Smiths Group plc Annual Results for the year ended 31 July 2019

London, Friday 20 September 2019

Building on our return to growth

	Headline[1]				Statutory		
	FY2019 £m	FY2018[2] £m	Reported growth	Underlying[3] growth	FY2019 £m	FY2018[2] £m	Reported growth
Continuing Operations[4]							
Revenue	2,498	2,328	+7%	+3%	2,498	2,328	+7%
Operating profit	427	388	+10%	+4%	326	342	(5)%
Operating margin	17.1%	16.7%	+40bps		13.1%	14.7%	(160)bps
Pre-tax profit	376	333	+13%		304	287	+6%
Profit after tax	273	246	+11%		142	119	+19%
Discontinued Operations[5]							
Profit after tax	112	115	(3)%		85	160	(47)%
Total Group							
Profit for the year	385	361	+7%		227	279	(19)%
Free cash-flow	234	302	(23)%				
Return on capital employed	14.4%	14.6%	(20)bps				
Basic EPS	96.8p	90.7p	+7%	+3%	56.8p	70.0p	(19)%
Dividend	45.90p	44.55p	+3%				

Continuing Operations – excluding Smiths Medical

- ***Further good growth, in line with expectations***
  - Underlying revenue +3%, building on the Group's return to growth last year. Strong performances in John Crane, Flex-Tek and Interconnect, moderated by the timing of deliveries in Smiths Detection
  - The net impact of acquisitions and disposals and favourable foreign exchange translation each added a further 2% to revenue growth. As a result, reported revenue increased 7%
- ***Focused on operational excellence***
  - Good underlying headline operating profit growth, +4%
  - Continued margin improvement, +40bps to 17.1%
- ***Value creative investment***
  - Continued investment for sustainable growth, with cash R&D 4.5% of sales (FY2018: 4.1%)
  - Further progress on portfolio optimisation – now over 90% well positioned. Two acquisitions completed during the year including Flex-Tek's acquisition of United Flexible for $345m in February 2019

Discontinued Operations – Smiths Medical

- ***Separation of Smiths Medical on track for H1 CY2020***
  - Returned to growth in H2, with underlying revenue +2%; flat for the year with an improved margin in H2
  - Further New Product Introductions (NPIs) and submission of its large volume pump to the US regulator for first phase review
  - New Smiths Medical CEO, JehanZeb Noor, joined in July

Total Group

- ***Strong financial framework***
  - The differences between headline and statutory operating profit are non-headline items as defined in note 3 to the accounts, of which the largest constituents are the amortisation of acquired intangibles, and the Guaranteed Minimum Pensions (GMP) equalisation
  - Basic headline EPS up 7% to 96.8p but down 19% on a statutory basis due to the reasons stated above
  - Continued strong balance sheet; net debt to EBITDA 1.8x
  - Operating cash conversion 83%, temporarily impacted by working capital – increase in current receivables following strong end to the year and higher inventory associated with order phasing in Smiths Detection and John Crane
  - Proposed final dividend of 31.80 pence per share. Full year dividend increased by 3%

Outlook

- Further progress expected in FY2020, with year on year growth weighted towards the first half; resulting in a more even balance in overall performance between the first and second halves
- If current rates prevail, foreign exchange will provide a tailwind
- Improved operational excellence and cash generation
- On course to grow faster than our markets over the medium-term

Andy Reynolds Smith, Group Chief Executive, commented:

"FY2019 was a significant year in the evolution of Smiths. We continue to build sustainable growth, paving the way to outperform our markets. Importantly, this growth was coupled with enhanced margins, we have now delivered a 300 basis points margin improvement since 2016. In addition, we continued to optimise our portfolio, with two acquisitions completed in the year.

In this context of progress and confidence in the future, we announced plans to separate Smiths Medical to create two stronger, industry-leading companies. I am delighted to have welcomed JehanZeb Noor as CEO of Smiths Medical. The separation process is progressing well; we are on track for demerger by the end of the first half of CY2020.

In FY2020 we expect to make further progress, with year on year growth weighted towards the first half and resulting in a more even balance in overall performance between the first and second halves. At current rates, foreign exchange will provide a tailwind to revenue and profit.

We remain on course to grow faster than our markets over the medium-term. Our strategy is to focus the portfolio for growth and deliver world-class competitiveness, within a strong financial framework. The Board remains confident that this will drive long-term sustainable growth and attractive returns."

Statutory reporting
Statutory reporting takes account of all items excluded from headline performance. On a statutory basis, total Group profit for the year was £227m (FY2018: £279m) and basic earnings per share were 56.8p (FY2018: 70.0p).

See accounting policies for an explanation of the presentation of results and note 3 to the financial statements for an analysis of non-headline items.

Footnotes
The following definitions are applied throughout the document:
[1]Headline: In addition to statutory reporting, the Group reports on a headline basis except for balance sheet and cash-flow. Definitions of headline metrics, and information about the adjustments to statutory measures, are provided in note 3 to the financial statements
[2] FY2018 has been restated for IFRS 15 and the Smiths Medical reclassification as discontinued operations
[3] Underlying modifies headline performance to adjust prior year to reflect an equivalent period of ownership for divested businesses and excludes the effects of foreign exchange, acquisitions and supplemental sales for divested businesses
[4] Continuing operations exclude Smiths Medical which is accounted for as 'discontinued operations – businesses held for distribution to owners', given the intended separation of Smiths Medical by the end of the first half of CY2020
[5] Discontinued operations is defined in note 27 to the financial statements
[6] Revenue from higher growth regions is comprised of territories whose real GDP growth exceeds the G7 average

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Presentation

The presentation slides and a live webcast of the analyst presentation will be available at https://smiths.com/investors/results-reports-and-presentations at 09.00 (UK time) today. A recording of the webcast will be made available from 13.00 (UK time).

Photography

Original high-resolution photography is available to the media from the media contacts above or from http://www.smiths-images.com/

This document contains certain statements that are forward-looking statements. They appear in a number of places throughout this document and include statements regarding the intentions, beliefs and/or current expectations of Smiths Group plc (the "Company") and its subsidiaries (together, the "Group") and those of their respective officers, directors and employees concerning, amongst other things, the results of operations, financial condition, liquidity, prospects, growth, strategies and the businesses operated by the Group. By their nature, these statements involve uncertainty since future events and circumstances can cause results and developments to differ materially from those anticipated. The forward-looking statements reflect knowledge and information available at the date of preparation of this document and, unless otherwise required by applicable law, the Company undertakes no obligation to update or revise these forward-looking statements. Nothing in this document should be construed as a profit forecast. The Company and its directors accept no liability to third parties. This document contains brands that are trademarks and are registered and/or otherwise protected in accordance with applicable law.

Results overview

Continuing Operations (£m)	FY2018	Foreign exchange	Acquisitions & disposals*	Underlying movement	FY2019
Group revenue	2,328	57	43	70	**2,498**
Group headline operating profit	388	11	13	15	**427**

* Includes disposals and FY2019 performance from acquisitions that do not have comparators for the prior year

FY2019 - Headline	Underlying revenue growth	Underlying operating profit growth	Operating margin
John Crane	+8%	+6%	23.3%
Smiths Detection	(2)%	(7)%	16.0%
Flex-Tek	+3%	+4%	19.2%
Smiths Interconnect	+3%	+6%	14.7%
Group	**+3%**	**+4%**	**17.1%**

Continuing Operations

The commentary below refers to continuing operations (excluding Smiths Medical), unless otherwise stated.

Revenue

In FY2019 the Group successfully built on its return to growth. Underlying revenue growth of 3% was in line with expectations and marks another important milestone on our journey towards sustained outperformance versus our markets. All divisions delivered growth, except for Smiths Detection where some large orders were deferred by customers into the first half of FY2020.

The net impact of acquisitions and disposals (£43m), and favourable foreign exchange translation (£57m) each added a further 2% to revenue growth. As a result, reported revenue increased to £2,498m (FY2018: £2,328m), up 7% or £170m.

Revenue from higher-growth regions[6], which now represents 20% of Group sales, grew 9% on an underlying basis.

Operating profit

The net impact of acquisitions and disposals (£13m), and favourable foreign exchange translation (£11m) each added a further 3% to profit growth. As a result, reported headline operating profit increased to £427m (FY2018: £388m), up 10% or £39m.

Central costs reduced by £6m to £(51)m (FY2018: £(57)m), reflecting continued focus on central cost efficiencies.

The £(101)m difference between headline and statutory operating profit is non-headline items as defined in note 3 to the financial statements. The two largest constituents relate to amortisation of acquired intangibles and GMP equalisation. On a statutory basis, after taking into account all items excluded from headline performance, operating profit of £326m was £(16)m lower than last year (FY2018: £342m).

Operating margin

Headline operating margin increased 40bps to 17.1% on a reported basis. This improvement was driven by a continued focus on operational excellence, as well as good volume growth, partially offset by mix and pricing in Smiths Detection and re-investment for future growth in John Crane. Since 2016, the Group's operating margin has increased 300bps, evidencing good progress towards our medium-term ambition of achieving Group operating margins of 18-20%.

Finance costs

Headline finance costs of £(51)m (FY2018: £(55)m) were lower than last year driven by early repayment of higher coupon bonds. Statutory finance costs were £(22)m (FY2018: £(55)m) with the £33m reduction driven by a £39m foreign exchange gain on an intercompany loan with discontinued operations (which is neutral on a Group basis), partially offset by hedge ineffectiveness on fair value hedges, which are treated as non-headline.

R&D & capex

The Group's investment in R&D grew, with income statement costs up by £8m, or 9% on a reported basis, to £93m (FY2018: £85m). This translated into cash costs of £111m or 4.5% of sales (FY2018: £96m or 4.1%).

Our Vitality Index measures the effectiveness of organic investment, tracking revenue from new products launched in the past three years. Our Total Group Vitality Index was 13% (FY2018: 13%), with an ambition to reach ~20% in the medium-term.

Capex at £(68)m (FY2018: £(60)m) represented 1.3x depreciation and amortisation (FY2018: 1.0x). The increase was driven by planned investment in John Crane to support growth.

Portfolio

We actively manage our portfolio of businesses and review all options to enhance our leadership positions and maximise value for shareholders.

We made further progress on portfolio optimisation through organic and inorganic investment; over 90% of the Group is now well positioned in attractive markets.

In February 2019, Flex-Tek completed the acquisition of United Flexible for an enterprise value of $345m. This acquisition strengthens Flex-Tek's positions in aerospace and industrial end-markets globally. The integration is progressing well.

In April 2019, John Crane completed the acquisition of the industrial division of Advanced Diamond Technologies (ADT) for an enterprise value of $8m. ADT is a leader in the development and application of diamond films for industrial, electronic, mechanical and medical applications. The acquisition enhances John Crane's technological leadership.

For more information, please read notes 26 and 28 of the financial statements.

Discontinued operations – Smiths Medical

Smiths Medical returned to growth in the second half with revenue up 2%, delivering flat revenue for the year overall at £874m, in line with expectations. The improved trend reflects an increased contribution from new products and a change in sales channel for our chronic obstructive pulmonary disease (COPD) product, both of which offset the previously announced impact of the transition to a new Notified Body in Europe and associated product re-certifications.

Headline operating profit of £147m was down (6)% on an underlying basis. Operating profit was impacted by the £15m cost associated with re-certification in Europe, as anticipated, and some operational inefficiencies. As a result, headline operating margin reduced (110)bps to 16.8%, with margin showing signs of improvement in the second half at 17.0%.

Smiths Medical's headline profit after tax was £112m, as displayed in the Group income statement. The difference between headline and statutory total profit are non-headline items of £(27)m which include a foreign exchange loss on an intercompany loan with the Group and separation costs, partially offset by profit on disposals of non-core assets and tax credits on non-headline items.

During the year, Smiths Medical completed the disposal of two non-core businesses for a total consideration of c.£30m, further focusing the business on scalable leading positions in its chosen markets.

The separation of Smiths Medical is progressing well; we are on track to complete the demerger by the end of the first half of CY2020, conditional on the approval of Smiths' shareholders. The Board of Smiths continues to evaluate all opportunities for value maximisation as the separation process progresses, with the overriding objective of optimising shareholder value. The separation will create two stronger, industry-leading companies with distinct strategies and focus.

Smiths Medical successfully achieved its FY2019 performance milestones supporting the separation process. The division returned to growth in the second half, with the sustainability of this growth underpinned by the ongoing launch of new products. One of the division's most significant new product investments, the large volume pump, has now been submitted to the US regulator for first phase review. The large volume pump market represents a c.£2bn extension to Smiths Medical's addressable market.

In July, JehanZeb Noor joined as Chief Executive Officer of Smiths Medical to oversee the separation and continue building a strong, sustainable future for Smiths Medical. He is focused on accelerating growth and driving enhanced performance to deliver the division's medium-term ambition of growing ahead of its markets, with operating margins in excess of 20% and attractive returns.

Total Group

The commentary below refers to Total Group, unless otherwise stated.

Taxation

The headline tax charge for the year of £(135)m (FY2018: £(126)m) represents an effective rate of 25.9% (FY2018: 25.8%).

Non-headline taxation items of £(52)m included a £(36)m UK deferred tax write-off as a result of the proposed Medical demerger and a £(18)m US deferred tax write-off. Therefore, the statutory tax rate is 45.1%. Please refer to note 3 of the financial statements for further details.

An effective tax rate in the range of 25-27% is expected for the year ending 31 July 2020.

Statutory total profit and EPS
Total statutory profit after tax decreased by (19)% to £227m (FY2018: £279m). Statutory basic EPS was also down (19)% to 56.8p (FY2018: 70.0p) due to the non-headline items referred to previously.

Cash generation
During the year stock turns were 3.4x (FY2018: 3.7x) and average working capital as a percentage of sales was stable at 26% (FY2018: 26%). Headline operating cash-flow was £474m (FY2018: £538m). This reflected an increase in year-end working capital of £(104)m (FY2018: £(16)m), caused by higher current receivables following a strong end to the year and higher inventory associated with order phasing in Smiths Detection and John Crane. As a result, operating cash conversion was 83% (FY2018: 99%). Strong cash generation remains a distinguishing feature of Smiths' performance and over the last four years the Group has averaged 100% operating cash conversion.

Statutory net cash inflow from operating activities was £346m (FY2018: £405m). Free cash-flow of £234m (FY2018: £302m) decreased by (23)% reflecting lower operating cash. See note 29 to the financial statements for a reconciliation of headline operating cash to statutory cash-flow measures.

Pension
The net accounting pension surplus was £311m (FY2018: £381m), driven by actuarial losses arising from the application of a lower discount rate. The Group continues to de-risk the pension schemes, for example through a £176m buy-in agreement with Canada Life for Smiths Industries Pension Scheme (SIPS) in July 2019.

The Group made contributions for the year of £36m (FY2018: £49m). For FY2020, we expect total cash contributions of around £40m across all schemes.

GMP is a portion of UK pension that was accrued by individuals who were contracted out of the UK State Second Pension prior to 6 April 1997. Historically there was an inequality of benefits between male and female members who have GMP, which is not unique to Smiths. A total £(29)m past service cost (FY2018: £nil) was recognised in the current period as a non-headline item following the UK High Court ruling that GMP equalisation is required for all such UK schemes.

Dividend
The Board has a progressive dividend policy, aiming to increase dividends in line with long-term underlying growth in earnings and cash-flow. This policy enables us to retain sufficient cash-flow to finance investment in the drivers of growth and meet our financial obligations. In setting the level of dividend payments, the Board considers prevailing economic conditions and future investment plans, along with the objective to maintain minimum dividend cover of around 2.0x.

The Board is recommending a final dividend of 31.80p per share, bringing the total dividend for the year to 45.90p, a year-on-year increase of 3.0% (FY2018: 44.55p). The final dividend will be paid on 15 November 2019 to shareholders on the register at close of business on 18 October 2019.

The Company offers a Dividend Reinvestment Plan (DRIP) - see our website for details. To participate in the DRIP for the FY2019 final dividend, shareholders must submit their election notice to be received by 1 November 2019 – the Election Date. Elections received after the Election Date will apply to dividends paid after 15 November 2019. Purchases under the DRIP are made on or as soon as practicable after the dividend payment date and at prevailing market prices.

ROCE
ROCE reduced marginally to 14.4% (FY2018: 14.6%). The ROCE movement reflects recent investments, such as the acquisition of United Flexible, which are expected to generate superior returns over the longer-term.

Debt
Net debt at 31 July 2019 was £(1,197)m, an increase of £(304)m in the period. Net debt to EBITDA increased to 1.8x mainly driven by the acquisition of United Flexible. Gross debt was £(1,512)m (FY2018: £1,610m) and cash reserves were £315m (FY2018: £717m). Of the gross debt, £nil falls due within one year. Our strong balance sheet continues to allow us to deploy significant further investment capacity to support sustainable growth.

The maturity profile of the major tranches of the debt in issue is as follows:
2022 - £(329)m ($400m 3.625% bond)
2023 - £(564)m (€600m 1.25% bond)
2027 - £(607)m (€650m 2.00% bond)

IFRS 15 - revenue from contracts with customers
The Group has adopted IFRS 15 retrospectively from a transition date of 1 August 2018. The transition to IFRS 15 has not impacted the primary statements for the FY2018 comparative results but has resulted in the reclassification of £(16)m of variable selling costs as contras to revenue within Smiths Medical - discontinued operations.

Foreign exchange

The results of overseas operations are translated into sterling at average exchange rates. The net assets are translated at period-end rates. The principal exchange rates, expressed in terms of the value of sterling, are shown in the following table.

	Average rates		Period-end rates	
	31 July 2019	31 July 2018	31 July 2019	31 July 2018
USD	1.29	1.35	1.22	1.31
EUR	1.13	1.13	1.10	1.12

With over 95% of our revenue originating outside the UK, we are exposed to foreign exchange movements, mainly the US Dollar and the Euro. For each $0.10 move, the annual operating profit impact is c.£15m. For each €0.10 move, the annual operating profit impact is c.£10m. Current foreign exchange will provide a tailwind to revenue and profit, if current rates prevail.

Outlook

In FY2020 we expect to make further progress, with year on year growth weighted towards the first half and resulting in a more even balance in overall performance between the first and second halves. At current rates, foreign exchange will provide a tailwind to revenue and profit.

We remain confident that over the medium-term we can grow faster than our markets. Our strategy is to focus the portfolio for growth and deliver world-class competitiveness, within a strong financial framework. The Board remains confident that this will drive long-term sustainable growth and attractive returns.

Financial information

The financial information in this preliminary announcement which comprises the consolidated income statement, consolidated statement of comprehensive income, consolidated balance sheet, consolidated cash-flow statement, consolidated statement of changes in equity, accounting policies and related notes, does not constitute statutory accounts within the meaning of Section 434 of the Companies Act 2006.

The statutory accounts for the year ended 31 July 2018 have been filed with the Registrar of Companies. The auditors have reported on those accounts and on the statutory accounts for the year ended 31 July 2019, which will be filed with the Registrar of Companies. Both the audit reports were unqualified and did not contain any statement under section 498 of the Companies Act 2006.

Business review

John Crane

John Crane is a leading provider of mission-critical engineered solutions for global energy and process industries. c.61% of revenue is derived from the energy sector (downstream and midstream oil & gas and power generation) and c.39% comes from other process industries (including chemical, pharmaceutical, mining, water treatment, and pulp & paper). 66% of John Crane revenue comes from aftermarket sales. John Crane represents 38% of continuing Group revenue.

	FY2019 £m	FY2018 £m	Reported growth	Underlying growth
Revenue	945	881	+7%	**+8%**
Original Equipment	313	292		**+13%**
Aftermarket	632	589		**+5%**
Headline operating profit	220	202	+9%	**+6%**
Headline operating margin	23.3%	22.9%	+40bps	
Statutory operating profit	191	199	(4)%	
Return on capital employed	23.4%	22.9%	+50bps	
R&D cash costs % sales	1.7%	1.3%	+40bps	

Revenue

John Crane delivered a continued good performance, with revenue up 8% on an underlying basis. Reported revenue was up 7%, including £(13)m net impact from the disposal of the Bearings business and the acquisition of Seebach GmbH in the prior year and £10m favourable foreign exchange translation.

Underlying revenue from John Crane's Energy and Industrial activities was up c.10% and c.4% respectively, reflecting the improved trend in global energy markets and continued growth in John Crane's industrial sales. These market conditions also drove improved underlying sales of Original Equipment (OE), up 13%. Investment in OE projects and the expansion of the installed base continued during the period. Multiple new project agreements were secured, including oil & gas expansion projects in the Middle East, United States, APAC and Europe, an oil field development project in Brazil, as well as new power, petrochemical, pulp and paper, and chemical contracts across all regions. John Crane's large installed base and leading service offering position it well to satisfy strong aftermarket demand for repairs, maintenance and upgrades; underlying aftermarket revenue grew 5% during the year and now represents 66% of John Crane's revenue.

Operating profit

Headline operating profit of £220m increased 6% on an underlying basis, mainly driven by strong volumes. Headline operating profit margin was 23.3%, up 40bps, with the positive impact of volume growth and the disposal of a lower margin business partially held back by the higher mix of OE, the costs of restarting capacity and increased investment in R&D. The difference between statutory and headline operating profit includes the net cost in relation to the provision for John Crane, Inc. asbestos litigation.

Portfolio

In April 2019, John Crane completed the acquisition of the industrial division of Advanced Diamond Technologies (ADT) for an enterprise value of $8m. ADT is a leader in the development and application of diamond films for industrial, electronic, mechanical and medical applications. The acquisition enhances John Crane's technological leadership.

ROCE

ROCE was up 50bps at 23.4% driven by the impact of disposals and increased profitability, partially offset by acquisitions and investments in capex.

R&D

Cash R&D expenditure during the period increased by 33% or £(4)m to 1.7% of sales (FY2018: 1.3%). John Crane's innovation is primarily focused on using materials science advancements and coatings to enhance seal performance and efficiency, as well as leveraging the Group's digital expertise to support the development of predictive diagnostic platforms and other innovative digital technologies. During the year John Crane launched a simplified cartridge seal design for process industries, supporting faster and easier installation. The advanced seal for crude oil pipeline pumps, launched last year, saw rapid adoption by some of the world's leading pipeline companies.

Outlook

John Crane continues to see strong order intake for both OE and aftermarket. This supports our expectations of good growth in FY2020, albeit against a strong comparator.

Smiths Detection

Smiths Detection is a global leader in the detection and identification of security threats and contraband. It produces equipment for customers in the Aviation market and Other Security Systems for ports & borders, defence and urban security markets. 46% of Smiths Detection's sales are derived from the aftermarket. Smiths Detection represents 32% of continuing Group revenue.

	FY2019 £m	FY2018 £m	Reported growth	Underlying growth
Revenue	798	793	+1%	**(2)%**
Aviation	522	540		**(6)%**
Other Security Systems	276	253		**+6%**
Headline operating profit	127	134	(5)%	**(7)%**
Headline operating margin	16.0%	16.9%	(90)bps	
Statutory operating profit	91	93	(2)%	
Return on capital employed	11.5%	12.1%	(60)bps	
R&D cash costs % sales	8.4%	7.4%	+100bps	

Revenue

Smiths Detection's underlying revenue decreased by (2)%. This reflects an improved second half performance but the customer deferral of some large deliveries in to the first half of FY2020. Aftermarket revenue grew 2% on an underlying basis and now accounts for 46% of the division's revenue (FY2018: 44%). Reported revenue was up 1%, including £22m favourable impact from foreign exchange translation.

Revenue from Aviation activities decreased (6)% on an underlying basis against a strong comparator. The compound annual growth rate of Aviation revenue over the past two years is c.6%. Aviation is Smiths Detection's largest segment, representing 65% of total revenue. We continued to see strong demand for hold baggage screening (HBS) systems in EMEA, associated with the ECAC Standard 3 Regulation, and globally as airports upgrade their HBS fleets. Some significant HBS contracts signed recently include a £128m order by Aena in Spain due for delivery through FY2020-2023. Smiths Detection's Computed Tomography (CT) based screening systems for cabin baggage are being successfully trialed globally. The new scanners enable more efficient detection of threats and eliminate the need to take liquids and laptops out of bags. The CT cabin baggage scanners have already been purchased by airports in Korea, Japan, Australia and the TSA has recently placed a $96.8m order for installations, some of which were originally anticipated in FY2019.

Revenues from Other Security Systems grew by 6%, reflecting an improved focus in Smiths Detection's other core vertical markets, particularly ports and borders. Major deliveries during the year included Egypt, India and Azerbaijan. Further wins included a contract with Meridian Port Services Limited (MPS) to provide scanning portals for the major Tema Port Expansion project in Ghana.

Operating profit

Headline operating profit decreased (7)% on an underlying basis, reflecting pricing pressure in the latter stages of the European hold baggage recapitalisation cycle and the mix of programmes delivered. This is partially offset by a higher proportion of aftermarket revenues, which typically have higher margins than original equipment sales. Headline reported operating margin decreased (90)bps to 16.0%. The difference between statutory and headline operating profit primarily reflects amortisation of acquired intangibles.

ROCE

ROCE decreased by (60)bps to 11.5% reflecting the division's lower profitability and higher working capital during the period.

R&D

Cash R&D expenditure during the period was 8.4% of sales, or 6.6% excluding customer funded R&D (FY2018: 7.4% and 6.3% respectively). We continue to invest in the development of the next generation of detection devices for the defence market, new algorithms to improve the detection of dangerous goods for cargo applications and operational efficiency, and digital solutions to strengthen our aftermarket proposition.

Outlook

In Smiths Detection, we expect low single digit revenue growth for the year supported by a robust order book, with deliveries weighted towards the first half.

Flex-Tek

Flex-Tek provides innovative components to heat and move fluid and gases for aerospace and industrial applications. Flex-Tek represents 17% of continuing Group revenue.

	FY2019 £m	FY2018 £m	Reported growth	Underlying growth
Revenue	436	354	+23%	**+3%**
Aerospace	121	87		**+3%**
Industrials	315	267		**+3%**
Headline operating profit	84	67	+25%	**+4%**
Headline operating margin	19.2%	18.9%	+30bps	
Statutory operating profit	68	68	-	
Return on capital employed	23.3%	35.0%	(1,170)bps	
R&D cash costs % sales	0.6%	0.6%	-	

Revenue

Flex-Tek delivered a good performance with revenue up 3% on an underlying basis, driven by growth in both the Industrial and Aerospace segments. On a reported basis, revenue increased 23%, including £56m incremental revenue associated with the acquisition of United Flexible and £14m favourable foreign exchange translation.

Aerospace revenue was up 3% on an underlying basis, driven by growth in new engine and airframe platforms including the Joint Strike Fighter, the GE GEnx engine and Airbus A320 models as well as growth in the aftermarket business. Industrial revenue was up 3% driven by growth in specialty products for process heating solutions and US housing construction, and Gastite penetration in Europe.

Operating profit

On an underlying basis headline operating profit increased 4% to £84m, driven by revenue growth and a £3m credit from a litigation settlement offset by a £(3)m one-off cost relating to a facility closure in Asia. Headline operating margin increased 30bps to 19.2%. The difference between statutory and headline operating profit is primarily due to a reduction in the provision for Titeflex Corporation for subrogation claims, and acquisition costs.

Portfolio

In February 2019, Flex-Tek completed the acquisition of United Flexible for an enterprise value of $345m. This acquisition strengthens Flex-Tek's positions in aerospace and industrial end markets globally. The integration is progressing well.

ROCE

ROCE decreased (1,170)bps to 23.3%, driven by the acquisitions of Osram's heating element business in the prior year and United Flexible this year.

R&D

Cash R&D expenditure remained consistent at 0.6% of sales (FY2018: 0.6%), focused on market-leading innovative solutions to meet specific customer needs. The most significant product launch was Gastite Flashshield+ which provides easier installation for contractors while maintaining best in class safety performance.

Outlook

In Flex-Tek, we expect to deliver a similar rate of growth in FY2020 bolstered by the impact of the acquisition of United Flexible. Strong demand for aerospace and heating solution components, as well as increased penetration into the European construction markets, is expected to be partially offset by some signs of softening in the US housing construction market.

Smiths Interconnect

Smiths Interconnect designs solutions for high-speed, secure connectivity in demanding applications for various end markets including defence, semiconductor test, medical, space, commercial aerospace, and rail. Smiths Interconnect represents 13% of continuing Group revenue.

	FY2019 £m	FY2018 £m	Reported growth	Underlying growth
Revenue	319	300	+6%	**+3%**
Headline operating profit	47	42	+10%	**+6%**
Headline operating margin	14.7%	14.1%	+60bps	
Statutory operating profit	45	37	+22%	
Return on capital employed	12.8%	11.9%	+90bps	
R&D cash costs % sales	7.2%	7.0%	+20bps	

Revenue

Smiths Interconnect built on its return to growth with underlying revenue up 3%, reflecting good growth in Asia and North America. On a reported basis, revenue increased by 6% including £11m favourable foreign exchange translation.

Revenue growth was driven by sales associated with large defence and aerospace programmes in the US – notably the Joint Strike Fighter, Next Generation Jammer and B-21 programs, as well as successes in the semiconductor segment in Asia. We are beginning to see benefits from investments we have made in capacity and capabilities in the region, including the joint venture with Sichuan Huafeng Enterprise Group Co. Ltd established in 2018. The joint venture is supporting our growth in the commercial aerospace and high-speed rail segments in Asia.

Operating profit

Headline operating profit increased 6% on an underlying basis to £47m, reflecting the division's sales growth as well as procurement and restructuring savings. Headline operating margin of 14.7% increased 60bps. The difference between statutory and headline operating profit reflects adjustments for amortisation of acquired intangibles.

ROCE

ROCE increased 90bps to 12.8%, driven by increased profitability.

R&D

Cash R&D expenditure was 7.2% of sales (FY2018: 7.0%) (6.4% excluding customer funded R&D, FY2018: 6.0%). Product launches included connectors from our SpaceNXT range for space applications, board level components, cable assemblies and high-speed contact technology for defence and space applications as well as next generation power connectors for rail applications.

Outlook

Smiths Interconnect is expected to make further progress, with continued growth in our key end markets, partially offset by softening in the semiconductor market.

Discontinued Operations - Smiths Medical

Smiths Medical supplies high-quality, cost effective medical devices and consumables vital to patient care globally. Our portfolio incorporates established brands, with strong positions in select segments of the Infusion Systems, Vascular Access, and Vital Care markets. 83% of Smiths Medical's sales are from consumable and disposable products.

	FY2019 £m	FY2018 £m	Reported growth	Underlying growth
Revenue	874	869	+1%	-
Headline operating profit	147	156	(6)%	**(6)%**
Headline operating margin	16.8%	17.9%	(110)bps	
Statutory operating profit	151	152	(1)%	
Return on capital employed	11.7%	13.1%	(140)bps	
R&D cash costs % sales	6.0%	5.9%		

Revenue

Smiths Medical's underlying revenue was flat year-on-year. The division returned to growth in the second half with revenue up 2%. The improved trend reflects the increased contribution from new products and a change in sales channel for our chronic obstructive pulmonary disease (COPD) product, both of which offset the previously announced impact of the transition to a new Notified Body in Europe. Reported revenue was up 1% including £(16)m impact of divestments and £23m favourable foreign exchange translation.

The costs associated with the Notified Body transition and implementation of the new EU Medical Device Regulation were £15m, as anticipated. For FY2020 we continue to expect costs of £10-15m.

Underlying revenue was flat year-on-year in Infusion Systems, with good growth in ambulatory pumps offset by the delayed release of the new Medfusion syringe pump as a result of component supply issues. Vascular Access underlying revenue declined by (3)% as a result of lower peripheral intravenous catheter (PIVC) sales but showed 1% growth in the second half due to strong performance of ViaValve in the blood control space. Underlying revenue from Vital Care and Specialty Products grew 3%, with strong growth in the COPD product line, which is now being sold directly, offsetting lower volumes in tracheostomy, general anaesthesia and respiratory products.

Operating profit

Headline operating profit declined (6)% on an underlying basis. Operating profit during the year was impacted by the costs associated with the new EU Medical Device Regulation and operational inefficiencies in the first half which are being addressed. Headline operating margin was (110)bps lower than the prior year at 16.8%, with margin showing signs of improvement in the second half at 17.0%. The difference between statutory and headline operating profit included £17m profit on disposals and separation costs.

ROCE

ROCE decreased (140)bps to 11.7%, reflecting lower profitability during the period.

Portfolio

During the year, Smiths Medical completed the disposal of two non-core businesses for a total consideration of c.£30m.

R&D

Cash R&D expenditure was 6.0% of sales (FY2018: 5.9%). Smiths Medical continues to invest in the development of innovative, commercially focused products across the portfolio to support long-term, sustainable growth. In the last 24 months, 33 products have been launched, including 12 in this year.

Update on separation

In March 2019 we announced plans to separate Smiths Medical, to create two stronger, industry-leading companies with distinct strategies and focus. We are on track to complete the demerger of Smiths Medical in the first half of CY2020, conditional on the approval of Smiths' shareholders.

Smiths Medical successfully achieved its FY2019 performance milestones supporting the separation process. The division returned to growth in the second half, with the sustainability of this growth underpinned by the ongoing launch of new products. One of the division's most significant new product investments, the large volume pump, has now been submitted to the US regulator for first phase review. The large volume pump market represents a c.£2bn extension to Smiths Medical's addressable market.

In July, JehanZeb Noor joined as Chief Executive Officer of Smiths Medical to oversee the separation and continue building a strong, sustainable future for Smiths Medical. He is focused on accelerating growth and driving enhanced performance to deliver the division's medium-term ambition of growing ahead of its markets, with operating margins in excess of 20% and attractive returns.

Outlook

The increasing contribution from new products, and the actions being taken by the reinvigorated management team to accelerate growth and enhance margins, support our confidence in Smiths Medical's improving performance in FY2020.

CONSOLIDATED INCOME STATEMENT

	Notes	Year ended 31 July 2019 Headline £m	Year ended 31 July 2019 Non-headline (note 3) £m	Year ended 31 July 2019 Total £m	Year ended 31 July 2018 – restated* Headline £m	Year ended 31 July 2018 – restated* Non-headline (note 3) £m	Year ended 31 July 2018 – restated* Total £m
CONTINUING OPERATIONS							
Revenue	1	2,498		2,498	2,328		2,328
Cost of sales		(1,429)		(1,429)	(1,327)		(1,327)
Gross profit		1,069		1,069	1,001		1,001
Sales and distribution costs		(267)		(267)	(258)		(258)
Administrative expenses		(375)	(101)	(476)	(355)	(53)	(408)
Profit on business disposal	28					7	7
OPERATING PROFIT	2	**427**	**(101)**	**326**	**388**	**(46)**	**342**
Interest receivable		11		11	10		10
Interest payable		(62)		(62)	(65)		(65)
Other financing gains/(losses)			18	18		(7)	(7)
Other finance income – retirement benefits	8		11	11		7	7
Finance costs	4	(51)	29	(22)	(55)		(55)
Continuing operations – profit before taxation		**376**	**(72)**	**304**	**333**	**(46)**	**287**
Taxation	6	(103)	(59)	(162)	(87)	(81)	(168)
Continuing operations – profit for the year		**273**	**(131)**	**142**	**246**	**(127)**	**119**
Discontinued operations							
Profit from discontinued operations	27	112	(27)	85	115	45	160
PROFIT FOR THE YEAR		**385**	**(158)**	**227**	**361**	**(82)**	**279**
Profit for the year attributable to:							
Smiths Group shareholders – continuing operations		271	(131)	140	244	(127)	117
Smiths Group shareholders – discontinued operations		112	(27)	85	115	45	160
Non-controlling interests in respect of continuing operations		2		2	2		2
		385	**(158)**	**227**	**361**	**(82)**	**279**
EARNINGS PER SHARE	5						
Basic				56.8p			70.0p
Basic – continuing				35.4p			29.6p
Diluted				56.5p			69.1p
Diluted – continuing				35.1p			29.2p

* Results for the year ended 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
PROFIT FOR THE YEAR		**227**	279
Other comprehensive income:			
Actuarial (losses)/gains on retirement benefits	8	(76)	104
Taxation recognised on actuarial movements	6	13	(18)
Other comprehensive income and expenditure which will not be reclassified to the consolidated income statement		(63)	86
Other comprehensive income which will be reclassified and reclassifications:			
Exchange gains		191	6
Cumulative exchange gains recycled on business disposals			(5)
Fair value gains/(losses) and reclassification adjustments:			
– deferred on available for sale financial assets		2	1
– deferred in the period on cash-flow and net investment hedges		(77)	(6)
– reclassified to income statement on cash-flow and net investment hedges		(4)	(6)
Total other comprehensive income		**49**	**76**
Total comprehensive income		**276**	**355**
Attributable to:			
Smiths Group shareholders		272	353
Non-controlling interests		4	2
		276	**355**
Total comprehensive income attributable to Smiths Group shareholders arising from:			
Continuing operations		148	191
Discontinued operations		124	162
		272	**353**

CONSOLIDATED BALANCE SHEET

	Notes	31 July 2019 £m	31 July 2018 £m
NON-CURRENT ASSETS			
Intangible assets	10	1,684	2,061
Property, plant and equipment	12	232	320
Financial assets – other investments	16	19	18
Retirement benefit assets	8	469	526
Deferred tax assets	6	115	180
Trade and other receivables	14	52	57
Financial derivatives	19	47	50
		2,618	**3,212**
CURRENT ASSETS			
Inventories	13	417	466
Current tax receivable	6	11	38
Trade and other receivables	14	764	733
Cash and cash equivalents	17	289	717
Financial derivatives	19	3	7
Assets held for distribution to owners	27	1,216	
		2,700	**1,961**
TOTAL ASSETS		**5,318**	**5,173**
CURRENT LIABILITIES			
Financial liabilities			
– borrowings	17	(9)	(203)
– financial derivatives	19	(5)	(4)
Provisions for liabilities and charges	22	(66)	(76)
Trade and other payables	15	(569)	(606)
Current tax payable	6	(56)	(72)
Liabilities held for distribution to owners	27	(213)	
		(918)	**(961)**
NON-CURRENT LIABILITIES			
Financial liabilities			
– borrowings	17	(1,500)	(1,407)
– financial derivatives	19	(1)	(6)
Provisions for liabilities and charges	22	(285)	(262)
Retirement benefit obligations	8	(152)	(145)
Corporation tax payable	6	(6)	
Deferred tax liabilities	6	(45)	(77)
Trade and other payables	15	(30)	(27)
		(2,019)	**(1,924)**
TOTAL LIABILITIES		**(2,937)**	**(2,885)**
NET ASSETS		**2,381**	**2,288**
SHAREHOLDERS' EQUITY			
Share capital	23	148	148
Share premium account		360	358
Capital redemption reserve	25	6	6
Revaluation reserve	25	1	1
Merger reserve	25	235	235
Retained earnings		1,993	1,826
Hedge reserve	25	(383)	(302)
Total shareholders' equity		**2,360**	**2,272**
Non-controlling interest equity		21	16
TOTAL EQUITY		**2,381**	**2,288**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Notes	Share capital and share premium £m	Other reserves £m	Retained earnings £m	Hedge reserve £m	Equity shareholders' funds £m	Non-controlling Interest £m	Total equity £m
At 31 July 2018		506	242	1,826	(302)	2,272	16	2,288
Profit for the year				225		225	2	227
Other comprehensive income:								
Actuarial losses on retirement benefits and related tax				(63)		(63)		(63)
Exchange gains				189		189	2	191
Fair value gains/(losses) and related tax				2	(81)	(79)		(79)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR				**353**	**(81)**	**272**	**4**	**276**
Transactions relating to ownership interests:								
Exercises of share options	23	2				2		2
Purchase of own shares	25			(19)		(19)		(19)
Dividends:								
– equity shareholders	24			(178)		(178)		(178)
– non-controlling interest							(1)	(1)
Receipt of capital from non-controlling interest							2	2
Share-based payment	9			11		11		11
At 31 July 2019		**508**	**242**	**1,993**	**(383)**	**2,360**	**21**	**2,381**

	Notes	Share capital and share premium £m	Other reserves £m	Retained earnings £m	Hedge reserve £m	Equity shareholders' funds £m	Non-controlling Interest £m	Total equity £m
At 31 July 2017		503	242	1,634	(290)	2,089	15	2,104
Profit for the year				277		277	2	279
Other comprehensive income:								
Actuarial gains on retirement benefits and related tax				86		86		86
Exchange gains				1		1		1
Fair value gains/(losses) and related tax				1	(12)	(11)		(11)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR				365	(12)	353	2	355
Transactions relating to ownership interests:								
Exercises of share options	23	3				3		3
Purchase of own shares	25			(15)		(15)		(15)
Dividends:								
– equity shareholders	24			(172)		(172)		(172)
– non-controlling interest							(1)	(1)
Share-based payment	9			14		14		14
At 31 July 2018		**506**	**242**	**1,826**	**(302)**	**2,272**	**16**	**2,288**

CONSOLIDATED CASH-FLOW STATEMENT

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Net cash inflow from operating activities	29	**346**	**405**
Cash-flows from investing activities			
Expenditure on capitalised development		(27)	(26)
Expenditure on other intangible assets	10	(12)	(12)
Purchases of property, plant and equipment	12	(79)	(68)
Disposals of property, plant and equipment		4	4
Capital returned by/(investment in) financial assets	16	2	(1)
Acquisition of businesses	26	(277)	(71)
Disposal of businesses – continuing operations	28		29
Disposal of businesses – discontinued operations		30	
Tax paid on disposal of businesses - discontinued operations		(8)	
Net cash-flow used in investing activities		**(367)**	**(145)**
Cash-flows from financing activities			
Proceeds from exercise of share options	23	2	3
Purchase of own shares	25	(19)	(15)
Settlement of cash settled share awards		(2)	(1)
Dividends paid to equity shareholders	24	(178)	(172)
Cash inflow from matured derivative financial instruments			4
Repayment of borrowings	17	(194)	(135)
Net cash-flow used in financing activities		**(391)**	**(316)**
Net (decrease)/increase in cash and cash equivalents		(412)	(56)
Cash and cash equivalents at beginning of year		717	781
Cash held in disposal group		(26)	
Exchange differences		10	(8)
Cash and cash equivalents at end of year	17	**289**	**717**
Cash and cash equivalents at end of year comprise:			
– cash at bank and in hand		153	287
– short-term deposits		136	430
		289	**717**

Reconciliation of net cash-flow to movement in net debt

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Net debt at start of year	17	**(893)**	**(967)**
Net (decrease)/increase in cash and cash equivalents		(412)	(56)
Net cash held in disposal group		(23)	
Reduction and repayment of borrowings		194	135
Movement in net debt resulting from cash-flows		**(241)**	**79**
Capitalisation, interest accruals and unwind of capitalisation fees		1	2
Movement from fair value hedging		(46)	1
Exchange differences		(41)	(8)
Movement in net debt in the year		**(327)**	**74**
Net debt at end of year	17	**(1,220)**	**(893)**

ACCOUNTING POLICIES

Basis of preparation

The accounts have been prepared in accordance with the Companies Act 2006 applicable to companies reporting under International Financial Reporting Standards (IFRS) and International Financial Reporting Interpretations Committee (IFRIC) interpretations, as adopted by the European Union, on a going concern basis and under the historical cost convention modified to include revaluation of certain financial instruments, share options and pension assets and liabilities, held at fair value as described below.

The accounting policies adopted are consistent with those of the previous financial year.

Key estimates and significant judgements

The preparation of the accounts in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the accounts and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from these estimates.

The key sources of estimation uncertainty together with the significant judgements and assumptions used for these consolidated financial statements are set out below.

Sources of estimation uncertainty

Business combinations

When acquiring businesses, the Group has to make assumptions and best estimates to value any identified intangible assets of the acquisition. Where acquisitions are significant, appropriate advice is sought from professional advisers on the identification and valuation of intangible assets. Otherwise valuations are undertaken by management using methodology consistent with that used on prior period acquisitions.

Key sources of estimation uncertainty for the acquisition of the United Flexible business relate to the assumptions used to underpin the valuation of acquired intangibles, particularly customer related (£134m) and tradenames (£13m). The value of these intangibles was determined by cash flow forecasts discounted at a rate between 11% and 14%. The customer relationship intangible asset was valued by applying an annual attrition factor between 4.1% and 7.9% on base revenue to account for a potential loss of customer orders in the future.

Impairment reviews for intangible assets

In carrying out impairment reviews of intangible assets, a number of significant assumptions have to be made when preparing cash-flow projections to determine the value in use of the cash generating unit (CGU). These include the future rate of market growth, discount rates, the market demand for the products acquired, the future profitability of acquired businesses or products, levels of reimbursement and success in obtaining regulatory approvals. If actual results differ or changes in expectations arise, impairment charges may be required which would adversely impact operating results.

Retirement benefits

Determining the value of the future defined benefit obligation involves significant estimates in respect of the assumptions used to calculate present values. These include future mortality, discount rate and inflation. The Group uses previous experience and independent actuarial advice to select the values of critical judgements. The estimates, and the effect of variances in key estimates, are disclosed in note 8.

Receivables provisions

If the carrying value of any receivable is higher than the fair value, the Group makes provisions to write down the balance to its fair value. The fair value of receivables is considered individually for each customer and incorporates past experience and progress with collecting receivables.

The provision for the allowance for expected credit losses is calculated using historical write-offs as a basis with a default risk multiplier applied to reflect country risk premium. The value assigned to this risk multiplier is a source of estimation uncertainty.

At 31 July 2019 the gross value of receivables partly or fully provided for or more than three months overdue was £64m (FY2018: £70m) and there were provisions of £24m (FY2018: £32m) against these receivables. Consequently, these receivables were carried at a net value of £40m (FY2018: £38m). See note 14 for disclosures on credit risk and ageing of trade receivables.

Inventory provisions

The calculation of inventory provisions requires judgement by management of the expected value of future sales. If the carrying value of inventory is higher than the expected recoverable value, the Group makes provisions to write inventory down to its net recoverable value. Inventory is initially assessed for impairment by comparing inventory levels to recent utilisation rates and

carrying values to historical selling prices. A detailed review is completed for inventory lines identified in the initial assessment considering sales activity, order flow, customer contracts and current selling prices.

At 31 July 2019, there were provisions of £51m (FY2018: £54m) against gross inventory of £468m (FY2018: £520m). See note 13 for a breakdown of inventory.

A 10% increase in the proportion of raw materials provided for would increase the provision by £17m (FY2018: £17m) and a 10% increase in the proportion of finished goods provided for would increase the provision by £17m (FY2018: £23m).

Provisions for liabilities and charges

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Where the Group expects some or all of a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognised as a separate asset but only when the reimbursement is virtually certain.

John Crane, Inc. (JCI), a subsidiary of the Group, is one of many co-defendants in litigation relating to products previously manufactured which contained asbestos. Provision of £237m (FY2018: £223m) has been made for the future defence costs which the Group is expected to incur and the expected costs of future adverse judgments against JCI. Whilst well-established incidence curves can be used to estimate the likely future pattern of asbestos-related disease, JCI's claims experience is significantly impacted by other factors which influence the US litigation environment. These can include: changing approaches on the part of the plaintiffs' bar; changing attitudes amongst the judiciary at both trial and appellate levels; and legislative and procedural changes in both the state and federal court systems. Therefore, because of the significant uncertainty associated with the future level of asbestos claims and of the costs arising out of the related litigation, there can be no guarantee that the assumptions used to estimate the provision will result in an accurate prediction of the actual costs that may be incurred.

JCI takes account of the advice of an expert in asbestos liability estimation in quantifying the expected costs. The following judgements were made in preparing the provision calculation:

- the period over which the expenditure can be reliably estimated is judged to be ten years, based on past experience regarding significant changes in the litigation environment that have occurred every few years and on the amount of time taken in the past for some of those changes to impact the broader asbestos litigation environment. See note 22 for a sensitivity showing the impact on the provision of reducing or increasing this time horizon;
- the future trend of legal costs; the rate of future claims filed; the rate of successful resolution of claims; and the average amount of judgments awarded have been projected based on the past history of JCI claims and well-established tables of asbestos incidence projections, since this is the best available evidence. Claims history from other defendants is not used to calculate the provision because JCI's defence strategy generates a significantly different pattern of legal costs and settlement expenses. See note 22 for a sensitivity showing the range of expected future spend.

Titeflex Corporation, a subsidiary of the Group in the Flex-Tek division, has received a number of claims from insurance companies seeking recompense on a subrogated basis for the effects of damage allegedly caused by lightning strikes in relation to its flexible gas piping product. It has also received a number of product liability claims regarding this product, some in the form of purported class actions. Titeflex Corporation believes that its products are a safe and effective means of delivering gas when installed in accordance with the manufacturer's instructions and local and national codes; however some claims have been settled on an individual basis without admission of liability. Provision of £74m (FY2018: £78m) has been made for the costs which the Group is expected to incur in respect of these claims. In preparing the provision calculation, judgements were made about the impact of safe installation initiatives on the level of future claims. See note 22 for a sensitivity showing the impact on the provision of reducing or increasing the expected impact. However, because of the significant uncertainty associated with the future level of claims, there can be no guarantee that the assumptions used to estimate the provision will result in an accurate prediction of the actual costs that may be incurred.

All provisions may be subject to potentially material revisions from time to time if new information becomes available as a result of future events.

Taxation

The Group has recognised deferred tax assets of £106m (FY2018: £121m) relating to losses and £68m (FY2018: £67m) relating to the John Crane, Inc. and Titeflex Corporation litigation provisions. The recognition of assets pertaining to these items involves judgement and estimates by management as to the likelihood of realisation of these deferred tax assets. This is based on a number of factors, which seek to assess the expectation that the benefit of these assets will be realised, including expected future levels of operating profit, expenditure on litigation, pension contributions and the timing of the unwind of other tax positions. It has been concluded that there are sufficient taxable profits in future periods to support recognition.

A 5% reduction in expected future operating profits would reduce the level of deferred tax recognised by £5m (FY2018: £1m), and a 5% increase in expected future operating profits would increase the level of deferred tax recognised by £5m (FY2018: £7m). Further detail on the Group's deferred taxation position is included in note 6.

Significant judgements made in applying accounting policies

Business combinations

On the acquisition of a business, the Group has to make judgements in identifying the intangible assets of the business and judgements about the fair value allocation of the purchase price.

Where acquisitions are significant, appropriate advice is sought from professional advisers before making such allocations. Otherwise intangible assets are identified and the purchase price is allocated by management using methodology consistent with that used on prior period acquisitions.

Impairment testing

Goodwill is tested at least annually for impairment and other assets, including capitalised development costs and intangible assets acquired in business combinations, are tested if there are any indications of impairment.

Impairment testing is undertaken at the lowest level for which internal performance is monitored. Judgement is required in assessing the appropriate CGU level for impairment testing of each intangible asset.

Retirement benefits

At 31 July 2019 the Group has recognised a retirement benefit asset of £469m (FY2018: £526m), principally relating to UK schemes, which arises from the rights of the employers to recover the surplus at the end of the life of the scheme.

The recognition of this surplus is a significant judgement. It has been determined that the surplus is recoverable by the Group and therefore can be recognised. If the pension schemes were wound up while they still had members, the schemes would need to buy out the benefits of all members. The buyouts would cost significantly more than the present value of the scheme liabilities calculated in accordance with IAS 19: Employee benefits.

Capitalisation of development costs

Expenditure incurred in the development of major new products is capitalised as internally generated intangible assets only when it has been judged that strict criteria are met, specifically in relation to the products' technical feasibility and probable future economic benefits. The carrying value of intangible assets is amortised over their expected useful lives, commencing in the year that sales are first made.

The assessment of the future viability and technical feasibility of development projects and the determination of the underlying products' useful economic life and amortisation basis require significant judgement and the use of assumptions and estimates.

Revenue recognition

Revenue is recognised as the performance obligations to deliver products or services are satisfied and revenue is recorded based on the amount of consideration expected to be received in exchange for satisfying the performance obligations.

Smiths Detection has multi-year contractual arrangements for the sale of goods and services. Where these contracts have separately identifiable components with distinct patterns of delivery and customer acceptance, revenue is accounted for separately for each identifiable component. Judgement is applied in the identification of the performance obligations of the contract and the allocation of contract revenue to each performance obligation.

The Group enters into certain contracts for agreed fees that are performed across more than one accounting period and revenue is recognised over time. Judgement is required to assess the stage of completion of the contract activity at the balance sheet date. This assessment requires the expected total contract revenues and costs to be determined based on the contract progress.

Presentation of the Smiths Medical demerger

Following the Group's decision to pursue a demerger of the Smiths Medical business, judgement is required to determine the most appropriate financial reporting treatment of the division and its performance.

Management has determined that sufficient progress has been achieved on the demerger project for Smiths Medical to meet the criteria for classification as discontinued and held for distribution to owners.

The key judgement for this reclassification is that the following conditions were met at the balance sheet date:

- The entity is committed to distribute the assets;
- The assets are available for immediate sale in their present condition;
- Actions to complete the distribution have been initiated and shareholder approval is highly probable;
- The distribution must be expected to be completed within one year from the date of classification; and

- It should be unlikely that any significant changes will be made to the plan or that it will be withdrawn.

Following this reclassification, the results of Smiths Medical are presented as profit from discontinued operations in FY2019 and FY2018 and its assets and liabilities reported in assets and liabilities held for distribution to owners in FY2019. The prior year balance sheet has not been restated.

Presentation of headline profits and underlying growth

In order to provide users of the accounts with a clear and consistent presentation of the performance of the Group's ongoing trading activity, the income statement is presented in a three column format with 'headline' profits shown separately from non-headline items.

Judgement is required in determining which items should be included as non-headline. The amortisation of acquired intangibles, impairments, legacy liabilities, material one-off items and certain re-measurements are included in a separate column of the income statement. See note 3 for a breakdown of the items excluded from headline profit.

Performance measures for the Group's ongoing trading activity are described as 'headline' and used by management to measure and monitor performance. See note 1 for disclosures of headline operating profit and note 30 for more information about the calculation of return on capital employed and credit metrics.

In addition, the Group reports underlying growth rates for sales and profit measures. Determining which items should be adjusted involves judgement. Underlying growth excludes the impact of acquisitions, divestments, presentational changes and the effects of foreign exchange translation, by making the following adjustments:

- Exclude acquisitions from the current period for the first 12 months of ownership;
- Exclude the performance of divested businesses after the date of disposal from comparative period; and
- Retranslate the comparative to current year exchange rates before calculating growth measures.

SIGNIFICANT ACCOUNTING POLICIES

Basis of consolidation

The consolidated accounts incorporate the financial statements of Smiths Group plc (the 'Company') and its subsidiary undertakings, together with the Group's share of the results of its associates.

Subsidiaries are all entities controlled by the Company. Subsidiaries are fully consolidated from the date on which control is obtained by the Company to the date that control ceases.

Associates are entities which the Group has significant influence over but does not control, generally accompanied by a share of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method.

Foreign currencies

The Company's presentational currency is sterling. The financial position of all subsidiaries and associates that have a functional currency different from sterling are translated into sterling at the rate of exchange at the date of that balance sheet, and the income and expenses are translated at average exchange rates for the period. All resulting exchange differences are recognised as a separate component of equity.

On consolidation, exchange differences arising from the translation of the net investment in foreign entities, and of borrowings and other currency instruments designated as hedges of such investments, are taken to shareholders' equity. When a foreign operation is sold, the cumulative amount of such exchange differences is recognised in the income statement as part of the gain or loss on sale.

Exchange differences arising on transactions are recognised in the income statement. Those arising on trading are taken to operating profit; those arising on borrowings are classified as finance income or cost.

Revenue

Revenue is measured at the fair value of the consideration received, net of trade discounts (including distributor rebates) and sales taxes. Revenue is discounted only where the impact of discounting is material.

When the Group enters into complex contracts with multiple, separately identifiable components, the terms of the contract are reviewed to determine whether or not the elements of the contract should be accounted for separately. If a contract is being split into multiple components, the contract revenue is allocated to the different components at the start of the contract. The basis of allocation depends on the substance of the contract. The Group considers relative stand-alone selling prices, contractual prices and relative cost when allocating revenue.

The Group has identified the following different types of revenue:

Sale of goods (i) – generic products manufactured by Smiths
Generic products are defined as either;

- Products that are not specific to any particular customer;
- Products that may initially be specific to a customer but can be reconfigured at minimal cost, i.e. retaining a margin, for sale to an alternative customer; or
- Products that are specific to a customer but are manufactured at Smiths' risk, i.e. we have no right to payment of costs plus margin if the customer refuses to take control of the goods.

For established products with simple installation requirements, revenue is recognised when the control of the product is passed to the customer. The point in time that control passes is defined in accordance with the agreed shipping terms and is determined on a case by case basis. The time of despatch or delivery of the goods to the customer is normally the point at which invoicing occurs.

For some generic products which are technically innovative and highly configured, revenue is recognised when the overall performance obligation has been completed, which is often after the customer has completed its acceptance procedures and has assumed control.

Products that are sold under multiple element arrangements, i.e. contracts involving a combination of products and services, are bundled into a single performance obligation unless the customer can benefit from the goods or services either on their own, or together with other resources that are readily available to the customer. For contracts that pass control of the product to the customer only on completion of installation services, revenue will be recognised upon completion of the installation.

An obligation to provide a refund for faulty products under the standard warranty terms is recognised as a provision. If the contract includes terms that either extend the warranty beyond the standard term or implies that maintenance is provided to keep the product working, these are service warranties and revenue is deferred to cover the performance obligation in an amount equivalent to the stand-alone selling price of that service.

Sale of goods (ii) – customer-specific products where the contractual terms include rights to payment for work performed to date
Customer-specific products are defined as being:

- Products that cannot be reconfigured economically such that it remains profitable to sell to another customer;
- Products that cannot be sold to another customer due to contractual restrictions; and
- Products that allow Smiths to charge for the work performed to date in an amount that represents the costs incurred to date plus a margin, should the customer refuse to take control of the goods.

For contracts that meet the terms listed above, revenue is recognised over the period that the Group is engaged in the manufacture of the product, calculated using the input method based on the amount of costs incurred to date compared to the overall costs of the contract. The time of despatch or delivery of the goods to the customer is normally the point at which invoicing occurs.

An obligation to provide a refund for faulty products under the standard warranty terms is recognised as a provision. If the contract includes terms that either extend the warranty beyond the standard term or implies that maintenance is provided to keep the product working, these are service warranties and revenue should be deferred to cover the performance obligation in an amount equivalent to the stand-alone selling price of that service.

Services relating to the installation, repair and ongoing maintenance of equipment
Services include installation, commissioning, testing, training, software hosting & maintenance, product repairs and contracts undertaking extended warranty services.

For complex installations where the supply of services cannot be separated from the supply of product, revenue is recognised upon acceptance of the combined performance obligation (see Sale of goods (i) above).

For services that can be accounted for as a separate performance obligation, revenue is recognised over time, assessed on the basis of the actual service provided as a proportion of the total services
to be provided.

Depending on the nature of the contract, revenue will be recognised as follows:

- Installation, commissioning and testing services (when not linked to the supply of product and subject to acceptance) will be recognised rateably as the service is provided;
- Training services will be recognised on completion of the training course;
- Software hosting & maintenance services will be recognised rateably over the life of the contract;
- Product repair services, where the product is returned to Smiths premises for remedial action, will be recognised when the product is returned to the customer and they regain control of the asset;
- On-site ad hoc product repair services will be recognised rateably as the services are performed;
- Long-term product repair and maintenance contracts will be recognised rateably over the contract term; and
- Extended service warranties will be recognised rateably over the contract term.

Invoicing for services will depend on the nature of the service provided with some services charged in advance and others in arrears.

Where contracts are accounted for under the revenue recognised over time basis the proportion of costs incurred is used to determine the percentage of contract completion.

Contracts for the construction of substantial assets, which normally last in excess of one year, will be accounted for under the revenue recognised over time basis, using an input method.

For fixed-price contracts, revenue will be recognised based upon an assessment of the amount of cost incurred under the contract, compared to the total expected costs that will be incurred under the contract. This calculation will be applied cumulatively with any over/under recognition being adjusted in the current period.

For cost-plus contracts, revenue will be recognised based upon costs incurred to date plus any agreed margin.

For both fixed-price and cost-plus contracts, invoicing will normally be based on a schedule with milestone payments.

Contract costs

The Group has taken the practical expedient of not capitalising contract costs as they are expected to be expensed within one year from the date of signing.

Leases

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases are charged to the income statement on a straight-line basis over the period of the lease.

Taxation

The charge for taxation is based on profits for the year and takes into account taxation deferred because of temporary differences between the treatment of certain items for taxation
and accounting purposes.

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to taxation authorities. Tax benefits are not recognised unless it is likely that the tax positions are sustainable. Once considered to be likely, tax benefits are reviewed to assess whether a provision should be made based on prevailing circumstances. Tax provisions are included in current tax liabilities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Deferred tax is provided in full using the balance sheet liability method. A deferred tax asset is recognised where it is probable that future taxable income will be sufficient to utilise the available relief. Tax is charged or credited to the income statement except when it relates to items charged or credited directly to equity, in which case the tax is also dealt with in equity.

Deferred tax is provided on temporary differences arising on investments in subsidiaries and associates, except where the timing of the reversal of the temporary differences is controlled by the Company and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax liabilities and assets are not discounted.

Employee benefits

Share-based compensation

The fair value of the shares or share options granted is recognised as an expense over the vesting period to reflect the value of the employee services received. The fair value of options granted, excluding the impact of any non-market vesting conditions, is

calculated using established option pricing models, principally binomial models. The probability of meeting non-market vesting conditions, which include profitability targets, is used to estimate the number of share options which are likely to vest.

For cash-settled share-based payment, a liability is recognised based on the fair value of the payment earned by the balance sheet date. For equity-settled share-based payment, the corresponding credit is recognised directly in reserves.

Pension obligations and post-retirement benefits
The Group has defined benefit plans, defined contribution plans and post-retirement healthcare schemes.

For defined benefit plans and post-retirement healthcare schemes the liability for each scheme recognised in the balance sheet is the present value of the obligation at the balance sheet date less the fair value of any plan assets. The obligation is calculated annually by independent actuaries using the projected unit credit method. The present value is determined by discounting the estimated future cash outflows using interest rates of AA-rated corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related liability. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are recognised in full in the period in which they occur, outside of the income statement, and are presented in the statement of comprehensive income. Past service costs are recognised immediately in the income statement.

For defined contribution plans, the Group pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. Contributions are expensed as incurred.

Intangible assets

Goodwill
Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of the identifiable net assets of the acquired subsidiary at the date of acquisition.

Goodwill arising from acquisitions of subsidiaries after 1 August 1998 is included in intangible assets, tested annually for impairment and carried at cost less accumulated impairment losses. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold. Goodwill arising from acquisitions of subsidiaries before 1 August 1998 was set against reserves in the year of acquisition.

Goodwill is tested for impairment at least annually. Any impairment is recognised immediately in the income statement. Subsequent reversals of impairment losses for goodwill are not recognised.

Research and development
Expenditure on research and development is charged to the income statement in the year in which it is incurred with the exception of:

- amounts recoverable from third parties; and
- expenditure incurred in respect of the development of major new products where the outcome of those projects is assessed as being reasonably certain as regards viability and technical feasibility. Such expenditure is capitalised and amortised over the estimated period of sale for each product, commencing in the year that sales of the product are first made. Amortisation is charged straight line or based on the units produced, depending on the nature of the product and the availability of reliable estimates of production volumes.

The cost of development projects which are expected to take a substantial period of time to complete includes attributable borrowing costs.

Intangible assets acquired in business combinations
The identifiable net assets acquired as a result of a business combination may include intangible assets other than goodwill. Any such intangible assets are amortised straight line over their expected useful lives as follows:

Patents, licences and trademarks	up to 20 years
Technology	up to 13 years
Customer relationships	up to 11 years

The assets' useful lives are reviewed, and adjusted if appropriate, at each balance sheet date.

Software, patents and intellectual property
The estimated useful lives are as follows:

Software	up to 7 years
Patents and intellectual property	shorter of the economic life and the period the right is legally enforceable

The assets' useful lives are reviewed, and adjusted if appropriate, at each balance sheet date.

Property, plant and equipment

Property, plant and equipment is stated at historical cost less accumulated depreciation and any recognised impairment losses.

Land is not depreciated. Depreciation is provided on other assets estimated to write off the depreciable amount of relevant assets by equal annual instalments over their estimated useful lives. In general, the rates used are: Freehold and long leasehold buildings – 2%; Short leasehold property – over the period of the lease; Plant, machinery, etc. – 10% to 20%; Fixtures, fittings, tools and other equipment – 10% to 33%.

The cost of any assets which are expected to take a substantial period of time to complete includes attributable borrowing costs.

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each balance sheet date. An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined using the first-in, first-out (FIFO) method. The cost of finished goods and work in progress comprises raw materials, direct labour, other direct costs and related production overheads (based on normal operating capacity). The cost of items of inventory which take a substantial period of time to complete includes attributable borrowing costs. Net realisable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses.

Trade and other receivables

Trade receivables are initially recognised at fair value and subsequently measured at amortised cost, less any appropriate provision for expected credit losses.

A provision for expected credit losses is established when there is objective evidence that amounts due under the original payment terms will not be collected. Expected credit losses are calculated using historical write-offs as a basis with a default risk multiplier applied to reflect country risk premium.

Provisions

Provisions for warranties and product liability, disposal indemnities, restructuring costs, vacant leasehold property and legal claims are recognised when: the Company has a legal or constructive obligation as a result of a past event; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated. Provisions are not recognised for future operating losses.

Provisions are discounted where the time value of money is material.

Where there is a number of similar obligations, for example where a warranty has been given, the likelihood that an outflow will be required in settlement is determined by considering the class of obligations as a whole. A provision is recognised even if the likelihood of an outflow with respect to any one item included in the same class of obligations may be small.

Businesses held for distribution to owners

Businesses classified as held for distribution to owners are measured at the lower of carrying amount and fair value less costs to sell. Impairment losses on initial classification as held for sale and gains or losses on subsequent remeasurements are included in the income statement. No depreciation is charged on assets and businesses classified as held for distribution.

Businesses are classified as held for distribution to owners if their carrying amount will be settled principally through a demerger transaction rather than through continuing use and the following criteria are met:

- The business must be a separate major line of business, available for immediate distribution in its present condition;
- Management is committed to the plan, shareholder approval is highly probable and the plan is unlikely to be significantly changed or withdrawn; and
- Distribution is expected to be completed within 12 months of the date of classification.

The assets and liabilities of businesses held for distribution to owners are presented as separate lines on the balance sheet but the prior year has not been restated.

Discontinued operations

A discontinued operation is either:

- a component of the Group's business that represents a separate major line of business or geographical area of operations that has been disposed of, has been abandoned or meets the criteria to be classified as held for distribution to owners; or
- a business acquired solely for the purpose of selling it.

Discontinued operations are presented on the income statement as a separate line and are shown net of tax.

Cash and cash equivalents

Cash and cash equivalents include cash at bank and in hand and highly liquid interest-bearing securities with maturities of three months or less.

In the cash-flow statement, cash and cash equivalents are shown net of bank overdrafts, which are included as current borrowings in liabilities on the balance sheet.

Financial assets

The classification of financial assets depends on the purpose for which the assets were acquired. Management determines the classification of an asset at initial recognition and re-evaluates the designation at each reporting date. Financial assets are classified as: measured at amortised cost, fair value though other comprehensive income or fair value through profit and loss.

Financial assets primarily include trade receivables, cash and cash equivalents (comprising cash at bank, money market funds and short term deposits), short term investments, derivatives (foreign exchange contracts and interest rate derivatives) and unlisted investments.

- Trade receivables are classified either as 'held to collect' and measured at amortised cost or as 'held to collect and sell' and measured at fair value through other comprehensive income (FVOCI). The Group may sell trade receivables due from certain customers before the due date. Any trade receivables from such customers that are not sold at the reporting date are classified as 'held to collect and sell'.
- Cash and cash equivalents (consisting of balances with banks and other financial institutions, money-market funds, short-term deposits) and short-term investments are subject to low market risk. Cash balances and short-term investments are measured at amortised cost. Money market funds and short-term deposits are measured at fair value through profit and loss (FVPL).
- Derivatives and unlisted investments are measured at FVPL.

Financial assets are derecognised when the right to receive cash-flows from the assets has expired, or has been transferred, and the Company has transferred substantially all of the risks and rewards of ownership. When securities classified as available for sale are sold or impaired, the accumulated fair value adjustments previously taken to reserves are included in the income statement.

Financial assets are classified as current if they are expected to be realised within 12 months of the balance sheet date.

Financial liabilities

Borrowings are initially recognised at the fair value of the proceeds, net of related transaction costs. These transaction costs, and any discount or premium on issue, are subsequently amortised under the effective interest rate method through the income statement as interest over the life of the loan and added to the liability disclosed in the balance sheet. Related accrued interest is included in the borrowings figure.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least one year after the balance sheet date.

Derivative financial instruments and hedging activities

The Group uses derivative financial instruments to hedge its exposures to foreign exchange and interest rates arising from its operating and financing activities.

Derivative financial instruments are initially recognised at fair value on the date a derivative contract is entered into and are subsequently re-measured at their fair value. The method of recognising any resulting gain or loss depends on whether the derivative financial instrument is designated as a hedging instrument and, if so, the nature of the item being hedged.

Where derivative financial instruments are designated into hedging relationships, the Group formally documents the following:

- the risk management objective and strategy for entering the hedge;
- the nature of the risks being hedged and the economic relationship between the hedged item and the hedging instrument; and
- whether the change in cash-flows of the hedged item and hedging instrument are expected to offset each other.

Changes in the fair value of any derivative financial instruments that do not qualify for hedge accounting are recognised immediately in the income statement.

Fair value hedge

The Group uses derivative financial instruments to convert part of its fixed rate debt to floating rate in order to hedge the risks arising from its external borrowings.

The Group designates these as fair value hedges of interest rate risk with changes in the hedging instrument recorded in the income statement, together with any changes in the fair values of the hedged assets or liabilities that are attributable to the

hedged risk to the extent that the hedge is effective. Gains or losses relating to any ineffectiveness is immediately recognised in the income statement.

Cash-flow hedge
Cash flow hedging is used by the Group to hedge certain exposures to variability in future cash-flows.

The effective portions of changes in the fair values of derivatives that are designated and qualify as cash-flow hedges are recognised in equity. The gain or loss relating to any ineffective portion is recognised immediately in the income statement. Amounts accumulated in the hedge reserve are recycled in the income statement in the periods when the hedged items will affect profit or loss (for instance when the forecast sale that is hedged takes place).

If a forecast transaction that is hedged results in the recognition of a non-financial asset (for example, inventory) or a liability, the gains and losses previously deferred in the hedge reserve are transferred from the reserve and included in the initial measurement of the cost of the asset or liability. When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in the hedge reserve at that time remains in the reserve and is recognised when the forecast transaction is ultimately recognised in the income statement.

When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in other comprehensive income is immediately transferred to the income statement.

Net investment hedge
Hedges of net investments in foreign operations are accounted for similarly to cash-flow hedges. Any gain or loss on the hedging instrument relating to the effective portion of the hedge is recognised in other comprehensive income; the gain or loss relating to any ineffective portion is recognised immediately in the income statement. When a foreign operation is disposed of, gains and losses accumulated in equity related to that operation are included in the income statement for that period.

Fair value of financial assets and liabilities

The fair values of financial assets and financial liabilities are the amounts at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

'IFRS 13: Fair value measurement' requires fair value measurements to be classified according to the following hierarchy:

- level 1 – quoted prices in active markets for identical assets or liabilities;
- level 2 – valuations in which all inputs are observable either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- level 3 – valuations in which one or more inputs that are significant to the resulting value are not based on observable market data.

See note 20 for information on the methods the Group uses to estimate the fair values of its financial instruments.

Dividends

Dividends are recognised as a liability in the period in which they are authorised. The interim dividend is recognised when it is paid and the final dividend is recognised when it has been approved by shareholders at the Annual General Meeting.

New accounting standards effective 2019

IFRS 9: Financial instruments

On 1 August 2018, the Group adopted IFRS 9: Financial Instruments. There was no material impact on adoption of this new standard. The Group's risk management strategies and hedge documentation are aligned with the requirements of IFRS 9 and these relationships are therefore treated as continuing hedges.

The new standard addresses the classification and measurement of financial assets. The alignment of the classification and measurement model under IFRS 9 has resulted in changes in the classification of all financial assets excluding derivatives, see notes 18, 19 and 20 for further details. These changes did not have a quantitative impact on the financial statements.

IFRS 9 has introduced an expected credit loss model, requiring an expected credit loss to be recognised on all financial assets held at amortised cost. The Group has previously provided against bad and doubtful debts within trade and other receivables based on specific risk assessments and reference to past default experience. The reassessment of existing provisions has not had a material impact on the net assets of the Group.

IFRS 9 has also introduced changes to the qualifying criteria for hedge accounting and has expanded the financial and non-financial instruments which may be designated as hedged items and hedging instruments in order to align hedge accounting with business strategy. The changes to hedge accounting under IFRS 9 have resulted in qualitative enhancements to the interest rate and foreign currency risk management disclosures but did not have a quantitative impact on the financial statements.

IFRS 15: Revenue from contracts with customers

IFRS 15 has replaced IAS 18: Revenue and IAS 11: Construction contracts. The new standard has set out a five-step model for the recognition of revenue and has established principles for reporting useful information to users of financial statements about the nature, amount, timing and uncertainty of revenue and cash-flows arising from an entity's contracts with customers.

The principal areas of impact for the Group's revenue recognition comprise:

Continuing operations:

- Customer specific products – rephasing of revenue recognition for certain customer specific products in the Interconnect division that have no alternative use and for which the Group has the right to receive payment; and
- Contract assets and liabilities – certain assets and liabilities currently included within trade receivables, accrued income and deferred revenue have been reclassified as contract assets and liabilities.

Discontinued operations:

- Customer specific rights – rephasing of revenue recognition for contractual customer specific rights in the Medical division; and
- Variable selling costs – certain expenses currently classified as variable selling costs have been reclassified as offsets to revenue. This classification change reduces revenue and cost of sales but has no impact on profit.

The Group has adopted IFRS 15 retrospectively from a transition date of 1 August 2018. The transition to IFRS 15 has not impacted the primary statements for the FY2018 comparative results, but has resulted in the reclassification of £16m of variable selling costs as contras to revenue within the Smiths Medical discontinued operation.

New standards and interpretations not yet adopted

Certain new accounting standards and interpretations have been published that are not mandatory for 31 July 2019 reporting periods and have not been early adopted by the Group. None of these is expected to have a material impact on the financial statements of the Group except as set out below:

IFRS 16: Leases (effective year ending 31 July 2020)

IFRS 16 'Leases' introduces, for lessees, a single accounting model for the treatment of both operating and finance leases, replacing the existing standard of IAS 17 and related guidance. The Group will adopt the new standard from 1 August 2019. The new standard will require the Group to recognise the obligation to make future lease payments as lease liabilities on the balance sheet, with a corresponding 'right of use' asset.

The Group has elected to apply the modified retrospective transition approach, requiring no restatement of the comparative period. The Group has also elected to apply the practical expedients of:

- Applying the new definition of a lease only to contracts entered into after the transition date;
- Excluding short-term leases with a term of 12 months or less from the right of use asset or lease liability; and
- Excluding low value leases for which the underlying asset is value is less than £5,000, from the right of use asset or lease liability.

A preliminary assessment of the main changes arising on the adoption of IFRS 16 is that, on the 1 August 2019, the Group expects to recognise right of use assets and lease liabilities with a value in the region of £140m - £160m, including £45m - £50m within discontinued operations.

Operating profit for the year ended 31st July 2020 is estimated to increase by approximately £3m - £7m due to the reclassification of the financing charges inherent in operating lease costs being taken to finance costs. The depreciation of the right of use asset will remain as a charge within operating costs.

IFRIC 23: Uncertainty over income tax treatments (effective year ending 31 July 2020)

IFRIC 23 will apply to the Group from 1 August 2019 and clarifies how to recognise and measure uncertainties over income tax treatments. The Group already provides for tax uncertainties and the net impact on the Group of implementing IFRIC 23 is expected to be immaterial.

NOTES TO THE ACCOUNTS

1 SEGMENT INFORMATION

Analysis by operating segment

The Group is organised into five divisions: John Crane, Smiths Detection, Flex-Tek, Smiths Interconnect and Smiths Medical. These divisions design, manufacture and support the following products:

- **John Crane** – mechanical seals, seal support systems, power transmission couplings and specialised filtration systems;
- **Smiths Detection** – sensors and systems that detect and identify explosives, narcotics, weapons, chemical agents, biohazards and contraband;
- **Flex-Tek** – engineered components, flexible hosing and rigid tubing that heat and move fluids and gases;
- **Smiths Interconnect** – specialised electronic and radio frequency board-level and waveguide devices, connectors, cables, test sockets and sub-systems used in high-speed, high reliability, secure connectivity applications; and
- **Smiths Medical** – infusion systems, vascular access products, patient airway and temperature management equipment and specialised devices in areas of diagnostic and emergency patient transport.

The position and performance of each division is reported at each Board meeting to the Board of Directors. This information is prepared using the same accounting policies as the consolidated financial information except that the Group uses headline operating profit to monitor divisional results and operating assets to monitor divisional position. See note 3 for an explanation of which items are excluded from headline measures.

Following the reclassification of the Smiths Medical business as a discontinued operation, the segmental information of the Smiths Medical division is disclosed in note 27.

Intersegment sales and transfers are charged at arm's length prices.

Segment trading performance

						Year ended 31 July 2019
	John Crane £m	**Smiths Detection £m**	**Flex-Tek £m**	**Smiths Interconnect £m**	**Corporate costs £m**	**Total £m**
Revenue	945	798	436	319		2,498
Divisional headline operating profit	220	127	84	47		478
Corporate headline operating costs					(51)	(51)
Headline operating profit/(loss)	**220**	**127**	**84**	**47**	**(51)**	**427**
Items excluded from headline measures (note 3)	(29)	(36)	(16)	(2)	(18)	(101)
Operating profit/(loss)	**191**	**91**	**68**	**45**	**(69)**	**326**

						Year ended 31 July 2018 – restated*
	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Corporate costs £m	Total £m
Revenue	881	793	354	300		2,328
Divisional headline operating profit	202	134	67	42		445
Corporate headline operating costs					(57)	(57)
Headline operating profit/(loss)	**202**	**134**	**67**	**42**	**(57)**	**388**
Items excluded from headline measures (note 3)	(3)	(41)	1	(5)	2	(46)
Operating profit/(loss)	**199**	**93**	**68**	**37**	**(55)**	**342**

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

Headline operating profit is stated after charging the following items:

	Year ended 31 July 2019					
	John Crane £m	**Smiths Detection £m**	**Flex-Tek £m**	**Smiths Interconnect £m**	**Corporate and non-headline £m**	**Total £m**
Depreciation	14	10	5	6	2	37
Amortisation of capitalised development		9				9
Amortisation of software, patents and intellectual property	3	2		2	2	9
Amortisation of acquired intangibles					42	42
Share-based payment	4	3	1	1	5	14

	Year ended 31 July 2018 - restated*					
	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Corporate and non-headline £m	Total £m
Depreciation	13	10	4	7	1	35
Amortisation of capitalised development		10				10
Amortisation of software, patents and intellectual property	3	5		2	4	14
Amortisation of acquired intangibles					26	26
Share-based payment	3	1	1	1	6	12

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

Corporate and non-headline items are central costs and charges that are treated as non-headline (see note 3).

Segment assets and liabilities

Segment assets

	31 July 2019					
	John Crane £m	**Smiths Detection £m**	**Flex-Tek £m**	**Smiths Interconnect £m**	**Corporate and non-headline £m**	**Total £m**
Property, plant, equipment, development projects, other intangibles and investments	113	106	52	38	20	329
Inventory, trade and other receivables	428	485	171	132	17	1,233
Segment assets	**541**	**591**	**223**	**170**	**37**	**1,562**

	31 July 2018						
	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Smiths Medical £m	Corporate and non-headline £m	Total £m
Property, plant, equipment, development projects, other intangibles and investments	94	101	37	35	242	21	530
Inventory, trade and other receivables	361	372	117	120	266	22	1,258
Segment assets	**455**	**473**	**154**	**155**	**508**	**43**	**1,788**

Non-headline assets comprise receivables relating to non-headline items, acquisitions and disposals. Further details of the segmental asset held for distribution to owners is disclosed in note 27.

Segment liabilities

	31 July 2019					
	John Crane £m	**Smiths Detection £m**	**Flex-Tek £m**	**Smiths Interconnect £m**	**Corporate and non-headline £m**	**Total £m**
Divisional liabilities	(158)	(287)	(63)	(56)		(564)
Corporate and non-headline liabilities					(386)	(386)
Segment liabilities	**(158)**	**(287)**	**(63)**	**(56)**	**(386)**	**(950)**

	31 July 2018						
	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Smiths Medical £m	Corporate and non-headline £m	Total £m
Divisional liabilities	(138)	(257)	(46)	(43)	(116)		(600)
Corporate and non-headline liabilities						(370)	(370)
Segment liabilities	**(138)**	**(257)**	**(46)**	**(43)**	**(116)**	**(370)**	**(970)**

Non-headline liabilities comprise provisions and accruals relating to non-headline items, acquisitions and disposals. Further details of the segmental liabilities held for distribution to owners is disclosed in note 27.

Reconciliation of segment assets and liabilities to statutory assets and liabilities

	Assets		Liabilities	
	31 July 2019 £m	31 July 2018 £m	**31 July 2019 £m**	31 July 2018 £m
Segment assets and liabilities	**1,562**	**1,788**	**(950)**	**(970)**
Goodwill and acquired intangibles	1,606	1,867		
Derivatives	50	57	(6)	(11)
Current and deferred tax	126	218	(107)	(149)
Retirement benefit assets and obligations	469	526	(152)	(145)
Cash and borrowings	289	717	(1,509)	(1,610)
Assets and liabilities held for distribution to owners	1,216		(213)	
Statutory assets and liabilities	**5,318**	**5,173**	**(2,937)**	**(2,885)**

Segment capital expenditure

The capital expenditure on property, plant and equipment, capitalised development and other intangible assets for each division is:

	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Corporate and non-headline £m	Total £m
Capital expenditure year ended 31 July 2019	29	23	6	10	53	**121**
Capital expenditure year ended 31 July 2018	17	22	7	10	52	**108**

Corporate and non-headline items include corporate capital expenditure through Smiths Business Information Services on IT equipment and software and £52m (FY18: £48m) of expenditure from businesses held for distribution to owners.

Segment capital employed

Capital employed is a non-statutory measure of invested resources. It comprises statutory net assets adjusted to add goodwill recognised directly in reserves in respect of subsidiaries acquired before 1 August 1998 of £787m (31 July 2018: £787m) and eliminate post-retirement benefit assets and liabilities and litigation provisions relating to non-headline items, both net of related tax, and net debt. See note 30 for a reconciliation of net assets to capital employed.

The 12-month rolling average capital employed by division, which Smiths use to calculate divisional return on capital employed, is:

31 July 2019	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Total £m
Average divisional capital employed	938	1,113	359	368	2,778
Average capital employed - assets held for distribution to owners					1,253
Average corporate capital employed					(59)
Average total capital employed					**3,972**

31 July 2018	John Crane £m	Smiths Detection £m	Flex-Tek £m	Smiths Interconnect £m	Total £m
Average divisional capital employed	881	1,108	191	356	2,536
Average capital employed - assets held for distribution to owners					1,195
Average corporate capital employed					4
Average total capital employed					**3,735**

The Smiths Medical division has been accounted for as a business held for distribution to owners. Further details of the segmental asset and liabilities of the Smiths Medical division is disclosed in note 27.

Analysis of revenue

The revenue for the main product and service lines for each division is:

John Crane	Original equipment £m	Aftermarket £m	Total £m
Revenue year ended 31 July 2019	313	632	**945**
Revenue year ended 31 July 2018	292	589	**881**

Smiths Detection	Aviation security £m	Other security systems £m	Total £m
Revenue year ended 31 July 2019	522	276	**798**
Revenue year ended 31 July 2018	540	253	**793**

Flex-Tek	Aerospace £m	Industrials £m	Total £m
Revenue year ended 31 July 2019	121	315	**436**
Revenue year ended 31 July 2018	87	267	**354**

Smiths Interconnect	Components, Connectors & Subsystems £m
Revenue year ended 31 July 2019	**319**
Revenue year ended 31 July 2018	**300**

Following a review the Group has rationalised the analysis of divisional revenue to focus on the key markets of each division and to reflect the measures of revenue performance that are reported to and reviewed by the chief operating decision maker of the business. This review has resulted in the following changes to the analysis of revenue, and comparatives have been updated accordingly:

- Smiths Detection - Air Transportation has been renamed as Aviation whilst Urban Security, Defence and Ports & Borders have been aggregated and reported as Other Security Systems;
- Flex-Tek – revenue is now analysed by end market, Aerospace and Industrials. Previously revenue was analysed by product line.
- Smiths Interconnect – the Connectors and Microwave sectors have been aggregated and reported as Components, Connectors & Subsystems; and

The Group's statutory revenue is analysed as follows:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated* £m
Sale of goods recognised at a point in time	1,984	1,841
Sale of goods recognised over time	41	31
Services	473	456
	2,498	**2,328**

* The comparatives for the year to 31 July 2018 have been restated to reflect the adoption of IFRS 15 and the reclassification of the Smiths Medical business as a discontinued operation.

Analysis by geographical areas

The Group's revenue by destination and non-current operating assets by location are shown below:

	Revenue		Intangible assets and property plant and equipment	
	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated* £m	**31 July 2019 £m**	31 July 2018 £m
Americas	1,243	1,158	1,299	1,676
Europe	558	545	533	588
Asia-Pacific	409	365	69	104
Rest of the World	288	260	15	13
	2,498	**2,328**	**1,916**	**2,381**

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

2 OPERATING PROFIT IS STATED AFTER CHARGING

	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated* £m
Research and development expense	84	75
Depreciation of property, plant and equipment	37	35
Amortisation of intangible assets	60	50
Operating leases:		
– land and buildings	25	23
– other	7	7

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

Research and development (R&D) cash costs were £111m (FY2018: £96m) comprising £84m (FY2018: £75) of R&D expensed to the income statement, £9m (FY2018: £10m) of capitalised costs and £18m (FY2018: £11m) of customer funded R&D.

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Audit services		
Fees payable to the Company's auditors for the audit of the Company's annual financial statements	4.0	4.1
Fees payable to the Company's auditors and its associates for other services:		
– the audit of the Company's subsidiaries	1.5	1.4
	5.5	**5.5**
All other services	0.2	0.3

Other services comprise audit-related assurance services £0.2m (FY2018: £0.2m) and other services £nil (FY2018: £0.1m). Total fees for non-audit services comprise 4% (FY2018: 5%) of audit fees. Audit-related assurance services include the review of the Interim Report.

3 NON-STATUTORY PROFIT MEASURES

Headline profit measures

The Company seeks to present a measure of performance which is not impacted by material non-recurring items or items considered non-operational in nature. This measure of profit is described as 'headline' and is used by management to measure and monitor performance. See the disclosures on presentation of results in accounting policies for an explanation of the adjustments. The items excluded from 'headline' are referred to as 'non-headline' items.

Non-headline operating profit items

The non-headline items included in statutory operating profit for continuing operations are as follows:

	Notes	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 restated* £m
Post-acquisition integration costs and fair value adjustment unwind			
Integration programme costs		(17)	(19)
Unwind of acquisition balance sheet fair value uplift		(6)	(2)
Acquisition and disposal related transaction costs and provision releases			
Business acquisition / disposal costs		(10)	(2)
Release of acquisition related provisions		4	
Legacy pension scheme arrangements			
Guaranteed Minimum Pension (GMP) equalisation	8	(29)	
Settlement (loss)/gain on post-retirement benefit schemes	8	(1)	4
Non-headline litigation provision movements			
Net release of provision held against Titeflex Corporation subrogation claims	22	6	2
Provision for John Crane, Inc. asbestos litigation	22	(17)	(10)
Cost recovery for John Crane, Inc. asbestos litigation		11	
Other items			
Amortisation of acquisition related intangible assets	10	(42)	(26)
Profit on disposal of businesses	28		7
Non-headline items in operating profit - continuing operations		**(101)**	**(46)**

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

Post-acquisition integration costs and fair value adjustment unwind
The £17m (FY2018: £19m) of integration programme costs relate to defined projects for the integration of Morpho Detection into the existing Smiths Detection business and United Flexible into the existing Flex-Tek business. Integration programme costs include the direct costs of organisational change, IT system harmonisation expenses, site rationalisation and entity closure costs. The Morpho Detection integration programme is due to conclude in 2020 and the United Flexible integration programme is due to conclude in 2021. Integration costs are recognised as non-headline items because they are considered material and non-recurring.

The impact of unwinding the acquisition balance sheet fair value adjustments required by IFRS 3 'Business combinations' are recognised as non-headline as the charge does not relate to trading activity. The £6m (FY2018: £2m) charge is due to the unwind of fair value uplifts on the United Flexible and Morpho Detection acquisitions.

Acquisition and disposal transaction costs and provision releases
The £10m of business acquisition / disposal costs (FY2018: £2m) comprise £7m of directly linked incremental transaction costs, principally related to the acquisition of United Flexible which completed in February 2019 and £2m of litigation settlement costs relating to a prior year disposal. These costs do not include the cost of employees working on transactions and are reported as non-headline because they are dependent on the level of acquisition and disposal activity in the year.

The release of acquisition related provisions of £4m (FY2018: £nil) represents the release of excess accruals for deferred consideration on business acquisitions. These are reported as non-headline as the initial provision accrual was not recognised as a headline expense.

Legacy pension scheme arrangement
In the current year £29m of past service costs (FY2018: £nil) were recognised following the UK High Court ruling that GMP equalisation is required. A £1m settlement loss (FY2018: £4m gain) was recognised when defined benefit pension scheme members opted to take lump sums in lieu of annuities. These items are included in non-headline as they are non-recurring and relate to legacy pension liabilities. See note 8 for further details.

Non-headline litigation provision movements
The following litigation costs and recoveries have been treated as non-headline items because the provisions were treated as non-headline when originally recognised and the subrogation claims and litigation relate to products that the Group no longer sells in these markets:

- A provision release of £6m (FY2018: £2m) has been recognised by Titeflex Corporation in respect of changes to the estimated cost of future claims. The release is principally related to a fall in the expected number of claims. See note 22 for further details; and
- The £17m (FY2018: £10m) charge in respect of John Crane, Inc. asbestos litigation is principally due to litigation management expenses. The costs recovered via insurer settlements in the current year were £11m (FY2018: £nil). See note 22 for further details.

Other items
Acquisition related intangible asset amortisation costs of £42m (FY2018: £26m) were recognised in the current year. This is considered to be a non-headline item on the basis that these charges result from acquisition accounting and do not relate to current trading activity.

The £7m profit on disposal of businesses in FY2018 principally relates to the sale of John Crane Bearings. This is considered to be a non-headline item since the proceeds and cash impact are material and non-recurring.

Non-headline finance costs items
The non-headline items included in finance costs for continuing operations are as follows:

	Notes	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 £m
Unwind of discount on provisions	22	(8)	(6)
Other finance income – retirement benefits	8	11	7
Foreign exchange gain on intercompany loan with discontinued operations		39	2
Other financing losses		(13)	(3)
Non-headline items in finance costs – continuing operations		**29**	
Continuing operations – non-headline loss before taxation		**(72)**	**(46)**

The financing elements of non-headline legacy liabilities, including the £8m (FY2018: £6m) unwind of discount on provisions, are excluded from headline finance costs because these provisions were originally recognised as non-headline and this treatment has been maintained for ongoing costs and credits.

Other finance income comprises £11m (FY2018: £7m) of financing credits relating to retirement benefits. These are excluded from headline finance costs because the ongoing costs and credits are a legacy of previous employee pension arrangements.

Following the reclassification of Smiths Medical division as a discontinued operation, foreign exchange gains or losses on intercompany financing between Smiths Medical and the continuing group are recognised on the face of the income statement as a non-headline item. The £39m foreign exchange gain in continuing operations (FY2018: £2m gain) offsets the foreign exchange loss in discontinued operations. This is excluded from headline net finance costs as these fair value movements are non-operational in nature and are purely a consequence of the presentational requirements for discontinued operations.

Other financing losses represent the fair value movements on financial instruments and foreign exchange movements on borrowings which the Group excludes from headline net finance costs. The current year loss of £13m (FY2018: £3m) is principally due to prior year hedge ineffectiveness following a change in valuation methodology for the bonds designated as fair value hedges, this hedge ineffectiveness will reverse over the remaining period to maturity. These fair value movements are excluded from headline net finance costs when the following requirements are met:

- Fair value gains and losses on the interest element of derivative financial instruments hedging the Group's net debt exposures are excluded from headline as they will either reverse over time or be matched in future periods by interest charges.
- Fair value gains and losses on the currency element of derivative financial instruments hedging the Group's net debt and exposures, and exchange gains and losses on borrowings are excluded as the relevant foreign exchange gains and losses on the commercially hedged items are recognised as a separate component of other comprehensive income in accordance with the Group's foreign currencies accounting policy.

Non-headline taxation items

The non-headline items included in taxation for continuing operations are as follows:

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Tax on non-headline loss	6	12	(3)
Tax on the repatriation of treasury legacy cash pools	6	(17)	
Impact of US tax reform	6		(78)
US deferred tax asset derecognition	6	(18)	
UK deferred tax asset derecognition	6	(36)	
Non-headline items in taxation – continuing operations		**(59)**	**(81)**
Continuing operations – non-headline loss for the year		**(131)**	**(127)**

Tax on the repatriation of treasury legacy cash pools

A £17m tax charge on prior year undistributed overseas earnings has been recognised following the adoption of a new Treasury cash repatriation policy. This cost has been reported as non-headline because the impact of the policy change was material and non-recurring.

Impact of US tax reform

In the prior year, US tax reform led to the Group recognising a £78m tax charge for continuing operations and a £26m tax credit for discontinued operations, following a reduction in the US Federal tax rate. This cost was reported as non-headline, because the impact of US tax reform was both material and non-recurring.

US deferred tax asset derecognition

Smiths Detection US business has generated tax losses from tax-deductible amortisation relating to the acquisition of Morpho in March 2017. The utilisation of these losses has been affected by changes in US tax legislation. As a consequence deferred tax of £18m on tax losses has been derecognised. The losses equated to non-headline amortisation of intangibles and their derecognition has therefore also been treated as non-headline.

UK deferred tax asset derecognition

In prior years UK deferred tax of £69m was recognised as a non-headline credit. The decision to separate Smiths Medical will reduce Group profitability in the UK. As a consequence, deferred tax of £36m has been derecognised. The derecognition has been reported as non-headline because the original credit was reported as non-headline.

Non-headline items for discontinued operations

The non-headline items for discontinued operations are as follows:

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Acquisition and disposal related transaction costs and provision releases			
Business acquisition / disposal costs		(2)	(1)
Medical separation costs		(8)	
Other items			
Amortisation of acquisition related intangible assets		(3)	(3)
Profit on disposal of businesses		17	
Non-headline finance costs items			
Foreign exchange loss on intercompany loan with parent		(39)	(2)
Other financing gains		1	
Non-headline taxation items			
Tax on non-headline loss	6	8	25
Tax on the repatriation of treasury legacy cash pools	6	(1)	
Non headline impact of US tax reform	6		26
Non-headline items in profit from discontinued operations		**(27)**	**45**
Profit for the year – non headline items for continuing and discontinued operations		**(158)**	**(82)**

The £2m of Business acquisition/disposal costs (FY2018: £1m) comprise incremental deal costs. These costs do not include the cost of employees working on transactions and are reported as non-headline because they are dependent on the level of activity in the year.

The incremental costs incurred by the Group on the transaction to demerge the Smiths Medical business amounted to £8m in the current year. This cost has been reported as non-headline as the full year effect of the transaction on the Group's financial statements is both material and non-recurring.

The £39m foreign exchange loss on intercompany loan with parent (FY2018: £2m gain) offsets the foreign exchange gain in continuing operations. This is excluded from headline net finance costs as these fair value movements are non-operational in nature and are purely a consequence of the presentational requirements for discontinued operations.

The profit on disposal of businesses of £17m (FY2018: £nil) relates to the sale of Medical's sterile water bottling and EMEA kitting businesses. See note 27. These are considered to be a non-headline items since the profit and cash impact are material and non-recurring arising from the sale of a business.

4 NET FINANCE COSTS

	Notes	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated* £m
Interest receivable		11	10
Interest payable:			
– bank loans and overdrafts, including associated fees		(7)	(6)
– other loans		(55)	(59)
Interest payable		(62)	(65)
Headline net finance costs		**(51)**	**(55)**
Other financing gains/(losses):			
– valuation movements on fair value hedged debt		(52)	3
– valuation movements on fair value derivatives		42	(3)
– net foreign exchange losses		(3)	(3)
Other financing losses	3	(13)	(3)
Foreign exchange gain on intercompany loan with discontinued operations	3	39	2
Unwind of discount on provisions	3	(8)	(6)
Net interest income on retirement benefit obligations	8	11	7
Non-headline finance cost items		**29**	
Net finance costs		**(22)**	**(55)**

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

5 EARNINGS PER SHARE

Basic earnings per share are calculated by dividing the profit for the year attributable to equity shareholders of the Company by the average number of ordinary shares in issue during the year.

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Profit attributable to equity shareholders for the year:		
– continuing	140	117
– discontinued	85	160
Total	225	277
Average number of shares in issue during the year	395,936,520	395,723,069
Statutory earnings per share continuing operations – basic	35.4p	29.6p
Statutory earnings per share continuing operations – diluted	35.1p	29.2p
Statutory earnings per share total – basic	56.8p	70.0p
Statutory earnings per share total – diluted	56.5p	69.1p

Diluted earnings per share are calculated by dividing the profit attributable to ordinary shareholders by 398,375,376 (FY2018: 400,999,220) ordinary shares, being the average number of ordinary shares in issue during the year adjusted by the dilutive effect of employee share schemes. For the year ended 31 July 2019, zero options (FY2018: zero) were excluded from this calculation because their effect was anti-dilutive for continuing operations.

A reconciliation of statutory and headline earnings per share is as follows:

	Year ended 31 July 2019			Year ended 31 July 2018		
	£m	Basic EPS (p)	Diluted EPS (p)	£m	Basic EPS (p)	Diluted EPS (p)
Total profit attributable to equity shareholders of the Parent Company	225	56.8	56.5	277	70.0	69.1
Exclude: Non-headline items (note 3)	158			82		
Headline earnings per share	383	96.8	96.1	359	90.7	89.5
Profit from continuing operations attributable to equity shareholders of the Parent Company	140	35.4	35.1	117	29.6	29.2
Exclude: Non-headline items (note 3)	131			127		
Headline earnings per share	271	68.4	68.0	244	61.7	60.8

6 TAXATION

This note only provides information about corporate income taxes under IFRS. Smiths companies operate in over 50 countries across the world. They pay and collect many different taxes in addition to corporate income taxes including: payroll taxes; value added and sales taxes; property taxes; product-specific taxes and environmental taxes. The costs associated with these other taxes are included in profit before tax.

	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated* £m
The taxation charge in the consolidated income statement for the year comprises:		
Continuing operations		
– current income tax charge	93	93
– current tax adjustments in respect of prior periods	5	10
Current taxation	**98**	**103**
Deferred taxation	64	65
Total taxation expense – continuing operations	**162**	**168**
Discontinued operations		
– current income tax credit	36	11
– deferred taxation	(11)	(23)
Total taxation expense – discontinued operations	25	(12)
Total taxation expense in the consolidated income statement	**187**	**156**

* The comparatives for the year to 31 July 2018 have been restated to reflect the reclassification of the Smiths Medical business as a discontinued operation.

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Tax on items charged/(credited) to equity		
Deferred tax charge/(credit):		
– retirement benefit schemes	(13)	18
– cash-flow hedge accounting		(1)
– share-based payments	3	1
	(10)	**18**

Of the £13m credit to equity for retirement benefits, £12m relates to UK retirement schemes and £1m to US pension schemes.

Current taxation

	Current tax £m
At 31 July 2017	17
Foreign exchange gains and losses	(1)
Charge to income statement	(115)
Tax paid	65
At 31 July 2018	**(34)**
Current tax receivable	38
Current tax payable	(72)
At 31 July 2018	**(34)**
Foreign exchange gains and losses	(1)
Charge to income statement	(132)
Reclassified to businesses held for distribution to owners (note 27)	9
Tax paid	107
At 31 July 2019	**(51)**
Current tax receivable	11
Current tax payable within one year	(56)
Corporation tax payable after more than one year	(6)
At 31 July 2019	**(51)**

Provisions included in current tax liabilities are established based on reasonable estimates of the possible consequences of tax authority audits in the various countries in which the Group operates. Management judgement is used to determine the amount of such provisions based on an understanding of the relevant local tax law, taking into account the differences of interpretation that can arise on a wide variety of issues, depending on the prevailing circumstances, including the nature of current tax audits and the experience of previous enquiries.

Reconciliation of the tax charge

The tax charge on the profit for the year for continuing operations is different from the standard rate of corporation tax in the UK of 19.0% (FY2018: 19.0%). The difference is reconciled as follows:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 restated £m
Profit before taxation	**304**	**286**
Notional taxation expense at UK rate of 19.0% (FY2018: 19.0%)	58	54
Different tax rates on non-UK profits and losses	22	33
Non-deductible expenses	18	9
Tax credits and non-taxable income	(14)	(8)
Non-headline derecognition of UK deferred tax asset	36	
Other adjustments to unrecognised deferred tax	3	15
Non-headline derecognition of US deferred tax asset	18	
Non-headline impact of US tax reform - deferred tax revaluation		62
Non-headline impact of US tax reform - deemed repatriation tax		17
Provision for prior year deferred tax on unremitted overseas earnings	17	
Effect of non-taxable profits on disposal of businesses		(1)
Tax on Medical consolidation adjustments	7	(8)
Prior Year true-up	(3)	(5)
Tax on continuing activities	162	168
Tax on discontinued activities	25	(12)
Total taxation expense in the consolidated income statement	**187**	**156**
Comprising:		
Taxation on headline profit	103	87
Non-headline taxation items:		
– tax on non-headline loss	(12)	3
– UK deferred tax asset derecognition	36	
– US deferred tax asset derecognition	18	
– tax on the repatriation of treasury legacy cash pools	17	
– Impact of US tax reform		78
Taxation on non-headline items	59	81
Taxation on discontinued operation	25	(12)
Total taxation expense in the consolidated income statement	**187**	**156**

The head office of Smiths Group is domiciled in the UK; so the tax charge has been reconciled to UK tax rates.

Deferred taxation

	Property, plant and equipment & intangible assets £m	Employment benefits £m	Losses carried forward £m	Provisions £m	Other £m	Total £m
At 31 July 2017	(148)	(10)	129	138	52	161
Reallocation				2	(2)	
(Charge)/credit to income statement – continuing	60	(21)	(7)	(55)	(18)	(41)
(Charge)/credit to income statement – discontinued	2		(1)		(1)	
(Charge) to equity		(18)				(18)
Business combinations	1					1
Exchange adjustments	1	(1)		(1)	1	
At 31 July 2018	**(84)**	**(50)**	121	84	32	103
Deferred tax assets	3	(56)	120	80	33	180
Deferred tax liabilities	(87)	6	1	4	(1)	(77)
At 31 July 2018	**(84)**	**(50)**	121	84	32	103
Reallocation			1	3	(4)	
Charge to income statement – continuing	(19)	(9)	(21)	(2)	(2)	(53)
Credit to equity		10				10
Business combinations	(31)		2	1	(1)	(29)
Reclassified to businesses held for distribution to owners (note 27)	61		(1)	(2)	(23)	35
Exchange adjustments	(11)	1	4	7	3	4
At 31 July 2019	**(84)**	**(48)**	**106**	**91**	**5**	**70**
Deferred tax assets	(20)	(57)	103	66	23	115
Deferred tax liabilities	(64)	9	3	25	(18)	(45)
At 31 July 2019	**(84)**	**(48)**	**106**	**91**	**5**	**70**

Discontinued operations had net deferred tax liabilities of £35m at 31 July 2019.

In 2017, as a result of improvement in the legacy UK pension position and financing changes UK deferred tax of £69m was recognised as a non-headline gain in the period. The largest contribution to UK profitability derives from the activities of the Medical division and following the decision to separate Medical next year, net deferred tax assets related to non-Medical activities have been de-recognised, generating a non-headline charge of £36m. The closing net deferred tax asset balance related to UK activities and included in the balance at 31 July 2019 amounted to £nil (2018: £35m).

The deferred tax asset relating to losses has been recognised on the basis that evidence demonstrates a consistent pattern of improving results and the Group has implemented plans to support continuing improvements, or the losses relate to specific, identified non-recurring events. To the extent that losses have been derecognised, the derecognition has been reported on a consistent basis as the original credit. See note 3 for further details on the deferred tax derecognised in the current year.

Deferred tax relating to provisions includes £50m (2018: £48m) relating to John Crane Inc litigation provision, and £18m (2018: £19m) relating to Titeflex Corporation litigation provision. See note 22 for additional information on provisions.

Included in other deferred tax balances above is a deferred tax asset related to inventory of £6m (2018: £8m), deferred revenue of £9m (2018: £9m) and rebate reserve of £nil (2018: £6m).

Unrecognised Deferred Tax

The Group has unrecognised deferred tax relating to non-UK losses amounting to £243m (FY2018: £73m).

The expiry date of operating losses carried forward is dependent upon the law of the various territories in which the losses arise. A summary of expiry dates for losses in respect of which deferred tax has not been recognised is set out below:

	2019 £m	Expiry of losses	2018 £m	Expiry of losses
Restricted losses – Asia	29	2020-2026	16	2019-2025
Restricted losses - Americas	53	2020-2032		
Unrestricted losses – operating losses	161	No expiry	57	No expiry
Total losses	**243**		**73**	

Franked Investment Income Group Litigation Order (FII GLO)

Smiths Group is one of the companies enrolled in the FII GLO litigation against HMRC. The court actions first filed in 2003 are nearing an end and some claimants with different fact patterns have received payments. Smiths' recoveries are estimated at circa £22m (computed on a simple interest basis and after deducting 45% withholding tax) however there are further relevant legal actions that may impact this estimate.

The Group has not recognised any of this potential tax credit to the financial statements in the current period or the prior year.

EU Commission Investigation re Claims for Partial (75%) Exemption for Profits from qualifying loan relationships

In April 2019, the European Commission issued its decision in respect of a state aid investigation into the Group Financing Exemption in the UK controlled foreign company rules. The European Commission's decision found that part of the Group Financing Exemption constitutes state aid. The Group Financing Exemption was introduced in legislation by the UK Government in 2013. In common with other UK-based international companies whose arrangements were in line with the then UK CFC legislation, Smiths Group may be affected by the ultimate outcome of this decision.

In June 2019 the UK government and some other UK-based international companies appealed to the General Court of the European Union against the decision. Smiths is considering whether to appeal itself. Nonetheless, the UK Government is required to commence recovery from beneficiaries of the alleged aid in line with the European Commission's decision. As the first step in this recovery process HMRC have written to beneficiaries, including Smiths, for information. At present it is not possible to determine the amount that the UK government will seek to collect from Smiths.

If the European Commission's decision is ultimately upheld, the estimated maximum potential liability (which includes both tax and interest) is approximately £15m. Based on our current assessment, no provision is being made in respect of this issue.

7 EMPLOYEES

	Year ended 31 July 2019			Year ended 31 July 2018		
	Continuing operations £m	Discontinued operations £m	Total £m	Continuing operations £m	Discontinued operations £m	Total £m
Staff costs during the period						
Wages and salaries	645	245	890	603	236	839
Social security	80	25	105	74	23	97
Share-based payments (note 9)	14	1	15	14	2	16
Pension costs (including defined contribution schemes) (note 8)	27	13	40	26	11	37
	766	**284**	**1,050**	**717**	**272**	**989**

The average number of persons employed, rounded to the nearest 50 employees, was:

	Year ended 31 July 2019	Year ended 31 July 2018
John Crane	6,200	6,100
Smiths Detection	2,850	2,750
Flex-Tek	2,550	2,150
Smiths Interconnect	2,350	2,300
Corporate (including central/shared IT services)	300	350
Continuing operations	**14,250**	**13,650**
Discontinued operations - Smiths Medical	7,750	8,050
Total	**22,000**	**21,700**

Key management

The key management of the Group comprises Smiths Group plc Board Directors and Executive Committee members. Their aggregate compensation is shown below. Details of Directors' remuneration are contained in the report of the Remuneration Committee within the Annual Report 2019.

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Key management compensation		
Salaries and short-term employee benefits	10.2	11.4
Cost of post-retirement benefits	0.3	0.1
Cost of share-based incentive plans	5.0	5.4

No member of key management had any material interest during the period in a contract of significance (other than a service contract or a qualifying third-party indemnity provision) with the Company or any of its subsidiaries.

Options and awards held at the end of the period by key management in respect of the Company's share-based incentive plans were:

	Year ended 31 July 2019		Year ended 31 July 2018	
	Number of instruments '000	**Weighted average exercise price**	Number of instruments '000	Weighted average exercise price
CIP / SMP			88	
SEP	231		309	
LTIP	1,463		1,455	
Restricted stock	178		296	
SAYE	12	£10.63	9	£10.48

Related party transactions

The only related party transactions in FY2019 were key management compensation (FY2018: key management compensation).

8 POST-RETIREMENT BENEFITS

Smiths provides post-retirement benefits to employees in a number of countries. This includes defined benefit and defined contribution plans and, mainly in the United Kingdom (UK) and United States of America (US), post-retirement healthcare.

Defined contribution plans

The Group operates defined contribution plans across many countries. In the UK a defined contribution plan has been offered since the closure of the UK defined benefit pension plans. In the US a 401(k) defined contribution plan operates. The total expense recognised in the consolidated income statement in respect of all these plans was £37m (FY2018: £34m).

Defined benefit and post-retirement healthcare plans

The principal defined benefit pension plans are in the UK and in the US and these have been closed so that no future benefits are accrued.

For all schemes, pension costs are assessed in accordance with the advice of independent, professionally qualified actuaries. These valuations have been updated by independent qualified actuaries in order to assess the liabilities of the schemes as at 31 July 2019. Scheme assets are stated at their market values. Contributions to the schemes are made on the advice of the actuaries, in accordance with local funding requirements.

The changes in the present value of the net pension asset in the period were:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
At beginning of period	381	224
Exchange adjustment	(4)	
Current service cost	(3)	(3)
Scheme administration costs	(4)	(5)
Past service cost, curtailments, settlements	(30)	5
Finance income – retirement benefits	11	7
Contributions by employer	36	49
Actuarial (loss)/gain	(76)	104
Net retirement benefit asset	**311**	**381**

The £311m net retirement benefit assets includes £6m of pension obligations disclosed as liabilities held for distribution to owners.

UK pension schemes

Smiths funded UK pension schemes are subject to a statutory funding objective, as set out in UK pension legislation. Scheme trustees need to obtain regular actuarial valuations to assess the scheme against this funding objective. The trustees and sponsoring companies need to agree funding plans to improve the position of a scheme when it is below the acceptable funding level.

The UK Pensions Regulator has extensive powers to protect the benefits of members, promote good administration and reduce the risk of situations arising which may require compensation to be paid from the Pension Protection Fund. These include imposing a schedule of contributions or the calculation of the technical provisions, where a trustee and company fail to agree appropriate calculations.

Smiths Industries Pension Scheme ('SIPS')

This scheme was closed to future accrual effective 1 November 2009. SIPS provides index-linked pension benefits based on final earnings at date of closure. SIPS is governed by a corporate trustee (SI Pension Trustee Limited, a wholly owned subsidiary of Smiths Group plc). The board of trustee directors currently comprises four company-nominated trustees and four member-nominated trustees, with an independent chairman selected by Smiths Group plc. Trustee Directors are responsible for the management, administration, funding and investment strategy of the scheme.

The most recent actuarial valuation of this scheme has been performed using the Projected Unit Method as at 31 March 2017, and experience gains and losses identified during this valuation have been incorporated into the IAS 19 valuation. Under the funding plan for SIPS agreed in June 2018 Smiths pays cash contributions of £1m a month until the Scheme reaches full funding on a 'gilts + 0%' basis. Under the governing documentation of SIPS, any future surplus would be returnable to Smiths Group plc by refund, assuming gradual settlement of the liabilities over the lifetime of the scheme.

On 26 October 2018, the High Court of Justice of England and Wales issued a judgment that schemes need to equalise GMP benefits for men and women. We have estimated the financial effect of equalising benefits in respect of GMPs and any conversion of GMPs into non-GMPs to be £21m. This has been recognised as a past service cost in the income statement for the year ended 31 July 2019. The estimate is based on method C2.

The duration of SIPS liabilities is around 23 years (FY2018: 23 years) for active deferred members, 23 years (FY2018: 22 years) for deferred members and 12 years (FY2018: 11 years) for pensioners and dependants. On 3 July 2019 SIPS purchased a buy-in annuity policy with Canada Life for a premium of £176m. An actuarial loss of £14m was recognised as a result of this buy-in agreement.

TI Group Pension Scheme ('TIGPS')

This scheme was closed to future accrual effective 1 November 2009. TIGPS provides index-linked pension benefits based on final earnings at the date of closure. TIGPS is governed by a corporate trustee (TI Pension Trustee Limited, an independent company). The board of trustee directors comprises four company-nominated trustees and four member-nominated trustees, with an independent trustee director selected by the Trustee. The Trustee is responsible for the management, administration, funding and investment strategy of the scheme.

The most recent actuarial valuation of this scheme has been performed using the Projected Unit Method as at 5 April 2017. Under the funding plan for TIGPS agreed in June 2018, Smiths pays cash contributions of £1m a month until the Scheme is fully funded on a solvency basis. Under the governing documentation of TIGPS, any future surplus would be returnable to Smiths Group plc by refund, assuming gradual settlement of the liabilities over the lifetime of the scheme.

On 26 October 2018, the High Court of Justice of England and Wales issued a judgment that schemes need to equalise GMP benefits for men and women. We have estimated the financial effect of equalising benefits in respect of GMPs and any conversion of GMPs into non-GMPs to be £8m. This has been recognised as a past service cost in profit and loss in the year ending 31 July 2019. The estimate is based on method C2.

The duration of the TIGPS liabilities is around 25 years (FY2018: 24 years) for active deferred members, 22 years (FY2018: 22 years) for deferred members and 11 years (FY2018: ten years) for pensioners and dependants.

US pension plans

The valuations of the principal US pension and post-retirement healthcare plans were performed using census data at 1 January 2018.

The pension plans were closed with effect from 30 April 2009 and benefits were calculated as at that date and are not revalued. Governance of the US pension plans is managed by a Settlor Committee appointed by Smiths Group Services Corp, a wholly-owned subsidiary.

The duration of the liabilities for the largest US plan is around 18 years (FY2018: 19 years) for active deferred members, 18 years (FY2018: 19 years) for deferred members and 11 years (FY2018: 12 years) for pensioners and dependants.

Risk management

The pensions schemes are exposed to risks that:

- investment returns are below expectations, leaving the scheme with insufficient assets in future to pay all their pension obligations;
- members and dependants live longer than expected, increasing the value of the pensions the schemes have to pay;
- inflation rates are higher than expected, causing amounts payable under index-linked pensions to be higher than expected; and
- increased contributions are required to meet regulatory funding targets if lower interest rates increase the current value of liabilities.

These risks are managed separately for each pension scheme. However the Group has adopted a common approach of closing defined benefit schemes to cap members' entitlements and supporting trustees in adopting investment strategies which aim to match assets to future obligations, after allowing for the funding position of the scheme.

TIGPS

TIGPS has covered roughly 50% of liabilities with matching annuities, eliminating investment return, longevity, inflation and funding risks in respect of those liabilities. It has also adopted a liability matching strategy to hedge interest and inflation risks of the scheme's uninsured liabilities by investment in gilts together with the use of gilt repurchase arrangements and total return swaps. The strategy also takes into account the scheme's corporate bond investments.

SIPS

SIPS has covered roughly 30% of liabilities with matching annuities, eliminating investment return, longevity, inflation and funding risks in respect of those liabilities. It has also adopted a liability matching strategy to hedge interest and inflation risks of the scheme's uninsured liabilities by investment in gilts together with the use of gilt repurchase arrangements, total return swaps, inflation swaps and interest rate swaps. The strategy also takes into account the scheme's corporate bond investments.

The principal assumptions used in updating the valuations are set out below:

	2019 UK	**2019 US**	**2019 Other**	2018 UK	2018 US	2018 Other
Rate of increase in salaries	n/a	n/a	3.3%	n/a	n/a	3.1%
Rate of increase for active deferred members	4.2%	n/a	n/a	4.1%	n/a	n/a
Rate of increase in pensions in payment	3.3%	n/a	3.1%	3.2%	n/a	2.5%
Rate of increase in deferred pensions	3.3%	n/a	n/a	3.2%	n/a	n/a
Discount rate	2.1%	3.5%	2.8%	2.8%	4.15%	3.4%
Inflation rate	3.3%	n/a	2.6%	3.2%	n/a	3.3%
Healthcare cost increases	4.7%	n/a	n/a	4.7%	n/a	n/a

The assumptions used in calculating the costs and obligations of the Group's defined benefit pension plans are set by the Group after consultation with independent professionally qualified actuaries. The assumptions used are estimates chosen from a range of possible actuarial assumptions which, due to the timescale covered, may not necessarily occur in practice. For countries outside the UK and USA; assumptions are disclosed as a weighted average.

Discount rate assumptions

The UK schemes use a discount rate based on the annualised yield on the Aon GBP Select AA Curve, using the expected cash-flows from a notional scheme with obligations of the same duration as that of the UK schemes.

Mortality assumptions

The mortality assumptions used in the principal UK schemes are based on the "SAPS S2" All Birth year tables with relevant scaling factors based on the recent experience of the schemes. The assumption allows for future improvements in life expectancy in line with the 2018 CMI projections, with a smoothing factor of 7.0 and A parameter of 0.5% and blended to a long-term rate of 1.25%. The mortality assumptions used in the principal US schemes are based on the RP-2014 table for healthy employees and healthy annuitants, removing MP-2014 improvement projections from 2006-2014 and applying scale MP-2018 mortality improvements from 2006 on a generational basis.

	UK schemes				US schemes			
Expected further years of life	**Male 31 July 2019**	**Female 31 July 2019**	Male 31 July 2018	Female 31 July 2018	**Male 31 July 2019**	**Female 31 July 2019**	Male 31 July 2018	Female 31 July 2018
Member who retires next year at age 65	22	24	22	24	21	23	21	23
Member, currently 45, when they retire in 20 years' time	23	25	24	25	22	24	22	24

Sensitivity

Sensitivities in respect of the key assumptions used to measure the principal pension schemes as at 31 July 2019 are set out below. These sensitivities show the hypothetical impact of a change in each of the listed assumptions in isolation, with the exception of the sensitivity to inflation which incorporates the impact of certain correlating assumptions. In practice, such assumptions rarely change in isolation.

	Profit before tax for year ended 31 July 2019 £m	**Increase/ (decrease) in scheme assets 31 July 2019 £m**	**(Increase)/ decrease in scheme liabilities 31 July 2019 £m**	Profit before tax for year ended 31 July 2018 £m	Increase/ (decrease) in scheme assets 31 July 2018 £m	(Increase)/ decrease in scheme liabilities 31 July 2018 £m
Rate of mortality – 1 year increase in life expectancy	(2)	86	(195)	(3)	70	(166)
Rate of mortality – 1 year decrease in life expectancy	2	(85)	193	3	(71)	166
Rate of inflation – 0.25% increase	(2)	26	(109)	(2)	22	(94)
Discount rate – 0.25% increase	4	(33)	152	5	(28)	135
Market value of scheme assets – 2.5% increase	2	76		2	74	

The effect on profit before tax reflects the impact of current service cost and net interest cost. The value of the scheme assets is affected by changes in mortality rates, inflation and discounting because they affect the carrying value of the insurance assets.

Asset valuation
Liquidity funds, equities and bonds are valued using quoted market prices in active markets. Exchange traded equity index futures are valued at market prices.

Total return, interest and inflation swaps are bilateral agreements between counterparties and do not have observable market prices. These derivative contracts are valued using observable market inputs.

Insured liabilities comprise annuity policies matching the scheme obligation to identified groups of pensioners. These assets are valued at the actuarial valuation of the corresponding liability, reflecting this matching relationship. Property is valued by specialists applying recognised property valuation methods incorporating current market data on rental yields and transaction prices.

Retirement-benefit plan assets

	31 July 2019 – £m				31 July 2018 – £m			
	UK schemes	**US schemes**	**Other countries**	**Total**	UK schemes	US schemes	Other countries	Total
Cash and cash equivalents:								
– cash	31	1	1	33	26	1	1	28
– liquidity funds	14			14	32			32
Equities:								
– UK funds	1		1	2	1		1	2
– other regions and global funds	60		3	63	79		3	82
Government bonds	2,230	85	3	2,318	1,679	72	4	1,755
Corporate bonds	1,174	196		1,370	1,097	166		1,263
Insured liabilities	1,343		1	1,344	1,154		1	1,155
Property	103		1	104	121			121
Other:								
– diversified growth funds and scheme receivables	310		26	336	544		23	567
– gilt repurchase obligations	(1,160)			(1,160)	(866)			(866)
Total market value	**4,106**	**282**	**36**	**4,424**	**3,867**	**239**	**33**	**4,139**

UK other investments at 31 July 2019 included £4m (FY2018: £19m) of interest and inflation swaps held by SIPS.

The scheme assets do not include any property occupied by, or other assets used by, the Group. Equities include investments in broad-based equity indices, some of which hold ordinary equity shares in Smiths Group plc.

Present value of funded scheme liabilities and assets for the main UK and US schemes

	31 July 2019 – £m			31 July 2018 – £m		
	SIPS	**TIGPS**	**US schemes**	SIPS	TIGPS	US schemes
Present value of funded scheme liabilities:						
– Active deferred members	(42)	(60)	(95)	(57)	(56)	(88)
– Deferred members	(930)	(587)	(123)	(784)	(550)	(115)
– Pensioners	(1,142)	(857)	(72)	(1,070)	(804)	(47)
Present value of funded scheme liabilities	**(2,114)**	**(1,504)**	**(290)**	**(1,911)**	**(1,410)**	**(250)**
Market value of scheme assets	2,377	1,710	282	2,214	1,633	239
Surplus/(deficit)	**263**	**206**	**(8)**	**303**	**223**	**(11)**

Net retirement benefit obligations

	31 July 2019 – £m				31 July 2018 – £m			
	UK schemes	**US schemes**	**Other countries**	**Total**	UK schemes	US schemes	Other countries	Total
Market value of scheme assets	4,106	282	36	4,424	3,867	239	33	4,139
Present value of funded scheme liabilities	(3,637)	(291)	(45)	(3,973)	(3,342)	(250)	(41)	(3,633)
Surplus/(deficit)	**469**	**(9)**	**(9)**	**451**	**525**	**(11)**	**(8)**	**506**
Unfunded pension plans	(56)	(8)	(59)	(123)	(53)	(7)	(49)	(109)
Post-retirement healthcare	(5)	(10)	(2)	(17)	(5)	(9)	(2)	(16)
Present value of unfunded obligations	**(61)**	**(18)**	**(61)**	**(140)**	**(58)**	**(16)**	**(51)**	**(125)**
Net pension asset/(liability)	**408**	**(27)**	**(70)**	**311**	467	**(27)**	**(59)**	381
Post-retirement assets	469			469	526			526
Post-retirement liabilities	(61)	(27)	(64)	(152)	(59)	(27)	(59)	(145)
Liabilities held for distribution to owners			(6)	(6)				
Net pension asset/(liability)	**408**	**(27)**	**(70)**	**311**	467	**(27)**	**(59)**	381

Liabilities held for distribution to owners comprises £5m of unfunded pension plans and £1m deficit on defined benefit schemes within the Smiths Medical division.

Where any individual scheme shows a recoverable surplus under IAS 19, this is disclosed on the balance sheet as a retirement benefit asset. The IAS 19 surplus of any one scheme is not available to fund the IAS 19 deficit of another scheme. The retirement benefit asset disclosed arises from the rights of the employers to recover the surplus at the end of the life of the scheme.

Amounts recognised in the consolidated income statement

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Amounts charged to operating profit		
Current service cost	3	3
Past service costs - Guaranteed Minimum Pension (GMP) equalisation	29	
Settlement loss/(gain)	1	(4)
Scheme administration costs	4	5
	37	**4**
The operating cost is charged as follows:		
Cost of sales	1	1
Sales and distribution costs	1	1
Headline administrative expenses	5	6
Non-headline settlement loss/(gain)	1	(4)
Non-headline administrative expenses	29	
	37	**4**
Amounts credited to finance costs		
Non-headline other finance income – retirement benefits	**(11)**	**(7)**

Amounts recognised directly in the consolidated statement of comprehensive income

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Actuarial gains/(losses)		
Difference between interest credit and return on assets	355	(18)
Experience losses on scheme liabilities	(4)	(10)
Actuarial gains arising from changes in demographic assumptions	25	5
Actuarial (losses)/gains arising from changes in financial assumptions	(452)	127
	(76)	**104**

Changes in present value of funded scheme assets

	31 July 2019 – £m				31 July 2018 – £m			
	UK schemes	US schemes	Other countries	Total	UK schemes	US schemes	Other countries	Total
At beginning of period	3,867	239	33	4,139	3,959	266	34	4,259
Interest on assets	105	10	1	116	101	9	1	111
Actuarial movement on scheme assets	332	24	(1)	355	(6)	(12)	(1)	(19)
Employer contributions	24	5	1	30	28	12	1	41
Assets distributed on settlement						(27)		(27)
Scheme administration costs	(3)	(1)		(4)	(3)	(1)		(4)
Exchange adjustments		18	3	21		1		1
Benefits paid	(219)	(13)	(1)	(233)	(212)	(9)	(2)	(223)
At end of period	**4,106**	**282**	**36**	**4,424**	**3,867**	**239**	**33**	**4,139**

Changes in present value of funded defined benefit obligations

	31 July 2019 – £m				31 July 2018 – £m			
	UK schemes	US schemes	Other countries	Total	UK schemes	US schemes	Other countries	Total
At beginning of period	(3,342)	(250)	(41)	(3,633)	(3,571)	(292)	(42)	(3,905)
Current service cost			(1)	(1)			(1)	(1)
Past service costs	(29)			(29)				
Interest on obligations	(91)	(9)	(2)	(102)	(90)	(10)	(2)	(102)
Actuarial movement on liabilities	(394)	(24)		(418)	107	13	1	121
Liabilities extinguished on settlement						31		31
Exchange adjustments		(21)	(2)	(23)				
Benefits paid	219	13	1	233	212	9	2	223
At end of period	**(3,637)**	**(291)**	**(45)**	**(3,973)**	**(3,342)**	**(249)**	**(42)**	**(3,633)**

Changes in present value of unfunded defined benefit pensions and post-retirement healthcare plans

	Assets		Obligations	
	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 £m
At beginning of period			(125)	(130)
Reclassification of small unfunded obligations				
Liabilities transferred on disposals				1
Current service cost			(2)	(2)
Interest on obligations			(3)	(3)
Actuarial movement			(13)	2
Employer contributions	6	7		
Exchange adjustments			(3)	
Benefits paid	(6)	(7)	6	7
At end of period			**(140)**	**(125)**

Cash contributions

Company contributions to the defined benefit pension plans and post-retirement healthcare plans for 2019 totalled £36m (FY2018: £49m). This comprised regular contributions to funded schemes of £12m (FY2018: £24m) to SIPS, £12m (FY2018: £5m) to TIGPS, a one-off £5m contribution (FY2018: £12m) to funded US schemes and contributions to other schemes of £1m (FY2018: £2m). In addition, £6m (FY2018: £7m) was spent on providing benefits under unfunded defined benefit pension and post-retirement healthcare plans.

In 2020, the cash contributions to the Group's schemes are expected to total about £40m, including £12m to SIPS and £12m to TIGPS, with the balance relating mainly to the US scheme. Group contributions in respect of the unfunded schemes and post-retirement healthcare are expected to be in line with 2019.

9 EMPLOYEE SHARE SCHEMES

The Group operates share schemes and plans for the benefit of employees. The nature of the principal schemes and plans, including general conditions, is set out below:

Long-Term Incentive Plan (LTIP)

The LTIP is a share plan under which an award over a capped number of shares will vest after the end of a three-year performance period if performance conditions are met. LTIP awards are made to selected senior executives, including the Executive Directors.

LTIP performance conditions

Each performance condition has a threshold below which no shares vest and a maximum performance target at or above which the award vests in full. For performance between 'threshold' and 'maximum', awards vest on a straight-line sliding scale. The performance conditions are assessed separately so performance on one condition does not affect the vesting of the other elements of the award. To the extent that the performance targets are not met over the three-year performance period, awards will lapse. There is no re-testing of the performance conditions.

LTIP awards have performance conditions relating to underlying revenue growth, growth in headline EPS, ROCE and cash conversion.

Smiths Share Matching Plan (SMP)

Under the scheme, participants were required to invest between 25% and 50% of their post-tax bonus to purchase the Company's shares at the prevailing market price. Matching shares granted in October 2015 vested during the year at a rate correlating to the performance of the Group LTIP issued for the same performance period. There are no SMP awards outstanding at 31 July 2019 and no future awards will be made under the SMP.

Smiths Excellence Plan (SEP)

In September 2016, the Smiths Excellence plan (SEP) was introduced. The SEP is designed to reinforce value creation over the medium term by focusing on specific objectives in key areas of operational performance. Awards vest after two years, depending on performance on the operational objectives during the first year and continued employment with the Group. There is no re-testing of performance. However, the Remuneration Committee has discretion to adjust vesting rates if material misstatements in reported performance are subsequently identified and awards are subject to clawback provisions in the event of misconduct.

Directors are not eligible to participate in the SEP.

Restricted stock

Restricted stock is used by the Remuneration Committee, as a part of the recruitment strategy, to make awards in recognition of incentive arrangements forfeited on leaving a previous employer. If an award is considered appropriate, the award will take account of relevant factors including the fair value of awards forfeited, any performance conditions attached, the likelihood of those conditions being met and the proportion of the vesting period remaining.

	Long-term incentive plans	SMP	SEP	Restricted stock	Save as you earn scheme	Total	Weighted average exercise price £
Ordinary shares under option ('000)							
31 July 2017	3,798	926	748	205	1,110	6,787	£1.64
Granted	1,600		857	283	268	3,008	£1.07
Exercised	(444)	(424)	(55)	(178)	(298)	(1,399)	£2.12
Lapsed	(1,043)	(89)	(191)	(6)	(118)	(1,447)	£0.86
31 July 2018	3,911	413	1,359	304	962	6,949	£1.46
Granted	1,602		928	24	315	2,869	£1.30
Exercised	(406)	(331)	(379)	(79)	(193)	(1,388)	£1.27
Lapsed	(1,215)	(82)	(621)	(57)	(72)	(2,047)	£0.41
31 July 2019	**3,892**		**1,287**	**192**	**1,012**	**6,383**	**£1.77**

Options and awards were exercised on an irregular basis during the period. The average closing share price over the financial year was 1,479.21p (FY2018: 1,589.60p). There has been no change to the effective option price of any of the outstanding options during the period.

Range of exercise prices	**Total shares under option at 31 July 2019 ('000)**	**Weighted average remaining contractual life at 31 July 2019 (months)**	Total shares under option at 31 July 2018 ('000)	Weighted average remaining contractual life at 31 July 2018 (months)	**Options exercisable at 31 July 2019 ('000)**	**Exercisable weighted average exercise price for options exercisable at 31 July 2019**	Options exercisable at 31 July 2018 ('000)	Exercisable weighted average exercise price for options exercisable at 31 July 2018
£0.00 – £2.00	5,370	15	5,986	13	n/a	n/a	n/a	n/a
£6.01 – £10.00	312	10	504	17	n/a	n/a	n/a	n/a
£10.01 – £14.00	700	36	459	40	n/a	n/a	n/a	n/a

For the purposes of valuing options to arrive at the share-based payment charge, the binomial option-pricing model has been used. The key assumptions used in the models for 2019 and 2018 are volatility of 25% to 20% (FY2018: 25% to 20%) and dividend yield of 3% (FY2018: 3%), based on historical data, for the period corresponding with the vesting period of the option. These generated a weighted average fair value for SEP of £14.48 (FY2018: £14.87), LTIP of £14.52 (FY2018: £13.48), and restricted stock of £13.43 (FY2018: £12.73).

Included within staff costs is an expense arising from share-based payment transactions of £15m (FY2018: £16m), of which £14m (FY2018: £14m) relates to equity-settled share-based payment.

10 INTANGIBLE ASSETS

	Goodwill £m	Development costs £m	Acquired intangibles (see table below) £m	Software, patents and intellectual property £m	Total £m
Cost					
At 31 July 2017	1,658	330	574	206	2,768
Exchange adjustments	1	1	1	1	4
Business combinations (note 26)	46		29	1	76
Additions		29		11	40
Disposals				(11)	(11)
Business disposals (note 28)	(1)		(22)	(1)	(24)
At 31 July 2018	**1,704**	**360**	**582**	**207**	**2,853**
Exchange adjustments	110	24	47	9	190
Business combinations (note 26)	127		148		275
Additions		30		12	42
Disposals				(7)	(7)
Business disposals (note 27)	(7)				(7)
Reclassified to assets held for distribution to owners (note 27)	(622)	(270)	(212)	(50)	(1,154)
At 31 July 2019	**1,312**	**144**	**565**	**171**	**2,192**
Amortisation and impairments					
At 31 July 2017	88	180	324	161	753
Exchange adjustments		1		1	2
Charge for the year		24	29	18	71
Disposals				(11)	(11)
Business disposals (note 28)			(22)	(1)	(23)
At 31 July 2018	88	205	331	168	792
Exchange adjustments	5	14	24	6	49
Charge for the year		23	45	13	81
Disposals				(6)	(6)
Reclassified to assets held for distribution to owners (note 27)	(27)	(143)	(195)	(43)	(408)
At 31 July 2019	**66**	**99**	**205**	**138**	**508**
Net book value at 31 July 2019	**1,246**	**45**	**360**	**33**	**1,684**
Net book value at 31 July 2018	1,616	155	251	39	2,061
Net book value at 31 July 2017	1,570	150	250	45	2,015

In addition to goodwill, the acquired intangible assets comprise:

	Patents, licences and trademarks £m	Technology £m	Customer relationships £m	Total acquired intangibles £m
Cost				
At 31 July 2017	57	211	306	574
Exchange adjustments		1		1
Business combinations (note 26)		2	27	29
Business disposals (note 28)			(22)	(22)
At 31 July 2018	**57**	**214**	**311**	**582**
Exchange adjustments	4	16	27	47
Business combinations (note 26)	13		135	148
Reclassified to assets held for distribution to owners (note 27)	(59)	(90)	(63)	(212)
At 31 July 2019	**15**	**140**	**410**	**565**
Amortisation				
At 31 July 2017	36	110	178	324
Charge for the year	3	11	15	29
Business disposals (note 28)			(22)	(22)
At 31 July 2018	**39**	**121**	**171**	**331**
Exchange adjustments	3	10	11	24
Charge for the year	3	12	30	45
Reclassified to assets held for distribution to owners (note 27)	(42)	(90)	(63)	(195)
At 31 July 2019	**3**	**53**	**149**	**205**
Net book value at 31 July 2019	**12**	**87**	**261**	**360**
Net book value at 31 July 2018	18	93	140	251
Net book value at 31 July 2017	21	101	128	250

Individually material intangible assets comprise £132m of customer related intangibles attributable to United Flexible (remaining amortisation period: 7 years) and £105m of customer relationship intangibles attributable to Morpho Detection (remaining amortisation period: 13 years).

11 IMPAIRMENT TESTING

Goodwill

Goodwill is tested for impairment at least annually or when there is an indication that the carrying value may not be recoverable.

Recoverable amount is determined by value in use or fair value less cost to sell calculations for each group of cash generating units (CGU) that goodwill is allocated to.

Value in use is calculated as the net present value of the projected risk-adjusted cash-flows of the CGU. These forecast cash-flows are based on the 2019 budget, the five-year strategic plan approved by the Board and detailed divisional strategic projections, where these have been prepared and approved by the Board.

Fair value less cost to sell is calculated using available information on past and expected future profitability, valuation multiples for comparable quoted companies and similar transactions (adjusted as required for significant differences) and information on costs of similar transactions. Fair value less costs to sell models are used when trading projections in the strategic plan cannot be adjusted to eliminate the impact of a major restructuring.

Goodwill is allocated by division as follows:

	2019 £m	2019 Number of CGUs	2018 £m	2018 Number of CGUs
John Crane	140	1	133	1
Smiths Detection	673	1	642	1
Flex-Tek	171	1	35	2
Smiths Interconnect	261	1	243	2
Smiths Medical - reclassified as an asset held for distribution at 31 July 2019 (note 27)		1	563	1
	1,245	**5**	**1,616**	**7**

Flex-Tek acquired United Flexible in February 2019 and a single management team was in place covering Flex-Tek and United Flexible. The integration of the two businesses since the acquisition date has progressed well and is such that they are considered to be a single CGU for impairment testing.

Impairment testing assumptions

The key assumptions used in value in use calculations are:

- Sales: projected sales are built up with reference to markets and product categories. They incorporate past performance, historical growth rates and projections of developments in key markets;
- Margins: projected margins reflect historical performance and the impact of all completed projects to improve operational efficiency and leverage scale. The projections do not include the impact of future restructuring projects to which the Group is not yet committed;
- Discount rate: the discount rates have been calculated based on the Group's weighted average cost of capital and risks specific to the CGU being tested. Pre-tax rates of 9.9% to 13.9% (FY2018: 12.0% to 14.9%) have been used for the impairment testing; and
- Long-term growth rates: as required by IAS 36, growth rates for the period after the detailed forecasts are based on the long-term GDP projections of the primary market for the CGU. The average growth rate used in the testing was 2.0% (FY2018: 2.0%). These rates do not reflect the long-term assumptions used by the Group for investment planning.

The assumptions used in the impairment testing of CGUs with significant goodwill balances are as follows:

	Year ended 31 July 2019				
	John Crane	**Smiths Detection**	**Flex-Tek**	**Smiths Interconnect**	**Smiths Medical**
Net book value of goodwill (£m)	140	673	171	261	595
Basis of valuation	**Value in use**	**Value in use**	**Value in use**	**Value in use**	**Value in use**
Discount rate (pre-tax)	13.9%	11.2%	11.3%	12.6%	9.9%
Period covered by management projections	5 years	5 years	5 years	5 years	5 years
Long-term growth rates	2.1%	2.1%	1.8%	1.8%	1.8%

	Year ended 31 July 2018				
	John Crane	Smiths Detection	Smiths Interconnect		Smiths Medical
			Microwave Subsystems	Connectors and Components	
Net book value of goodwill (£m)	133	642	75	168	563
Basis of valuation	Value in use	Value in use	Value in use	Value in use	Value in use
Discount rate (pre-tax)	14.0%	13.5%	12.4%	14.9%	12.0%
Period covered by management projections	5 years	5 years	5 years	5 years	5 years
Long-term growth rates	2.2%	1.8%	2.0%	2.0%	1.9%

Goodwill impairment

No impairment charges have been incurred (FY2018: £nil).

Other intangible assets

The Group has no indefinite life intangible assets other than goodwill. During the year, impairment tests were carried out for capitalised development costs that have not yet started to be amortised and acquired intangibles where there were indications of impairment. Value in use calculations were used to determine the recoverable values of these assets.

No impairment charges have been incurred (FY2018: £nil).

12 PROPERTY, PLANT AND EQUIPMENT

	Land and buildings £m	Plant and machinery £m	Fixtures, fittings, tools and equipment £m	Total £m
Cost or valuation				
At 31 July 2017	204	635	209	1,048
Exchange adjustments		1	(1)	
Business combinations (note 26)	2	1		3
Additions	8	47	13	68
Disposals	(6)	(28)	(24)	(58)
Business disposals (note 28)	(1)	(19)	(3)	(23)
At 31 July 2018	**207**	**637**	**194**	**1,038**
Exchange adjustments	14	41	4	59
Business combinations (note 26)	3	8		11
Additions	7	57	15	79
Disposals	(2)	(38)	(17)	(57)
Reclassified to assets held for distribution to owners (note 27)	(43)	(309)	(58)	(410)
At 31 July 2019	**186**	**396**	**138**	**720**
Depreciation				
At 31 July 2017	107	461	165	733
Exchange adjustments		1	(1)	
Charge for the year	7	35	13	55
Disposals	(6)	(24)	(23)	(53)
Business disposals (note 28)	(1)	(14)	(2)	(17)
At 31 July 2018	**107**	**459**	**152**	**718**
Exchange adjustments	6	31	2	39
Charge for the year	10	33	13	56
Disposals		(36)	(14)	(50)
Reclassified to assets held for distribution to owners (note 27)	(19)	(216)	(40)	(275)
At 31 July 2019	**104**	**271**	**113**	**488**
Net book value at 31 July 2019	**82**	**125**	**25**	**232**
Net book value at 31 July 2018	100	178	42	320
Net book value at 31 July 2017	97	174	44	315

13 INVENTORIES

	31 July 2019 £m	31 July 2018 £m
Inventories comprise		
Raw materials and consumables	146	149
Work in progress	111	94
Finished goods	160	223
	417	**466**

Note: Smiths Medical is classified as held for distribution to owners in the current year, the prior year comparatives have not been restated.

The Group consumed £1,440m (FY2018: £1,424m) of inventories during the period. In the year to 31 July 2019, £21m (FY2018: £13m) was charged for the write-down of inventory and £8m (FY2018: £7m) was released from inventory provisions no longer required.

Inventory provisioning

	31 July 2019 £m	31 July 2018 £m
Gross inventory carried at full value	**357**	**391**
Gross value of inventory partly or fully provided for	111	129
	468	**520**
Inventory provision	(51)	(54)
Inventory after provisions	**417**	**466**

14 TRADE AND OTHER RECEIVABLES

	31 July 2019 £m	31 July 2018 restated* £m
Non-current		
Trade receivables	1	1
Contract assets	45	45
Other receivables	6	11
	52	**57**
Current		
Trade receivables	574	564
Prepayments	25	31
Contract assets	125	103
Other receivables	40	35
	764	**733**

* The comparatives for 31 July 2018 have been represented to reflect the adoption of IFRS 15. Note: Smiths Medical is classified as held for distribution to owners in the current year, the prior year comparatives have not been restated.

Trade receivables do not carry interest. Management considers that the carrying value of trade and other receivables approximates to the fair value. Trade and other receivables, including prepayments, accrued income and other receivables qualifying as financial instruments are classified as 'loans and receivables'. The maximum credit exposure arising from these financial assets is £713m (FY2018: £688m).

Trade receivables are disclosed net of provisions for bad and doubtful debts. The provisions for bad and doubtful debts are based on specific risk assessment and reference to past default experience.

Contract assets comprise balances not yet due on contracts, where revenue recognition does not align with the agreed payment schedule. The main movements in the year arise from increases in contract asset balances of £22m (2018: £19m) due to £8m of foreign currency translation gains and an increase of £9m in Interconnect's receivables.

Credit risk is managed separately for each customer and, where appropriate, a credit limit is set for the customer based on previous experience of the customer and third party credit ratings. The Group has no significant concentration of credit risk, with exposure spread over a large number of customers. The largest single customer is the US Federal Government, representing 6% (FY2018: less than 5%) of Group revenue.

Ageing of trade receivables

	31 July 2019 £m	31 July 2018 £m
Trade receivables which are not impaired and not yet due	553	566
Trade receivables which are not impaired and less than three months overdue	93	97
Trade receivables which are not impaired and more than three months overdue	38	27
Gross value of partially and fully provided receivables	26	43
	710	**733**
Provision for bad and doubtful debts	(24)	(32)
Trade receivables	**686**	**701**

15 TRADE AND OTHER PAYABLES

	31 July 2019 £m	31 July 2018 restated* £m
Non-current		
Other payables	15	14
Contract liabilities	15	13
	30	**27**
Current		
Trade payables	221	244
Other payables	12	23
Other taxation and social security costs	19	22
Accruals	201	185
Contract liabilities	116	132
	569	**606**

* The comparatives for 31 July 2018 have been represented to reflect the adoption of IFRS 15. Note: Smiths Medical is classified as held for distribution to owners in the current year, the prior year comparatives have not been restated.

Trade and other payables, including accrued expenses and other payables qualifying as financial instruments, are accounted for at amortised cost and are categorised as other financial liabilities.

Contract liabilities include deferred income balances of £131m (2018: £104m) in respect of payments being made in advance of the revenue recognition and balances of £nil (2018: £41m) relating to amounts deferred under variable consideration agreements. The movement in the year arises primarily from the liabilities of the Smiths Medical division being classified as held for distribution (see note 27) and movements in the long term contracts of the Smiths Detection division.

16 FINANCIAL ASSETS

At 31 July 2019, £13m (FY2018: £13m) was held on deposit with banks as security for liabilities or letters of credit.

The remaining balance of financial assets relate to the Group's investments in early stage businesses that are developing or commercialising related technology.

17 BORROWINGS AND NET DEBT

This note sets out the calculation of net debt, an important measure in explaining our financing position. The net debt figure includes accrued interest and fair value adjustments relating to hedge accounting.

	31 July 2019 £m	31 July 2018 £m
Cash and cash equivalents		
Net cash and deposits	**289**	**717**
Short-term borrowings		
$250m 7.20% US$ Guaranteed notes 2019		(190)
Bank and other loans		(1)
Interest accrual	(9)	(12)
	(9)	**(203)**
Long-term borrowings		
$400m 3.625% US$ Guaranteed notes 2022	(329)	(298)
€600m 1.25% Eurobond 2023	(564)	(533)
€650m 2.00% Eurobond 2027	(607)	(575)
Bank and other loans		(1)
	(1,500)	**(1,407)**
Borrowings	**(1,509)**	**(1,610)**
Net debt	**(1,220)**	**(893)**

Cash and cash equivalents include highly liquid investments with maturities of three months or less. Borrowings are accounted for at amortised cost and are categorised as other financial liabilities. See note 18 for a maturity analysis of borrowings. Interest of £36m (FY2018: £42m) was charged to the consolidated income statement in this period in respect of public bonds.

Secured loans

Loans amounting to £nil (FY2018: £2m) were secured on plant and equipment with a book value of £nil (FY2018: £3m).

Cash and cash equivalents

	31 July 2019 £m	31 July 2018 £m
Cash at bank and in hand	153	287
Short-term deposits	136	430
Cash and cash equivalents	**289**	**717**

Netting

Cash and overdraft balances in interest compensation cash pooling systems are reported gross on the balance sheet. The cash pooling agreements incorporate a legally enforceable right of net settlement. However, as there is no intention to settle the balances net, these arrangements do not qualify for net presentation. At 31 July 2019 the total value of overdrafts on accounts in interest compensation cash pooling systems was £nil (FY2018: £nil). The balances held in zero balancing cash pooling arrangements have daily settlement of balances. Therefore netting is not relevant.

Movements in assets/(liabilities) arising from financing activities

	Changes in net debt				Changes in other financing items			
	Net cash and cash equivalents £m	Other short-term borrowings £m	Long-term borrowings £m	**Net debt £m**	Interest rate & cross-currency swaps £m	Foreign exchange contracts £m	**Other financing items £m**	**Total liabilities from financing activities £m**
At 31 July 2018	717	(203)	(1,407)	(893)	43	4	47	(846)
Foreign exchange gains and losses	10	(4)	(47)	(41)		5,733	5,733	5,692
Net cash outflow	(218)			(218)	(30)	(5,733)	(5,763)	(5,981)
Repayment of borrowings	(194)	194						
Capitalisation, interest accruals and unwind of capitalised fees		2	(1)	1	30		30	31
Fair value movement from interest rate hedging			(46)	(46)				(46)
Revaluation of derivative contracts					2	(1)	1	1
Reclassified to asset/liability held for distribution to owners	(26)	2	1	(23)		(4)	(4)	(27)
At 31 July 2019	**289**	**(9)**	**(1,500)**	**(1,220)**	**45**	**(1)**	**44**	**(1,176)**

Change of control

The Company has in place credit facility agreements under which a change in control would trigger prepayment clauses. The Company also has bonds in issue, the terms of which would allow bondholders to exercise put options and require the Company to buy back the bonds at their principal amount plus interest if a rating downgrade occurs at the same time as a change of control takes effect.

18 FINANCIAL RISK MANAGEMENT

The Group's international operations and debt financing expose it to financial risks which include the effects of changes in foreign exchange rates, changes in debt market prices, interest rates, credit risks and liquidity risks. The management of operational credit risk is discussed in note 14.

Treasury Risk Management Policy

The Board maintains a Treasury Risk Management Policy, which governs the treasury operations of the Group and its subsidiary companies and the consolidated financial risk profile to be maintained. A report on treasury activities, financial metrics and compliance with the Policy is prepared monthly. This is circulated to the Chief Financial Officer each month and key elements to the Audit and Risk Committee on a semi-annual basis.

The Policy maintains a treasury control framework within which counterparty risk, financing and debt strategy, cash and liquidity, interest rate risk and currency translation management are reserved for Group Treasury, while currency transaction management is devolved to operating divisions.

Centrally directed cash management systems exist globally to manage overall liquid resources efficiently across the divisions. The Group uses financial instruments to raise financing for its global operations, to manage related interest rate and currency financial risk, and to hedge transaction risk within subsidiary companies.

The Group does not speculate in financial instruments. All financial instruments hedge existing business exposures and all are recognised on the balance sheet.

The Policy defines four treasury risk components and for each component a set of financial metrics to be measured and reported monthly compared against pre-agreed objectives.

Credit quality

The Group's strategy is to maintain a solid investment-grade rating to ensure access to the widest possible sources of financing at the right time and to minimise the resulting cost of debt capital. The credit ratings at the end of July 2019 were BBB+ / Baa2 (both stable) from Standard & Poor's and Moody's respectively. An essential element of an investment-grade rating is consistent and robust cash-flow metrics. The Group's objective is to maintain a net debt/headline EBITDA ratio at two times or lower over the medium term. Capital management is discussed in more detail in note 25.

Debt and interest rate

The Group's risk management objectives are to ensure that the majority of funding is drawn from the public debt markets, the average maturity profile of gross debt is at or greater than three years, and between 40-60% of gross debt is at fixed rates. At 31 July 2019 these measures were 100% (FY2018: 100%), 5.2 years (FY2018: 5.5 years) and 48% (FY2018: 55%)

The Group remains in full compliance with all covenants within its external debt agreements. Interest rate risk management is discussed in note 18(b).

Liquidity management

The Group's objective is to ensure that at any time undrawn committed facilities, net of short-term overdraft financing, are at least £300m and that committed facilities have at least 12 months to run until maturity. At 31 July 2019, these measures were £655m (FY2018: £609m) and 51 months (FY2018: 51 months). At 31 July 2019, net cash resources were £289m (FY2018: £717m). Liquidity risk management is discussed in note 18(d).

Currency management

The Group is an international business with the majority of its net assets denominated in foreign currency. We protect our balance sheet and reserves from adverse foreign exchange movements by financing our foreign currency assets where appropriate in the same currency. The Group's objective for managing transaction currency exposure is to reduce medium-term volatility to cash-flow, margins and earnings. Foreign exchange risk management is discussed in note 18(a) below.

(a) Foreign exchange risk

Transactional currency exposure

The Group is exposed to foreign currency risks arising from sales or purchases by businesses in currencies other than their functional currency. It is Group policy that, when the net foreign exchange exposure to known future sales and purchases is material, this exposure is hedged using forward foreign exchange contracts. The net exposure is calculated by adjusting the expected cash-flow for payments or receipts in the same currency linked to the sale or purchase. This policy minimises the risk that the profits generated from the transaction will be affected by foreign exchange movements which occur after the price has been determined. Hedge accounting documentation and effectiveness testing are only undertaken if it is cost effective.

The following table shows the currency of financial instruments. It excludes loans and derivatives designated as net investment hedges.

					At 31 July 2019
	Sterling £m	US$ £m	Euro £m	Other £m	Total £m
Financial assets and liabilities					
Financial instruments included in trade and other receivables	35	380	130	168	713
Financial instruments included in trade and other payables	(47)	(204)	(70)	(73)	(394)
Cash and cash equivalents	27	150	23	89	289
	15	326	83	184	608
Exclude balances held in operations with the same functional currency	(15)	(155)	(75)	(177)	(422)
Exposure arising from intra-group loans		(11)	55	(41)	3
Forward foreign exchange contracts	(17)	(149)	(19)	185	
	(17)	**11**	**44**	**151**	**189**

	At 31 July 2018				
	Sterling £m	US$ £m	Euro £m	Other £m	Total £m
Financial assets and liabilities					
Financial instruments included in trade and other receivables	42	375	106	165	688
Financial instruments included in trade and other payables	(49)	(237)	(77)	(78)	(441)
Cash and cash equivalents	53	444	58	162	717
Cross currency swaps (not hedge accounted)		(242)	267		25
Borrowings not designated as net investment hedges	(1)	(2)	(271)	(2)	(276)
	45	338	83	247	713
Exclude balances held in operations with the same functional currency	(40)	(195)	(63)	(227)	(525)
Exposure arising from intra-group loans		(307)	(65)	(38)	(410)
Forward foreign exchange contracts	(100)	(6)	41	65	
	(95)	**(170)**	**(4)**	**47**	**(222)**

Financial instruments included in trade and other receivables comprise trade receivables, accrued income and other receivables which qualify as financial instruments. Similarly, financial instruments included in trade and other payables comprise trade payables, accrued expenses and other payables that qualify as financial instruments.

Based on the assets and liabilities held at the year-end, if the specified currencies were to strengthen 10% while all other market rates remained constant, the change in the fair value of financial instruments not designated as net investment hedges would have the following effect:

	Impact on profit for the year 31 July 2019 £m	**Gain/(loss) recognised in reserves 31 July 2019 £m**	Impact on profit for the year 31 July 2018 £m	Gain/(loss) recognised in reserves 31 July 2018 £m
US dollar	(10)	3	19	(4)
Euro	(3)	(1)	(1)	2
Sterling	10	(2)	(32)	(6)

These sensitivities were calculated before adjusting for tax and exclude the effect of quasi-equity intra-group loans.

Cash-flow hedging

The Group uses forward foreign exchange contracts to hedge future foreign currency sales and purchases. At 31 July 2019, contracts with a nominal value of £54m (FY2018: £385m) were designated as hedging instruments. In addition, the Group had outstanding foreign currency contracts with a nominal value of £431m (FY2018: £275m) which were being used to manage transactional foreign exchange exposures, but were not accounted for as cash-flow hedges. The fair value of the contracts is disclosed in note 19.

The majority of hedged transactions will be recognised in the consolidated income statement in the same period that the cash-flows are expected to occur, with the only differences arising because of normal commercial credit terms on sales and purchases. It is the Group's policy to hedge 80% of certain exposures for the next two years and 50% of highly probable exposures for the next 12 months.

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument. The foreign exchange forward contracts have similar critical terms to the hedged items, such as the notional amounts and maturities. Therefore, there is an economic relationship and the hedge ratio is established as 1:1.

The main sources of hedge ineffectiveness in these hedging relationships is the effect of the counterparty and the Group's own credit risk on the fair value of the foreign exchange forward contracts, which is not reflected in the fair value of the hedged item attributable to changes in foreign exchange rates and the risk of over-hedging where the hedge relationship requires re-balancing. No other sources of ineffectiveness emerged from these hedging relationships. Any hedge ineffectiveness is recognised immediately in the income statement in the period that it occurs. Of the foreign exchange contracts designated as hedging instruments, 100% are for periods of 12 months or less (FY2018: 81%).

The following table presents a reconciliation by risk category of the cash flow hedge reserve and analysis of other comprehensive income in relation to hedge accounting:

		Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Brought forward cash-flow hedge reserve at start of year		2	1
Foreign exchange forward contracts:	Net fair value gains on effective hedges	2	2
	Amount reclassified to income statement – revenue	(2)	1
	Amount reclassified to income statement – cost of sales	(2)	(2)
Carried forward cash-flow hedge reserve at end of year			**2**

The following tables set out information regarding the change in value of the hedged item used in calculating hedge ineffectiveness as well as the impacts on the cash-flow hedge reserve:

					Cash-flow hedge reserve	
Hedged item	**Hedged exposure**	**Hedging instrument**	**Changes in value of the hedged item for calculating ineffectiveness £m**	**Changes in value of the hedging instrument for calculating ineffectiveness £m**	**Continued hedges £m**	**Discontinued hedges £m**
Sales and purchases	Foreign currency risk	Foreign exchange contracts	2	(2)		

Cash-flow hedges generated £nil of ineffectiveness in FY2019 which was recognised in the income statement through finance costs.

Translational currency exposure

The Group has significant investments in overseas operations, particularly in the United States and Europe. As a result, the sterling value of the Group's balance sheet can be significantly affected by movements in exchange rates. The Group seeks to mitigate the effect of these translational currency exposures by matching the net investment in overseas operations with borrowings denominated in their functional currencies, except where significant adverse interest differentials or other factors would render the cost of such hedging activity uneconomic. This is achieved by borrowing primarily in the relevant currency or in some cases indirectly using cross-currency swaps.

Net investment hedges

The table below sets out the currency of loans and swap contracts designated as net investment hedges:

	At 31 July 2019			At 31 July 2018				
	US$ £m	**Euro £m**	**Total £m**	Sterling £m	US$ £m	Euro £m	Other £m	Total £m
Loans designated as net investment hedges	(325)	(854)	(1,179)		(491)	(836)		(1,327)
Cross-currency swap	(613)	364	(249)		(329)	357		28
Currency swap contracts				110			(110)	
	(938)	**(490)**	**(1,428)**	**110**	**(820)**	**(479)**	**(110)**	**(1,299)**

At 31 July 2019, cross-currency swaps hedged the Group's exposure to US dollars and Euros (31 July 2018: US dollars and Euros). All the cross-currency swaps designated as net investment hedges are non-current (FY2018: non-current).

Swaps generating £353m of the US dollar exposure (FY2018: £329m) will mature in April 2023 and swaps generating £260m of the US dollar exposure (FY2018: £nil) will mature in February 2027.

In addition, non-swapped borrowings were also used to hedge the Group's exposure to US dollars and euros (31 July 2018 US dollars and euros). Borrowings generating £325m of the US dollar exposure (FY2018: £302m April 2023 and £189m May 2019) will mature in April 2023. Borrowings generating £543m of the euro exposure (FY2018: £531m) will mature in April 2023 and borrowings generating £312m of the euro exposure (FY2018: £305m) will mature in February 2027.

In the prior year swap contracts hedged the Group's exposure to Canadian dollars, Japanese yen and Chinese renminbi. All these currency swap contracts designated as net investment hedges in the prior year were current.

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument. The swaps and borrowings have the same notional amount to the hedged items and therefore, there is an economic relationship with the hedge ratio established as 1:1.

The main sources of hedge ineffectiveness in these hedging relationships is the effect of the counterparty and the Group's own credit risk on the fair value of the cross-currency swaps and cross-currency basis risk which are not reflected in the fair value of the hedged item. No other sources of ineffectiveness emerged from these hedging relationships. Any hedge ineffectiveness is recognised immediately in the income statement in the period that it occurs.

The following table presents a reconciliation by risk category of the net investment hedge reserve and analysis of other comprehensive income in relation to hedge accounting:

		Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Brought forward net investment hedge reserve at start of year		(304)	(291)
Cross-currency swaps	Net fair value losses on effective hedges	(35)	(7)
Bonds	Net fair value losses on effective hedges	(44)	(1)
Amounts removed from the hedge reserve and recognised in the income statement	Profit/(loss) on business disposal		(5)
Carried forward net investment hedge reserve at end of year		**(383)**	**(304)**

The following table sets out information regarding the change in value of the hedged item used in calculating hedge ineffectiveness as well as the impacts on the net investment hedge reserve as at 31 July 2019:

					Net investment hedge reserve	
Hedged item	**Hedged exposure**	**Hedging instrument**	**Changes in value of the hedged item for calculating ineffectiveness £m**	**Changes in value of the hedging instrument for calculating ineffectiveness £m**	**Continued hedges £m**	**Discontinued hedges £m**
Overseas operation	Foreign currency risk	Forward contracts		(1)		
Overseas operation	Foreign currency risk	Cross-currency swaps	35	(37)	(35)	
Overseas operation	Foreign currency risk	Bonds	44	(44)	(44)	
			79	**(82)**	**(79)**	

Net investment hedges generated £1m of ineffectiveness in FY2019 which was recognised in the income statement through finance costs.

The fair values of these net investment hedges are subject to exchange rate movements. Based on the hedging instruments in place at the year-end, if the specified currencies were to strengthen 10% while all other market rates remained constant, it would have the following effect:

	Loss recognised in hedge reserve 31 July 2019 £m	Loss recognised in hedge reserve 31 July 2018 £m
US dollar	104	91
Euro	54	53

These movements would be fully offset by an opposite movement on the retranslation of the net assets of the overseas subsidiaries. These sensitivities were calculated before adjusting for tax.

(b) Interest rate risk

The Group operates an interest rate policy designed to optimise interest cost and reduce volatility in reported earnings. The Group's current policy is to require interest rates to be fixed within a band of between 40% and 60 % of the level of gross debt. This is achieved through fixed rate borrowings and interest rate swaps. At 31 July 2019, 48% (FY2018: 55%) of the Group's gross borrowings were at fixed interest rates, after adjusting for interest rate swaps and the impact of short maturity derivatives designated as net investment hedges.

The Group monitors its fixed rate risk profile against both gross and net debt. For medium-term planning, it now focuses on gross debt to eliminate the fluctuations of variable cash levels over the cycle. The weighted average interest rate on borrowings and cross-currency swaps at 31 July 2019, after interest rate swaps, is 3.22% (FY2018: 3.69%).

Interest rate profile of financial assets and liabilities and the fair value of borrowings

The following table shows the interest rate risk exposure of investments, cash and borrowings, with the borrowings adjusted for the impact of interest rate hedging. The other financial assets and liabilities do not earn or bear interest and for all financial instruments except for borrowings the carrying value is not materially different from their fair value.

	At fair value through profit or loss 31 July 2019 £m	**Cash and cash equivalents 31 July 2019 £m**	**Borrowings 31 July 2019 £m**	**Fair value of borrowings 31 July 2019 £m**	Available for sale investments 31 July 2018 £m	Cash and cash equivalents 31 July 2018 £m	Borrowings 31 July 2018 £m	Fair value of borrowings 31 July 2018 £m
Fixed interest								
Less than one year							(190)	(196)
Between one and five years			(384)	(391)			(365)	(368)
Greater than five years			(314)	(342)			(307)	(314)
Total fixed interest financial liabilities			**(698)**	**(733)**			**(862)**	**(878)**
Floating rate interest financial assets/(liabilities)	6	238	(811)	(811)	4	657	(748)	(758)
Total interest-bearing financial assets/(liabilities)	**6**	**238**	**(1,509)**	**(1,544)**	4	657	**(1,610)**	**(1,636)**
Non-interest-bearing assets in the same category	13	51			14	60		
Total	**19**	**289**	**(1,509)**	**(1,544)**	18	717	**(1,610)**	**(1,636)**

Interest rate hedging

The Group also has exposures to the fair values of non-derivative financial instruments such as EUR and USD fixed rate borrowings. To manage the risk of changes in these fair values, the Group has entered into fixed-to-floating interest rate swap and cross-currency interest rate swaps which for accounting purposes are designated as fair value hedges.

At 31 July 2019 and 31 July 2018, the Group had designated the following hedges against variability in the fair value of borrowings arising from fluctuations in base rates:

- USD150m interest rate swap which matures on 12 October 2022 partially hedging the USD 2022 Guaranteed notes; and
- €400m of the fixed/floating element of EUR/USD interest rate swaps maturing on 28 April 2023 partially hedging the € 2023 Eurobond.

Additionally at 31 July 2019 the Group designated the following hedge against variability in the fair value of borrowings arising from fluctuations in base rates:

- €300m of the fixed/floating and € exchange exposure of EUR/USD interest rate swaps maturing on 23 February 2027 partially hedging the € 2027 Eurobond.

The fair values of the hedging instruments are disclosed in note 19. The effect of the swaps is to convert £761m (FY2018: £471m) debt from fixed rate to floating rate. The swaps have similar critical terms to the hedged items, such as the reference rate, reset dates, notional amounts, payment dates and maturities. Therefore, there is an economic relationship and the hedge ratio is established as 1:1. Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic prospective effectiveness assessments to ensure that an economic relationship exists between the hedged item and hedging instrument.

The main sources of hedge ineffectiveness in these hedging relationships is the effect of the counterparty and the Group's own credit risk on the fair value of the cross-currency and interest rate swaps and currency basis risk on cross-currency interest rate swaps which are not reflected in the fair value of the hedged item. No other sources of ineffectiveness emerged from these hedging relationships. Any hedge ineffectiveness is recognised immediately in the income statement in the period that it occurs.

The following table sets out the details of the hedged exposures covered by the Group's fair value hedges:

Hedged item	Hedged exposure	Changes in value of hedged item for calculating ineffectiveness £m	Changes in value of the hedging instrument for calculating ineffectiveness £m	Carrying amount Assets £m	Carrying amount Liabilities £m	Accumulated fair value adjustments on hedged item Assets £m	Accumulated fair value adjustments on hedged item Liabilities £m
Fixed rate bonds (a)	Interest rate risk	8	(5)		123		2
Fixed rate bonds (a)	Interest rate and currency rate risk	44	(37)		638		39
		52	**(42)**		**761**		**41**

(a) Classified as borrowings

Fair value hedges generated £10m of ineffectiveness in FY2019 which was recognised in the income statement through finance costs.

Sensitivity of interest charges to interest rate movements

The Group has exposure to sterling, US dollar and euro interest rates. However, the Group does not have a significant exposure to interest rate movements for any individual currency. Based on the composition of net debt and investments at 31 July 2019, and taking into consideration all fixed rate borrowings and interest rate swaps in place, a one percentage point (100 basis points) change in average floating interest rates for all three currencies would have less than £5m impact (FY2018: £3m impact) on the Group's profit before tax.

(c) Financial credit risk

The Group is exposed to credit-related losses in the event of non-performance by counterparties to financial instruments, but does not currently expect any counterparties to fail to meet their obligations. Credit risk is mitigated by the Board-approved policy of only placing cash deposits with highly rated relationship bank counterparties within counterparty limits established by reference to their Standard & Poor's long-term debt rating. In the normal course of business, the Group operates cash pooling systems, where a legal right of set-off applies.

The maximum credit risk exposure in the event of other parties failing to perform their obligations under financial assets, excluding trade and other receivables and derivatives, totals £308m at 31 July 2019 (FY2018: £735m).

	31 July 2019 £m	31 July 2018 £m
Cash in AAA liquidity funds	85	200
Cash at banks with at least a AA- credit rating	97	306
Cash at banks with all other A credit ratings	97	74
Cash at other banks	10	137
Investments in bank deposits	13	13
Other investments	6	5
	308	**735**

At 31 July 2019, the maximum exposure with a single bank for deposits and cash is £179m (FY2018: £127m), whilst the maximum mark to market exposure with a single bank for derivatives is £17m (FY2018: £17m). These banks have A+ and AA- credit ratings respectively (FY2018: Both AA-).

(d) Liquidity risk

Borrowing facilities

The Board policy specifies the maintenance of unused committed credit facilities of at least £300m at all times to ensure it has sufficient available funds for operations and planned development, which is provided by a multi-currency revolving credit facility.

Smiths has a $800m Revolving Credit Facility that matures on 1 November 2023. At the balance sheet date, the Group had the following undrawn credit facilities:

	31 July 2019 £m	31 July 2018 £m
Expiring after more than two years	655	609

Cash deposits

As at 31 July 2019, £136m (FY2018: £430m) of cash and cash equivalents was on deposit with various banks of which £32m (FY2018: £71m) was on deposit with UK banks, £85m (FY2018: £200m) was in liquidity funds and £13m (FY2018: £13m) of investments comprised bank deposits held to secure liabilities and letters of credit.

Gross contractual cash-flows for borrowings

	Borrowings (note 17) 31 July 2019 £m	Fair value adjustments 31 July 2019 £m	Contractual interest payments 31 July 2019 £m	Total contractual cash-flows 31 July 2019 £m	Borrowings (note 17) 31 July 2018 £m	Fair value adjustments 31 July 2018 £m	Contractual interest payments 31 July 2018 £m	Total contractual cash-flows 31 July 2018 £m
Less than one year	(9)		(31)	(40)	(203)		(43)	(246)
Between one and two years			(31)	(31)			(29)	(29)
Between two and three years			(31)	(31)			(29)	(29)
Between three and four years	(893)	20	(25)	(898)			(29)	(29)
Between four and five years			(12)	(12)	(832)	(5)	(24)	(861)
Greater than five years	(607)	20	(36)	(623)	(575)		(46)	(621)
Total	**(1,509)**	**40**	**(166)**	**(1,635)**	**(1,610)**	**(5)**	**(200)**	**(1,815)**

The figures presented in the borrowings column include the non-cash adjustments which are highlighted in the adjacent column. The contractual interest reported for borrowings is before the effect of interest rate swaps.

Gross contractual cash-flows for derivative financial instruments

	Receipts 31 July 2019 £m	Payments 31 July 2019 £m	Net cash-flow 31 July 2019 £m	Receipts 31 July 2018 £m	Payments 31 July 2018 £m	Net cash-flow 31 July 2018 £m
Assets						
Less than one year	217	(236)	(19)	379	(386)	(7)
Greater than one year	712	(652)	60	726	(657)	69
Liabilities						
Less than one year	241	(238)	3	319	(324)	(5)
Greater than one year	19	(18)	1	36	(42)	(6)
Total	**1,189**	**(1,144)**	**45**	**1,460**	**(1,409)**	**51**

This table presents the undiscounted future contractual cash-flows for all derivative financial instruments. For this disclosure, cash-flows in foreign currencies are translated using the spot rates at the balance sheet date. The fair values of these financial instruments are presented in note 20.

Gross contractual cash-flows for other financial liabilities

The contractual cash-flows for financial liabilities included in trade and other payables are: £384m (FY2018: £432m) due in less than one year, £6m (FY2018: £6m) due between one and five years and £3m (FY2018: £3m) due after more than five years.

19 DERIVATIVE FINANCIAL INSTRUMENTS

The tables below set out the nominal amount and fair value of derivative contracts held by the Group, identifying the derivative contracts which qualify for hedge accounting treatment:

				At 31 July 2019
	Contract or underlying nominal amount £m	**Fair value**		
		Assets £m	**Liabilities £m**	**Net £m**
Foreign exchange contracts (cash-flow hedges)	54		(2)	(2)
Foreign exchange contracts (not hedge accounted)	431	4	(3)	1
Total foreign exchange contracts	**485**	**4**	**(5)**	**(1)**
Cross-currency swaps (fair value and net investment hedges)	613	46		46
Interest rate swaps (fair value hedges)	123		(1)	(1)
Total financial derivatives	**1,221**	**50**	**(6)**	**44**
Balance sheet entries				
Non-current	777	47	(1)	46
Current	444	3	(5)	(2)
Total financial derivatives	**1,221**	**50**	**(6)**	**44**

				At 31 July 2018
	Contract or underlying nominal amount £m	Fair value		
		Assets £m	Liabilities £m	Net £m
Foreign exchange contracts (cash-flow hedges)	385	6	(4)	2
Foreign exchange contracts (not hedge accounted)	275	2		2
Total foreign exchange contracts	**660**	**8**	**(4)**	**4**
Currency swaps (net investment hedges)	**110**			
Cross-currency swaps (fair value and net investment hedges)	328	28		28
Cross-currency swaps (not hedge accounted)	242	21		21
Interest rate swaps (fair value hedges)	114		(6)	(6)
Total financial derivatives	**1,454**	**57**	**(10)**	**47**
Balance sheet entries				
Non-current	760	50	(6)	44
Current	694	7	(4)	3
Total financial derivatives	**1,454**	**57**	**(10)**	**47**

Maturity profile, average interest and foreign currency exchange rates of the hedging instruments used in the Group's hedging strategies:

Hedged exposure	Hedging instrument		Maturity Up to one year	One to five years	More than five years
Fair value hedges					
Interest rate risk	Interest Rate Swaps - USD	– Notional amount (£m)		123	
		– Average spread over 6 month USD LIBOR		1.797%	
	Interest Rate Swaps - EUR	– Notional amount (£m)		364	
		– Average spread over 3 month EUR LIBOR		1.015%	
Interest rate risk/	Cross-currency swaps (EUR:GBP)	– Notional amount (£m)			254
Foreign currency risk		– Average exchange rate			0.8450
		– Average spread over 3 month USD LIBOR			1.750%
Net investment hedges					
Foreign currency risk	Cross-currency swaps (EUR:USD)	– Notional amount (£m)		353	
		– Average exchange rate		1.0773	
	Cross-currency swaps (GBP:USD)	– Notional amount (£m)			260
		– Average exchange rate			1.2534
Cash-flow hedges					
Foreign currency risk	Foreign exchange contracts	– Notional amount (£m)	24		
	(EUR:USD)	– Average exchange rate	1.1885		
	Foreign exchange contracts	– Notional amount (£m)	12		
	(EUR:GBP)	– Average exchange rate	0.9021		
	Foreign exchange contracts	– Notional amount (£m)	12		
	(USD:GBP)	– Average exchange rate	1.3523		
	Foreign exchange contracts	– Notional amount (£m)	6		
	(GBP:CZK)	– Average exchange rate	28.8236		

At 31 July 2019, the Group had forward foreign exchange contracts with a nominal value of £54m designated as cash-flow hedges. These forward foreign exchange contracts are in relation to sale and purchase of multiple currencies with varying maturities up to 28 July 2020. The largest single currency pairs are disclosed above and make up 100% of the notional hedged exposure.

Accounting for other derivative contracts

Any foreign exchange contracts which are not formally designated as hedges and tested are classified as 'held for trading' and not hedge accounted.

Netting

International Swaps and Derivatives Association (ISDA) master netting agreements are in place with derivative counterparties except for contracts traded on a dedicated international electronic trading platform used for operational foreign exchange hedging. Under these agreements if a credit event occurs, all outstanding transactions under the ISDA are terminated and only a single net amount per counterparty is payable in settlement of all transactions. The ISDA agreements do not meet the criteria for offsetting, since the offsetting is enforceable only if specific events occur in the future, and there is no intention to settle the contracts on a net basis.

	Assets 31 July 2019 £m	Liabilities 31 July 2019 £m	Assets 31 July 2018 £m	Liabilities 31 July 2018 £m
Gross value of assets and liabilities	50	(6)	57	(10)
Related assets and liabilities subject to master netting agreements	(2)	2	(1)	
Net exposure	**48**	**(4)**	**56**	**(10)**

20 FAIR VALUE OF FINANCIAL INSTRUMENTS

As at 31 July 2019	Notes	Basis for determining fair value	At amortised cost £m	At fair value through profit or loss £m	Total carrying value £m	Total fair value £m
Financial assets						
Other investments	16	A		13	13	13
Other investments	16	E		6	6	6
Cash and cash equivalents	17	A	153	136	289	289
Trade and other financial receivables	14	A/B	764		764	764
Derivative financial instruments	19	B		50	50	50
Total financial assets			**917**	**205**	**1,122**	**1,122**
Financial liabilities						
Trade and other financial payables	15	A	(569)		(569)	(569)
Short-term borrowings	17	C	(9)		(9)	(9)
Long-term borrowings	17	C	(1,500)		(1,500)	(1,535)
Finance leases	21	D	(3)		(3)	(3)
Derivative financial instruments	19	B		(6)	(6)	(6)
Total financial liabilities			**(2,081)**	**(6)**	**(2,087)**	**(2,122)**

As at 31 July 2018	Notes	Basis for determining fair value	Loans and receivables/ other financial liabilities £m	Fair value through profit or loss £m	Total carrying value £m	Total fair value £m
Financial assets						
Other investments	16	A		13	13	13
Other investments	16	E		5	5	5
Cash and cash equivalents	17	A	717		717	717
Trade and other financial receivables	14	A/B	733		733	733
Derivative financial instruments	19	B		57	57	57
Total financial assets			**1,450**	**75**	**1,525**	**1,525**
Financial liabilities						
Trade and other financial payables	15	A	(606)		(606)	(606)
Short-term borrowings	17	C	(203)		(203)	(203)
Long-term borrowings	17	C	(1,405)		(1,405)	(1,433)
Finance leases	21	D	(2)		(2)	(2)
Derivative financial instruments	19	B		(10)	(10)	(10)
Total financial liabilities			**(2,216)**	**(10)**	**(2,226)**	**(2,254)**

The fair value of a financial instrument is the price at which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arms-length transaction. Fair values have been determined with reference to available market information at the balance sheet date, using the methodologies described below:

A Carrying value is assumed to be a reasonable approximation to fair value for all of these assets and liabilities (Level 2 as defined by IFRS 13 Fair Value Measurement).

B Fair values of derivative financial assets and liabilities and trade receivables held to collect or sell are estimated by discounting expected future contractual cash-flows using prevailing interest rate curves. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. These financial instruments are included on the balance sheet at fair value, derived from observable market prices (Level 2 as defined by IFRS 13 Fair Value Measurement).

C Borrowings are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of borrowings is estimated using quoted prices (Level 1 as defined by IFRS 13).

D Leases are carried at amortised cost. Amounts denominated in foreign currencies are valued at the exchange rate prevailing at the balance sheet date. The fair value of the lease contract is estimated by discounting contractual future cash-flows (Level 2 as defined by IFRS 13).

E The fair value of investments is estimated by (Level 3 as defined by IFRS 13).

IFRS 13 defines a three level valuation hierarchy:

Level 1 – quoted prices for similar instruments
Level 2 – directly observable market inputs other than Level 1 inputs
Level 3 – inputs not based on observable market data

21 COMMITMENTS

Operating lease commitments – minimum lease payments

The minimum uncancellable lease payments which the Group is committed to make are:

	31 July 2019		31 July 2018	
	Land and buildings £m	**Other £m**	Land and buildings £m	Other £m
Payments due:				
– not later than one year	36	8	34	7
– later than one year and not later than five years	84	9	83	8
– later than five years	17		23	
	137	**17**	140	15

Other commitments

At 31 July 2019, commitments, comprising bonds and guarantees arising in the normal course of business, amounted to £209m (FY2018: £184m), including pension commitments of £54m (FY2018: £54m).

22 PROVISIONS AND CONTINGENT LIABILITIES

	Trading	Non-headline and legacy			Total
	£m	John Crane, Inc. litigation £m	Titeflex Corporation litigation £m	Other £m	£m
Current liabilities	21	29	20	6	76
Non-current liabilities	2	194	58	8	262
At 31 July 2018	**23**	**223**	**78**	**14**	**338**
Exchange adjustments	1	17	5	1	24
Business combinations (note 26)				12	12
Provision charged	15	15			30
Provision released	(6)		(6)		(12)
Unwind of provision discount		6	2		8
Utilisation	(12)	(24)	(5)	(3)	(44)
Reclassified to liability held for distribution to owners (note 27)	(3)			(2)	(5)
At 31 July 2019	**18**	**237**	**74**	**22**	**351**
Current liabilities	17	29	16	4	66
Non-current liabilities	1	208	58	18	285
At 31 July 2019	**18**	**237**	**74**	**22**	**351**

The John Crane, Inc. and Titeflex Corporation litigation provisions are the only provisions that are discounted.

Trading

Warranty provision and product liability

At 31 July 2019, the Group has warranty and product liability provisions of £17m (FY2018: £22m). Warranties over the Group's products typically cover periods of between one and three years. Provision is made for the likely cost of after-sales support based on the recent past experience of individual businesses.

Commercial disputes and litigation in respect of ongoing business activities

The Group has on occasion been required to take legal action to protect its intellectual property and other rights against infringement. It has also had to defend itself against proceedings brought by other parties, including product liability and insurance subrogation claims. Provision is made for any expected costs and liabilities in relation to these proceedings where appropriate, though there can be no guarantee that such provisions (which may be subject to potentially material revision from time to time) will accurately predict the actual costs and liabilities that may be incurred.

Contingent liabilities

In the ordinary course of its business, the Group is subject to commercial disputes and litigation such as government price audits, product liability claims, employee disputes and other kinds of lawsuits, and faces different types of legal issues in different jurisdictions. The high level of activity in the US, for example, exposes the Group to the likelihood of various types of litigation commonplace in that country, such as 'mass tort' and 'class action' litigation, legal challenges to the scope and validity of patents, and product liability and insurance subrogation claims. These types of proceedings (or the threat of them) are also used to create pressure to encourage negotiated settlement of disputes. Any claim brought against the Group (with or without merit) could be costly to defend. These matters are inherently difficult to quantify. In appropriate cases a provision is recognised based on best estimates and management judgement but there can be no guarantee that these provisions (which may be subject to potentially material revision from time to time) will result in an accurate prediction of the actual costs and liabilities that may be incurred. There are also contingent liabilities in respect of litigation for which no provisions are made.

The Group operates in some markets where the risk of unethical or corrupt behaviour is material and has procedures, including an employee 'Ethics Alertline', to help it identify potential issues. Such procedures will, from time to time, give rise to internal investigations, sometimes conducted with external support, to ensure that Smiths Group properly understands risks and concerns and can take steps both to manage immediate issues and to improve its practices and procedures for the future. The Group also co-operates with relevant authorities in investigating business conduct issues whenever requested to. The Group is not aware of any issues which are expected to generate material financial exposures.

Non-headline and legacy

John Crane, Inc.

John Crane, Inc. (JCI) is one of many co-defendants in numerous lawsuits pending in the United States in which plaintiffs are claiming damages arising from alleged exposure to, or use of, products previously manufactured which contained asbestos. Until 2006, the awards, the related interest and all material defence costs were met directly by insurers. In 2007, JCI secured the commutation of certain insurance policies in respect of product liability. Provision is made in respect of the expected costs of defending known and predicted future claims and of adverse judgments in relation thereto, to the extent that such costs can be reliably estimated.

The JCI products generally referred to in these cases consist of industrial sealing product, primarily packing and gaskets. The asbestos was encapsulated within these products in such a manner that causes JCI to believe, based on tests conducted on its behalf, that the products were safe. JCI ceased manufacturing products containing asbestos in 1985.

JCI continues to actively monitor the conduct and effect of its current and expected asbestos litigation, including the most efficacious presentation of its 'safe product' defence, and intends to continue to resist these asbestos claims based upon this defence. The table below summarises the JCI claims experience over the last 39 years since the start of this litigation:

	Year ended 31 July 2019	Year ended 31 July 2018	Year ended 31 July 2017	Year ended 31 July 2016	Year ended 31 July 2015
JCI claims experience					
Claims against JCI that have been dismissed	285,000	277,000	273,000	247,000	242,000
Claims JCI is currently a defendant in	38,000	43,000	50,000	74,000	76,000
Cumulative final judgments, after appeals, against JCI since 1979	144	140	138	137	133
Cumulative value of awards ($'m) since 1979	168	164	160	158	153

The number of claims outstanding at 31 July 2019 reflects the benefit of 8,000 claims being dismissed in the year.

JCI has also incurred significant additional defence costs. The litigation involves claims for a number of allegedly asbestos-related diseases, with awards, when made, for mesothelioma tending to be larger than those for the other diseases. JCI's ability

to defend mesothelioma cases successfully is, therefore, likely to have a significant impact on its annual aggregate adverse judgment and defence costs.

John Crane, Inc. litigation provision
The provision is based on past history of JCI claims and well-established tables of asbestos-related disease incidence projections. The provision is determined using advice from asbestos valuation experts, Bates White LLC. The assumptions made in assessing the appropriate level of provision include: the period over which the expenditure can be reliably estimated; the future trend of legal costs; the rate of future claims filed; the rate of successful resolution of claims; and the average amount of judgments awarded.

Established incidence curves can be used to estimate the likely future pattern of asbestos-related disease. However, JCI's claims experience is also significantly impacted by other factors which influence the US litigation environment. These can include: changing approaches on the part of the plaintiffs' bar; changing attitudes amongst the judiciary at both trial and appellate levels in specific jurisdictions which move the balance of risk and opportunity for claimants; and legislative and procedural changes in both the state and federal court systems.

The build-up of assets in trusts established by asbestos defendants in Chapter 11 restructuring ('524(g) trusts') will increase the influence of these trusts on the behaviour of claimants. Developments in the Garlock Sealing Technologies LLC Chapter 11 proceedings have provided additional data on plaintiff claims to 524 (g) trusts. Given the evidence that emerged of inconsistent duplicate claims, there is a significant likelihood that this will lead to changes in the pattern of claims made in the future, and the costs arising from claims.

The projections use a limited time horizon on the basis that Bates White LLC consider that there is substantial uncertainty in the asbestos litigation environment. So probable expenditures are not reasonably estimable beyond this time horizon. Asbestos is the longest running mass tort litigation in American history and is constantly evolving in ways that cannot be anticipated. JCI's defence strategy also generates a significantly different pattern of legal costs and settlement expenses from other defendants. Thus JCI is in an extremely rare position, and evidence from other litigation cannot be used to improve the reliability of the projections. A ten year (FY2018: ten year) time horizon has been used based on past experience regarding significant changes in the litigation environment that have occurred every few years and on the amount of time taken in the past for some of those changes to impact the broader asbestos litigation environment, and recent events, like the Garlock Sealing Technologies LLC Chapter 11 proceedings, which may lead to further major changes.

The rate of future claims filed has been estimated using well-established tables of asbestos incidence projections to determine the likely population of potential claimants, and JCI's past experience to determine what proportion of this population will make a claim against JCI. The JCI products generally referred to in claims had industrial and marine applications. As a result, the incidence curve used for JCI projections excludes construction workers, and is a composite of the curves that predict asbestos exposure-related disease from shipyards and other occupations. This is consistent with JCI's litigation history.

The rate of successful resolution of claims and the average amount of any judgments awarded are projected based on the past history of JCI claims, since this is the best available evidence, given JCI's unusual strategy of defending all claims.

The future trend of legal costs is estimated based on JCI's past experience, adjusted to reflect the assumed levels of claims and trial activity, since the number of trials is a key driver of legal costs.

John Crane, Inc. litigation insurance recoveries
While JCI has excess liability insurance, the availability of such insurance and scope of the cover are currently the subject of litigation in the United States. Pending the outcome of that litigation, JCI has met defence costs directly. The calculation of the provision does not take account of any potential recoveries from insurers.

John Crane, Inc. litigation provision history
The JCI asbestos litigation provision has developed over the last five years as follows:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m	Year ended 31 July 2017 £m	Year ended 31 July 2016 £m	Year ended 31 July 2015 £m
John Crane, Inc. litigation provision					
Gross provision	257	251	260	267	236
Discount	(20)	(28)	(23)	(15)	(20)
Discounted provision	**237**	**223**	**237**	**252**	**216**
Operating profit charge/(credit)					
Increased provisions for adverse judgments and legal defence costs	7	13	17	8	14
Change in US risk-free rates	8	(6)	(13)	7	1

Subtotal - items charged to/(released from) the provision	15	7	4	15	15
Litigation management, legal fees in connection with litigation against insurers and defence strategy	2	3	11	8	4
Recoveries from insurers	(11)		(6)	(16)	
Total operating profit charge	6	10	9	7	19
Cash-flow					
Provision utilisation	(24)	(27)	(24)	(22)	(24)
John Crane, Inc. litigation spend	26	30	32	32	27

The increase in 2019 is principally due to decreasing US dollar discount rates, with no material movement in the gross provision.

The operating charge for John Crane, Inc. litigation comprises:

- a charge of £7m (FY2018: £13m) in respect of the net increased provision for adverse judgments and legal defence costs;
- a charge of £8m arising from a decrease in US risk-free rates (FY2018: credit of £6m);
- £2m (FY2018: £3m) costs for litigation management, defence strategy and legal fees in connection with litigation against insurers; and
- a credit of £11m arising from the recovery of costs through a settlement with an insurer. This agreement does not provide any cover for future costs. So there is no material impact on the closing litigation provision.

John Crane, Inc. litigation provision sensitivities

The provision may be subject to potentially material revision from time to time if new information becomes available as a result of future events. There can be no guarantee that the assumptions used to estimate the provision will result in an accurate prediction of the actual costs that may be incurred because of the significant uncertainty associated with the future level of asbestos claims and of the costs arising out of related litigation.

Statistical reliability of projections over the ten year time horizon

In order to evaluate the statistical reliability of the projections, a population of outcomes is modelled using randomised verdict outcomes. This generated a distribution of outcomes with future spend at the 5th percentile of £234m and future spend at the 95th percentile of £297m (FY2018: £230m and £290m, respectively). Statistical analysis of the distribution of these outcomes indicates that there is a 50% probability that the total future spend will fall between £242m and £267m (FY2018: between £238m and £263m), compared to the gross provision value of £257m (FY2018: £251m).

Sensitivity of the projections to changes in the time horizon used

If the asbestos litigation environment becomes more volatile and uncertain, for example if defendants are successful in legal cases against plaintiff law firms and this impacts the nature of claims filed, the time horizon over which the provision can be calculated may reduce. Conversely, if the environment became more stable, or JCI changed approach and committed to long-term settlement arrangements, the time period covered by the provision might be extended.

The projections use a ten year time horizon. Reducing the time horizon by one year would reduce the provision by £17m (FY2018: £15m) and reducing it by five years would reduce the provision by £100m (FY2018: £91m).

We consider, after obtaining advice from Bates White LLC, that to forecast beyond ten years requires that the litigation environment remains largely unchanged with respect to the historical experience used for estimating future asbestos expenditures. Historically, the asbestos litigation environment has undergone significant changes more often than every ten years. If one assumed that the asbestos litigation environment would remain unchanged for longer and extended the time horizon by one year it would increase the provision by £14m (FY2018: £13m) and extending it by five years would increase the provision by £59m (FY2018: £52m). However, there are also reasonable scenarios that, given certain recent events in the US asbestos litigation environment, would result in no additional asbestos litigation for JCI beyond ten years. At this time, how the asbestos litigation environment may evolve beyond ten years is not reasonably estimable.

John Crane, Inc. contingent liabilities

Provision has been made for future defence costs and the cost of adverse judgments expected to occur. JCI's claims experience is significantly impacted by other factors which influence the US litigation environment. These can include: changing approaches on the part of the plaintiffs' bar; changing attitudes amongst the judiciary at both trial and appellate levels; and legislative and procedural changes in both the state and federal court systems. As a result, whilst the Group anticipates that asbestos litigation will continue beyond the period covered by the provision, the uncertainty surrounding the US litigation environment beyond this point is such that the costs cannot be reliably estimated.

Although the methodology used to calculate the JCI litigation provision can in theory be applied to show claims and costs for longer periods, the Directors consider, based on advice from Bates White LLC, that the level of uncertainty regarding the factors used in estimating future costs is too great to provide for reasonable estimation of the numbers of future claims, the nature of such claims or the cost to resolve them for years beyond the ten year time horizon.

Titeflex Corporation

Titeflex Corporation, a subsidiary of the Group in the Flex-Tek division, has received a number of claims from insurance companies seeking recompense on a subrogated basis for the effects of damage allegedly caused by lightning strikes in relation to its flexible gas piping product. It has also received a number of product liability claims regarding this product, some in the form of purported class actions. Titeflex Corporation believes that its products are a safe and effective means of delivering gas when installed in accordance with the manufacturer's instructions and local and national codes. However some claims have been settled on an individual basis without admission of liability. Equivalent third-party products in the US marketplace face similar challenges.

Titeflex Corporation litigation provision

The continuing progress of claims and the pattern of settlement, together with recent market-place activity, provide sufficient evidence to recognise a liability in the accounts. Therefore provision has been made for the costs which the Group is expected to incur in respect of future claims to the extent that such costs can be reliably estimated. Titeflex Corporation sells flexible gas piping with extensive installation and safety guidance (revised in 2008) designed to assure the safety of the product and minimise the risk of damage associated with lightning strikes.

The assumptions made in assessing the appropriate level of provision, which are based on past experience, include: the period over which expenditure can be reliably estimated; the number of future settlements; the average amount of settlements; and the impact of statutes of repose and safe installation initiatives on the expected number of future claims.

The provision of £74m (FY2018: £78m) is a discounted pre-tax provision using discount rates, being the risk-free rate on US debt instruments for the appropriate period. The deferred tax asset related to this provision is shown within the deferred tax balance (note 6).

	31 July 2019 £m	31 July 2018 £m
Gross provision	118	129
Discount	(44)	(51)
Discounted pre-tax provision	**74**	**78**
Deferred tax	(18)	(19)
Discounted post-tax provision	**56**	**59**

Titeflex Corporation litigation provision history

A credit of £6m (FY2018: £6m charge) has been recognised by Titeflex Corporation in respect of changes to the estimated cost of future claims from insurance companies seeking recompense for damage allegedly caused by lightning strikes. The lower gross provision value has been driven by a reduction in the average number of claims per year and a decline in the settlement rate experienced.

Titeflex Corporation litigation provision sensitivities

The significant uncertainty associated with the future level of claims and of the costs arising out of related litigation means that there can be no guarantee that the assumptions used to estimate the provision will result in an accurate prediction of the actual costs that may be incurred. Therefore the provision may be subject to potentially material revision from time to time, if new information becomes available as a result of future events.

The projections incorporate a long-term assumption regarding the impact of safe installation initiatives on the level of future claims. If the assumed annual benefit of bonding and grounding initiatives were 0.5% higher, the provision would be £5m (FY2018: £4m) lower, and if the benefit were 0.5% lower, the provision would increase by £6m (FY2018: £5m).

Other non-headline and legacy

Legacy provisions comprise provisions relating to former business activities and properties no longer used by Smiths. Non-headline provisions comprise all provisions that were disclosed as non-headline items when they were charged to the consolidated income statement. These provisions include non-headline reorganisation, vacant properties, disposal indemnities and litigation in respect of old products and discontinued business activities.

Reorganisation

At 31 July 2019, there were reorganisation provisions of £3m relating to the integration of the Morpho business into the Detection division (FY2018: £7m). The Morpho integration provision is expected to be utilised in the next year.

Property

At 31 July 2019, there were provisions of £14m (FY2018: £2m) related to actual and potential environmental issues for sites currently or previously occupied by Smiths operations and £1m (FY2018: £2m) related to onerous leases and dilapidations provisions.

Disposal

Other provisions include disposal provisions of £3m (FY2018: £3m) relating to warranties and other obligations in respect of the disposal of the Marine Systems and Aerospace businesses.

23 SHARE CAPITAL

	Number of shares	Issued capital £m	Consideration £m
Ordinary shares of 37.5p each			
Total share capital at 31 July 2017	395,476,662	148	
Exercise of share options	284,565		3
Total share capital at 31 July 2018	**395,761,227**	**148**	
Exercise of share options	195,554		2
Total share capital at 31 July 2019	**395,956,781**	**148**	

Share capital structure

As at 31 July 2019, the Company's issued share capital was 395,956,781 ordinary shares with a nominal value of 37.5p per share, all of the issued share capital was in free issue and all issued shares are fully paid.

The Company's ordinary shares are listed and admitted to trading on the Main Market of the London Stock Exchange. The Company has an American Depositary Receipt (ADR) programme and one ADR equates to one ordinary share. As at 31 July 2019, 8,401,830 ordinary shares were held by the nominee of the programme in respect of the same number of ADRs in issue.

The holders of ordinary shares are entitled to receive the Company's Reports and Accounts, to attend and speak at general meetings of the Company, to appoint proxies and to exercise voting rights. None of the ordinary shares carry any special rights with regards to control of the Company.

There are no known agreements relating to, or restrictions on, voting rights attached to the ordinary shares (other than the 48 hour cut-off for casting proxy votes prior to a general meeting). There are no restrictions on the transfer of shares, and there is no requirement to obtain approval for a share transfer. There are no known arrangements under which financial rights are held by a person other than the holder of the ordinary shares. There are no known limitations on the holding of shares.

Powers of Directors

The Directors are authorised to issue and allot shares and to buy back shares subject to annual shareholder approval at the AGM. Such authorities were granted by shareholders at the 2018 AGM, and at the 2019 AGM it will be proposed that the Directors be granted new authorities to allot and buy back shares.

Repurchase of shares

The Company did not purchase any of its own shares during the financial year ended 31 July 2019. As at 16 September 2019 (the latest practicable date for inclusion in this report), the Company had an unexpired authority to repurchase ordinary shares up to a maximum of 40m ordinary shares. As at 16 September 2019, the Company did not hold any shares in treasury. Any ordinary shares purchased may be cancelled or held in treasury.

Employment share schemes

Shares acquired through Company share schemes and plans rank pari passu with the shares in issue and have no special rights. The Company operates an Employee Benefit Trust, with an independent trustee, to hold shares pending employees becoming entitled to them under the Company's share schemes and plans. On 31 July 2019, the trust held 53,058 ordinary shares in the Company. The trust waived its dividend entitlement on its holding during the year, and the trust abstains from voting the shares at general meetings.

24 DIVIDENDS

The following dividends were declared and paid in the period:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Ordinary final dividend of 30.75p for FY2018 (FY2017: 29.70p) paid 16 November 2018	122	117
Ordinary interim dividend of 14.10p for FY2019 (FY2018: 13.80p) paid 26 April 2019	56	55
	178	**172**

The final dividend for the year ended 31 July 2019 of 31.80p per share was recommended by the Board on 19 September 2019 and will be paid to shareholders on 15 November 2019, subject to approval by the shareholders. This dividend has not been included as a liability in these accounts and is payable to all shareholders on the register of Members at close of business on 18 October 2019.

Waiver of dividends

The following waived all dividends payable in the year, and all future dividends, on their shareholdings in the Company:

- Wealth Nominees Limited (Smiths Industries Employee Share Trust)
- Reuter File Limited

25 RESERVES

Retained earnings include the value of Smiths Group plc shares held by the Smiths Industries Employee Benefit Trust. In the year the Company issued 1,170,315 (FY2018: nil) shares to the Trust, and the Trust purchased 1,222,607 shares (FY2018: 952,111 shares) in the market for a consideration of £19m (FY2018: £15m). At 31 July 2019, the Trust held 53,058 (FY2018: 766) ordinary shares.

The capital redemption reserve, revaluation reserve and merger reserve arose from: share repurchases; revaluations of property, plant and equipment; and merger accounting for business combinations before the adoption of IFRS, respectively.

Capital management

Capital employed comprises total equity adjusted for goodwill recognised directly in reserves, net post-retirement benefit related assets and liabilities, net litigation provisions relating to non-headline items and net debt. The efficiency of the allocation of the capital to the divisions is monitored through the return on capital employed (ROCE). This ratio is calculated over a rolling 12-month period and is the percentage that headline operating profit comprises of monthly average capital employed. The ROCE was 14.4% (FY2018: 14.6%), see note 30.

The capital structure is based on the Directors' judgement of the balance required to maintain flexibility while achieving an efficient cost of capital.

The ratio of net debt to headline EBITDA of 1.8 (FY2018: 1.4) is within the Group's stated policy of 2.0 or less over the medium term. The Group's robust balance sheet and record of strong cash generation is more than able to fund the immediate investment needs and
other legacy obligations. See note 30 for the definition of headline EBITDA and the calculation of this ratio.

As part of its capital management the Group strategy is to maintain a solid investment grade credit rating to ensure access to the widest possible sources of financing and to minimise the resulting cost of capital. At 31 July 2019, the Group had a credit rating of BBB+/Baa2 (FY2018: BBB+/Baa2) with Standard & Poor's and Moody's respectively.

The Board has a progressive dividend policy for future payouts, with the aim of increasing dividends in line with the long-term underlying growth in earnings. In setting the level of dividend payments, the Board will take into account prevailing economic conditions and future investment plans, along with the objective to maintain minimum dividend cover of around 2.0.

Hedge reserve

	31 July 2019 £m	31 July 2018 £m
The hedge reserve on the balance sheet comprises:		
– cash-flow hedge reserve		2
– net investment hedge reserve	(383)	(304)
	(383)	**(302)**

See transactional currency exposure risk management disclosures in note 18 for additional details of cash-flow hedges, and translational currency exposure risk management disclosure also in note 18 for additional details of net investment hedges.

26 ACQUISITIONS

On 19 February 2019, the Group's Flex-Tek division completed the acquisition of the entire share capital of United Flexible, an engineering solutions business, for a headline price of $345m. The acquisition strengthens Flex-Tek's global position in aerospace and industrial end markets. The intangible assets recognised on this acquisition comprise customer relationships, order backlog and tradenames. Goodwill represents the expected synergies from the strategic fit of the acquisition and the value of the expertise in the assembled workforce.

From the date of acquisition to 31 July 2019, United Flexible contributed £56m to revenue and £11m to profit before taxation. If the Group had acquired this business at the beginning of the financial year, the acquisition would have contributed £123m to revenue and £15m to profit before taxation. Due to the size of the acquired business, the assessment of the fair value of the assets and liabilities acquired has not yet been finalised and in accordance with IFRS 3 'Business combinations' they are shown as provisional in the table below.

On 17 April 2019, the Group's John Crane division completed the acquisition of the Industrial Division of Advanced Diamond Technologies for £6m. This business has been renamed John Crane Diamond. John Crane Diamond has developed unrivalled expertise in proprietary materials that capture the properties of natural diamond using chemical vapor deposition, further enhancing John Crane's industry leadership. Goodwill represents the expected synergies from the strategic fit of the acquisition and the value of the expertise in the assembled workforce.

From the date of acquisition to 31 July 2019, John Crane Diamond contributed £1m to revenue and less than £1m to profit before taxation. If the Group had acquired this business at the beginning of the financial year, the acquisition would have contributed £2m to revenue and £1m to profit before taxation.

The provisional balance sheets at the date of acquisition are:

		United Flexible £m	John Crane Diamond £m	Total £m
Non-current assets	– acquired intangible assets	146	2	148
	– land and buildings	3		3
	– plant and equipment	8		8
Current assets	– inventory	25		25
	– trade and other receivables	15	1	16
	– cash and cash equivalents	7		7
Current liabilities	– trade and other payables	(13)		(13)
Non-current liabilities	– provisions	(12)		(12)
	– deferred tax	(31)		(31)
Net assets acquired		**148**	**3**	**151**
Goodwill on current year acquisitions		**124**	**3**	**127**
Cash paid during the year		271	6	277
Deferred consideration		1		1
Total consideration		**272**	**6**	**278**

27 DISCONTINUED OPERATIONS AND BUSINESSES HELD FOR DISTRIBUTION TO OWNERS

On 22 March 2019, the Group formally announced the intention to pursue a demerger of the Smiths Medical business and separately list it on the UK Stock Exchange. At the July 2019 Smith Group Board meeting, it was determined that the project had progressed sufficiently for Smiths Medical business to be accounted for as a discontinued operation and as a business held for distribution to owners. The Group is on track to complete the demerger of Smiths Medical during the first half of calendar year 2020.

Discontinued operations

The financial performance of the Smiths Medical business in the current and prior years is presented below:

	Year ended 31 July 2019			Year ended 31 July 2018 – restated*		
	Headline £m	**Non-headline (note 3) £m**	**Total £m**	Headline £m	Non-headline (note 3) £m	Total £m
Revenue	874		874	869		869
Cost of sales	(412)		(412)	(405)		(405)
Gross profit	462		462	464		464
Sales and distribution costs	(183)		(183)	(177)		(177)
Administrative expenses	(132)	(13)	(145)	(131)	(4)	(135)
Profit on business disposal		17	17			
Operating profit	**147**	**4**	**151**	**156**	**(4)**	**152**
Finance costs	(3)	(38)	(41)	(2)	(2)	(4)
Taxation	(32)	7	(25)	(39)	51	12
Profit from discontinued operations	**112**	**(27)**	**85**	**115**	**45**	**160**

* The comparatives for FY2018 have been restated to reflect the adoption of IFRS 15.

£3.3m (FY2018: £2.8m) interest was capitalised as part of the costs of Smiths Medical development projects. £0.6m (FY2018: £0.8m) of tax relief has been recognised as current tax relief in the period. The demerger of the Medical division is not anticipated to give rise to material tax charges, however, it is noted that the relevant regulatory filings and clearances are still in progress.

Cash-flow from discontinued operations included in the consolidated cash-flow statement is as follows:

	31 July 2019 £m	31 July 2018 £m
Net cash inflow from operating activities	149	123
Net cash-flow used in investing activities	(28)	(43)
Net cash-flow used in financing activities	(60)	(59)
	61	**21**

Businesses held for distribution to owners

The carrying value of the assets and liabilities of the Smiths Medical business as at 31 July 2019 are as follows:

	31 July 2019 £m
Assets classified as held for distribution to owners:	
Intangible assets	746
Property, plant and equipment	135
Inventories	151
Deferred tax assets	13
Current tax receivable	2
Trade and other receivables	138
Cash and cash equivalents	26
Financial derivatives	5
Assets classified as held for distribution to owners	**1,216**
Liabilities classified as held for distribution to owners:	
Financial liabilities	
– borrowings	(3)
– financial derivatives	(2)
Trade and other payables	(137)
Current tax payable	(11)
Deferred tax liabilities	(48)
Retirement benefit obligations	(6)
Provisions for liabilities and charges	(6)
Liabilities classified as held for distribution to owners	**(213)**

Additional segmental information for discontinued operations

Headline operating profit for discontinued operations is stated after charging depreciation £19m (FY2018: £20m), amortisation £21m (FY2018: £18m) and share based payments £nil (FY2018: £2m).

The capital expenditure on property, plant and equipment, capitalised development and other intangible assets for discontinued operations is £45m (FY2018: £48m).

Revenue for the Smiths Medical discontinued operation is analysed by the following product lines: Infusion Systems £307m (FY2018: £302m), Vascular Access £286m (FY2018: £294m) and Vital Care/Other £281m (FY2018: £273m).

Revenue by destination and non-current operating assets by location for discontinued operations is shown below:

	Year ended 31 July 2019				Year ended 31 July 2018			
	Americas £m	**Europe, Middle East & Africa £m**	**Asia-Pacific £m**	**Total £m**	Americas £m	Europe, Middle East & Africa £m	Asia-Pacific £m	Total £m
Revenue	493	233	148	**874**	476	241	152	**869**
Intangible assets and property, plant and equipment	772	64	45	**881**	711	78	42	**831**

28 DISPOSALS

In the prior year, the Group recognised a net profit of £7m for business disposals, this profit was principally due to the sale of John Crane Bearings which completed on 31 May 2018.

29 CASH-FLOW

Cash-flow from operating activities

		Year ended 31 July 2019			Year ended 31 July 2018 – restated		
		Headline £m	Non-headline £m	Total £m	Headline £m	Non-headline £m	Total £m
Operating profit	– continuing operations	427	(101)	326	388	(46)	342
	– discontinued operations	147	4	151	156	(4)	152
Amortisation of intangible assets		36	45	81	39	32	71
Depreciation of property, plant and equipment		56		56	55		55
(Profit)/loss on disposal of property, plant and equipment		4		4	(1)		(1)
Profit on disposal of businesses			(18)	(18)		(7)	(7)
Share-based payment expense		15		15	14	2	16
Retirement benefits		7	(6)	1	5	(49)	(44)
Decrease/(increase) in inventories		(52)	4	(48)	(19)	2	(17)
Decrease/(increase) in trade and other receivables		(105)		(105)	(17)		(17)
Increase/(decrease) in trade and other payables		60	6	66	26	(5)	21
Decrease in provisions		(7)	(19)	(26)	(6)	(30)	(36)
Cash generated from operations		**588**	**(85)**	**503**	**640**	**(105)**	**535**
Interest paid		(64)		(64)	(71)	(1)	(72)
Interest received		6		6	7		7
Tax paid		(99)		(99)	(65)		(65)
Net cash inflow from operating activities		**431**	**(85)**	**346**	**511**	**(106)**	**405**

The split of tax payments between headline and non-headline only considers the nature of payments made. No adjustment has been made for reductions in tax payments due to tax relief received on non-headline items.

Headline cash measures

The Group measure of headline operating cash includes capital expenditure supporting organic growth and excludes interest and tax.

	Year ended 31 July 2019			Year ended 31 July 2018		
	Headline £m	**Non-headline £m**	**Total £m**	Headline £m	Non-headline £m	Total £m
Net cash inflow from operating activities	**431**	**(85)**	**346**	**511**	**(106)**	**405**
Include:						
Expenditure on capitalised development, other intangible assets and property, plant and equipment	(118)		(118)	(106)		(106)
Disposals of property, plant and equipment	4		4	4		4
Investment in financial assets relating to operating activities and pensions financing	2		2	(1)		(1)
Free cash-flow			**234**			**302**
Exclude:						
Investment in financial assets relating to operating activities and pensions financing outstanding at the balance sheet	(2)		(2)	1		1
Interest paid	64		64	71	1	72
Interest received	(6)		(6)	(7)		(7)
Tax paid	99		99	65		65
Headline operating cash-flow	**474**	**(85)**	**389**	**538**	**(105)**	**433**

Headline cash conversion

Headline operating cash conversion for the total Group is calculated as follows:

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Headline operating profit	574	544
Headline operating cash-flow	474	538
Headline operating cash conversion	**83%**	99%

Reconciliation of headline free cash-flow to total movement in cash and cash-equivalents

	Year ended 31 July 2019 £m	Year ended 31 July 2018 £m
Free cash-flow	**234**	**302**
Acquisition of businesses	(277)	(71)
Disposal of businesses and discontinued operations	22	29
Net cash-flow used in financing activities	(391)	(316)
Net decrease in cash and cash equivalents	**(412)**	**(56)**

30 NON-STATUTORY CAPITAL AND CREDIT METRICS

In addition to the non-statutory profit measures explained in note 3, the Group calculates credit metrics and return on capital employed incorporating the same adjustments. See the disclosures on presentation of results in accounting policies for an explanation of the excluded items.

Return on capital employed (ROCE)

Smiths ROCE is calculated over a rolling 12-month period and is the percentage that headline operating profit comprises of monthly average capital employed. See note 1 for the divisional headline operating profit and average divisional capital employed used to calculate divisional ROCE.

Capital employed

Capital employed is a non-statutory measure of invested resources. It comprises statutory net assets adjusted to add goodwill recognised directly in reserves in respect of subsidiaries acquired before 1 August 1998 of £787m (FY2018: £787m) and eliminate post-retirement benefit assets and liabilities and litigation provisions relating to non-headline items, both net of related tax, and net debt.

	Notes	**31 July 2019 £m**	31 July 2018 £m
Net assets		**2,381**	**2,288**
Adjust for:			
Goodwill recognised directly in reserves		787	787
Post-retirement benefit assets and liabilities	8	(311)	(381)
Tax related to post-retirement benefit assets and liabilities		55	62
John Crane, Inc. litigation provisions and related tax	22	187	175
Titeflex Corporation litigation provisions and related tax	22	56	59
Net debt - including £23m of net cash in discontinued operations	17	1,197	893
Capital employed		**4,352**	**3,883**

Return on capital employed

	Notes	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 £m
Headline operating profit for previous 12 months - including discontinued operations		574	544
Average capital employed	1	3,972	3,735
ROCE		**14.4%**	**14.6%**

Credit metrics

Smiths Group monitors the ratio of net debt to Headline EBITDA as part of its management of credit ratings, see note 25 for details. This ratio is presented for the whole Group, including discontinued operations, and is calculated as follows:

Headline earnings before interest, tax, depreciation and amortisation (Headline EBITDA)

	Notes	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 restated £m
Headline operating profit		**427**	**388**
Include:			
– headline operating profit of discontinued operations	27	147	156
Exclude:			
– depreciation	12	56	55
– amortisation of development costs	10	23	24
– amortisation of software, patents and intellectual property	10	13	18
Headline EBITDA		**666**	**641**

£1m of software amortisation was charged to restructuring projects and treated as a non-headline cost.

Ratio of net debt to headline EBITDA - including discontinued operations

	Notes	**Year ended 31 July 2019 £m**	Year ended 31 July 2018 £m
Headline EBITDA		666	641
Net debt - including £23m of net cash in discontinued operations	17	1,197	893
Ratio of net debt to headline EBITDA		**1.8**	**1.4**