit, it has excluded other net gains and losses, acquisition related costs, amortization and impairment of acquired intangibles and the cost of major restructuring programs. In 2018, the Group has also excluded the impact of adjustments arising from clarification of guaranteed minimum pension (GMP) equalization legislation in the UK and in 2017, excluded the impact of US tax reform on associate operating profit. The intangible charges relate only to intangible assets acquired through business combinations and acquisition costs are the direct costs of acquiring those businesses. The Group does not believe these charges are relevant to an understanding of the underlying performance. Charges relating to acquired intangible assets are non-cash charges that reflect the historical expenditure of the acquired business. These acquired intangible assets continue to be supported by ongoing expenditure that is reported within adjusted operating profit. Other net gains and losses that represent profits and losses on the sale of subsidiaries, joint ventures, associates and other financial assets are also excluded from adjusted operating profit as it is important to highlight their impact on operating profit, as reported, in the period in which the disposal transaction takes place in order to understand the underlying trend in the performance of the Group. The GMP equalization charge arises from the ruling in the Lloyds Bank High Court case in the UK in October 2018 that provided clarity on how pension plans should equalize GMP between males and females. The case ruling results in an income statement charge, an additional liability and the potential requirement to make back-payments to pensioners who may have been retired for some years. The Group has excluded this charge from adjusted earnings as it relates to historical circumstances. The charge is an estimate based on available data and revisions to these estimates in future years will be treated as assumption changes and recorded in other comprehensive income rather than the income statement. US tax reform in 2017 resulted in the revaluation of deferred tax balances in associates. These revaluations have been excluded from adjusted earnings in 2017 due to their one-off nature.

A reconciliation of operating profit to adjusted operating profit for continuing operations is included in the tables below:

	Year ended December 31, 2018				
	North America	**Core**	**Growth**	**PRH**	**Total**
	£m	**£m**	**£m**	**£m**	**£m**
Sales	2,784	806	539	—	4,129
	67%	*20%*	*13%*	—	*100%*
Total operating profit	216	25	266	46	553
Add back:					
Cost of major restructuring	78	16	—	8	102
Intangible charges	72	8	19	14	113
Other net gains and losses	(4)	—	(226)	—	(230)
UK pension GMP equalization	—	8	—	—	8
Total adjusted operating profit	362	57	59	68	546
	66%	*10%*	*11%*	*13%*	*100%*

	Year ended December 31, 2017				
	North America	Core	Growth	PRH	Total
	£m	£m	£m	£m	£m
Sales	2,929	815	769	—	4,513
	65%	*18%*	*17%*	—	*100%*
Total operating profit	242	27	28	154	451
Add back:					
Cost of major restructuring	60	11	8	—	79
Intangible charges	89	12	37	28	166
Other net gains and losses	3	—	(35)	(96)	(128)
Impact of US tax reform	—	—	—	8	8
Total adjusted operating profit	394	50	38	94	576
	68%	*9%*	*7%*	*16%*	*100%*

North America

Sales in North America decreased by £145m or 5% from £2,929m in 2017 to £2,784m in 2018 and adjusted operating profit decreased by £32m, or 8%, from £394m in 2017 to £362m in 2018. The Group estimates that after excluding the impact of exchange, the contribution from businesses disposed in 2018 and 2017 and the impact of adopting IFRS 15, North America sales declined by 1% in 2018 compared to 2017 and adjusted operating profit increased by 1%. The sales decline was primarily due to North American Higher Education Courseware declining 5%, School Courseware which was down 4%, impacted by weak Open Territory sales in the second half of the year, the continued decline in Learning Studio as the product moved towards the retirement in 2019 and Student Assessment which declined moderately. Offsetting that, was good growth in Virtual Schools, Online Program Management (OPM) and Professional Certification revenue. The adjusted operating profit benefited from restructuring savings which more than offset the impact of lower sales, inflation and other operating factors.

The North America results also include £78m in 2018 and £60m in 2017 in respect of the 2017-2019 restructuring program. Amortization relating to acquired intangibles was £72m in 2018 compared to £89m in 2017 and there were net gains on business disposals of £4m and net losses of £3m in 2017. None of the disposals in either 2018 or 2017 were material. Overall adjusted operating margins in the North America business decreased in 2018 to 13.0% compared to 13.5% in 2017 due to sales mix offset partly by restructuring savings.

North America — courseware

In School Courseware, revenue declined primarily due to declines in Open Territory states. This was partially offset by growth in Adoption state revenue on strong performance in Science in Florida, South Carolina and Tennessee, Elementary Math in Oklahoma and Elementary Social Studies in California and South Carolina. The Group’s new adoption participation rate rose to 80% in 2018 from 61% in 2017 and the Group won an estimated 33% share of adoptions competed for (38% in 2017) and 26% of total new adoption expenditure of $509m (29% of $365m in 2017).

In Higher Education Courseware, total US college enrolments, as reported by the National Student Clearinghouse, fell 1.4%, with combined two-year public and four-year for-profit enrolments declining 4.8%. Enrolment weakness was particularly focused on part-time students where enrolment declined 2.9% compared to full-time enrolment which declined 1.1%. Net revenue in the US Higher Education Courseware business declined. Enrolment weakness was particularly focused on part-time students where enrolment declined 2.9% compared to full-time enrolment which declined 1.1%. Net revenue in the US Higher Education Courseware business declined 5% during the year. The Group estimates that around 2% of this decline was driven by lower enrolment; around 1.5% from the adoption of Open Educational Resources (OER); around 2.5% from the combined impact of shifts in the secondary market, more cautious buying by the channel and lower returns; offset by around a 1% benefit from the shift to digital. In 2018, Pearson's US Higher Education Courseware market share, as reported by MPI, was within the 40-41.5% range seen over the previous five years.

Digital revenue grew 2% benefiting from continued growth in direct sales and favorable mix. Global digital registrations of MyLab and related products were flat. In North America, digital registrations fell 3% with good growth in Science, Business & Economics and Revel offset by lower overall enrolment and continued softness in Developmental Mathematics. Revel registrations grew more than 40%. Including stand-alone eBook registrations, total North American digital registrations rose 1% and global registrations rose 3%.

The actions announced in early 2017 to promote access over ownership met with continued success. Stand- alone eBook volumes grew 34% in the US with revenue up 25% and the partner print rental program has had a successful start with 130 titles in the program in 2018.

The North America business continued to make good progress with the Inclusive Access (Direct Digital Access) solutions product signing 192 new institutions in 2018, taking the total of not-for-profit and public institutions served to 617. Including 80 longer- standing contracts with for-profit colleges, there are now direct courseware relationships with nearly 700 institutions. Inclusive Access ensures that students have affordable access to the courseware that they need on day one of the course, whilst further shifting the Group's business model in this segment away from ownership and towards subscription. During the 2018, the business delivered over 1.4m course enrolments with inclusive access revenues from non-profit and public institutions rising to c.8% of the higher education courseware revenue as more colleges and faculties saw the benefit of this model.

North America — assessment

In Student Assessment, revenue declined moderately in 2018 due to the faster than expected contraction in revenue associated with the PARCC and ACT-Aspire multi-state volume-based contracts and a more disciplined competitive approach. During 2018, Pearson successfully renewed contracts in Arizona and Kentucky through competitive procurements and secured business with the District of Columbia, New Jersey, New Mexico, and Maryland under new contracts with these PARCC states. The business also won new contracts for Utah's High School Assessments and with the University of Iowa for the delivery of Iowa's new assessment system.

In 2018, the Group delivered 24m standardized online tests to K12 students, down 5% from 2017. TestNav 8, Pearson's next-generation online test platform, supported a peak load of 825,000 tests in a single day and provided 99.99% up time. The AI scoring systems scored 36m responses to open-ended test items, around 33% of the total. Paper based standardized test volumes fell 9% to 18.5m.

In Professional Certification, VUE global test volume rose 4% to over 15m. Revenue in North America was up due to growth in medical college admissions testing and certification for professional bodies, offset by continued declines in volumes in the GED High School Equivalency Test and higher-level IT certifications in an environment of low unemployment.

The business signed over 70 new contracts in 2018 and the renewal rate on existing contracts continued to be over 95%. During the year, over 80 contracts were renewed including the National Council of State Boards of Nursing (NCLEX exam), Microsoft and Adobe. Clinical Assessment sales declined slightly on an absence of new major product introductions. Late in 2018 the Group launched a refresh of the Peabody Picture Vocabulary Test and Expressive Vocabulary Test (PPVT/EVT). Q-interactive, Pearson's digital solution for Clinical Assessment administration, saw continued strong growth in license sales with sub-test administrations up more than 37% over the same period last year.

North America — services

Connections Academy, the K12 online school business grew revenue 8%. Connections Academy served 73,000 Full Time Equivalent (FTE) students through 37 continuing full-time virtual partner schools in 28 states, up 11% on last year. Total FTE virtual school students declined 3% to 75,400 as expected due to contract exits at Commonwealth Charter Academy in Pennsylvania and Florida Virtual School. Three new full-time online, state- wide partner schools opened in the 2018-19 school year in Florida, Michigan, and Ohio. The 2018 Connections Academy Parent Satisfaction Survey continued to show solid endorsement for the schools with 93% of families with enrolled students stating they would recommend Connections virtual schools to others and 95% agreeing that the curriculum is of high quality.

In Pearson Online Services, revenue grew 3%, primarily due to growth in OPM, partially offset by a decline in Learning Studio revenue as the product is retired and declines as smaller non-OPM contracts were restructured. In OPM, revenue grew 9% as course registration grew strongly, up 14% to more than 388,000, in programs at key partners including Arizona State University Online, Maryville University, Regis College, Bradley University, Ohio University and the University of Southern California. The overall active program count grew by 33 to 325. The launch of 46 new programs were offset by 13 discontinued programs. During 2018, 27 new multi-year programs were signed including programs at new partners the University of North Dakota and Rider University. The business closed nine out of 15 renewal opportunities and as part of broader efforts around portfolio optimization agreed with partners to terminate 23 programs that were not mutually viable.

Core

Sales in Core markets decreased by £9m, or 1%, from £815m in 2017 to £806m in 2018 while adjusted operating profit increased by £7m, or 14%, from £50m in 2017 to £57m in 2018. At constant exchange and after excluding the contribution from disposals, Core sales were flat year on year and profits increased by 10%. Growth in Pearson Test of English Academic, OPM in the UK and Australia and Professional Certification was offset by declines in Higher Education and Student Assessment and Qualifications.

The increase in adjusted operating profit was mainly due to restructuring savings partly offset by cost inflation. Also included in the Core statutory operating profit were restructuring costs of £16m in 2018 and £11m in 2017 and amortization of acquired intangibles of £8m in 2018 and £12m in 2017. The statutory operating profit in 2018 also includes the one-off £8m charge in respect of guaranteed minimum pension (GMP) equalization in the UK. The GMP equalization charge arises from the ruling in the Lloyds Bank High Court case in the UK in October 2018 that provided clarity on how pension plans should equalize GMP between males and females. The case ruling results in an income statement charge, an additional liability and the potential requirement to make back- payments to pensioners who may have been retired for some years.

Core — courseware

Courseware revenue declined moderately. Slight growth in School Courseware was offset by declines in Higher Education Courseware. In Higher Education Courseware, revenue was down due to market declines in Europe and Asia, partially offset by growth in digital sales to institutional partners in the UK and Australia.

Core — assessments

In Student Assessment and Qualifications, revenue fell as modest growth in BTEC Firsts and GCE A-Level was more than offset by declines in AS levels, international GCSEs in the UK and UK Apprenticeships due to policy changes in the schools’ qualifications and the apprenticeships market. The business successfully delivered the National Curriculum Test (NCT) for 2018, marking 3.6m scripts, up slightly from 2017.

Clinical Assessment sales declined, primarily in Australia, due to an absence of new major product introductions. Q-Interactive, Pearson’s digital solution for Clinical Assessment administration, saw continued strong growth. Pearson Test of English Academic also saw continued strong growth in test volumes and successfully extended its agreement with the Department of Home Affairs in Australia for another two years. In Professional Certification, revenue was up modestly due to the launch of additional computer-based exams for an existing customer in the UK and the MOI, the French Driving Test.

Core — services

In Higher Education Services, revenue grew strongly. OPM revenue was up 34%. In Australia, there was good growth due to the successful partnership with Monash University, and continued success of the Graduate Diploma in Psychology. There was a total of around 10,200 course registrations across the seven programs in Australia up from around 9,300 in 2017. In the UK, there were 11 new programs launched and course registrations grew, reaching around 3,000 compared to around 1,400 in 2017. During the year, new partnerships with the University of Northumbria in the UK, and ESSEC Business School in France were announced.

Growth

Growth sales decreased by £230m, to £539m in 2018 from £769 in 2017. Adjusted operating profit increased by £21m or 55% to £59m in 2018 from £38m in 2017. The Group estimates that, after excluding the impact of exchange rates and the incremental contribution from businesses disposed in 2018 and 2017, sales were up 1% year on year. Strong growth in China and modest growth in Brazil and Hispano America were partially offset by declines in South Africa following a large one-off order in 2017.

The adjusted operating profit increase reflected the higher revenue and benefits of current and prior year restructuring. The Group's statutory operating profit included restructuring costs of £8m in 2017. In 2018 restructuring costs were offset by credits to leave a net charge of nil in 2018. Also included in the statutory operating profit was amortization of acquired intangibles of £19m in 2018 and £37m in 2017 and gains on business disposals. In 2018 these gains amounted to £226m and result from the sale of the Wall Street English language teaching business (WSE), realizing a gain of £207m and the disposal of the equity interest in UTEL, the online University partnership in Mexico, realizing a gain of £19m. Gains in 2017 of £35m include the sale of the Group's test preparation business in China.

Growth — courseware

Courseware revenue grew slightly, with strong growth in English Language Courseware in China, partially offset by declines in School Courseware in South Africa following a large one-off order in 2017.

Growth — assessments

Professional Certification grew well due to a new ICT infrastructure certification contract. Pearson Test of English Academic saw strong growth in revenue with over 10% growth in the volume of tests taken in India, China and the Middle East and moderate price increases.

Growth — services

In English Services, revenue grew slightly in the English language school franchise, Wizard, due to new product launches. In School Services, revenue was flat, with declines in student enrolment in the public sistemas business in Brazil offset by price increases, improved products and better student retention across the Group's private sistemas. In India, Pearson MyPedia, an inside service 'sistema' solution for schools, expanded to over 700 schools with over 200,000 learners. In Higher Education services revenue declined slightly due to business exits in India and slight revenue decline at Pearson Institute of Higher Education (formerly CTI), the university business in South Africa, due to a change in mix with total enrolment broadly flat and new student enrolment up 18%.

Penguin Random House

The Group owns 25% of Penguin Random House, the first truly global consumer book publishing company. The Group owned 47% until October 5, 2017, when it completed the sale of 22% to Bertelsmann. The Group's share of Penguin Random House adjusted operating profits were £68m in 2018 compared to £94m in 2017, the decrease is primarily due to the reduced contribution following the sale of part of the Group's share.

Penguin Random House performed solidly with underlying revenue growth on increased audio sales and stable print sales, whilst the business benefitted from international bestseller "Becoming" by Michelle Obama, the year's top-selling U.S. title, and bestsellers from Bill Clinton & James Patterson, Jordan Peterson, Jamie Oliver, Dr. Seuss, John Grisham, and Lee Child.

Liquidity and capital resources

Cash flows and financing

Net cash generated from operations decreased to £480m in 2019 from £547m in 2018. The decrease in cash generated from operations was largely due to increased investment in pre-publication and other increases in working capital, including the impact of reduced staff incentives, together with increased restructuring spend and the absence of a contribution from the K12 business following its disposal in the first half of 2019. These decreases were partially offset by the impact of IFRS 16 which reclassified lease cash flows as financing, investment and interest items rather than as cash flows from operations as was previously the case.

Net interest paid at £64m in 2019 compares to £22m in 2018 and reflects the adoption of IFRS 16 and the incorporation of lease interest for the first time as referred to above. Tax paid in 2019 was £30m compared to £43m in 2018 with the decrease mainly explained by a refund received in the US relating to historical periods together with no US tax being paid in relation to 2019 as a result of the tax loss on the sale of the US K12 business. In addition to the refund in the US in 2019, there was tax paid to the Chinese tax authorities following the disposal of WSE during 2018 and New York state and city taxes paid in the US as a result of a settlement with the tax authorities relating to past disposals.

Capital expenditure on property, plant and equipment was £55m in 2019 compared to £70m in 2018. Proceeds from the sale of property in 2018 of £128m includes proceeds from the sale of the Group's London property as part of the restructuring program. There were no material property sales in 2019. Capital expenditure on software intangibles increased from £130m in 2018 to £138m in 2019. The expenditure on both tangible and intangible capital includes the continuing investment in enabling function technology designed to lower administrative costs.

Cash outflow from acquisitions including £40m of additional capital invested in PRH in 2019 was £97m compared to £15m in 2018 relating to investment purchases and prior year acquisitions. There were two small acquisitions in 2019, Lumerit and Smart Sparrow which together accounted for £40m of cash consideration with the balance of the cash outflow on acquisitions in 2019 being in relation to investments and prior year items. The net cash inflow in respect of businesses and investments disposed was £107m in 2018 compared to a net outflow of £96m in 2019. In 2018 the cash received largely related to proceeds from the sale of WSE and UTEL. In 2019 the cash outflow mainly relates to the K12 business and reflects the deferral of proceeds and the level of working capital in the business at the disposal date.

Dividends from joint ventures and associates decreased from £117m in 2018 to £64m in 2019. The reduction is primarily due to the impact of the PRH sale transaction in 2017 which resulted in a reduced equity share from 47% to 25% and involved recapitalization dividends which were £50m in 2018.

The cash outflow from financing of £102m in 2019 compares to £729m in 2018 and includes the repayment of borrowings of £48m in 2019 and £441m in 2018. These repayments include the early redemption of various bonds (and their associated swaps). In March 2019, the Group executed market tenders to repurchase €55m of its €500m 1.875% notes due 2021 of which €250m were outstanding at 31 December 2018. In January 2018, the Group repurchased €250m of its €500m Euro 1.875% Notes due May 2021 and €200m of its €500m Euro 1.375% Notes due May 2025. Also included in financing cash flows are repayments of lease liabilities which increased from £4m in 2018 to £91m following the adoption of IFRS 16. In 2019, the Group announced the refinancing of its bank facility, reducing its size to $1.19bn and extending its maturity date to February 2024. Drawings of £230m representing a financing cash inflow in 2019 were outstanding on this facility at the end of December 2019. Dividends paid to company shareholders in 2019 of £147m compares to £136m in 2018. Cash returned to shareholders via the share buyback program, announced in October 2017 and completed in February 2018, amounted to £153m in 2018. Treasury share purchases in 2019 in respect of employee share plans were £52m. There were no purchases of treasury shares for this purpose in 2018.

Overall the Group’s net borrowings increased from £143m at the end of 2018 to £1,016m at the end of 2019. In addition to the cash flows referred to above, the adoption of IFRS 16 added £666m of net debt on transition after taking account of both lease liabilities and the investment in finance lease receivable brought on balance sheet at 1 January 2019.

Capital resources

The Group’s borrowings fluctuate by season because of the school year’s effect on the working capital requirements in the educational materials business. Assuming no acquisitions or disposals, the Group’s maximum level of net debt normally occurs in July, and its minimum level of net debt normally occurs in December.

In March 2020, the Group has reassessed its funding requirements considering the impact of the COVID-19 pandemic on the business. As a result of the pandemic the Group anticipates that there will be an impact on profit and cash flows in 2020 as set out in the outlook section above. The impact has been modelled under several scenarios to ensure that the likelihood of a prolonged period of disruption has been appropriately considered in assessing the availability of funding to the Group and the ability of the Group to comply with its banking covenants. The modelling includes a severe reduction in revenue, profit and operating cash flow that extends from March into the second and third quarters of 2020 with conditions returning to normal in the course of the fourth quarter. At the end of February 2020, the Group had significant financial headroom with approximately £1bn in total liquidity immediately available from cash and its Revolving Credit Facility. In response to the uncertainty, the Group paused its share buyback program on 23 March 2020 having purchased £167m of shares of the £350m originally planned. Based on the review of potential impacts to the business from the pandemic and a review of historical trends in working capital requirements and of forecast balance sheets for the next 12 months, the Group believes that it will comply with its banking covenants and has sufficient funds available for the Group’s present requirements, with an appropriate level of headroom given its portfolio of businesses and current plans. The Group’s ability to expand and grow its business in accordance with current plans and to meet long-term capital requirements beyond this 12-month period will depend on many factors, including the rate, if any, at which its cash flow changes and the availability of public and private debt and equity financing, including its ability to secure bank lines of credit. The Group cannot be certain that additional financing, if required, will be available on favorable terms, if at all.

At December 31, 2019, the Group’s net debt was £1,016m compared to £143m at December 31, 2018. The main reason for the increase was the adoption of IFRS 16 which added £666m of net debt on transition after taking account of both lease liabilities and the investment in finance lease receivable brought on balance sheet at 1 January 2019. The remaining decrease in net debt was principally due to cash outflows from acquisition and disposal activity, purchase of fixed assets and treasury shares and the payment of dividends which more than offset cash generated from operations.

Net debt is defined as all short-term, medium-term and long-term borrowing (including leases and related derivatives), less all cash, cash equivalents, other liquid resources and the net investment in finance lease receivables. Cash equivalents comprise short-term deposits with a maturity of up to 90 days, while liquid resources comprise short-term deposits with maturities of more than 90 days and other marketable instruments which are readily realizable and held on a short-term basis. Total short-term, medium- term and long-term borrowing excluding derivatives amounted to £1,664m at December 31, 2019, compared to £720m at December 31, 2018 reflecting the adoption of IFRS 16, drawings on the revolving credit facility and reductions due to bonds repaid during the year. At December 31, 2019, total cash and liquid resources were £437m, compared to £568m at December 31, 2018. This decrease reflects the utilization of cash to pay down long-term debt and create a more efficient balance sheet.

Contractual obligations

The following table summarizes the maturity of the Group’s borrowings, its obligations under non-cancellable leases, deferred consideration and pension funding obligations, exclusive of anticipated interest payments. Due to the variability of future interest payments, these have been excluded from the table below.

	Year ended December 31, 2019				
	Total	Less than one year	One to Two years	Two to five years	After five years
	£m	£m	£m	£m	£m
Gross Borrowings:					
Bank loans and overdrafts	3	3	—	—	—
Revolving credit facility	230	—	—	230	—
Bonds	593	—	170	161	262
Lease liabilities	838	89	81	218	450
Deferred consideration	36	5	5	15	11
UK pension funding obligation	—	—	—	—	—
Total	1,700	97	256	624	723

The UK pension plan’s most recent triennial actuarial valuation for funding purposes was completed as at 1 January 2018 and this valuation revealed a technical provision funding surplus of £163m. The plan expects to be able to provide benefits (in accordance with the plan rules) with a very low level of reliance on future funding from the Group.

At December 31, 2019 the Group had no capital commitments for fixed assets. There are contingent liabilities in respect of indemnities, warranties, legal and royalty claims and guarantees in relation to former subsidiaries and in respect of guarantees in relation to subsidiaries and associates. In addition, there are contingent liabilities in respect of tax assessments as outlined in note 34 in “Item 18. Financial statements”. None of these claims, guarantees or assessments is currently expected to result in a material gain or loss.

Off-balance sheet arrangements

The Group does not have any off-balance sheet arrangements, as defined by the SEC for the purposes of Form 20-F, that have or are reasonably likely to have a material current or future effect on the Group’s financial position or results of operations.

Borrowings

The Group finances its operations by a mixture of cash flows from operations, short-term borrowings from banks and commercial paper markets, and longer-term loans from banks and capital markets.

At December 31, 2019, the Group had a $1.19bn committed revolving credit facility with a maturity date in February 2024. At December 31, 2019, £230m of the $1.19bn credit facility had been drawn. The facility set in place in March 2019, contains two key covenants measured for each 12-month period ending June 30 and December 31: