Press Release

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The Business of Science®

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Oxford Instruments plc
Announcement of Half Year Results for the six months to 30 September 2019

Oxford Instruments plc, a leading provider of high technology products and systems for industry and research, today announces its Half Year Results for the six months to 30 September 2019.

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	**% change reported**	**% change constant currency**
Revenue[1]	**166.3**	147.0	**+13.1%**	**+9.1%**
Adjusted* operating profit[1]	**25.8**	21.0	**+22.9%**	**+12.4%**
Adjusted* profit before tax[1]	**25.4**	19.8	**+28.3%**	
Profit before tax[1]	**18.0**	11.6	**+55.2%**	
Adjusted* basic earnings per share[1]	**35.5p**	27.3p	**+30.0%**	
Dividend per share (interim)	**4.1p**	3.8p	**+7.9%**	
Cash generated from operations[1]	**16.4**	21.4	**(23.4)%**	
Net cash/(debt)	**14.2**	(12.5)		

[1]*Continuing operations*

Financial Highlights:

- Orders up 6.4% to £173.3 million (2018: £162.9 million), an increase of 2.8% at constant currency; book-to-bill ratio of 1.04
- Order book of £186.8 million (31 March 2019: £171.6 million), up 8.9% (+6.0% at constant currency)
- Reported revenue increased by 13.1% to £166.3 million (+9.1% at constant currency)
- Adjusted operating profit from continuing operations up 22.9% at £25.8 million (+12.4% at constant currency)
- Adjusted operating margin of 15.5% (2018: 14.3%), 14.7% at constant currency
- Reported profit before tax up 55.2% to £18.0 million after mark-to-mark movement on currency derivatives and other adjusting items
- Net cash of £14.2 million following cash conversion of 65% and one-off US pension termination payment
- Interim dividend increased by 7.9% to 4.10 pence

Operational Highlights:

- Good progress with Horizon, delivering continued growth and improved operating margin
- Market intimacy enabled new growth opportunities from academic and commercial customers, which more than offset softening in silicon semiconductor, electronics and automotive production markets
- Materials & Characterisation delivered a strong performance underpinned by increased sales across Semiconductor & Communications, Advanced Materials and Energy & Environment segments
- Research & Discovery saw growth across Healthcare & Lifescience, Quantum Technology and Fundamental Research segments
- Increased focus on customer support services related to our own products delivered an improved performance in Service & Healthcare
- Improved commercial practices and gains from our operational excellence programme contributed to increased profitability in the period
- Focus on customer applications driving success of recently launched products and the development of richer future product roadmaps and IP portfolio; total cash spend on R&D equivalent to 7.8% of sales
- Underlying order growth impacted by some softer end markets and the phasing of OEM orders
- Our access to all phases of the technology cycle – from academic research through to commercial production – provided resilience against uncertain macroeconomic backdrop

Summary and Outlook:

Ian Barkshire, Chief Executive of Oxford Instruments plc, said:

The Group has delivered a strong first half performance, with revenue, profit and order growth against a backdrop of uncertain macroeconomic conditions. Our customer centric approach has delivered growth within existing markets and expansion into new adjacent markets.

The breadth of our product portfolio and the diversity of our end-markets, together with our focus on understanding customer needs and responding to market changes, underpin our ability to deliver further growth and margin improvement. We expect the second half of the financial year to benefit from the normal seasonal bias, with expectations for the current financial year remaining unchanged on a constant currency basis.

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Number of pages: 34

**NOTE: Throughout this half-year announcement we make reference to adjusted numbers. A full definition of adjusted numbers can be found in Note 2. Where we make reference to constant currency numbers, these are prepared on a month-by-month basis using the translational and transactional exchange rates which prevailed in the previous year rather than the actual exchange rates which prevailed in the year. Transactional exchange rates include the effect of our hedging programme.*

NOTE: Oxford Instruments plc compiled analyst forecast range for adjusted operating profit (year to 31 March 2020): £51.5 million to £53.0 million, with an average consensus of £52.4 million.

Chief Executive's Review

Introduction

Oxford Instruments provides high technology products and services to the world's leading industrial companies and scientific research communities, exploiting our world-class ability to image, analyse and manipulate materials down to the atomic and molecular level. Our core purpose is to support our customers in addressing some of the world's most pressing challenges, enabling a greener economy, increased connectivity, improved health, and leaps in scientific understanding.

We continue to make good progress with the implementation of our Horizon strategy whilst maintaining a focus on the near-term delivery of improved performance. Our customer-centric approach provides valuable market insights that deliver growth within existing markets and allow us to identify opportunities in new adjacent markets. These insights are driving increased success for recently launched products and the development of a richer future product roadmap. The implementation of improved commercial practices, combined with gains from our operational excellence programme, contributed to improved profitability in the period, and provide the foundation for further growth. We remain focused on addressing a broad and diverse range of attractive end markets with long-term growth drivers. By addressing the academic, applied R&D and high technology manufacturing segments, we are engaged throughout the technology cycle and are well positioned to benefit from each wave of commercialisation and market disruption.

Overview

The Group has delivered a strong first half performance, with revenue, profit and order growth against a backdrop of uncertain macroeconomic conditions. Reported revenue increased 13.1% (9.1% at constant currency) to £166.3 million (2018: £147.0 million), with good growth across each of our sectors – Materials & Characterisation, Research & Discovery and Service & Healthcare. We had strong constant currency revenue growth from both academic and commercial customers, increasing by 8% and 10% respectively. The proportion of revenue from commercial customers remained broadly unchanged at 51%.

From an end market perspective, we saw constant currency growth across each of our target customer segments, with Healthcare & Lifescience up 6% (27% of Group revenue), Semiconductor & Communications up 8% (22% of revenue), Quantum Technology up 6% (8% of revenue), Energy & Environment up 16% (10% of revenue), Advanced Materials up 9% (23% of revenue) and Research & Fundamental Science up 14% (10% of revenue) resulting in a relatively unchanged end market distribution from 31 March 2019. While we saw further softening in specific markets such as silicon semiconductor, electronics and automotive production, our focus on customer outcomes has enabled us to find growth opportunities elsewhere.

From a geographical perspective, constant currency revenue grew in Europe, North America and Asia by 18%, 8% and 4% respectively. In Asia we continue to make good progress in China, with revenue up 14% relative to the comparative period. Asia represented 40% of Group revenue at constant currency, Europe 27%, North America 32% and Rest of World 1%. Within Asia, China represented an unchanged proportion of Group revenue at 21%.

Increased volumes and the benefit from our improved business processes and commercial practices, combined with gains from our operational excellence programme, drove reported adjusted operating profit up 22.9% to £25.8 million (2018: £21.0 million), an increase of 12.4% at constant currency. The Materials & Characterisation and Research & Discovery sectors both delivered double-digit constant currency growth. In our Service & Healthcare sector, strong profit growth from the increased demand for the services related to our own products was partially offset by reduced contribution from OI Healthcare in the period due to the phasing of system sales. Reported operating margin increased to 15.5% (2018: 14.3%) representing margin of 14.7% at constant currency.

Continuing adjusted basic earnings per share increased by 30.0% to 35.5 pence (2018: 27.3 pence).

Reported orders for the Group increased to £173.3 million (2018: £162.9 million) up 6.4% (2.8% at constant currency). We saw growth from academic and commercial customers being partially offset by reduced activity within the silicon semiconductor, electronics and automotive markets. The Materials & Characterisation and Service & Healthcare sectors increased orders on a constant currency basis, with Research & Discovery marginally down in the period due primarily to the phasing of larger customer orders within our X-ray Technology business. Continued order growth resulted in a book-to-bill ratio for the period of 1.04.

The order book, representing orders for future delivery, as at 30 September 2019 increased 8.9% on a reported basis (6.0% at constant currency) since the year end, driven predominately by growth in Materials & Characterisation and the servicing of our own products.

Good cash collection in the period resulted in an improved Group net cash position of £14.2 million, up from £6.7 million at the year end.

Horizon strategy progress

We have maintained a sharp focus on our Horizon strategy to deliver sustainable revenue growth and improved margins. In the period we have continued to increase our commercial focus and build capabilities across the Group. We continue to see opportunities for further revenue and margin improvement delivered through the Horizon strategy. With good progress across our Market Intimacy, Innovation and Product Development, and Operational Excellence programmes, we have now started the transformation of our Customer Service approach, representing the fourth point of the Oxford Instruments operating model. As part of this programme we will be reviewing the way in which we provide support to our customers as well as expanding the breadth of service offerings and capabilities, including services to support performance enhancements and yield management packages.

Sector performance

Turning to the performance of our individual sectors:

Materials & Characterisation provides products and solutions that enable the fabrication and characterisation of materials down to the atomic scale, predominantly supporting customers across applied R&D as well as the production and manufacture of high technology products. The sector delivered a strong and enhanced first half performance underpinned by growth from both commercial and academic customers across the Semiconductor & Communications, Advanced Materials, and Energy & Environment customer segments. Revenue of £69.8 million (2018: £60.1 million) represented an increase of 12.3% at constant currency, with adjusted operating profit increasing to £12.2 million (2018: £9.7 million), growth of 16.5% at constant currency. Orders grew to £74.5 million (2018: £69.5 million), up 3.9% at constant currency, contributing to positive order book growth for future deliveries. Reported operational margin for the sector increased by 140 basis points (+60 basis points at constant currency) to 17.5% (2018: 16.1%).

Research & Discovery provides advanced solutions that create unique environments and enable imaging and analytical measurements down to the molecular and atomic level, used predominantly in scientific research and applied R&D. Revenue increased to £61.2 million, up 8.7% at constant currency (2018: £54.3 million) supported by growth from academic and commercial customers across the Healthcare & Lifescience, Quantum Technology, and Research & Fundamental Science segments. Adjusted operating profit increased to £6.4 million (2018: £4.8 million), up 16.7% at constant currency, supported by improved operational efficiencies within the sector and manufacturing yield improvements of our scientific X-ray tubes. Orders of £61.9 million (2018: £60.0 million) were broadly flat at constant currency, partially held back in the period by the phasing of large OEM customer orders in our X-ray Technology business. Operational margin for the sector grew 170 basis points (+70 basis points at constant currency) to 10.5% (2018: 8.8%) on a reported basis.

Service & Healthcare provides customer service and support for our own products and the service, sale and rental of third-party healthcare imaging systems. Revenue of £35.3 million (2018: £32.6 million) grew by 4.0% at constant currency, driven predominantly by increased sales of services and support related to our own products. Adjusted operating profit increased to £7.2 million (2018: £6.5 million), up 3.1% at constant currency. Strong growth in orders related to our own products were partially offset by the timing of system orders in our US OI Healthcare business resulting in reported orders of £36.9 million (2018: £33.4 million), an increase of 6.3% at constant currency. Operational margin for the sector grew 50 basis points (-10 basis points at constant currency) to 20.4% (2018: 19.9%) on a reported basis.

R&D

The development and delivery of highly innovative and market-leading technology that delivers ongoing, sustainable value for our customers remains a central theme within our Horizon strategy. Our enhanced customer-centric, market-focused approach is identifying increasingly attractive development opportunities, enriching our IP portfolio and driving our investment decisions across the Group. Through Horizon we are exploiting our technical capabilities and synergiesboth within the Group and with external partners to deliver key products faster. R&D spend in the period rose to £13.0 million (2018: £12.0 million), representing 7.8% of sales, reflecting both the increased opportunities available and our commitment to delivering sustainable growth.

People

Our employees are fundamental to our business progress and I remain delighted by their continued engagement with our Horizon strategy. We continue to invest in the development of our teams and the processes and tools to help them be successful. I would like to thank all our employees for their continued commitment to offering our customers a world-class experience and their part in helping to address some of the world's most pressing challenges.

Dividends

The Board has declared an interim dividend increase of 7.9% to 4.1 pence (2018: 3.8 pence), reflecting improvement in underlying earnings per share.

Current trading and outlook

The Group has delivered a strong first half performance, with revenue, profit and order growth against a backdrop of uncertain macroeconomic conditions. Our customer-centric approach has delivered growth within existing markets and expansion into new adjacent markets.

The breadth of our product portfolio and the diversity of our end markets, together with our focus on understanding customer needs and responding to market changes, underpin our ability to deliver further growth and margin improvement. We expect the second half of the financial year to benefit from the normal seasonal bias, with expectations for the current financial year remaining unchanged on a constant currency basis.

Ian Barkshire
Chief Executive

12 November 2019

Operations Review

Our Group reports in the following three sectors: Materials & Characterisation, Research & Discovery, and Service & Healthcare.

Materials & Characterisation

	2019 £m	2018 £m	Growth	Constant Currency Growth[1]
Revenue	**69.8**	60.1	+16.1%	+12.3%
Adjusted[2] operating profit	**12.2**	9.7	+25.8%	+16.5%
Adjusted[2] operating margin	**17.5%**	16.1%		
Profit before tax after adjusting items	**11.0**	8.6		

[1]For definition refer to note on page 2 of highlights.
[2]Details of adjusting items can be found in Note 2 to the condensed Financial Statements.

The Materials & Characterisation sector comprises Asylum Research, NanoAnalysis and Plasma Technology. This sector has a broad customer base across a wide range of applications for the imaging and analysis of materials down to the atomic level as well as the fabrication of semiconductor devices and structures through our range of advanced semiconductor etch and deposition process systems. Our portfolio of imaging systems include our range of market-leading X-ray and electron analysis systems used in conjunction with electron and ion microscopes as well as our performance-leading atomic force microscopes. The sector has a strong focus on supporting and accelerating our customers' applied R&D, enabling the development of new devices and next generation higher performance materials as well as enhanced productivity in advanced manufacturing, quality assurance ("QA") and quality control ("QC"). Our products provide market-leading performance, ease of use and data analytics.

Materials & Characterisation delivered strong growth in both revenue and operating profit with good order growth. A core strength of the sector is the market diversification and reach across academic and corporate R&D, and commercial production customers. Improved performance in the period was supported by the success of new and recently launched products, and our increased focus on tailoring our product offerings to specific end-customer applications, raising the product value and expanding our addressable markets. This led to strong revenue growth from both academic and commercial customers in the period, with the latter accounting for 55% of revenue. Increased volumes, application-tailored products and operational efficiencies all contributed to reported adjusted operating margin increasing 140 basis points to 17.5% (2018: 16.1%).

Looking at end markets, increased revenue was driven by growth in each of the three main application segments of Advanced Materials, Semiconductor & Communications, and Energy & Environment. Advanced Materials represented 38% of sales in the sector, Semiconductor & Communications 40%, with Energy & Environment 15%, and Healthcare & Lifescience 6%. Geographically, we saw strong growth in Europe and good growth in North America and Asia.

We had double-digit revenue growth in Advanced Materials due to positive end markets, despite the ongoing weakness in orders from automotive manufacturing customers. This growth was driven by the continued demand for lighter, stronger and higher functioning materials, combined with our leading market performance. Our measurement solutions are used to aid the development of next generation products and components as well as in the quality control and quality assurance of current manufactured products. Applications include the development of safer cars and planes with improved fuel consumption, and advanced new materials for wind turbine blades and medical implants. We continue to see growth in more routine applications including the optimisation of razor blade coatings, the quality control of ceramics used in mobile phone applications and increasing the strength of thinner aluminium drink cans to reduce their raw material consumption. These applications have led to strong growth across our range of Symmetry™ material structural analysers, X-ray detectors and atomic force microscopes ("AFM").

We continue to develop new products and tailored applications to target specific end-customer applications and grow our addressable market. In the period we launched Jupiter™, our first large sample AFM which can accept objects the size of a semiconductor wafer or tablet computer. This builds on our market-leading AFM product performance and reputation in the research market. Jupiter™ provides high resolution, faster results and simpler user experience to multi-user sites and industrial manufacturers, significantly expanding our addressable customer base. This has already driven significant growth to customers needing to characterise thin films and coatings. We have seen continued growth in sales into additive manufacturing through the launch of AZtecAM™, a dedicated analysis package for this market segment.

Semiconductor & Communications delivered strong revenue growth and remains a significant market segment. Here we provide imaging and analysis products, as well as etch and deposition process solutions used across a range of advanced compound semiconductor and silicon device applications. Whilst we have seen continued weakness and associated reduced sales of our imaging and analysis solutions into silicon semiconductor and electronics customers, we have had continued strong growth and demand across our portfolio of etch and deposition solutions underpinned by our leading performance and expertise in compound semiconductors.

The compound semiconductor market remains buoyant with strong, long-term market drivers, due to the ability of compound semiconductor devices to dramatically transform the performance of power electronics, connectivity and communications. In the period we have seen growth in a number of key areas; our gallium arsenide and indium phosphide solutions support the increased speed and infrastructure capacity required to deliver the desired transformation and connectivity, for example telecommunication data centres and the rise in the data economy. Silicon carbide and gallium nitride solutions are being used to develop more efficient and faster power devices, enabling greater electric vehicle range and faster charging times. Demand for increased communications is driving growth across sensors and optoelectronic devices such as 3D sensors for facial recognition and heads up displays.

Our growth has been further supported by our ability to tailor our product offerings to specifically meet the needs of academic, corporate R&D and production customers. For example, we are now offering dedicated production-ready systems with key enabling processes, market-leading wafer throughput and reduced time to service.

We have seen growth in the Energy & Environment segment driven by the increased activities related to battery research and quality control, and in the development of improved efficiency and performance photovoltaic materials. This has included increased sales of our AFM products, and our advanced high resolution ultra-sensitive Extreme™ X-ray analyser remains the market leader in imaging the internal chemistry and active interfaces of batteries at the nanoscale. In the period we launched AZtecMineral™, a tailored solution building on the benefits of our existing products to optimise mining and ore processing. In combination with the high sensitivity provided by Extreme™, this is supporting the more efficient mining and recovery of lithium-based materials.

Research & Discovery

	2019 £m	2018 £m	Growth	Constant Currency Growth[1]
Revenue	**61.2**	54.3	+12.7%	+8.7%
Adjusted[2] operating profit	**6.4**	4.8	+33.3%	+16.7%
Adjusted[2] operating margin	**10.5%**	8.8%		
Profit before tax after adjusting items	**3.2**	1.9		

[1]For definition refer to note on page 2 of highlights.
[2]Details of adjusting items can be found in Note 2 to the condensed Financial Statements.

The Research & Discovery sector includes Andor Technology, Magnetic Resonance, NanoScience, X-ray Technology and our minority share in Scienta Omicron. This sector provides advanced solutions that create unique environments and enable imaging and analytical measurements down to the molecular and atomic level, used predominantly in fundamental and applied research. We build on our relationships with customers working on breakthrough applications in research to gain insights and support future commercial applications. We have strong brand recognition and leading product performance in our chosen market segments. Our increased applications focus has supported strong growth to commercial customers in addition to good growth from academic and Government-funded research. Revenue from industrial and commercial customers increased to 35%, with 65% of sales from the academic and Government-funded research community.

Strong revenue and double-digit profit growth were driven from across our product portfolio with continued growth from the main target application segments of Healthcare & Lifescience (representing 41% of revenue), Quantum Technology (19% of revenue), and Research & Fundamental Science (24% of revenue). Revenue growth was supported by an increased demand and improved operational performance in NanoScience, with profit growth supported by manufacturing yield improvements of our scientific X-ray tubes and an improved contribution from the Scienta Omicron joint venture. Order growth was offset by the phasing of framework OEM orders for our X-ray Technology business and of higher value rock core analysis systems.

Within Healthcare & Lifescience, demand continued to be driven by researchers seeking to uncover more about the pathology of disease states, helping to reveal more accurate cellular details at better resolution and higher speeds. This has driven increased revenue across our portfolio of microscopy systems, analysis and visualisation software and scientific research cameras. A significant proportion of sales are being used to understand the origins and progression of cancers and neurological disorders, such as Alzheimer's and Parkinson's, and to contribute to the development of new treatment approaches. The attractive advanced microscopy market has led to increased competitor activity which has moderated order growth in the period. We continue to focus on adding value to our products, building on our market-leading capabilities. For instance, the latest release of Imaris™ utilises sophisticated management of large data sets to enable the practical and efficient analysis and interpretation over multiple length scales from the big picture down to the molecular detail. Improved rendering and machine learning algorithms lead to automation and statistically meaningful analysis of biological structures and systems.

Our high sensitivity cameras, which offer enhanced performance at low light levels, are being used to measure and observe the interaction with individual biomolecules in real time. This continues to drive growth with our strategic OEM partners for a range of applications including gene sequencing and clinical screening solutions, which are used for drug feasibility studies and in the development of personalised medicines.

Quantum Technology continues to attract funding from both Governments and private industry, with increased long-term investment being announced within Europe, China and Japan, targeting quantum computing, cryptography and sensors. We continue to see increased demand for our cryogenic platforms, which are used for both fundamental research into quantum effects and in the development towards practical quantum computers. We have had increased sales of our Teslatron™ system, which provides low temperatures and high magnetic fields for the development and characterisation of quantum materials and sensors. We are also seeing increased demand for our high sensitivity and high-speed cameras in the growing area of quantum optics for applications across fundamental science through to secure communications and quantum computing.

Within Research & Fundamental Science, we continued to see growth in sales of our high field magnets and research instruments. In addition, astronomy remains an attractive market for us, with demand for higher performance cameras in order to meet the increasing requirements of modern astronomy. Through the successful collaboration with end customers within the astronomy market, we have launched Balor™, our new large area camera, whose unique features, including large field of view, enable it to capture a much larger area of the sky with improved resolution and stability. This enables the practical tracking of significantly smaller space junk, easier tracking of near-earth asteroids and enhanced solar studies, which are important due to the dramatic impact these can have on satellite and earth-based communications.

Service & Healthcare Sector

	2019 £m	2018 £m	Growth	Constant Currency Growth[1]
Revenue	**35.3**	32.6	+8.3%	+4.0%
Adjusted[2] operating profit	**7.2**	6.5	+10.8%	+3.1%
Adjusted[2] operating margin	**20.4%**	19.9%		
Profit before tax after adjusting items	**6.8**	6.1		

[1]For definition refer to note on page 2 of highlights.
[2]Details of adjusting items can be found in Note 2 to the condensed Financial Statements.

The Service & Healthcare sector comprises the Group's maintenance service contracts, billable repairs, training and support services, and spare part sales related to Oxford Instruments' own products under the OiService brand; and the sale, service and rental of refurbished third-party MRI and CT machines under the OI Healthcare brand.

Good order, revenue and profit growth at constant currency in the period through the increased demand for services and support related to our own products was partially offset by the timing of system orders within our US OI Healthcare business.

Revenue from our OI Healthcare businesses was broadly flat with adjusted operating profit slightly down on last year owing to the phasing of system orders. Utilisation of our mobile MRI fleet remains strong and we continue our focus on building a healthy service orderbook.

The Service & Healthcare sector is now a focal point within the evolution of our Horizon strategy. We have initiated the transformation of our customer service approach by reviewing the way in which we provide support to our customers as well as expanding the breadth of service product offerings and capabilities. This includes the tailoring of service products to end market applications and customer segments. For example, for industrial customers, we are introducing services to support performance enhancements and yield management packages. Our launch of Plasmaview™ process control software supports this transition for our semiconductor customers, allowing us to provide a broader range of diagnostic and process optimisation services both online and remotely. Whilst still at the early stages, we have already built a pipeline of opportunities and have seen an uplift in service-related revenue and profitability.

Finance Review

Reported orders increased by 6.4% to £173.3 million (2018: £162.9 million), an increase of 2.8% at constant currency. At the end of the period the Group's order book for future deliveries stood at £186.8 million (31 March 2019: £171.6 million). The order book grew 8.9% on a reported basis and 6.0% at constant currency.

Reported revenue increased by 13.1% to £166.3 million (2018: £147.0 million). Revenue, excluding currency effects, increased by 9.1%, with the movement in average currency exchange rates against the comparative period increasing reported revenue by £5.9 million.

Adjusted operating profit increased by 22.9% to £25.8 million (2018: £21.0 million) with the movement in exchange rates against the comparative period increasing adjusted operating profit by £2.2 million. Adjusted operating profit, excluding currency effects, increased by 12.4%. Adjusted operating margin increased by 120 basis points to 15.5% (2018: 14.3%), supported by a currency tailwind. Excluding currency effects, adjusted operating margin increased by 40 basis points to 14.7%.

Adjusted profit before tax grew by 28.3% to £25.4 million (2018: £19.8 million), representing a margin of 15.3% (2018: 13.5%).

Adjusting items consist of amortisation of acquired intangibles of £4.8 million and a charge of £2.6 million relating to the movement in the mark-to-market valuation of uncrystallised currency hedges for future years.

After adjusting items, the Group recorded an operating profit of £18.4 million (2018: £13.7 million) and profit before tax of £18.0 million (2018: £11.6 million).

Adjusted basic earnings per share grew by 30.0% to 35.5 pence (2018: 27.3 pence). Basic earnings per share grew by 59.0% to 24.8 pence (2018: 15.6 pence).

Cash generated from operations of £16.4 million (2018: £21.4 million), represents 65% (2018: 91%) cash conversion. Net cash increased from £6.7 million on 31 March 2019 to £14.2 million.

Adjusted operating profit is stated before impairment and amortisation of goodwill and acquired intangibles, the mark-to-market valuation of unexpired currency hedges, and other adjusting items, as set out in Note 2 to the Half-year Financial Statements.

Under the rules for audit tendering and rotation implemented in 2016, the Group is required to replace our current auditors, KPMG LLP, no later than 31 March 2021, effective for the 31 March 2022 year end. The Audit Committee has decided to undertake a comprehensive and thorough competitive tender process for the audit in the first quarter of 2020. The Committee expects to invite at least one challenger firm to participate in this process. Depending on the outcome of the tender, we expect to make an appointment prior to our 31 March 2020 year end, effective for the 31 March 2021 year end. This appointment will be subject to Shareholder approval at the next AGM to be held in September 2020.

Income Statement

The Group's Income Statement is summarised below.

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	Change
Revenue	**166.3**	147.0	13.1%
Gross profit	**82.2**	73.9	11.2%
Administrative expenses	**(55.3)**	(52.0)	
Share of profit of associate	**-**	(0.6)	
Foreign exchange	**(1.1)**	(0.3)	
Adjusted operating profit	**25.8**	21.0	22.9%
Net finance costs	**(0.4)**	(1.2)	
Adjusted profit before tax	**25.4**	19.8	28.3%
Amortisation of acquired intangibles	**(4.8)**	(4.7)	
Non-recurring items	**-**	(0.6)	
Mark-to-market of currency hedges	**(2.6)**	(2.9)	
Profit before tax	**18.0**	11.6	55.2%
Tax from continuing operations	**(3.8)**	(2.7)	
Profit for the period from continuing operations	**14.2**	8.9	
Adjusted effective tax rate[1]	**20.1%**	21.2%	
Continuing adjusted earnings per share – basic	**35.5p**	27.3p	30.0%
Continuing earnings per share – basic	**24.8p**	15.6p	59.0%
Continuing adjusted earnings per share – diluted	**35.1p**	27.0p	30.0%
Continuing earnings per share – diluted	**24.6p**	15.4p	59.7%
Dividend per share	**4.10p**	3.80p	7.9%

1. The adjusted effective tax rate is calculated excluding amortisation of acquired intangibles, the mark-to-market of financial derivatives, and other adjusting items.

Orders and revenue

Total reported orders grew by 6.4% (2.8% at constant currency) to £173.3 million. Orders, at constant currency, increased by 3.9% for Materials & Characterisation, declined by 0.5% for Research & Discovery and increased by 6.3% for Service & Healthcare. The decline in Research & Discovery was principally due to the phasing of OEM orders within X-Ray Technology.

Reported revenue of £166.3 million (2018: £147.0 million) increased by 13.1% (9.1% at constant currency). Reported revenue increased by 16.1% for Materials & Characterisation, 12.7% for Research & Discovery and 8.3% for Service & Healthcare.

The book-to-bill ratio (orders received to goods and services billed in the period) for the half year was 1.04.

Revenue, at constant currency, increased by 12.3% for Materials & Characterisation, with a particularly strong performance from all constituent businesses. Constant currency growth was 8.7% in Research & Discovery, with good progress from Andor Technology and an improvement in NanoScience and X-Ray Technology. Service & Healthcare constant currency revenue grew by 4.0%, with good growth from the service of our own products.

On a geographical basis, at constant currency, revenue grew by 18.4% in Europe, 7.8% in North America, 4.3% in Asia and 15.0% in Rest of World.

The total reported order book grew by 8.9% (6.0% at constant currency) to £186.8 million compared to 31 March 2019. The order book, at constant currency, increased by 10.4% for Materials & Characterisation, 0.7% for Research & Discovery and 13.6% in Service & Healthcare. All constituent businesses grew their order book over the half year, with the exception of X-Ray Technology as previously explained.

£m	Materials & Characterisation	Research & Discovery	Service & Healthcare	Total
Revenue: Half year 2018/19	60.1	54.3	32.6	147.0
Underlying movement	7.4	4.7	1.3	13.4
Foreign exchange	2.3	2.2	1.4	5.9
Revenue: Half year 2019/20	**69.8**	**61.2**	**35.3**	**166.3**
Revenue growth: reported	16.1%	12.7%	8.3%	13.1%
Revenue growth: constant currency	12.3%	8.7%	4.0%	9.1%

Reclassification of costs

During the year we have reviewed the classification of costs within the Income Statement, with a focus on whether items are reported within cost of sales or operating expenses. As a result, certain reclassifications were made, the most significant being that outward freight costs and sales commissions paid to employees and external agents are reported within cost of sales rather than within selling and marketing expenses. This is considered to be a better presentation since gross margin is now a clearer indicator of commercial performance and overheads a clearer indicator of cost control.

Gross profit

Gross profit increased by 11.2% to £82.2 million (2018: £73.9 million), representing a gross profit margin of 49.4%.

Adjusted operating profit

Adjusted operating profit increased by 22.9% to £25.8 million (2018: £21.0 million), representing an adjusted operating profit margin of 15.5%, an increase of 120 basis points against last year. At constant currency, the adjusted operating profit margin was 14.7%, an increase of 40 basis points.

Materials & Characterisation's margin increased by 140 basis points to 17.5% (2018: 16.1%). At constant currency, the margin was 16.7%, an increase of 60 basis points.

Research & Discovery's adjusted operating margin increased to 10.5% (2018: 8.8%), an increase of 170 basis points. At constant currency, the margin was 9.5%, an increase of 70 basis points.

Service & Healthcare's margin increased by 50 basis points to 20.4% (2018: 19.9%). At constant currency, the margin was 19.8%, a reduction of 10 basis points.

Our share of the Scienta Omicron joint venture showed an adjusted result after tax of zero for the period, against an adjusted loss of £0.6 million for the comparative period.

£m	Materials & Characterisation	Research & Discovery	Service & Healthcare	Total
Adjusted operating profit: Half year 2018/19	9.7	4.8	6.5	21.0
Underlying movement	1.6	0.8	0.2	2.6
Foreign exchange	0.9	0.8	0.5	2.2
Adjusted operating profit: Half year 2019/20	**12.2**	**6.4**	**7.2**	**25.8**
Margin: 2018/19	16.1%	8.8%	19.9%	14.3%
Margin: 2019/20	**17.5%**	**10.5%**	**20.4%**	**15.5%**

Adjusting items

Amortisation of acquired intangibles of £4.8 million relates to intangible assets recognised on acquisitions, being the value of technology, customer relationships and brands.

The Group uses derivative products to hedge its short-term exposure to fluctuations in foreign exchange rates. It is Group policy to have in place at the beginning of the financial year hedging instruments to cover approximately 80% of its forecast transactional exposure for that year. The Group has decided that the additional costs of meeting the extensive documentation requirements of IFRS 9 to apply hedge accounting to these foreign exchange hedges cannot be justified. Accordingly, the Group does not use hedge accounting for these derivatives.

Net movements on marking-to-market derivatives in respect of future periods are disclosed in the Income Statement as foreign exchange and excluded from our calculation of adjusted profit before tax.

The mark-to-market loss in respect of derivative financial instruments was £2.6 million (2018: £2.9 million loss). This reflects the movement on currency derivatives that are hedging future transactional currency exposures for the Group. The half-year position reflects an uncrystallised loss arising from a fall in the value of Sterling at the balance sheet date against a blended rate achieved on the US Dollar, Euro and Japanese Yen forward contracts that will mature over the next 18 months.

Net finance costs

The Group's adjusted net finance costs fell by £0.8 million to £0.4 million (2018: £1.2 million) with net finance charges falling by £0.6 million to £0.4 million, supported by a refund of overpaid interest for previous years of £0.2 million, and pension financing charges falling by £0.2 million to zero, reflecting the movement from a net pension deficit as at 31 March 2019 to a small net pension asset as at 30 September 2019.

Profit before tax

Adjusted profit before tax increased by 28.3% to £25.4 million (2018: £19.8 million). The adjusted profit before tax margin rose to 15.3% (2018: 13.5%).

Profit before tax of £18.0 million (2018: £11.6 million) is after the mark-to-market movement on derivative financial instruments and amortisation of acquired intangibles.

Tax

The adjusted tax charge of £5.1 million (2018: £4.2 million) represents an effective tax rate of 20.1% (2018: 21.2%). The reduction reflects a change in the geographical mix of profits.

Earnings per share

Adjusted basic earnings per share increased by 30.0% to 35.5 pence (2018: 27.3 pence); adjusted diluted earnings per share grew by 30.0% to 35.1 pence (2018: 27.0 pence). Basic earnings per share increased by 59.0% to 24.8 pence (2018: 15.6 pence); diluted earnings per share grew by 59.7% to 24.6 pence (2018: 15.4 pence).

The number of undiluted weighted average shares remained constant at 57.2 million.

Foreign exchange

The Group faces transactional and translational currency exposure, most notably against the US Dollar, Euro and Japanese Yen. For the year, approximately 13% of Group revenue was denominated in Sterling, 57% in US Dollars, 19% in Euros, 10% in Japanese Yen and 1% in other currencies. Our adjusted operating profit currency exposure for the half year in Sterling equivalent is short Sterling £35.2 million, long US Dollar £38.1 million, long Euro £19.3 million, long Japanese Yen £9.4 million, short Chinese Renminbi £4.5 million and short other currencies £1.3 million. Translational exposures arise on the consolidation of overseas company results into Sterling. Transactional exposures arise where the currency of sale or purchase transactions differs from the functional currency in which each company prepares its local accounts.

The Group maintains a hedging programme against its net transactional exposure using internal projections of expected currency trading transactions expected to arise over a period extending from 12 to 24 months. As at 30 September 2019 the Group had currency hedges in place extending up to eighteen months forward.

Currency effects (including the impact of transactional currency hedging) have increased half year reported adjusted operating profit by £2.2 million, when compared to blended hedged exchange rates for the comparative period. We estimate that the full-year currency effect, based on currency rates prevailing at the end of October 2019, will be approximately a benefit of £3.0 million to adjusted operating profit.

For the full year 2020/21, our assessment of the currency impact is, based on hedges currently in place and spot rates prevailing as at 31 October 2019, a benefit to adjusted operating profit of £1.0 million. As an example sensitivity, if we assume a 5% appreciation of Sterling against our major trading currencies, then the impact is a reduction in adjusted operating profit of £2.7 million.

The actual currency impact will be dependent on currency rates at the time of shipments and customer acceptances, as well as the currency mix, and is thus subject to a high degree of uncertainty.

Dividend

The Group's policy is to increase the dividend each year in line with the increase in underlying earnings, considering movements in currency. The Board has proposed to increase the interim dividend by 7.9% to 4.10 pence (2018: 3.80 pence). The interim dividend will be paid on 14 April 2020 to Shareholders on the register as at 6 March 2020.

Cash flow

The Group's cash flow is summarised below.

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m
Adjusted operating profit	**25.8**	21.0
Depreciation and amortisation	**5.2**	5.4
Adjusted EBITDA	**31.0**	26.4
Working capital movement	**(10.4)**	(1.2)
Purchase of rental assets held for subsequent sale	**(0.1)**	(0.6)
Equity settled share schemes	**2.0**	0.4
Share of loss from associate	**-**	0.6
Business reorganisation items	**-**	(0.7)
Pension scheme payments above charge to operating profit	**(6.1)**	(3.5)
Cash generated from operations	**16.4**	21.4
Interest	**(1.1)**	(2.3)
Tax	**(3.5)**	(4.7)
Capitalised development expenditure	**(2.2)**	(1.5)
Expenditure on tangible and intangible assets	**(2.0)**	(3.4)
Decrease in long-term receivables	**0.5**	0.6
Dividends paid	**(2.2)**	(2.1)
Proceeds from issue of share capital and exercise of share options	**0.2**	-
Payments made in respect of lease liabilities	**(1.6)**	(1.6)
Decrease in borrowings	**-**	(8.6)
Net increase/(decrease) in cash and cash equivalents from continuing operations	**4.5**	(2.2)

Note: Adjusted EBITDA is earnings before interest, tax, depreciation, amortisation of acquired intangibles, mark-to-market of financial derivatives, and other adjusting items.

Cash generated from operations

Cash generated from operations of £16.4 million (2018: £21.4 million), represents 65% (2018: 91%) cash conversion. Cash conversion is defined as cash generated from operations before pension scheme payments, less capitalised development expenditure, capital expenditure and payments made in respect of finance leases/adjusted operating profit. Payments made in respect of finance leases are now included within our definition of cash conversion to retain a like-for-like comparison following the introduction of IFRS 16.

Working capital rose by £10.4 million, reflecting an increase in inventories of £3.8 million, a decrease in receivables of £3.6 million and a reduction in payables and customer deposits of £10.2 million. The increase in inventories is primarily to support shipments in the second half of the year. Receivables fell by less than expected owing to a higher number of shipments occurring closer to the half year end compared to the previous year, with the effect that issued invoices are not due by the half year end and are thus not payable. The reduction in payables and customer deposits is primarily due to a reduction in deferred revenue due to a change in timing of invoicing of service contracts, a fall in customer deposits due to revenue recognised on acceptance close to the half year end, and the timing of payments made on the operational excellence consultancy support. We expect the cash conversion ratio to improve for the full year.

The increase in the cost of equity settled share schemes is due to a catch-up charge relating to a correction in the valuation of management share option incentive schemes.

Pension

Pension costs included a payment of $2.9 million (£2.3 million) to the US pension scheme as part settlement of termination liabilities. We expect a second and final payment of approximately $1.6 million will be made prior to the year end.

Interest

Net interest paid was £1.1 million (2018: £2.3 million). Cash interest is higher than the charge in the Income Statement due to timing differences on the payment of interest on private placement loan notes.

Tax

Tax paid was £3.5 million (2018: £4.7 million); the current period includes a cash settlement to HMRC of £4.0 million in April 2019, partially offset by a tax refund in the US following the closure of prior period submissions.

Investment in Research and Development ("R&D")

Total cash spend on R&D in the half year was £13.0 million, equivalent to 7.8% of sales (2018: £12.0 million, 8.2% of sales). During the half year we have invested in additional systems to support projects and sample production for new processes within our semiconductor solutions business. Development costs for a new analyser for electron microscopy have been capitalised in the first half of the year. A reconciliation between the amounts charged to the Income Statement and the cash spent is given below:

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m
R&D expense charged to the Income Statement	**11.9**	12.0
Amounts capitalised as fixed assets	**0.1**	-
Amortisation of R&D costs previously capitalised as intangibles	**(1.2)**	(1.5)
Amounts capitalised as intangible assets	**2.2**	1.5
Total cash spent on R&D during the year	**13.0**	12.0

Net cash and funding

Net cash

Cash generation in the half year increased the Group's net cash from £6.7 million at the start of the year to £14.2 million on 30 September 2019. Cash generated from operations was £16.4 million. The Group invested £2.2 million in capitalised development costs and £2.0 million in tangible and intangible assets.

Movement in net cash	£m
Net cash as at 31 March 2019	**6.7**
Cash generated from operations	16.4
Interest	(1.1)
Tax	(3.5)
Capitalised development expenditure	(2.2)
Capital expenditure on tangible and intangible assets	(2.0)
Dividends paid	(2.2)
Foreign exchange and other items	2.1
Net cash as at 30 September 2019	**14.2**

Funding

On 2 July 2018 the Group entered into an unsecured multi-currency revolving facility agreement, which is committed until June 2023 with one-year extension options at the end of the first and second years. The facility has been entered into with two banks and comprises a Euro denominated multi-currency facility of €50.0 million and a US Dollar denominated multi-currency facility of $80.0 million.

Debt covenants are net debt to EBITDA less than 3.0 times and EBITDA to interest greater than 4.0 times. As at 30 September 2019, the business had net cash.

Pensions

The Group has defined benefit pension schemes in the UK and USA. Both have been closed to new entrants since 2001 and closed to future accrual from 2010.

At 30 September 2019, we recorded a net asset of £2.6 million from defined benefit scheme obligations (31 March 2019: net liability of £6.5 million). The movement of £9.1 million from a net liability to net asset position was primarily due to the contributions paid in the period. Total scheme assets at 30 September 2019 were £353.1 million (31 March 2019: £311.4 million) while liabilities were £350.5 million (31 March 2019: £317.9 million).

We are progressing with the process to terminate the US defined benefit pension scheme. This will extinguish all liabilities of the scheme. We expect to complete the project by the end of the financial year.

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position, are set out in the Performance, Strategy and Operations sections of the 2019 Annual Report. The financial position of the Group, its cash flows, liquidity position and borrowing facilities are described in the Finance Review.

The diverse nature of the Group, combined with its financial strength, provides a solid foundation for a sustainable business. The Directors have reviewed the Group's forecasts and flexed them to incorporate a number of potential scenarios relating to changes in trading performance. The Directors believe that the Group will be able to operate within its existing debt facilities. This review also considered hedging arrangements in place. The Directors believe that the Group is well placed to manage its business risks successfully.

The Financial Statements have been prepared on a going concern basis, based on the Directors' opinion, after making reasonable enquiries, that the Group has adequate resources to continue in operational existence for the foreseeable future.

Forward-looking statements

This document contains certain forward-looking statements. The forward-looking statements reflect the knowledge and information available to the Company during the preparation and up to the publication of this document. By their very nature, these statements depend upon circumstances and relate to events that may occur in the future thereby involving a degree of uncertainty. Therefore, nothing in this document should be construed as a profit forecast by the Company.

Gavin Hill
Group Finance Director
12 November 2019

Responsibility Statement of the Directors in respect of the Half-year Financial Statements

We confirm that to the best of our knowledge:

• the condensed set of Financial Statements has been prepared in accordance with IAS 34 Interim Financial Reporting as adopted by the EU; and

• the interim management report includes a fair review of the information required by:

(a) DTR 4.2.7R of the Disclosure Guidance and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed set of Financial Statements; and a description of the principal risks and uncertainties for the remaining six months of the year; and

(b) DTR 4.2.8R of the Disclosure Guidance and Transparency Rules, being related party transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or performance of the entity during that period; and any changes in the related party transactions described in the last Annual Report that could do so.

Ian Barkshire Chief Executive	Gavin Hill Group Finance Director

12 November 2019

Condensed Consolidated Income Statement

Half year ended 30 September 2019 - unaudited

		Half year to 30 September 2019			Half year to 30 September 2018 as restated *2		
		Adjusted	Adjusting items *1	Total	Adjusted	Adjusting items *1	Total
	Note	£m	£m	£m	£m	£m	£m
Revenue	4	**166.3**	**-**	**166.3**	147.0	-	147.0
Cost of sales		**(84.1)**	**-**	**(84.1)**	(73.1)	-	(73.1)
Gross profit		**82.2**	**-**	**82.2**	73.9	-	73.9
Research and development	5	**(11.9)**	**-**	**(11.9)**	(12.0)	-	(12.0)
Selling and marketing		**(25.1)**	**-**	**(25.1)**	(24.6)	-	(24.6)
Administration and shared services		**(18.3)**	**(4.8)**	**(23.1)**	(15.4)	(4.7)	(20.1)
Share of (loss)/profit of associate, net of tax		**-**	**-**	**-**	(0.6)	0.3	(0.3)
Foreign exchange loss		**(1.1)**	**(2.6)**	**(3.7)**	(0.3)	(2.9)	(3.2)
Operating profit		**25.8**	**(7.4)**	**18.4**	21.0	(7.3)	13.7
Financial income		**0.5**	**-**	**0.5**	0.1	-	0.1
Interest charge on pension scheme net liabilities		**-**	**-**	**-**	(0.2)	-	(0.2)
Other financial expenditure		**(0.9)**	**-**	**(0.9)**	(1.1)	(0.9)	(2.0)
Financial expenditure		**(0.9)**	**-**	**(0.9)**	(1.3)	(0.9)	(2.2)
Profit/(loss) before income tax	4	**25.4**	**(7.4)**	**18.0**	19.8	(8.2)	11.6
Income tax (expense)/credit		**(5.1)**	**1.3**	**(3.8)**	(4.2)	1.5	(2.7)
Profit/(loss) for the period from continuing operations		**20.3**	**(6.1)**	**14.2**	15.6	(6.7)	8.9
Profit from discontinued operations after tax	7	**-**	**-**	**-**	-	-	-
Profit/(loss) for the period attributable to equity holders of the parent		**20.3**	**(6.1)**	**14.2**	15.6	(6.7)	8.9

	Note						
Earnings per share		**pence**		**pence**	pence		pence
Basic earnings per share	3						
From continuing operations		**35.5**		**24.8**	27.3		15.6
From discontinued operations		**-**		**-**	-		-
From profit for the period		**35.5**		**24.8**	27.3		15.6
Diluted earnings per share	3						
From continuing operations		**35.1**		**24.6**	27.0		15.4
From discontinued operations		**-**		**-**	-		-
From profit for the period		**35.1**		**24.6**	27.0		15.4
Dividends per share	9						
Dividends paid				**3.8**			3.7
Dividends proposed				**4.1**			3.8

*1 Adjusted numbers are stated to give a better understanding of the underlying business performance. Details of adjusting items can be found in Note 2.
*2 Details of restatement of prior period numbers can be found in Note 1.

Condensed Consolidated Income Statement - Continued

Half year ended 30 September 2019 - unaudited

	Note	Year to 31 March 2019 as restated *2 Adjusted £m	Adjusting items *1 £m	Total £m
Revenue	4	*333.6*	*-*	*333.6*
Cost of sales		*(166.6)*	*-*	*(166.6)*
Gross profit		*167.0*	*-*	*167.0*
Research and development	5	*(24.8)*	*-*	*(24.8)*
Selling and marketing		*(52.1)*	*-*	*(52.1)*
Administration and shared services		*(39.4)*	*(9.9)*	*(49.3)*
Share of profit of associate, net of tax		*0.2*	*0.3*	*0.5*
Foreign exchange loss		*(1.2)*	*(1.5)*	*(2.7)*
Operating profit		*49.7*	*(11.1)*	*38.6*
Financial income		*0.3*	*-*	*0.3*
Interest charge on pension scheme net liabilities		*(0.3)*	*-*	*(0.3)*
Other financial expenditure		*(2.2)*	*(0.9)*	*(3.1)*
Financial expenditure		*(2.5)*	*(0.9)*	*(3.4)*
Profit/(loss) before income tax	4	*47.5*	*(12.0)*	*35.5*
Income tax (expense)/credit		*(10.4)*	*3.6*	*(6.8)*
Profit/(loss) for the period from continuing operations		*37.1*	*(8.4)*	*28.7*
Profit from discontinued operations after tax	7	*-*	*1.3*	*1.3*
Profit/(loss) for the period attributable to equity holders of the parent		*37.1*	*(7.1)*	*30.0*
Earnings per share		*pence*		*pence*
Basic earnings per share	3			
From continuing operations		*64.9*		*50.1*
From discontinued operations		*-*		*2.3*
From profit for the period		*64.9*		*52.4*
Diluted earnings per share	3			
From continuing operations		*64.3*		*49.7*
From discontinued operations		*-*		*2.3*
From profit for the period		*64.3*		*52.0*
Dividends per share	9			
Dividends paid				*13.3*
Dividends proposed				*14.4*

*1 Adjusted numbers are stated to give a better understanding of the underlying business performance. Details of adjusting items can be found in Note 2.
*2 Details of restatement of prior period numbers can be found in Note 1.

Condensed Consolidated Statement of Comprehensive Income

Half year ended 30 September 2019 - unaudited

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Profit for the period	**14.2**	8.9	*30.0*
Other comprehensive income/(expense):			
Items that may be reclassified subsequently to profit or loss			
Foreign exchange translation differences	**2.7**	4.6	*4.2*
Items that will not be reclassified to profit or loss			
Remeasurement gain in respect of post-retirement benefits	**3.3**	2.1	*2.5*
Tax charge on items that will not be reclassified to profit or loss	**(0.6)**	(0.4)	*(0.5)*
Total other comprehensive income	**5.4**	6.3	*6.2*
Total comprehensive income for the period attributable to equity Shareholders of the parent	**19.6**	15.2	*36.2*

Condensed Consolidated Statement of Changes in Equity

Half year ended 30 September 2019 - unaudited

	Share capital £m	Share premium account £m	Other reserves £m	Foreign exchange translation reserve £m	Retained earnings £m	Total £m
As at 1 April 2019	**2.9**	**61.7**	**0.2**	**13.4**	**124.0**	**202.2**
Total comprehensive income/(expense):						
Profit for the period	**-**	**-**	**-**	**-**	**14.2**	**14.2**
Other comprehensive income/(expense):						
- Foreign exchange translation differences	**-**	**-**	**-**	**2.7**	**-**	**2.7**
- Remeasurement gain in respect of post-retirement benefits	**-**	**-**	**-**	**-**	**3.3**	**3.3**
- Tax on items recognised directly in other comprehensive income	**-**	**-**	**-**	**-**	**(0.6)**	**(0.6)**
Total comprehensive income attributable to equity Shareholders of the parent	**-**	**-**	**-**	**2.7**	**16.9**	**19.6**
Transactions with owners recorded directly in equity:						
- Proceeds from exercise of share options	**-**	**-**	**-**	**-**	**0.2**	**0.2**
- Credit in respect of employee service costs settled by award of share options	**-**	**-**	**-**	**-**	**2.0**	**2.0**
- Tax credit in respect of share options	**-**	**-**	**-**	**-**	**-**	**-**
- Dividends paid or accrued	**-**	**-**	**-**	**-**	**(8.3)**	**(8.3)**
Total transactions with owners recorded directly in equity:	**-**	**-**	**-**	**-**	**(6.1)**	**(6.1)**
As at 30 September 2019	**2.9**	**61.7**	**0.2**	**16.1**	**134.8**	**215.7**

	Share capital £m	Share premium account £m	Other reserves £m	Foreign exchange translation reserve £m	Retained earnings £m	Total £m
As at 1 April 2018	2.9	61.7	0.2	9.2	105.6	179.6
Impact of adoption of IFRS 15	-	-	-	-	(7.0)	(7.0)
	2.9	61.7	0.2	9.2	98.6	172.6
Total comprehensive income/(expense):						
Profit for the period	-	-	-	-	8.9	8.9
Other comprehensive income/(expense):						
- Foreign exchange translation differences	-	-	-	4.6	-	4.6
- Remeasurement gain in respect of post-retirement benefits	-	-	-	-	2.1	2.1
- Tax on items recognised directly in other comprehensive income	-	-	-	-	(0.4)	(0.4)
Total comprehensive income attributable to equity Shareholders of the parent	-	-	-	4.6	10.6	15.2
Transactions with owners recorded directly in equity:						
- Proceeds from exercise of share options	-	-	-	-	-	-
- Credit in respect of employee service costs settled by award of share options	-	-	-	-	0.4	0.4
- Tax credit in respect of share options	-	-	-	-	-	-
- Dividends paid or accrued	-	-	-	-	(7.6)	(7.6)
Total transactions with owners recorded directly in equity:	-	-	-	-	(7.2)	(7.2)
As at 30 September 2018	2.9	61.7	0.2	13.8	102.0	180.6

Condensed Consolidated Statement of Changes in Equity - Continued

Half year ended 30 September 2019 - unaudited

	Share capital	Share premium account	Other reserves	Foreign exchange translation reserve	Retained earnings	Total
	£m	£m	£m	£m	£m	£m
As at 1 April 2018	2.9	61.7	0.2	9.2	105.6	179.6
Impact of adoption of IFRS 15	-	-	-	-	(7.2)	(7.2)
	2.9	61.7	0.2	9.2	98.4	172.4
Total comprehensive income/(expense):						
Profit for the period	-	-	-	-	30.0	30.0
Other comprehensive income/(expense):						
- Foreign exchange translation differences	-	-	-	4.2	-	4.2
- Remeasurement gain in respect of post-retirement benefits	-	-	-	-	2.5	2.5
- Tax on items recognised directly in other comprehensive income	-	-	-	-	(0.5)	(0.5)
Total comprehensive income attributable to equity Shareholders of the parent	-	-	-	4.2	32.0	36.2
Transactions with owners recorded directly in equity:						
- Proceeds from exercise of share options	-	-	-	-	0.2	0.2
- Credit in respect of employee service costs settled by award of share options	-	-	-	-	0.8	0.8
- Tax credit in respect of share options	-	-	-	-	0.2	0.2
- Dividends paid or accrued	-	-	-	-	(7.6)	(7.6)
Total transactions with owners recorded directly in equity:	-	-	-	-	(6.4)	(6.4)
As at 31 March 2019	2.9	61.7	0.2	13.4	124.0	202.2

Condensed Consolidated Statement of Financial Position

As at 30 September 2019 - unaudited

	Note	**As at 30 September 2019 £m**	As at 30 September 2018 £m	*As at 31 March 2019 £m*
Assets				
Non-current assets				
Property, plant and equipment		**24.5**	23.9	*24.2*
Right of use assets		**8.8**	9.7	*8.8*
Intangible assets		**149.8**	156.8	*152.5*
Investment in associate	6	**4.6**	3.8	*4.6*
Long-term receivables		**-**	0.9	*0.3*
Retirement benefit asset		**3.4**	-	*-*
Deferred tax assets		**16.0**	15.4	*15.3*
		207.1	210.5	*205.7*
Current assets				
Inventories		**65.5**	64.6	*60.8*
Trade and other receivables		**75.1**	61.9	*78.3*
Current income tax receivable		**0.8**	2.1	*2.4*
Derivative financial instruments	10	**0.9**	1.0	*1.1*
Cash and cash equivalents		**42.1**	18.9	*35.2*
		184.4	148.5	*177.8*
Total assets		**391.5**	359.0	*383.5*
Equity				
Capital and reserves attributable to the Company's equity Shareholders				
Share capital		**2.9**	2.9	*2.9*
Share premium		**61.7**	61.7	*61.7*
Other reserves		**0.2**	0.2	*0.2*
Translation reserve		**16.1**	13.8	*13.4*
Retained earnings		**134.8**	102.0	*124.0*
		215.7	180.6	*202.2*
Liabilities				
Non-current liabilities				
Bank loans		**27.9**	27.3	*27.9*
Lease payables		**5.8**	7.5	*6.0*
Retirement benefit obligations		**-**	9.9	*6.5*
Provisions		**1.0**	1.3	*1.1*
Deferred tax liabilities		**6.6**	5.2	*6.3*
		41.3	51.2	*47.8*
Current liabilities				
Bank loans and overdrafts		**-**	4.1	*0.6*
Trade and other payables		**109.1**	99.9	*116.9*
Lease payables		**3.4**	2.3	*3.0*
Retirement benefit obligations		**0.8**	-	*-*
Current income tax payables		**3.5**	4.7	*4.3*
Accrued dividend		**6.1**	5.5	*-*
Derivative financial instruments	10	**4.2**	1.6	*1.1*
Provisions		**7.4**	9.1	*7.6*
		134.5	127.2	*133.5*
Total liabilities		**175.8**	178.4	*181.3*
Total liabilities and equity		**391.5**	359.0	*383.5*

Condensed Consolidated Statement of Cash Flows

Half year ended 30 September 2019 - unaudited

	Note	**Half year to 30 September 2019 £m**	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Profit for the period from continuing operations		**14.2**	8.9	*30.0*
Profit for the period from discontinued operations	7	**-**	-	*(1.3)*
Profit for the period from continuing operations		**14.2**	8.9	*28.7*
Adjustments for:				
Income tax expense		**3.8**	2.7	*6.8*
Net financial expense		**0.4**	2.1	*3.1*
Fair value movement on financial derivatives		**2.6**	2.9	*1.5*
Restructuring costs - relating to associate		**-**	0.3	*0.3*
Past service cost on defined benefit pension scheme		**-**	-	*0.3*
Share of impairment recognised by associate		**-**	(0.6)	*(0.6)*
Amortisation of acquired intangibles		**4.8**	4.7	*9.6*
Depreciation of right of use assets		**1.8**	1.7	*3.3*
Depreciation of property, plant and equipment		**2.2**	2.2	*3.9*
Amortisation and impairment of capitalised development costs		**1.2**	1.5	*3.5*
Amortisation and impairment of capitalised software costs		**-**	-	*0.3*
Adjusted earnings before interest, tax, depreciation and amortisation		**31.0**	26.4	*60.7*
Loss on disposal of plant, property and equipment		**-**	-	*0.2*
Charge in respect of equity settled employee share schemes		**2.0**	0.4	*0.8*
Share of loss/(profit) of associate		**-**	0.6	*(0.2)*
Restructuring costs paid		**-**	(0.7)	*(0.7)*
Cash payments to the pension scheme more than the charge to operating profit		**(6.1)**	(3.5)	*(7.1)*
Operating cash flows before movements in working capital		**26.9**	23.2	*53.7*
Increase in inventories		**(3.8)**	(7.9)	*(4.0)*
Decrease/(increase) in receivables		**3.6**	12.6	*(3.5)*
(Decrease)/increase in payables and provisions		**(9.7)**	(7.7)	*4.1*
(Decrease)/increase in customer deposits		**(0.5)**	1.8	*7.1*
Purchase of rental assets held for subsequent sale		**(0.1)**	(0.6)	*(1.1)*
Cash generated from operations		**16.4**	21.4	*56.3*
Interest paid		**(1.6)**	(2.3)	*(3.5)*
Income taxes paid		**(3.5)**	(4.7)	*(8.7)*
Net cash from operating activities - continuing operations		**11.3**	14.4	*44.1*
Net cash from operating activities - discontinued operations		1.6	-	*-*
Net cash from operating activities		**12.9**	14.4	*44.1*
Cash flows from investing activities				
Acquisition of property, plant and equipment		**(2.0)**	(2.4)	*(4.1)*
Acquisition of intangible assets		**-**	(1.0)	*(2.2)*
Capitalised development expenditure		**(2.2)**	(1.5)	*(3.5)*
Decrease in long-term receivables		**0.5**	0.6	*1.1*
Interest received		**0.5**	-	*0.3*
Net cash used in investing activities		**(3.2)**	(4.3)	*(8.4)*
Cash flows from financing activities				
Proceeds from exercise of share options		**0.2**	-	*0.2*
Payments made in respect of lease liabilities		**(1.6)**	(1.6)	*(3.2)*
Repayment of borrowings		**-**	(8.6)	*(11.5)*
Dividends paid		**(2.2)**	(2.1)	*(7.6)*
Net cash used in financing activities		**(3.6)**	(12.3)	*(22.1)*
Net increase/(decrease) in cash and cash equivalents		**6.1**	(2.2)	*13.6*
Cash and cash equivalents at beginning of the period		**35.2**	20.7	*20.7*
Effect of exchange rate fluctuations on cash held		**0.8**	0.4	*0.9*
Cash and cash equivalents at end of the period		**42.1**	18.9	*35.2*

Notes to the Half-year Financial Statements

Half-year ended 30 September 2019 - unaudited

1 Basis of preparation

Reporting entity

Oxford Instruments plc is a company incorporated in England and Wales. The condensed consolidated half-year "Financial Statements" consolidate the results of the Company and its subsidiaries (together referred to as the "Group".) They have been prepared and approved by the Directors in accordance with International Financial Reporting Standard ("IFRS") IAS 34 Interim Financial Reporting as adopted by the EU. They do not include all of the information required for full annual financial statements, and should be read in conjunction with the consolidated Financial Statements of the Group for the year ended 31 March 2019.

The financial information contained herein is unaudited and does not constitute statutory accounts as defined by Section 435 of the Companies Act 2006. The comparative figures for the financial year ended 31 March 2019 are not the Company's statutory accounts for that financial year. Those accounts have been reported on by the Company's auditors and delivered to the registrar of companies. The report of the auditors was (i) unqualified, (ii) did not include a reference to any matters to which the auditors drew attention by way of emphasis without qualifying their report, and (iii) did not contain a statement under Section 498 (2) or (3) of the Companies Act 2006.

Significant accounting policies

As required by the Disclosure and Transparency Rules of the Financial Conduct Authority, the condensed set of Financial Statements has been prepared applying the accounting policies and presentation that were applied in the preparation of the Company's published consolidated Financial Ftatements for the year ended 31 March 2019 except as note below.

Prior period adjustment

During the year, the Directors reviewed the classification of costs in the Income Statement with a particular focus on whether items are reported within cost of sales or operating expenses. As a result of this review a number of reclassifications were made the most significant being that outward freight costs and commissions paid to employees and external agents are better presented within cost of sales rather than within selling and marketing expenses. The Directors consider this to be a better presentation since gross margin is now a clearer indicator of commercial performance and overheads a clearer indicator of cost control. Consequently, the previously published figures for the half year to 30 September 2018 and the year to 31 March 2019 have been restated. The effect on the half year to 30 September 2018 has been to increase cost of sales by £4.8m and reduce research and development costs by £0.3m, selling and marketing costs by £4.3m and administration and shared services by £0.2m. The effect on the year to 31 March 2019 has been to increase cost of sales by £10.0m and reduce research and development costs by £0.6m, selling and marketing costs by £9.2m and administration and shared services by £0.2m. There is no impact on any other primary statement at any reporting date.

Estimates

The preparation of half-year Financial Statements requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, income and expense. Actual results may differ from these estimates.

In preparing these half-year Financial Statements, the significant judgements made by management in applying the Group's accounting policies and key sources of estimation uncertainty were the same as those that applied to the Consolidated Financial Statements as at and for the year ended 31 March 2019.

Going concern

The condensed consolidated half-year Financial Statements have been prepared on a going concern basis, based on the Directors' opinion, after making reasonable enquiries, that the Group has adequate resources to continue in operational existence for the foreseeable future.

Exchange rates

The principal exchange rates used to translate the Group's overseas results were as follows:

Period-end rates	**Half year to 30 September 2019**	Half year to 30 September 2018	*Year to 31 March 2019*
US Dollar	**1.23**	1.30	*1.30*
Euro	**1.13**	1.12	*1.16*
Japanese Yen	**133**	148	*144*

Average translation rates	**US Dollar**	**Euro**	**Japanese Yen**
Half year to 30 September 2019			
April	**1.30**	**1.16**	**144**
May	**1.28**	**1.15**	**142**
June	**1.27**	**1.13**	**138**
July	**1.26**	**1.12**	**136**
August	**1.23**	**1.11**	**132**
September	**1.23**	**1.12**	**132**

Average translation rates	**US Dollar**	**Euro**	**Japanese Yen**
Year to 31 March 2019			
April	1.39	1.14	150
May	1.36	1.14	148
June	1.33	1.14	146
July	1.32	1.13	146
August	1.30	1.12	144
September	1.29	1.11	146
October	1.29	1.13	145
November	1.28	1.13	144
December	1.28	1.12	142
January	1.30	1.13	142
February	1.31	1.15	145
March	1.30	1.16	144

2 Non-GAAP measures

In the preparation of adjusted numbers, the Directors exclude certain items in order to assist with comparability between peers and to give what they consider to be a better indication of the underlying performance of the business. These adjusting items are excluded in the calculation of adjusted operating profit, adjusted profit before tax, adjusted profit for the year from continuing operations, adjusted EBITDA, adjusted EPS, adjusted cash conversion and adjusted effective tax rate. Details of adjusting items are given below.

Adjusted EBITDA is calculated by adding back depreciation of property, plant and equipment, depreciation of right of use assets and amortisation of intangible assets to adjusted operating profit, and can be found in the Consolidated Statement of Cash Flows. The calculation of adjusted EPS can be found in Note 3. Adjusted effective tax rate is calculated by dividing the share of tax attributable to adjusted profit before tax by adjusted profit before tax. The definition of cash conversion is set out in the Finance Review.

Reconciliation between operating profit and profit before income tax and adjusted profit from continuing operations

	Half year to 30 September 2019		Half year to 30 September 2018		*Year to 31 March 2019*	
	Operating profit	**Profit before income tax**	Operating profit	Profit before income tax	*Operating profit*	*Profit before income tax*
	£m	**£m**	£m	£m	*£m*	*£m*
Statutory measure from continuing operations	**18.4**	**18.0**	13.7	11.6	*38.6*	*35.5*
Restructuring costs - relating to associate	**-**	**-**	0.3	0.3	*0.3*	*0.3*
Business reorganisation items	**-**	**-**	0.3	0.3	*0.3*	*0.3*
Past service cost on defined benefit pension scheme	**-**	**-**	-	-	*0.3*	*0.3*
Share of impairment recognised by associate	**-**	**-**	(0.6)	(0.6)	*(0.6)*	*(0.6)*
Amortisation and impairment of acquired intangibles	**4.8**	**4.8**	4.7	4.7	*9.6*	*9.6*
Mark-to-market loss in respect of derivative financial instruments	**2.6**	**2.6**	2.9	2.9	*1.5*	*1.5*
Loan note make-whole payable		**-**		0.9		*0.9*
Total non-GAAP adjustments	**7.4**	**7.4**	7.3	8.2	*11.1*	*12.0*
Adjusted measure from continuing operations	**25.8**	**25.4**	21.0	19.8	*49.7*	*47.5*
Share of taxation		**(5.1)**		(4.2)		*(10.4)*
Adjusted profit for the year from continuing operations	**25.8**	**20.3**	21.0	15.6	*49.7*	*37.1*
Adjusted effective tax rates		**20.1%**		21.2%		21.9%

Restructuring costs - relating to associate
These represent the Group's share of mergers and acquisition costs and other one-off items incurred by the associate.

Past service cost on defined benefit pension scheme
As at 31 March 2019, the IAS 19 defined benefit pension balance sheet liability includes an allowance of £0.3m for the expected cost of equalising Guaranteed Minimum Pension ("GMP") between males and females.

GMP is a portion of 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. A High Court case concluded on 26 October 2018 and confirmed that GMPs need to be equalised.

Share of impairment recognised by associate
During the year to 31 March 2018 the Group's equity accounted associate recognised an impairment relating to the disposal of its Vacgen subsidiary. The Group's share of this impairment was £2.0m. Following the completion and finalisation of the transaction, £0.6m of the impairment was been reversed in the year to 31 March 2019.

Amortisation and impairment of acquired intangibles
Adjusted profit excludes the non-cash amortisation and impairment of acquired intangible assets and goodwill.

Mark-to-market loss in respect of derivative financial instruments
Under IFRS 9, all derivative financial instruments are recognised initially at fair value. Subsequent to initial recognition, they are also measured at fair value. In respect of instruments used to hedge foreign exchange risk and interest rate risk, the Group does not take advantage of the hedge accounting rules provided for in IFRS 9 since that standard requires certain stringent criteria to be met in order to hedge account, which, in the particular circumstances of the Group, are considered by the Board not to bring any significant economic benefit. Accordingly, the Group accounts for these derivative financial instruments at fair value through profit or loss. To the extent that instruments are hedges of future transactions, adjusted profit for the year is stated before changes in the valuation of these instruments so that the underlying performance of the Group can be more clearly seen.

Loan note make-whole payable
During the year to 31 March 2019 the Group repaid £11.6m of the principal outstanding on its loan notes. This payment was necessary due to material changes to the Group's structure following the disposal of its Industrial Analysis business during July 2017. The costs of £0.9m relate to the make-whole balance payable upon settlement of the £11.6m principal.

Share of taxation
Adjusting items include the income tax on each of the items described above.

Reconciliation of changes in cash and cash equivalents to movement in net cash

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Net increase/(decrease) in cash and cash equivalents	**6.1**	(2.2)	*13.6*
Effect of foreign exchange rate changes on cash and cash equivalents	**0.8**	0.4	*0.9*
	6.9	(1.8)	*14.5*
Repayment of borrowings	**-**	8.6	*11.5*
Movement in accrued interest	**0.6**	0.4	*0.4*
Movement in net cash in the period	**7.5**	7.2	*26.4*
Net cash/(debt) at start of the period	**6.7**	(19.7)	*(19.7)*
Net cash/(debt) at the end of the period	**14.2**	(12.5)	*6.7*

Reconciliation of net cash/(debt) to Statement of Financial Position

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Loan notes - unsecured	**(27.9)**	(28.5)	*(28.5)*
Bank loans - unsecured	**-**	(2.9)	*-*
Cash and cash equivalents (per Balance Sheet)	**42.1**	18.9	*35.2*
Net cash/(debt) at the end of the period	**14.2**	(12.5)	*6.7*

3 Earnings per share

Basic and diluted EPS from continuing operations are based on the result for the year from continuing operations, as reported in the Group Income Statement. Basic and diluted EPS from total operations are based on the result for the year attributable to equity Shareholders of the parent. Adjusted and diluted adjusted EPS are based on adjusted profit for the year from continuing operations. The profit measures noted above are divided by the weighted average number of ordinary shares outstanding during the year, excluding shares held by the Employee Share Ownership Trust. The table below reconciles these different profit measures.

	Half year to 30 September 2019 £m	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Profit for the year attributable to equity Shareholders of the parent	**14.2**	8.9	*30.0*
Discontinued operations	**-**	-	*(1.3)*
Adjusting items:			
Business reorganisation items	**-**	0.3	*0.3*
Past service cost on defined benefit pension scheme	**-**	-	*0.3*
Share of impairment recognised by associate	**-**	(0.6)	*(0.6)*
Amortisation and impairment of acquired intangibles	**4.8**	4.7	*9.6*
Mark-to-market gain in respect of derivative financial instruments	**2.6**	2.9	*1.5*
Loan note make-whole payable	**-**	0.9	*0.9*
Income tax credit	**(1.3)**	(1.5)	*(3.6)*
Adjusted profit for the year from continuing operations	**20.3**	15.6	*37.1*

The weighted average number of shares used in the calculation excludes shares held by the Employee Share Ownership Trust, and is as follows:

	Half year to 30 September 2019 Shares million	Half year to 30 September 2018 Shares million	*Year to 31 March 2019 Shares million*
Weighted average number of shares outstanding	**57.4**	57.4	*57.4*
Less: weighted average number of shares held by Employee Share Ownership Trust	**(0.2)**	(0.2)	*(0.2)*
Weighted average number of shares used in calculation of basic earnings per share	**57.2**	57.2	*57.2*

The following table shows the effect of share options on the calculation of diluted earnings per share:

	Half year to 30 September 2019 Shares million	Half year to 30 September 2018 Shares million	*Year to 31 March 2019 Shares million*
Number of ordinary shares per basic earnings per share calculations	**57.2**	57.2	*57.2*
Effect of shares under option	**0.6**	0.5	*0.5*
Number of ordinary shares per diluted earnings per share calculations	**57.8**	57.7	*57.7*

4 Segment information

The Group has ten operating segments. These operating segments have been combined into three aggregated operating segments to the extent that they have similar economic characteristics, with relevance to products and services, type and class of customer, methods of sale and distribution and the regulatory environment in which they operate. Each of these three aggregated operating segments is a reportable segment. The aggregated operating segments are as follows:

- the Materials & Characterisation segment comprises a group of businesses focusing on applied R&D and commercial customers, enabling the fabrication and characterisation of materials and devices down to the atomic scale;
- the Research & Discovery segment comprises a group of businesses providing advanced solutions that create unique environments and enable measurements down to the molecular and atomic level which are used in fundamental research; and
- the Service & Healthcare segment provides customer service and support for the Group's products and the service, sale and rental of third-party healthcare imaging systems.

The Group's internal management structure and financial reporting systems have been amended to differentiate the three aggregated operating segments on the basis of the economic characteristics discussed above.

Reportable segment results include items directly attributable to a segment as well as those which can be allocated on a reasonable basis. Inter-segment pricing is determined on an arm's length basis. The operating results of each are regularly reviewed by the Chief Operating Decision Maker, which is deemed to be the Board of Directors. Discrete financial information is available for each segment and used by the Board of Directors for decisions on resource allocation and to assess performance. No asset information is presented below as this information is not presented in reporting to the Group's Board of Directors.

Results from continuing operations

Half year to 30 September 2019	**Materials & Characterisation £m**	**Research & Discovery £m**	**Service & Healthcare £m**	**Total £m**
External revenue	**69.8**	**61.2**	**35.3**	**166.3**
Inter-segment revenue	**-**	**-**	**-**	
Total segment revenue	**69.8**	**61.2**	**35.3**	
Segment adjusted operating profit from continuing operations	**12.2**	**6.4**	**7.2**	**25.8**

Half year to 30 September 2018	Materials & Characterisation £m	Research & Discovery £m	Service & Healthcare £m	Total £m
External revenue	60.1	54.3	32.6	147.0
Inter-segment revenue	-	-	-	
Total segment revenue	60.1	54.3	32.6	
Segment adjusted operating profit from continuing operations	9.7	4.8	6.5	21.0

Year to 31 March 2019	*Materials & Characterisation £m*	*Research & Discovery £m*	*Service & Healthcare £m*	*Total £m*
External revenue	*137.9*	*125.2*	*70.5*	*333.6*
Inter-segment revenue	-	-	-	
Total segment revenue	*137.9*	*125.2*	*70.5*	
Segment adjusted operating profit from continuing operations	*22.1*	*12.7*	*14.9*	*49.7*

Reconciliation of reportable segment profit from continuing operations

Half year to 30 September 2019	**Materials & Characterisation £m**	**Research & Discovery £m**	**Service & Healthcare £m**	**Unallocated Group items £m**	**Total £m**
Segment adjusted operating profit from continuing operations	**12.2**	**6.4**	**7.2**	**-**	**25.8**
Amortisation and impairment of acquired intangibles	**(1.2)**	**(3.2)**	**(0.4)**	**-**	**(4.8)**
Fair value movement on financial derivatives	**-**	**-**	**-**	**(2.6)**	**(2.6)**
Financial income	**-**	**-**	**-**	**0.5**	**0.5**
Financial expenditure	**-**	**-**	**-**	**(0.9)**	**(0.9)**
Profit/(loss) before income tax from continuing operations	**11.0**	**3.2**	**6.8**	**(3.0)**	**18.0**

Half year to 30 September 2018	Materials & Characterisation £m	Research & Discovery £m	Service & Healthcare £m	Unallocated Group items £m	Total £m
Segment adjusted operating profit from continuing operations	9.7	4.8	6.5	-	21.0
Restructuring costs - relating to associates	-	(0.3)	-	-	(0.3)
Share of impairment recognised by associate	-	0.6	-	-	0.6
Amortisation and impairment of acquired intangibles	(1.1)	(3.2)	(0.4)	-	(4.7)
Fair value movement on financial derivatives	-	-	-	(2.9)	(2.9)
Financial income	-	-	-	0.1	0.1
Financial expenditure	-	-	-	(2.2)	(2.2)
Profit/(loss) before income tax from continuing operations	8.6	1.9	6.1	(5.0)	11.6

Year to 31 March 2019	*Materials & Characterisation £m*	*Research & Discovery £m*	*Service & Healthcare £m*	*Unallocated Group items £m*	*Total £m*
Segment adjusted operating profit from continuing operations	*22.1*	*12.7*	*14.9*	-	*49.7*
Restructuring costs - relating to associates	-	*(0.3)*	-	-	*(0.3)*
Past service cost on defined benefit pension scheme	-	-	-	*(0.3)*	*(0.3)*
Share of impairment recognised by associate	-	*0.6*	-	-	*0.6*
Amortisation and impairment of acquired intangibles	*(2.4)*	*(6.4)*	*(0.8)*	-	*(9.6)*
Fair value movement on financial derivatives	-	-	-	*(1.5)*	*(1.5)*
Financial income	-	-	-	*0.3*	*0.3*
Financial expenditure	-	-	-	*(3.4)*	*(3.4)*
Profit/(loss) before income tax from continuing operations	*19.7*	*6.6*	*14.1*	*(4.9)*	*35.5*

5 Research and development ("R&D")

The total research and development spend by the Group is as follows:

	Half year to 30 September 2019	Half year to 30 September 2018 as restated*	*Year to 31 March 2019 as restated**
	£m	£m	*£m*
R&D expense charged to the Consolidated Statement of Income	**11.9**	12.0	*24.8*
Less: depreciation of R&D-related fixed assets	**-**	-	*(0.1)*
Add: amounts capitalised as fixed assets	**0.1**	-	*0.1*
Less: amortisation of R&D costs previously capitalised as intangibles	**(1.2)**	(1.5)	*(3.5)*
Add: amounts capitalised as intangible assets	**2.2**	1.5	*3.5*
Total cash spent on R&D during the year	**13.0**	12.0	*24.8*

* Details of restatement of prior period numbers can be found in Note 1.

6 Investment in associate

The Group's share of profit in its equity accounted associate, Scienta Scientific AB ("Scienta"), for the period was £nil (prior half year: £0.3m loss; prior full year: £0.5m profit). The Group did not receive any dividends from the associate in the current or prior periods.

7 Discontinued operations

During the period the Group received £1.6m being a receipt of additional proceeds in respect of the sale of the Industrial Analysis business in July 2017.

During the prior year the Group recognised £1.6m, of income representing additional proceeds due in respect of the sale of the Industrial Analysis business in July 2017 and an associated tax charge of £0.3m.

8 Taxation

The total effective tax rate on profits for the half year is 21.1% (prior half year: 23.3%). The weighted average tax rate in respect of adjusted profit before tax (see Note 2) for the half year is 20.1% (prior half year: 21.2%).

For the full year the Group expects the tax rate in respect of adjusted profit before tax to be 20.0%.

9 Dividends per share

The following dividends per share were paid by the Group:

	Half year to 30 September 2019	Half year to 30 September 2018	*Year to 31 March 2019*
	pence	pence	*pence*
Interim dividend	**3.8**	3.7	*3.7*
Final dividend	**-**	-	*9.6*
	3.8	3.7	*13.3*

The following dividends per share were proposed by the Group in respect of each accounting period presented:

	Half year to 30 September 2019	Half year to 30 September 2018	*Year to 31 March 2019*
	pence	pence	*pence*
Previous period interim dividend	**4.1**	3.8	3.8
Previous period final dividend	**-**	-	10.6
	4.1	3.8	14.4

The final dividend for the year to 31 March 2019 was approved by Shareholders at the Annual General Meeting held on 10 September 2019. Accordingly, it is no longer at the discretion of the Company and has been included as a liability as at 30 September 2019. It was paid on 18 October 2019.

The interim dividend for the year to 31 March 2020 of 4.1 pence was approved by the Board on 12 November 2019 and has not been included as a liability as at 30 September 2019. The interim dividend will be paid on 14 April 2020 to Shareholders on the register at the close of business on 6 March 2020.

10 Financial instruments

Fair values of financial assets and liabilities

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy. It does not include fair value information for financial assets and financial liabilities not measured at fair value if the carrying amount is a reasonable approximation of fair value.

		Half year to 30 September 2019		Half year to 30 September 2018		*Year to 31 March 2019*	
	Fair value hierachy	**Carrying amount**	**Fair value**	Carrying amount	Fair value	*Carrying amount*	*Fair value*
		£m	**£m**	£m	£m	*£m*	*£m*
Assets carried at amortised cost							
Long-term receivables		**-**		0.9		*0.3*	
Trade receivables		**63.4**		49.9		*64.7*	
Other receivables		**7.0**		8.3		*10.0*	
Cash and cash equivalents		**42.1**		18.9		*35.2*	
Assets carried at fair value							
Derivative financial instruments:							
- Foreign currency contracts	2	**0.9**	**0.9**	1.0	1.0	*1.1*	*1.1*
Liabilities carried at fair value							
Derivative financial instruments:							
- Foreign currency contracts	2	**(4.2)**	**(4.2)**	(1.6)	(1.6)	*(1.1)*	*(1.1)*
Liabilities carried at amortised cost							
Trade and other payables		**(56.6)**		(58.6)		*(65.7)*	
Borrowings		**(27.9)**		(31.4)		*(28.5)*	
Lease payables		**(9.2)**		(9.8)		*(9.0)*	

The following summarises the major methods and assumptions used in estimating the fair values of financial instruments reflected in the above table.

Derivative financial instruments

Derivative financial instruments are marked-to-market using market prices.

Fixed and floating rate borrowings

The fair value of fixed and floating rate borrowings is estimated by discounting the future contracted principal and interest cash flows using the market rate of interest at the reporting date.

Trade and other receivables/payables

For receivables/payables with a remaining life of less than one year, the carrying amount is deemed to reflect the fair value. All other receivables/payables are discounted to determine their fair value. Advances received are excluded from other payables above as these are not considered to be financial liabilities.

Lease payables

The lease liability is measured at amortised cost using the effective interest method.

Fair value hierachy

The table above gives details of the valuation method used in arriving at the fair value of financial instruments. The different levels have been identified as follows:

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

There have been no transfers between levels during the year.

11 Related parties

All transactions with related parties are conducted on an arm's length basis and in accordance with normal business terms. Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

During the period, the Group supplied services and materials to, and purchased services and materials from, a subsidiary of its associate on an arm's length basis. It had the following transactions during the period:

Transactions with ScientaOmicron GmbH	**Half year to 30 September 2019 £m**	Half year to 30 September 2018 £m	*Year to 31 March 2019 £m*
Purchases	**-**	0.7	*0.7*
Receivables at period end	**-**	2.1	*1.4*

Included on the Balance Sheet is a long-term loan receivable of £nil (September 2018: £0.9m, March 2019: £0.3m) and a current loan receivable of £0.8m (September 2018: £1.1m, March 2019: £1.1m) due from Scienta Scientific AB. The loan is repayable by the end of May 2020. During the period the Group received interest charged on the loan of £0.1m (six months to September 2018: £0.1m, year to March 2019: £0.2m).

Independent review report to Oxford Instruments plc

Conclusion
We have been engaged by the Company to review the condensed set of financial statements in the half-yearly financial report for the six months ended 30 September 2019 which comprises the Condensed Consolidated Statement of Income, the Condensed Consolidated Statement of Comprehensive Income, Condensed Consolidated Statement of Financial Position, Condensed Consolidated Statement of Changes in Equity, Condensed Consolidated Statement of Cash Flows and the related explanatory notes.

Based on our review, nothing has come to our attention that causes us to believe that the condensed set of financial statements in the half-yearly financial report for the six months ended 30 September 2019 is not prepared, in all material respects, in accordance with IAS 34 *Interim Financial Reporting* as adopted by the EU and the Disclosure Guidance and Transparency Rules ("the DTR") of the UK's Financial Conduct Authority ("the UK FCA").

Scope of review
We conducted our review in accordance with International Standard on Review Engagements (UK and Ireland) 2410 *Review of Interim Financial Information Performed by the Independent Auditor of the Entity* issued by the Auditing Practices Board for use in the UK. A review of interim financial information consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. We read the other information contained in the half-yearly financial report and consider whether it contains any apparent misstatements or material inconsistencies with the information in the condensed set of financial statements.

A review is substantially less in scope than an audit conducted in accordance with International Standards on Auditing (UK) and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

The impact of uncertainties due to the UK exiting the European Union on our review
Uncertainties related to the effects of Brexit are relevant to understanding our review of the condensed financial statements. Brexit is one of the most significant economic events for the UK, and at the date of this report its effects are subject to unprecedented levels of uncertainty of outcomes, with the full range of possible effects unknown. An interim review cannot be expected to predict the unknowable factors or all possible future implications for a company and this is particularly the case in relation to Brexit.

Directors responsibilities
The half-yearly financial report is the responsibility of, and has been approved by, the Directors. The Directors are responsible for preparing the half-yearly financial report in accordance with the DTR of the UK FCA.

The annual financial statements of the Group are prepared in accordance with International Financial Reporting Standards as adopted by the EU. The Directors are responsible for preparing the condensed set of financial statements included in the half-yearly financial report in accordance with IAS 34 as adopted by the EU.

Our responsibility
Our responsibility is to express to the Company a conclusion on the condensed set of financial statements in the half-yearly financial report based on our review.

The purpose of our review work and to whom we owe our responsibilities
This report is made solely to the Company in accordance with the terms of our engagement to assist the Company in meeting the requirements of the DTR of the UK FCA. Our review has been undertaken so that we might state to the Company those matters we are required to state to it in this report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company for our review work, for this report, or for the conclusions we have reached.

Mike Barradell
for and on behalf of KPMG LLP
Chartered Accountants
15 Canada Square
London E14 5GL

12 November 2019

Principal Risks and Uncertainties

Information regarding the risk management process in place at the Group is set out on page 43 of the 2019 Annual Report. The principal risks and uncertainties identified through that process are set out on pages 44 to 47 of the 2019 Annual Report and can be found on the Group's website at www.oxinst.com.

In keeping with the risk management process, the Group has performed a quarterly update of its risk register as at 30 September 2019. It has evaluated the disclosures made on pages 44 to 47 of the 2019 Annual Report and has concluded that the risks identified remain relevant for the remainder of the year-ending 31 March 2020 and that there are no other significant risks to be disclosed. A summary of the risks identified is set out below:

- routes to market;
- technical risk;
- economic environment;
- political risk;
- legal/compliance risk;
- Brexit-related risks;
- adverse movements in long-term foreign currency rates;
- supply chain risk;
- people;
- IT risk;
- operational risk; and
- pensions.

The continuing lack of clarity relating to Brexit means that uncertainty over the potential impact of Brexit remains. The Group has assessed the key risks arising from Brexit and concluded that the most significant short-term risks arise from a possible no-deal Brexit, due to the potential disruption to the supply chain that could arise as a result.