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.

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. Following the repayment of the vendor note, the Group is entitled to 20% of all future cash flows to equity holders and 20% of net proceeds if the business is sold.

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 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 last five years.

Digital revenue grew 2% benefiting from continued growth in direct sales and favourable 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 programme has had a successful start with 130 titles in the programme in 2018. The Group plans to increase the number of titles in the programme to around 400 by fall 2019.

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 year, 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 and it is anticipated that between two and five new partner schools will be opened in the 2019-20 school year. 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 and will deliver the NCT again in 2019 before the test transitions to another provider in 2020.

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 were 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), realising a gain of £207m and the disposal of the equity interest in UTEL, the online University partnership in Mexico, realising 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.

The Penguin Random House Venture Combined Financial Statements are included in this report on pages F-87 to F-160.

Results of operations

Year ended December 31, 2017 compared to year ended December 31, 2016

Consolidated results of operations

Sales

The Group's total sales decreased from £4,552m in 2016 to £4,513m in 2017, a decrease of £39m or 1%. The year on year movement was impacted by currency movements, primarily the comparative strength of the US dollar relative to sterling during the year. In 2017, currency movements increased sales by £126m when compared to the equivalent figures at constant 2016 rates. When measured at 2016 constant exchange rates, the Group's sales declined by 4%. Part of the decrease is due to the absence of sales from businesses sold during the year and the Group estimates that after excluding the impact of disposals, sales declined by 2% at constant exchange rates.

North America sales decreased by £52m or 2% from £2,981m in 2016 to £2,929m in 2017. The Group estimates that after excluding the impact of exchange and the contribution from businesses disposed in 2016 and 2017, North America sales declined by 4% in 2017 compared to 2016 due to declines in higher education and school courseware, school assessment and in Learning Studio, a learning management system that is being retired. North America continued to be the most significant source of the Group's sales and as a proportion of sales contributed 65% in both 2017 and 2016.

Core sales increased by £12m or 1% from £803m in 2016 to £815m in 2017. The Group estimates that after excluding the impact of exchange and the contribution from businesses disposed in 2016, Core sales were flat when comparing 2017 and 2016. Sales growth in OPM in the UK and Australia and growth in the Pearson Test of English Academic were offset by declines in school, higher education, English courseware and student assessment and qualifications.

Growth sales increased by £1m from £768m in 2016 to £769 in 2017. The Group estimates that after excluding the impact of exchange and the contribution from businesses disposed in 2017, Growth sales were flat when comparing 2017 and 2016. Increases in China, school courseware in South Africa and Pearson Test of English Academic, were offset by declines in higher education services primarily due to lower enrolment at CTI, the university business in South Africa and business rationalization in India, and declines in Brazil.

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	
	2017	**2016**
	£m	**£m**
Cost of goods sold	2,066	2,093
Operating expenses		
Distribution costs	84	88
Selling, marketing and product development costs	896	908
Administrative and other expenses	1,207	1,240
Restructuring costs	79	329
Other income	(64)	(85)
Total net operating expenses	2,202	2,480
Other net (gains) and losses	(128)	25
Impairment of intangible assets	—	2,548
Total continuing operations	4,140	7,146

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 £27m, or 1%, from £2,093m in 2016, to £2,066m in 2017. The decrease largely reflects the decrease in sales but also includes some benefit from 2016 restructuring realized in 2017. Cost of sales was 45.8% of sales in 2017 compared to 46.0% in 2016.

Distribution costs. Distribution costs consist primarily of shipping costs, postage and packing. Distribution costs have decreased by £4m reflecting restructuring benefits and the continuing shift to digital and services products.

Selling, marketing and product development costs. The Group’s selling, marketing and product development costs decreased by £12m or 1% from £908m in 2016 to £896m in 2017. As a percentage of sales, these costs were consistent at 19.9% in both 2016 and 2017.

Administrative and other expenses. The Group’s administrative and other expenses decreased by £33m or 3% from £1,240m in 2016 to £1,207m in 2017. This decrease is largely due to the full impact of restructuring savings from the 2016 program flowing through in 2017, partly offset by continuing investment in technology.

Restructuring costs. In 2017, restructuring costs of £79m relate to the 2017-2019 restructuring program announced in May 2017 and include costs incurred in the second half of 2017 relating to this program. Total restructuring in 2016 amounted to £338m and included costs associated with headcount reductions, property rationalization and closure or exit from certain systems, platforms, products and supplier and customer relationships.

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 decreased to £64m in 2017 compared to £85m in 2016 mainly due to a decline in investment income following the disposal of investments and the absence of gains on asset disposals.

Other net gains and losses. 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. Included in other gains and losses in 2016 are losses of £25m associated with the closure of the English language schools in Germany and the sale of the Pearson English Business Solutions business.

Impairment of intangible assets. At the end of 2016, following trading in the final quarter of the year, the Group determined that the underlying issues in the North American higher education courseware market were more severe than anticipated. These issues related to declining student enrolments, changes in buying patterns of students and correction of inventory levels by distributors and bookshops. As a result, in January 2017, the Group revised its strategic plans and estimates for future cash flows and, as a consequence, recognized an impairment to North American goodwill of £2,548m. There were no impairments in 2017.

Share of results of joint ventures and associates

The contribution from the Group's joint ventures and associates decreased by £19m to £78m in 2017 from £97m in 2016. The decrease was mainly due to the sale of 22% of PRH resulting in a lower share of profits for the final quarter of the year, which is the peak selling season for consumer publishing businesses.

Operating profit/(loss)

In 2017, there was an operating profit of £451m compared to an operating loss on a continuing basis of £2,497m in 2016. The increase in profits primarily reflects the absence of impairment charges in 2017 (£2,548m in 2016), lower restructuring costs (£79m in 2017 compared to £338m in 2016) and gains from the sale of businesses (a gain of £128m in 2017 compared to a loss of £25m in 2016). After stripping out the absence of impairments, lower restructuring costs and gains on the sale of businesses, profits from trading declined by around £58m. This was primarily due to increased amortization charges, higher staff incentives and cost inflation, offset in part by the year on year benefit from restructuring savings.

Net finance costs

Net interest payable in 2017 was £79m, compared to £59m in 2016. The increase was primarily due to higher US interest rates in 2017, additional charges relating to the early redemption of various bonds during the year and some additional interest on tax provisions. 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. Although there was a charge in respect of the early redemptions, there were also partial year savings as a result which have flowed through the income statement in the period since redemption, with 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. The decrease in finance income in respect of employee benefit plans from £11m in 2016 to £3m in 2017 reflects the lower net surplus on pension balances at the beginning of 2017 compared to the beginning of 2016. Both the exchange gain in 2017 of £44m and the exchange loss in 2016 of £20m mainly relate to foreign exchange differences on unhedged cash and cash equivalents and other financial instruments.

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 total tax charge in 2017 of £13m represents 3.1% of pre-tax profit and compares to a benefit of £222m or 8.7% of pre-tax losses in 2016. The tax benefit in 2016 was mainly due to the release of deferred tax liabilities relating to tax deductible goodwill that was impaired. The low tax rate in 2017 is largely attributable to uncertain tax position releases due to the expiry of the relevant statutes of limitation. As a result of US tax reform, the reported tax charge includes a benefit from revaluation of deferred tax balances to the reduced federal rate of £5m and a repatriation tax charge of £6m. In addition to the impact on the reported tax charge, the Group’s share of profit from associates was adversely impacted by £8m.

Discontinued operations

There were no discontinued operations in either 2016 or 2017.

Profit/(loss) for the year

The profit for the financial year in 2017 was £408m compared to a loss in 2016 of £2,335m. The loss in 2016 includes the impairment charge of £2,548m and higher restructuring charges, as noted above.

Earnings/(loss) 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 49.9p in 2017 compared to a loss per share of 286.8p in 2016 based on a weighted average number of shares in issue of 813.4m in 2017 and 814.8m in 2016. The increase in earnings per share was due to the increase in profit for 2017 described above and was not significantly affected by the movement in the weighted average number of shares.

The diluted earnings per ordinary share was also 49.9p in 2017, with the dilutive effect of options being minimal. The diluted earnings per ordinary share in 2016 was the same as the basic earnings per ordinary share due to the loss for the year.

Exchange rate fluctuations

Currency movements increased sales by £126m and increased the operating profit by £13m. 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, amortization and impairment of acquired intangibles, the cost of major restructuring programs and the impact of US tax reform. 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. US tax reform in 2017 resulted in the revaluation of deferred tax balances. These revaluations were excluded from adjusted operating profit in relation to post tax profits of associates 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, 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%*

	Year ended December 31, 2016				
	North America	Core	Growth	PRH	Total
	£m	£m	£m	£m	£m
Sales	2,981	803	768	—	4,552
	65%	*18%*	*17%*	—	*100%*
Total operating profit	(2,448)	(33)	(100)	84	(2,497)
Add back:					
Cost of major restructuring	172	62	95	9	338
Intangible charges	2,684	16	33	36	2,769
Other net gains and losses	12	12	1	—	25
Total adjusted operating profit	420	57	29	129	635
	66%	*9%*	*5%*	*20%*	*100%*

North America

Sales in North America decreased by £52m or 2% from £2,981m in 2016 to £2,929m in 2017 and adjusted operating profit decreased by £26m, or 6%, from £420m in 2016 to £394m in 2017. The Group estimates that after excluding the impact of exchange and the contribution from businesses disposed in 2017 and 2016, North America sales declined by 4% in 2017 compared to 2016 primarily due to anticipated declines in higher education and school courseware, school assessment, and Learning Studio, a learning management system was retired.

There were no impairment charges in 2017. In 2016, the Group recognized an impairment to its US goodwill. At the end of 2016, following trading in the final quarter of the year, the Group determined that the underlying issues in the North American higher education courseware market were more severe than anticipated. These issues related to declining student enrolments, changes in buying patterns of students and correction of inventory levels by distributors and bookshops. As a result, in January 2017, the Group revised its strategic plans and estimates for future cash flows and, as a consequence, recognized an impairment to North America goodwill of £2,548m. The 2017 North America results also include £60m in respect of the further major restructuring program announced during the year. 2016 results included £172m in respect of the previous major restructuring program and other losses on disposal mainly relating to the sale of the Pearson English Business Solutions business. Overall adjusted operating margins in the North America business declined in 2017 to 13.5% compared to 14.1% in 2016 due primarily to the impact of lower sales and other operating factors, partially offset by restructuring savings.

North America — courseware

In school courseware, revenue declined 6% primarily due to sharp declines across Open Territory states in the second half of the year. This was partially offset by growth in adoption state revenues where strong performance in Texas Grades K-12 Spanish, Indiana Grades K-12 Science and South Carolina Grades 6-8 Science outweighed a lower adoption participation rate resulting from the decision not to compete for the California Grades K-8 English Language Arts (ELA) adoption with a core basal program. The new adoption participation rate fell to 61% in 2017 from 64% in 2016. The Group won an estimated 38% share of adoptions competed for (30% in 2016) and 29% of total new adoption expenditure of $365m (19% of $470m in 2016).

In higher education, total US college enrolments, as reported by the National Student Clearinghouse, fell 1.1%, with combined two-year public and four-year for-profit enrolments declining 2.5%. Enrolment weakness was particularly focused on part-time students where enrolment declined 3.3%, a bigger decline than in any of the last five years. Full-time enrolment grew 0.3%, the first expansion since late 2010. Net revenues at constant exchange rates in the higher education courseware business declined 3% during the year. It is estimated that around 2% of this decline was driven by lower enrolment; just over 1% from the adoption of Open Educational Resources (OER); around 5% from the secondary market, new initiatives and other factors, primarily the growth in print rental; offset by an around 3% benefit from institutional selling and the shift to digital and a 2% benefit in 2017 from lower returns by the channel.

In 2017, the Group’s US higher education courseware market share, as reported by MPI, was in the upper half of the 40-41.5% range seen over the previous five years. During 2017, the Group performed strongly in Statistics and Business Statistics, Biology and Accounting. Statistics benefited from the popularity of “best in class” learning application StatCrunch, Biology from the success of Campbell Biology 11e and MasteringBiology, and Accounting from the success of Miller-Nobles Horngren Accounting 11e and MyAccountingLab. This was offset by weakness in Information Technology, particularly in the for-profit sector, and continued softness in Developmental Mathematics.

Digital revenues grew 9% benefiting from continued growth in direct sales, favourable mix and selected price increases. Global digital registrations of MyLab and related products fell 1%. 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 50%. Including stand-alone e-book registrations, total North American digital registrations were flat.

The actions announced in early 2017 to promote access over ownership were successfully implemented. The rental price of 2,000 eBook titles was reduced and resulted in eBook revenues increasing by more than 20% in response during 2017. In institutional courseware solutions, 210 institutions were signed up to the Group’s Inclusive Access (Direct Digital Access, DDA) solutions, taking the total to over 500. During the year, over 1m course enrolments were delivered with inclusive access rising to around 5% of higher education revenue in 2017 as more colleges and faculties saw the benefit of this model.

North America — assessment

In school assessment (State and National assessments), revenues at constant exchange rates declined by 9% due to contract losses. Colorado announced in June 2017 they would be leaving the PARCC consortium after the 2017/2018 school year. The Group won the subsequent bid to deliver ELA, Math, Science, and Social Studies for at least the next six years and also secured contract extensions in Virginia, Indiana, Arizona, Minnesota, Puerto Rico, Kentucky, New York City and North Carolina and for the National Assessment of Educational Progress.

The Group delivered 25.3m standardized online tests to K-12 students in 2017, up 7% from 2016. TestNav8, the Group’s next-generation online test platform, supported a peak load of 752,000 tests in a single day and provided 99.99% up time. AI scoring systems scored 35m responses to open-ended test items, around 30% of the total. Paper based standardized test volumes fell 7% to 20.4m.

In professional certification, revenues grew 2%. VUE global test volume rose 1% to over 15m. Revenues in North America were flat, with continued growth in certification for professional bodies, offset by modest declines in US teacher certification and the GED (General Educational Development, the high school equivalency test that is part of a joint venture with the American Council on Education), after a strong performance in 2016, and by weakness in higher level IT certifications in the second half of 2017.

The Group signed over 50 new contracts in 2017 including a ten-year contract with the Association of American Medical Colleges (AAMC) to administer the MCAT, and contracts with ExxonMobil for five years and the Project Management Institute for four years. Its renewal rate on existing contracts continues to be over 95%. During 2017, the Group renewed over 50 contracts including the American Board of Internal Medicine (ABIM) for nine years, Florida Teacher Licensure Assessments for five years, Pharmacy Technician Certification Board (PTCB) for five years, and The Institute of Internal Auditors for four years.

Clinical assessment sales increased 2% largely due to the effect of exchange rate movements and, at constant exchange rates, declined slightly on an absence of new major product introductions. Q-Interactive, the Group’s digital solution for Clinical Assessment administration, saw continued strong growth in license sales with sub-test administrations up more than 33% over the same period in 2016.

North America — services

Connections Education the virtual school business, served nearly 78,000 Full Time Equivalent students through full-time virtual and blended school programs, up 6% on 2016. Two new full-time online, state-wide, partner schools opened for the 2017-2018 school year. Enrolment growth from new and existing schools was partially offset by the termination of a school partnership at the end of the 2016-2017 school year. Revenues grew modestly as enrolment growth was partially offset by increased in-sourcing, as some partners took non-core services in-house. The 2017 Connections Academy Parent Satisfaction Survey showed strong results with 92% of families with students enrolled in full-time online partner schools stating they would recommend the schools to others and 95% agreeing that the curriculum is of high quality.

In Pearson Online Services, revenues declined primarily due to a decline in Learning Studio revenues as the product is being retired and the restructuring of smaller non-OPM contracts. Learning Studio declined by just over 50% to a revenue contribution of £11m in 2017. In OPM, revenues grew modestly as course enrolments increased strongly, up 8% to more than 341,000, boosted by good growth and program extensions at key partners including Arizona State University Online, Maryville University, Rutgers University and University of Alabama at Birmingham and from new partners, partially offset by contract exits.

The Group signed 45 multi-year programs in 2017 renewed 19 programs and launched 14 new programs at partners including Maryville University, Duquesne University and Ohio University. During 2017, it also agreed the termination of nine programs that were not mutually viable and did not renew a further six programs.

Brinker International, Inc. (NYSE: EAT), one of the world's leading casual dining restaurant companies and owner of Chili's® Grill & Bar and Maggiano's Little Italy®, with over 1,600 owned, operated and franchised restaurant locations, partnered with the Group to launch a comprehensive employer-education program Best You EDU that provides free educational opportunities to Brinker employees including foundational, GED and Associate Degree programs.

Core

Sales in Core markets increased by £12m, or 1%, from £803m in 2016 to £815m in 2017 while adjusted operating profit decreased by £7m, or 12%, from £57m in 2016 to £50m in 2017. At constant exchange and after excluding the contribution from disposals, Core sales were flat year on year and profits declined by 14%. Growth in OPM sales in the UK and Australia and growth in Pearson Test of English Academic were offset by declines in school, higher education, English courseware and student assessment and qualifications.

The decline in adjusted operating profit was due to revenue mix, investment in new products and services and product line exits, partially offset by restructuring savings. The Group's statutory results in 2017 included restructuring costs of £11m. The statutory results in 2016 included restructuring costs of £62m and a loss on closure of Wall Street English Germany of £12m.

Core — courseware

Courseware revenues declined 2%. In school, revenues declined in Australia, due to market contraction in the primary sector partly offset by slight growth in secondary, and declines in smaller markets in Europe and Africa. In higher education, revenues were down slightly due to declines in smaller markets, whilst in Australia and the UK an increase in direct to institution sales and a further shift to digital offset declines in traditional textbook sales. In English, there were declines in smaller markets.

Core — assessments

In higher education and School assessment, revenues fell 4% primarily due to lower AS level, iGCSE and Apprenticeship volumes as a result of policy changes. BTEC revenues also declined modestly as revenues recognized in 2017 lagged the greater stability seen in registrations and billed revenue in the year. The Group successfully delivered the National Curriculum Test for 2017, marking 3.5m scripts, up slightly from 2016.

Clinical assessment grew 15% with revenues benefiting from strong growth in the new editions of the Wechsler Intelligence Scale for Children (WISC-V) and the Clinical Evaluation of Language Fundamentals (CELF-5).

Pearson Test of English Academic saw continued growth in test volumes which rose 84% from 2016, driven primarily by its use to support visa applications to the Australian Department of Immigration and Border Protection and good growth in New Zealand.

In Professional certification, revenues were flat as the impact of last year's renegotiated terms of the UK Driving Theory test for the DVSA was offset by growth from new and existing contracts.

Core — services

In higher education services, revenues grew 17% and OPM revenues grew by 33%. In Australia, there was good growth due to the successful partnership with Monash University, and the continued success of the Graduate Diploma in Psychology. There are a total of around 9,300 course registrations across the seven programs in Australia (up from around 6,900 registrations in 2016). In the UK, five new programs were launched in addition to the two launched in 2016. UK course registrations grew to about 1,400, compared to about 370 in 2016.

English services grew, with strong growth in WSE Italy, due to the opening of new centers in 2015 and 2016, partially offset by declines in Japan.

Growth

Growth sales increased by £1m, to £769m in 2017 from £768m in 2016. Adjusted operating profit increased by £9m or 31% to £38m in 2017 from £29m in 2016. The Group estimates that, after excluding the impact of exchange rates and the incremental contribution from businesses disposed in 2017 and 2016, sales were flat year on year. Growth in China, school courseware in South Africa and Pearson Test of English Academic was offset by declines in higher education services, primarily due to lower enrolment at CTI, business rationalization in India and declines in Brazil.

The adjusted operating profit increase reflected the benefits of prior year restructuring and the higher revenues in China, South Africa school courseware and PTEA in India, partially offset by lower revenues in Brazil. The Group’s statutory results included restructuring costs of £8m in 2017 and £95m in 2016.

On November 27, 2017, The Group announced that it had agreed the sale of Wall Street English to a consortium of funds affiliated with Baring Private Equity Asia and CITIC Capital. The sale was completed on March 15, 2018.

Growth — courseware

Courseware revenues grew 7%, due to strong growth in school textbook sales in South Africa and English language courseware in China, partially offset by weakness in Brazil.

Growth — assessments

Professional Certification grew strongly. Pearson Test of English Academic saw over 30% growth in the volume of tests taken in India.

Growth — services

In English services, growth in Wall Street English in China, due to new center openings, was more than offset by declines in Brazil due to macroeconomic pressures.

In school services, revenue fell, with student enrolment in the sistemas business in Brazil falling 14% primarily due to NAME, the public sistema, where the Group took the strategic decision to exit two thirds of its contracts with municipalities due to unattractive economic prospects, together with a reduction in student enrolments in the Dom Bosco private sistema due to challenging economic conditions. In India, Pearson MyPedia, an inside service ‘sistema’ solution for schools, expanded to over 500 schools with approximately 157,000 learners.

In higher education services, revenues declined sharply due to a 14% fall in total student enrolment at CTI, the university business in South Africa, driven by the cumulative impact of economic factors in recent years, partially offset by improved new student enrolments in 2017, together with business exits in India.

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 £94m in 2017 compared to £129m in 2016, primarily due to the sale of part of the Group’s share.

Penguin Random House performed in line with expectations with revenues up slightly year on year on rising audio sales, broadly stable print sales, and modest ongoing declines in demand for e-books, whilst the business benefitted from bestsellers by Dan Brown, R.J. Palacio, John Grisham, Jamie Oliver, and Dr. Seuss.

The Penguin Random House Venture Combined Financial Statements are included in this report on pages F-87 to F-160.

Liquidity and capital resources

Cash flows and financing

Net cash generated from operations increased to £547m in 2018 from £462m in 2017. The main reason for the improvement in cash generated from operations was the absence in 2018 of special pension contributions which in 2017 were £227m and related to the FT Group disposal (£25m) and to agreements relating to the PRH merger in 2013 (£202m). The benefit from the absence of these pension contributions in 2018 was partly offset by higher incentive payments in 2018 relating to 2017 performance and other unfavourable movements in working capital.

Net interest paid at £22m in 2018 compares to £69m in 2017 and reflects the decrease in interest charge for the year referred to above. Tax paid in 2018 was £43m compared to £75m in 2017 with the decrease mainly explained by tax refunds in the US.

Capital expenditure on property, plant and equipment was £70m in 2018 compared to £82m in 2017. Proceeds from the sale of property in 2018 of £128m includes proceeds from the sale of London property as part of the restructuring program. There were no material property sales in 2017. Capital expenditure on software intangibles reduced from £150m in 2017 to £130m in 2018. The expenditure on both tangible and intangible capital includes the continuing investment in enabling function technology designed to lower administrative costs.

There were no significant acquisitions in either 2018 or 2017 and the net cash outflow in respect of businesses and investments acquired was £15m in 2018 and £14m in 2017. The net cash inflow in respect of businesses and investments disposed was £107m in 2018 compared to £430m in 2017. In 2017 the cash received largely related to the PRH and GEDU disposals and in 2018 includes proceeds from the sale of WSE and UTEL.

Dividends from joint ventures and associates decreased from £458m in 2017 to £117m in 2018. The reduction is primarily due to the PRH sale transaction in 2017 which resulted in a reduced equity share from 47% to 25% and involved recapitalization dividends amounting to £312m in 2017 and £50m in 2018.

The cash outflow from financing of £729m in 2018 compares to £1,759m in 2017 and includes the repayment of borrowings of £441m in 2018 and £1,294m in 2017. These repayments include the early redemption of various bonds (and their associated swaps). 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. In March and November 2017 respectively, the Group redeemed $500m 6.25% Global dollar bonds and $300 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 3.25% US dollar notes due in 2023.

Dividends paid to company shareholders in 2018 of £136m compares to £318m in 2017 reflecting the rebasing of the dividend in 2017 to reflect portfolio changes, increased investment and to align with profit expectations. Cash returned to shareholders via the share buyback program, announced in October 2017 and completed in February 2018, amounted to £149m in 2017 and £153m in 2018.

Overall the Group’s net borrowings decreased from £432m at the end of 2017 to £143m at the end of 2018. The reduction in net debt was principally due to cash generated from operations and the proceeds from disposal of businesses and property in the year which more than offset interest, tax, share buy-back and dividend payments.

Capital resources

The Group’s borrowings fluctuate by season due to the effect of the school year 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. Based on a review of historical trends in working capital requirements and of forecast monthly balance sheets for the next 12 months, the Group believes that it 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, 2018, the Group’s net debt was £143m compared to £432m at December 31, 2017. The reduction in net debt was principally due to cash generated from operations and the proceeds from disposal of businesses and property in the year which more than offset interest, tax, share buy-back and dividend payments. Net debt is defined as all short-term, medium-term and long-term borrowing (including finance leases), less all cash, cash equivalents and liquid resources. 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 amounted to £720m at December 31, 2018, compared to £1,085m at December 31, 2017 reflecting the bonds repaid during the year. At December 31, 2018, total cash and liquid resources were £568m, compared to £645m at December 31, 2017. This decrease reflects the utilization of cash to pay down long-term debt and create a more efficient balance sheet.

To ensure efficient use of the cash balances, during 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.

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, 2018				
	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, overdrafts and commercial paper	43	43	—	—	—
Bonds	672	—	—	399	273
Finance lease obligations	5	3	1	1	—
Operating lease obligations	1,175	143	130	307	595
Deferred consideration	42	5	5	15	17
UK Pension funding obligations	—	—	—	—	—
Total	1,895	189	131	707	868

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 provisions 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, 2018 the Group had no capital commitments for fixed assets, including finance leases already under contract. There are contingent liabilities in respect of indemnities, warranties 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 legal and royalty claims. None of these claims or guarantees is expected to result in a material gain or loss.

At December 31, 2018, the Group had a $1,750m committed revolving credit facility with a maturity date in August 2021. On March 6, 2019, the Group announced the refinancing of its bank facility, reducing its size to $1.19bn and extending its maturity date to February 2024.

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, 2018, the full $1.75bn was available under the committed revolving credit facility. The refinanced $1.19bn credit facility, set in place in March 2019, contains two key covenants measured for each 12 month period ending June 30 and December 31:

The Group must maintain the ratio of its profit before interest, tax and amortization to its net interest payable at no less than 3:1; and

The Group must maintain the ratio of its net debt to its EBITDA, explained below, at no more than 4:1.

“EBITDA” refers to earnings before interest, taxes, depreciation and amortization. The Group is currently in compliance with these covenants.

See note 18 of “Item 18. Financial Statements” for information on the Group’s longer term loans from banks and capital markets.

Treasury policy

The Group’s treasury policy is described in note 19 of “Item 18. Financial Statements”. For a more detailed discussion of the Group’s borrowing and use of derivatives, see “Item 11. Quantitative and Qualitative Disclosures about Market Risk”.

Related parties

There were no significant or unusual related party transactions in 2018, 2017 or 2016. Refer to note 36 in “Item 18. Financial Statements”.

Accounting policies

For a description of the Group’s principal accounting policies used refer to note 1 in “Item 18. Financial Statements.