Financial statements and other information

In this section

Independent auditor's report to the members of RELX PLC

OPINION

In our opinion:

- RELX PLC's group financial statements and parent company financial statements (the "financial statements") give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2022 and of the group's profit for the year then ended;
- the group financial statements have been properly prepared in accordance with UK adopted international accounting standards and International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB);
- the parent company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements of RELX PLC (the 'parent company') and its subsidiaries (the 'group') for the year ended 31 December 2022 which comprise:

Group	Parent company
Consolidated income statement for the year ended 31 December 2022	Statement of financial position as at 31 December 2022
Consolidated statement of comprehensive income for the year then ended	Statement of changes in equity for the year then ended
Consolidated statement of cash flows for the year then ended	Related notes 1 to 4 to the financial statements including a summary of significant accounting policies
Consolidated statement of financial position as at 31 December 2022	
Consolidated statement of changes in equity for the year then ended	
Related notes 1 to 28 to the financial statements, including a summary of significant accounting policies	

The financial reporting framework that has been applied in the preparation of the group financial statements is applicable law and UK adopted international accounting standards and International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. The financial reporting framework that has been applied in the preparation of the parent company financial statements is applicable law and United Kingdom Accounting Standards, including FRS 101 "Reduced Disclosure Framework"(United Kingdom Generally Accepted Accounting Practice).

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

INDEPENDENCE

We are independent of the group and parent in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

The non-audit services prohibited by the FRC's Ethical Standard were not provided to the group or the parent company and we remain independent of the group and the parent company in conducting the audit.

CONCLUSIONS RELATING TO GOING CONCERN

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate. Our evaluation of the directors' assessment of the group and parent company's ability to continue to adopt the going concern basis of accounting included:

- Confirming our understanding of management's going concern assessment process, in conjunction with our walkthrough of the Group's financial close process.
- Obtaining management's going concern assessment, including the cash forecast for the going concern period which covers 18 months from the balance sheet date to 30 June 2024. The Group has modelled a base case and a stress case of their cash forecasts in order to incorporate unexpected changes to the forecasted liquidity of the Group. We have challenged management on if they have considered all key factors in their assessment. We have reviewed the historical accuracy of management's forecasts and verified that these are consistent with forecasts used for other purposes in the audit. We have challenged the factors and assumptions included in each modelled scenario for reasonableness. Additionally, we tested the clerical accuracy of cash flow calculations and determined through inspection and testing of the methodology and calculations that the methods utilised were appropriately sophisticated to be able to make an assessment for the entity.
- Considering the mitigating factors included in the stress case that are within control of the Group. This includes review of the Group's non-operating cash outflows and evaluating the Group's ability to control these outflows as mitigating actions if required.
- Verifying the credit facilities available to the Group including inspection of the renegotiated signed $3bn revolving credit facility for the absence of financial covenants. Additionally, we obtained independent external confirmation that the facility remains undrawn.

- Reviewing management's reverse stress testing in order to assess the likelihood of factors that would lead to the Group running out of all available liquidity during the going concern period.
- Reviewing the Group's going concern disclosures included in the annual report in order to assess that the disclosures are consistent with the basis upon which the Board have concluded, and in conformity with the reporting standards.

In management's base case and stress case scenarios, there is significant headroom without taking into consideration the benefit of any identified mitigations.

Within management's stress case scenario, which assumes no access to the capital markets, the Group would still have substantial liquidity on its undrawn $3bn revolving credit facility (which was renegotiated in 2022 and no longer contains a financial covenant).

We have not identified going concern to be a key audit matter.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group and parent company's ability to continue as a going concern for a period of 18 months from the balance sheet date to 30 June 2024.

In relation to the group and parent company's reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the group's ability to continue as a going concern.

OVERVIEW OF OUR AUDIT APPROACH

Audit scope	▪ We performed an audit of the complete financial information of six components and audit procedures on specific balances for a further six components. We also instructed one additional location to perform specific audit procedures over manual journal entries to revenue. ▪ The components where we performed full or specific audit procedures accounted for 78% of profit before tax on an absolute basis, 83% of revenue and 81% of total assets.
Key audit matters	▪ Uncertain tax positions – risk that the tax provisions may be incorrectly quantified, impacting the effective tax rate, and that the tax provision is improperly disclosed. ▪ Revenue recognition – risk that there is an opportunity to commit fraud impacting revenue through manual adjustments or override of controls by management.
Materiality	▪ Overall Group materiality of £100m which represents 4.73% of profit before tax.

AN OVERVIEW OF THE SCOPE OF THE PARENT COMPANY AND GROUP AUDITS

Tailoring the scope

Our assessment of audit risk, our evaluation of materiality and our allocation of performance materiality determine our audit scope for each company within the Group. Taken together, this enables us to form an opinion on the consolidated financial statements. We take into account size, risk profile, the organisation of the group and effectiveness of group-wide controls, changes in the business environment, the potential impact of climate change and other factors such as recent internal audit results when assessing the level of work to be performed at each component.

The group has centralised processes for key judgements and determination of accounting policies. One key audit matter, namely revenue recognition are more decentralised processes delineated by business area. We have tailored our response accordingly and procedures were performed or directed by the group audit team.

In assessing the risk of material misstatement to the Group financial statements, and to ensure we had adequate quantitative coverage of significant accounts in the financial statements we selected twelve components covering entities within United Kingdom, Netherlands, United States, France and Japan, which represent the principal business units within the Group.

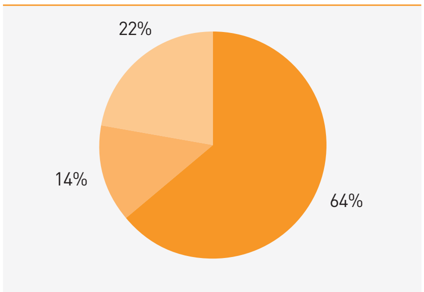
Of the twelve components selected, we performed an audit of the complete financial information of six components ("full scope components") which were selected based on their size or risk characteristics. For the remaining six components ("specific scope components"), we performed audit procedures on specific accounts within that component that we considered had the potential for the greatest impact on the significant accounts in the financial statements either because of the size of these accounts or their risk profile. We also instructed one additional location to perform specific audit procedures over manual journal entries to revenue.

The reporting components where we performed full and specific audit procedures accounted for 78% (2021: 80%) of the Group's profit before tax on an absolute basis, 83% (2021: 83%) of the Group's revenue and 81% (2021: 78%) of the Group's total assets. For the current year, the full scope components contributed 64% (2021: 60%) of the Group's profit before tax on an absolute basis, 75% (2021: 77%) of the Group's revenue and 68% (2021: 69%) of the Group's total assets. The specific scope component contributed 14% (2021: 20%) of the Group's profit before tax on an absolute basis, 8% (2021: 6%) of the Group's revenue and 13% (2021: 9%) of the Group's total assets. The audit scope of these components may not have included testing of all significant accounts of the component but will have contributed to the coverage of significant accounts tested for the Group. We also instructed one location to perform specified procedures over manual journal entries related to revenue, as described in the Risk section above.

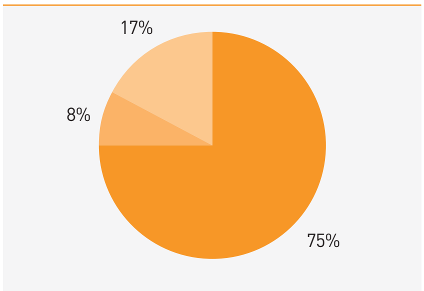
Of the remaining components that together represent 22% (2021: 20%) of the Group's profit before tax on an absolute basis, none are individually greater than 1% (2021: 1%) of the Group's profit before tax on an absolute basis. For these components, we performed other procedures, including analytical review, review of internal audit reports, testing of entity level and group wide controls, testing of consolidation journals, intercompany eliminations and foreign currency translation recalculations at the group level to respond to any potential risks of material misstatement to the Group financial statements.

The charts below illustrate the coverage obtained from the work performed by our audit teams.

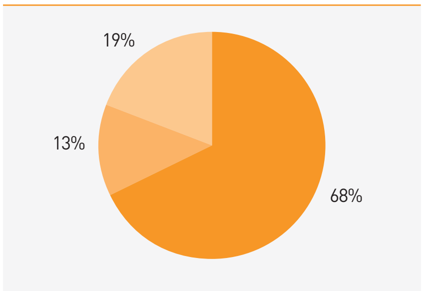
Profit before tax (on an absolute basis)



Revenue



Total assets



Full scope components | Specific scope components | Other procedures

(1) Coverage of profit before tax measure on an absolute basis for each component (components with a loss would be added to both the numerator and denominator).

Changes from the prior year
The full scope and specific scope components have not changed from the prior year as these components remain the most significant to the Group, by size and risk, and the coverage of the Group was consistent with the prior year audit. Our audit has been completed using a hybrid approach with virtual and in-person meetings where appropriate.

Involvement with component teams
In establishing our overall approach to the Group audit, we determined the type of work that needed to be undertaken at each of the components by us, as the primary audit engagement team, or by component auditors from other EY global network firms operating under our instruction. Of the six full scope components, audit procedures were performed on three of these directly by the primary audit team. For the three full scope components and the six specific scope components where the work was performed by component auditors, we determined the appropriate level of involvement to enable us to determine that sufficient audit evidence had been obtained as a basis for our opinion on the Group as a whole.

The Group audit team continued to follow a programme of planned visits that has been designed to ensure that the Senior Statutory Auditor or another Group audit partner, visit all full scope and specific scope locations over a one year cycle. During the current year's audit cycle, visits were undertaken by the primary audit team to the component teams in United Kingdom, United States, the Philippines, the Netherlands, and France. These visits involved meetings with local management, and discussions with the component team on the audit approach and any issues arising from their work. Oversight of audit work executed in Japan was performed virtually. The primary team interacted regularly with the component teams where appropriate during various stages of the audit, reviewed relevant working papers and were responsible for the scope and direction of the audit process. This, together with the additional procedures performed at Group level, gave us appropriate evidence for our opinion on the Group financial statements.

CLIMATE CHANGE
There has been increasing interest from stakeholders as to how climate change will impact companies. The Group has determined that the most significant future impacts from climate change on its operations will be from global warming and extreme weather events. These are explained on pages 73-79 in the required Task Force for Climate related Financial Disclosures, which form part of the "Other information," rather than the audited financial statements. Our procedures on these unaudited disclosures therefore consisted solely of considering whether they are materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appear to be materially misstated in line with our responsibilities on "Other information".

In planning and performing our audit we assessed the potential impacts of climate change on the Group's business and any potential consequential material impact on its financial statements.

The Group has explained in Note 1, Basis of Preparation, how they have assessed assets with indefinite and long lives which could be impacted by measures taken to address global warming. Management concluded that the Group's operations and the use of the Group's products have a relatively low environmental impact, and no issues were identified by management that would impact the carrying value of such assets or have any other material impact on the financial statements.

Our audit effort in considering the impact of climate change on the financial statements was focused on evaluating management's assessment of the impact of climate risk and their climate commitments. This included evaluation, with the support of our internal climate specialists, of management's assessment of the risk of impairment due to climate change did not constitute a significant judgement or estimate. We also performed a risk assessment to determine whether there were other risks of material misstatement from climate change in the financial statements which needed to be considered in our audit.

We also challenged the Directors' considerations of climate change in their assessment of going concern and viability and associated disclosures.

Based on our work we have not identified the impact of climate change on the financial statements to be a key audit matter or to impact a key audit matter.

KEY AUDIT MATTERS

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on the overall audit strategy, the allocation of resources in the audit, and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in our opinion thereon, and we do not provide a separate opinion on these matters.

RISK	OUR RESPONSE TO THE RISK	KEY OBSERVATIONS COMMUNICATED TO THE AUDIT COMMITTEE
Uncertain tax positions As described in note 9 to the consolidated financial statements, note 1 in the accounting policies and in the audit committee report (page 143), the Group is subject to tax in numerous jurisdictions. Provisions related to tax totalled £239m as at 31 December 2022 (2021: £228m). The Group's operational structure gives rise to potential tax exposures that require management to exercise judgement in making determinations as to the amount of tax that is payable. The Group reports cross-border transactions undertaken between subsidiaries on an arm's-length basis in tax returns in accordance with Organisation for Economic Co-operation and Development (OECD) guidelines. Transfer pricing relies on the exercise of judgement and it is reasonably possible for there to be a significant range of potential outcomes. As a result, the Group has recognised a number of provisions against uncertain tax positions, the valuation of which requires significant estimation uncertainty, as described in note 9. We focused on this area due to the complexity and the subjectivity in the quantification of the provision and the judgement around the trigger for recognition or release impacting the provision and the effective tax rate.	Our procedures included obtaining an understanding of the tax provisioning processes and evaluating the design of, as well as testing, internal controls over the tax provisioning process. We tested controls over management's review of the uncertain tax position provisions recorded, including the controls over the development of significant assumptions and judgements. Our procedures on the uncertain tax positions were performed centrally by the group team and supported by overseas teams including professionals with specialised skills. Procedures included: (i) meeting with members of management responsible for tax to understand the Group's cross-border transactions, status of significant provisions, and any changes to management's judgements in the year; (ii) reading correspondence with tax authorities and external advisors and obtaining an understanding of all matters considered by management to inform our assessment of recorded estimates and evaluate the completeness of the provisions recorded; (iii) independently assessing management's significant assumptions and judgements to record or release provisions following tax audits, settlements and the expiry of timeframes with reference to other similar tax positions the Group has historically held and our knowledge of developments in the jurisdictions in which RELX maintain tax provisions; (iv) testing the underlying schedules for arithmetic accuracy, as well as with reference to applicable tax laws; and (v) evaluating the adequacy of tax disclosures.	We reported to the Audit Committee that we challenged the robustness of the key management judgements around the trigger for recognition or release impacting the provision and the effective tax rate. We confirmed that we were satisfied that management's judgements in relation to the quantum of provisions for uncertain tax positions are appropriate. We noted further that there continues to be a high degree of uncertainty about the eventual outcome of many of these provisions. The notes to the financial statements appropriately include disclosure of the estimation uncertainty related to uncertain tax positions.

RISK	OUR RESPONSE TO THE RISK	KEY OBSERVATIONS COMMUNICATED TO THE AUDIT COMMITTEE
Revenue recognition Revenue recognition is described in note 2 to the consolidated financial statements. The Group recognises revenue (£8.6bn recorded in 2022, compared to £7.2bn recorded in 2021) from a variety of sources among the different business areas, including annual subscriptions, transactional usage and exhibition fees. The nature of the risk associated with the accurate recording of revenue varies. We recognise that revenue is a key metric upon which the group is judged, that the group has annual internal targets, and that the group has incentive schemes that are partially impacted by revenue growth. We have determined that there is a risk in each of the business areas related to the opportunity to commit fraud in the respective revenue streams through manual adjustments or override of controls by management.	We performed full and specific scope audit procedures over revenue in 12 locations, which covered 83% of revenue. We performed procedures to address the specific risk in each business area. Procedures included: (i) assessing the processes and testing controls over each significant revenue stream; (ii) evaluating the appropriateness of journal entries impacting revenue, as well as other adjustments made in the preparation of the financial statements; (iii) evaluating management's controls over such adjustments; (iv) inspecting a sample of contracts to check that revenue recognition was in accordance with the contract terms and the group's revenue recognition policies, which is in line with IFRS 15; (v) testing a sample of transactions around period end to test that revenue was recorded in the correct period; (vi) for revenue streams that have judgemental elements, evaluating management's assumption and critically challenging these assumptions against contractual terms and underlying financial information; (vii) for certain revenue streams we obtained audit evidence through the execution of data analytics procedures, including a correlation of revenue to cash. The procedures we performed over the remaining 17% of revenue included: (i) testing of entity level and group wide controls; (ii) analytical review of year over year movements in revenue; (iii) review for evidence of material contracts that would require further testing.	Revenue has been recognised appropriately in the year ended 31 December 2022 in accordance with IFRS 15: Revenue from Contracts with Customers.

OUR APPLICATION OF MATERIALITY

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion.

Materiality

The magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

We determined materiality for the Group to be £100 million (2021: £90 million), which is 4.73% (2021: 5%) of profit before tax. We believe that profit before tax provides the most relevant performance measure to the stakeholders of the entity and therefore have determined materiality based on this number.

During the course of our audit, we reassessed materiality as the actual adjusted profit before tax was higher than the Group's initial estimate we used at planning. However, due to the status of our procedures we did not change our materiality from £100 million to reflect this increase.

We determined materiality for the Parent Company to be £100 million (2021: £90 million), which is 0.5% (2021: 0.4%) of equity.

Performance materiality

The application of materiality at the individual account or balance level. It is set at an amount to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

On the basis of our risk assessments, together with our assessment of the Group's overall control environment, our judgement was that performance materiality was 75% (2021: 75%) of our planning materiality, namely £75m (2021: £68m). We have set performance materiality at this percentage due to our assessment of the control environment and the historic lack of significant audit findings.

Audit work at component locations for the purpose of obtaining audit coverage over significant financial statement accounts is undertaken based on a percentage of total performance materiality. The performance materiality set for each component is based on the relative scale and risk of the component to the Group as a whole and our assessment of the risk of misstatement at that component. In the current year, the range of performance materiality allocated to components was £15m to £65.3m (2021: £6.5m to £52m).

Reporting threshold
An amount below which identified misstatements are considered as being clearly trivial.

We agreed with the Audit Committee that we would report to them all uncorrected audit differences in excess of £5m (2021: £4.5m), which is set at 5% of planning materiality, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

We evaluate any uncorrected misstatements against both the quantitative measures of materiality discussed above and in light of other relevant qualitative considerations in forming our opinion.

OTHER INFORMATION

The other information comprises the information included in the annual report set out on pages 1-151, including the Strategic Report and Governance report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006
In our opinion, the part of the directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception
In the light of the knowledge and understanding of the group and the parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit

Corporate Governance Statement
We have reviewed the directors' statement in relation to going concern, longer-term viability and that part of the Corporate Governance Statement relating to the group and company's compliance with the provisions of the UK Corporate Governance Code specified for our review by the Listing Rules.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the Corporate Governance Statement is materially consistent with the financial statements or our knowledge obtained during the audit:

- Directors' statement with regards to the appropriateness of adopting the going concern basis of accounting and any material uncertainties identified set out on page 95;
- Directors' explanation as to its assessment of the company's prospects, the period this assessment covers and why the period is appropriate set out on page 95;
- Director's statement on whether it has a reasonable expectation that the group will be able to continue in operation and meets its liabilities set out on page 95;
- Directors' statement on fair, balanced and understandable set out on page 144;
- Board's confirmation that it has carried out a robust assessment of the emerging and principal risks set out on page 88;
- The section of the annual report that describes the review of effectiveness of risk management and internal control systems set out on page 117; and;
- The section describing the work of the audit committee set out on page 143

Responsibilities of directors
As explained more fully in the directors' responsibilities statement set out on page 150, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group and parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the group or the parent company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud
Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect irregularities, including fraud. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the company and management.

- We obtained an understanding of the legal and regulatory frameworks that are applicable to the group and determined that the most significant are those that relate to the reporting framework (UK adopted International Accounting Standards, FRS 101, the Companies Act 2006, UK Corporate Governance Code, the US Securities and Exchange Act of 1934 and the Listing Rules of the UK Listing Authority) and relevant tax compliance regulations in the jurisdictions in which the Group operates and the EU General Data Protection Regulation (GDPR).
- We understood how RELX PLC is complying with those frameworks by making inquiries of management, internal audit, those responsible for legal and compliance procedures and the company secretary. We corroborated our enquiries through our review of Board minutes and papers provided to the Audit Committee, observations in Audit Committee meetings, as well as consideration of the results of our audit procedures across the Group.
- We assessed the susceptibility of the group's financial statements to material misstatement, including how fraud might occur by meeting the finance and operational management from various parts of the business to understand where it considered there was susceptibility to fraud. We also considered performance targets and their propensity to influence on efforts made by management to manage earnings. We considered the programmes and controls that the Group has established to address risks identified, other that otherwise prevent, deter and detect fraud; and how senior management monitors those programmes and controls. Where the risk was considered to be higher, specifically manual journal entries to revenue, we performed audit procedures to address the identified fraud risk. These procedures included testing manual journals and were designed to provide reasonable assurance that the financial statements were free from fraud or error.
- Based on this understanding we designed our audit procedures to identify non-compliance with such laws and regulations. Our procedures involved journal entry testing, with a focus on manual consolidation journals and journals indicating large or unusual transactions based on our understanding of the business; enquiries of legal counsel, Group management, internal audit, business area management at all full and specific scope management; and focused testing. In addition, we completed procedures to conclude on the compliance of the disclosures in the annual report and accounts with all applicable requirements.

Any instances of non-compliance with laws and regulations were communicated by/to components and considered in our audit approach, if applicable.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

OTHER MATTERS WE ARE REQUIRED TO ADDRESS

- Following the recommendation from the audit committee we were appointed by the company on 21 April 2016 to audit the financial statements for the year ending 31 December and subsequent financial periods.

  The period of total uninterrupted engagement including previous renewals and reappointments is seven years, covering the years ending 2016 to 2022.

- The audit opinion is consistent with the additional report to the audit committee.

USE OF OUR REPORT

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's 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 and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Colin Brown (Senior statutory auditor)
for and on behalf of Ernst & Young LLP, Statutory Auditor
London
15 February 2023

Consolidated income statement

FOR THE YEAR ENDED 31 DECEMBER	Note	2020 £m	2021 £m	**2022 £m**
Revenue	2	7,110	7,244	**8,553**
Cost of sales		(2,487)	(2,562)	**(3,045)**
Gross profit		4,623	4,682	**5,508**
Selling and distribution costs		(1,212)	(1,197)	**(1,385)**
Administration and other expenses		(1,901)	(1,630)	**(1,819)**
Share of results of joint ventures		15	29	**19**
Operating profit	2, 3	1,525	1,884	**2,323**
Finance income	7	3	8	**4**
Finance costs	7	(175)	(150)	**(205)**
Net finance costs		(172)	(142)	**(201)**
Disposals and other non-operating items	8	130	55	**(9)**
Profit before tax		1,483	1,797	**2,113**
Current tax		(264)	(422)	**(534)**
Deferred tax		(11)	96	**53**
Tax expense	9	(275)	(326)	**(481)**
Net profit for the year		1,208	1,471	**1,632**
Attributable to:				
Shareholders		1,224	1,471	**1,634**
Non-controlling interests		(16)	–	**(2)**
Net profit for the year		1,208	1,471	**1,632**

Earnings per share

FOR THE YEAR ENDED 31 DECEMBER		2020	2021	**2022**
Basic earnings per share				
RELX PLC	10	63.5 p	76.3 p	**85.2** p
Diluted earnings per share				
RELX PLC	10	63.2 p	75.8 p	**84.7** p

Consolidated statement of comprehensive income

FOR THE YEAR ENDED 31 DECEMBER	Note	2020 £m	2021 £m	**2022 £m**
Net profit for the year		1,208	1,471	**1,632**
Items that will not be reclassified to profit or loss:				
Actuarial (losses)/gains on defined benefit pension schemes	6	(155)	321	**164**
Tax on items that will not be reclassified to profit or loss	9	39	(48)	**(43)**
Total items that will not be reclassified to profit or loss		(116)	273	**121**
Items that may be reclassified subsequently to profit or loss:				
Exchange differences on translation of foreign operations		(265)	223	**427**
Fair value movements on cash flow hedges	17	(6)	10	**(18)**
Transfer to profit from cash flow hedge reserve	17	22	(9)	**(17)**
Tax on items that may be reclassified to profit or loss	9	(4)	(1)	**8**
Total items that may be reclassified to profit or loss		(253)	223	**400**
Other comprehensive (loss)/ income for the year		(369)	496	**521**
Total comprehensive income for the year		839	1,967	**2,153**
Attributable to:				
Shareholders		855	1,967	**2,155**
Non-controlling interests		(16)	–	**(2)**
Total comprehensive income for the year		839	1,967	**2,153**

Consolidated statement of cash flows

FOR THE YEAR ENDED 31 DECEMBER	Note	2020 £m	2021 £m	**2022 £m**
Cash flows from operating activities				
Cash generated from operations	11	2,264	2,476	**3,061**
Interest paid (including lease interest)		(179)	(119)	**(169)**
Interest received		7	1	**4**
Tax paid (net)		(496)	(342)	**(495)**
Net cash from operating activities		1,596	2,016	**2,401**
Cash flows from investing activities				
Acquisitions	11	(869)	(254)	**(394)**
Purchases of property, plant and equipment		(43)	(28)	**(36)**
Expenditure on internally developed intangible assets		(319)	(309)	**(400)**
Purchase of investments		(2)	(8)	**(66)**
Proceeds from disposals of property, plant and equipment		–	5	**–**
Gross proceeds from business disposals and sale of investments		54	220	**19**
Payments on business disposals		(25)	(30)	**(15)**
Dividends received from joint ventures		31	20	**33**
Net cash used in investing activities		(1,173)	(384)	**(859)**
Cash flows from financing activities				
Dividends paid to shareholders	13	(880)	(920)	**(983)**
Distributions to non-controlling interests		(6)	(10)	**(9)**
Decrease in short-term bank loans, overdrafts and commercial paper	11	(436)	(200)	**(101)**
Issuance of term debt	11	2,342	–	**397**
Repayment of term debt	11	(1,233)	(431)	**(35)**
Repayment of leases	11	(105)	(93)	**(79)**
Receipts in respect of subleases	11	15	17	**1**
Disposal of non-controlling interest		–	–	**(1)**
Repurchase of ordinary shares	23	(150)	–	**(500)**
Purchase of shares by Employee Benefit Trust	23	(37)	(1)	**(50)**
Proceeds on issue of ordinary shares		16	32	**26**
Net cash used in financing activities		(474)	(1,606)	**(1,334)**
(Decrease)/increase in cash and cash equivalents	11	(51)	26	**208**
Movement in cash and cash equivalents				
At start of year		138	88	**113**
(Decrease)/increase in cash and cash equivalents		(51)	26	**208**
Exchange translation differences		1	(1)	**13**
At end of year		88	113	**334**

Consolidated statement of financial position

AS AT 31 DECEMBER	Note	2021 £m	**2022 £m**
Non-current assets			
Goodwill	14	7,366	**8,388**
Intangible assets	14	3,304	**3,524**
Investments in joint ventures and associates	15	105	**159**
Other investments	15	107	**127**
Property, plant and equipment	16	131	**126**
Right-of-use assets	22	161	**145**
Other receivables		19	**5**
Deferred tax assets	9	210	**146**
Net pension assets	6	46	**129**
Derivative financial instruments	17	52	**11**
		11,501	**12,760**
Current assets			
Inventories and pre-publication costs	18	253	**309**
Trade and other receivables	19	1,960	**2,405**
Derivative financial instruments	17	31	**21**
Cash and cash equivalents	11	113	**334**
		2,357	**3,069**
Total assets		13,858	**15,829**
Current liabilities			
Trade and other payables	20	3,275	**4,017**
Derivative financial instruments	17	2	**33**
Debt	21	232	**870**
Taxation	9	192	**249**
Provisions		47	**18**
		3,748	**5,187**
Non-current liabilities			
Derivative financial instruments	17	12	**236**
Debt	21	5,935	**5,860**
Deferred tax liabilities	9	591	**590**
Net pension obligations	6	315	**184**
Other payables		10	**3**
Provisions		23	**15**
		6,886	**6,888**
Total liabilities		10,634	**12,075**
Net assets		3,224	**3,754**
Capital and reserves			
Share capital	23	286	**279**
Share premium		1,491	**1,517**
Shares held in treasury	23	(876)	**(414)**
Translation reserve		250	**677**
Other reserves	24	2,081	**1,717**
Shareholders' equity		3,232	**3,776**
Non-controlling interests		(8)	**(22)**
Total equity		3,224	**3,754**

The consolidated financial statements were approved by the Board of Directors and authorised for issue on 15 February 2023. They were signed on its behalf by:

N L Luff
Chief Financial Officer

Consolidated statement of changes in equity

	Note	Share capital £m	Share premium £m	Shares held in treasury £m	Translation reserve £m	Other reserves £m	Shareholders' equity £m	Non-controlling interests £m	Total equity £m
Balance at 1 January 2020		286	1,443	(834)	292	979	2,166	24	2,190
Total comprehensive income for the year		–	–	–	(265)	1,120	855	(16)	839
Dividends paid	13	–	–	–	–	(880)	(880)	(6)	(886)
Issue of ordinary shares, net of expenses	23	–	16	–	–	–	16	–	16
Repurchase of ordinary shares		–	–	(87)	–	–	(87)	–	(87)
Increase in share based remuneration reserve (net of tax)		–	–	–	–	27	27	–	27
Settlement of share awards		–	–	34	–	(34)	–	–	–
Acquisitions		–	–	–	–	2	2	(2)	–
Exchange differences on translation of capital and reserves		–	–	–	–	–	–	2	2
Balance at 1 January 2021		286	1,459	(887)	27	1,214	2,099	2	2,101
Total comprehensive income for the year		–	–	–	223	1,744	1,967	–	1,967
Dividends paid	13	–	–	–	–	(920)	(920)	(10)	(930)
Issue of ordinary shares, net of expenses	23	–	32	–	–	–	32	–	32
Repurchase of ordinary shares		–	–	(1)	–	–	(1)	–	(1)
Increase in share based remuneration reserve (net of tax)		–	–	–	–	55	55	–	55
Settlement of share awards		–	–	12	–	(12)	–	–	–
Balance at 1 January 2022		**286**	**1,491**	**(876)**	**250**	**2,081**	**3,232**	**(8)**	**3,224**
Total comprehensive income for the year		**–**	**–**	**–**	**427**	**1,728**	**2,155**	**(2)**	**2,153**
Dividends paid	13	**–**	**–**	**–**	**–**	**(983)**	**(983)**	**(9)**	**(992)**
Issue of ordinary shares, net of expenses	23	**–**	**26**	**–**	**–**	**–**	**26**	**–**	**26**
Repurchase of ordinary shares		**–**	**–**	**(650)**	**–**	**–**	**(650)**	**–**	**(650)**
Purchase of shares by the employee benefit trust	23	**–**	**–**	**(50)**	**–**	**–**	**(50)**	**–**	**(50)**
Cancellation of shares	23	**(7)**	**–**	**1,127**	**–**	**(1,120)**	**–**	**–**	**–**
Increase in share based remuneration reserve (net of tax)		**–**	**–**	**–**	**–**	**47**	**47**	**–**	**47**
Settlement of share awards		**–**	**–**	**35**	**–**	**(35)**	**–**	**–**	**–**
Disposal of non-controlling interest		–	–	**–**	**–**	**(1)**	**(1)**	**–**	**(1)**
Exchange differences on translation of capital and reserves		**–**	**–**	**–**	**–**	**–**	**–**	**(3)**	**(3)**
Balance at 31 December 2022		**279**	**1,517**	**(414)**	**677**	**1,717**	**3,776**	**(22)**	**3,754**

Notes to the consolidated financial statements

for the year ended 31 December 2022

1 Basis of preparation and accounting policies

Basis of preparation

The shares of RELX PLC are traded on the London, Amsterdam and New York stock exchanges. RELX PLC and its subsidiaries, joint ventures and associates are together known as 'RELX'. In preparing the consolidated financial statements, subsidiaries are accounted for under the acquisition method and investments in associates and joint ventures are accounted for under the equity method. All intra-group transactions and balances are eliminated.

On acquisition of a subsidiary, or interest in an associate or joint venture, fair values, reflecting conditions at the date of acquisition, are attributed to the net assets, including identifiable intangible assets acquired. Adjustments are made to bring accounting policies into line with those of the Group. The results of subsidiaries sold or acquired are included in the consolidated financial statements up to or from the date that control passes from or to the Group. Non-controlling interests in the net assets of the Group are identified separately from shareholders' equity. Non-controlling interests consist of the amount of those interests at the date of the original acquisition and the non-controlling share of changes in equity since the date of acquisition.

The directors of RELX PLC, having made appropriate enquiries, consider that adequate resources exist for the Group to continue in operational existence for the foreseeable future and that, therefore, it is appropriate to adopt the going concern basis in preparing the consolidated financial information for the year ended 31 December 2022. As part of the going concern assessment the directors considered the sufficiency of the group's liquidity resources, including committed credit facilities, over the 18 month period to 30 June 2024. Please refer to page 95 for further disclosure in respect of going concern.

In preparing the Group financial statements management has considered the impact of climate change, taking into account the relevant disclosures in the Strategic Report, including those made in accordance with the recommendations of the Taskforce on Climate-related Financial Disclosure. This included an assessment of assets with indefinite and long lives and how they could be impacted by measures taken to address global warming. Recognising that the Group's operations, and the use of the Group's products, have a relatively low environmental impact, no issues were identified that would impact the carrying values of such assets or have any other material impact on the financial statements.

The 2022 annual report and accounts presents multi-year data with the earliest period on the left and the latest period on the right. This aligns with the approach used in our other investor relations material and allows better understanding of multi-year trends.

Accounting policies

The Group's consolidated financial statements are prepared in accordance with UK adopted International Accounting Standards in conformity with the requirements of the Companies Act 2006 and International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). The accounting policies under IFRS are included in the relevant notes to the consolidated financial statements. The accounting policies below are applied throughout the financial statements and are unchanged from those applied in preparing the consolidated financial statements for the year ended 31 December 2021.

Foreign exchange translation

The consolidated financial statements are presented in sterling.

Transactions in foreign currencies are recorded at the rate of exchange prevailing on the date of the transaction. Non-monetary assets and liabilities that are measured at historical cost in foreign currencies are translated using the exchange rate at the date of the transaction. At each statement of financial position date, monetary assets and liabilities that are denominated in foreign currencies are retranslated at the rate prevailing on the statement of financial position date. Exchange differences arising are recorded in the income statement other than where hedge accounting applies, as set out on pages 189 to 194.

Assets and liabilities of foreign operations are translated at exchange rates prevailing on the statement of financial position date. Income and expense items and cash flows of foreign operations are translated at the average exchange rate for the period. Significant individual items of income and expense and cash flows in foreign operations are translated at the rate prevailing on the date of transaction. Exchange differences arising are classified as equity and transferred to the translation reserve. When foreign operations are disposed of, the related cumulative translation differences are recognised within the income statement in the period.

The Group uses derivative financial instruments, primarily forward contracts, to hedge its exposure to certain foreign exchange risks. Details of the Group's accounting policies in respect of derivative financial instruments are set out on page 189.

Critical judgements and key sources of estimation uncertainty

The preparation of financial statements requires management to make judgements and estimates in the application of accounting policies used to report the financial position, results and cash flows of the Group. The actual outcome may differ to these estimates.

The critical judgements and key sources of estimation uncertainty are summarised below. Further detail is provided in the notes to the financial statements as referenced.

Critical judgements

- Capitalisation of development spend: assessing the potential value of a development project and determining the costs which are eligible for capitalisation (see note 14)

Key sources of estimation uncertainty

- Taxation: the valuation of provisions related to uncertain tax positions (see note 9)
- Defined benefit pension obligation: determining an appropriate rate at which the future pension payments are discounted, mortality and inflation assumptions (see note 6)

1 Basis of preparation and accounting policies (continued)

Other areas of judgement and accounting estimates
The consolidated financial statements include other areas of judgement and accounting estimates. While these do not meet the definition under IAS 1 of critical judgements or significant accounting estimates, key areas of judgement in estimating the values in use of businesses are the growth in cash flows over a forecast period of up to five years, the long-term growth rate assumed thereafter and the discount rate applied to the forecast cash flows. These calculations require the use of estimates in respect of forecast cash flows and discount rates.

- Goodwill: The assessment of the carrying value of goodwill requires management judgement and estimation to determine the value in use of the businesses (see note 14).
- Acquired intangible assets: Judgement is involved in identification of separate intangible assets on acquisition and estimation is required to determine future cashflows and discount rates used in valuation (see note 14).

Other significant accounting policies
The accounting policy in respect of revenue recognition is also significant in determining the financial condition and results of the Group. The application of this policy is straightforward and is included in note 2.

Standards and amendments effective for the year
The interpretations and amendments to IFRS effective for 2022 have not had a significant impact on the Group's accounting policies or reporting.

Standards, amendments and interpretations not yet effective
A number of amendments and interpretations have been issued which are not expected to have any significant impact on the accounting policies and reporting.

2 Revenue, operating profit and segment analysis

Accounting policy
The Group's reported segments are based on the internal reporting structure and financial information provided to the Board.

Adjusted operating profit is the key segmental profit measure used by the Group in assessing performance. Adjusted operating profit is reconciled to operating profit on page 171.

Revenue arises from the provision of products and services under contracts with customers. In all cases, revenue is recognised to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services, and is recognised when the customer obtains control of the goods or service.

Revenue is stated at the transaction price, which includes allowance for anticipated discounts and returns and excludes customer sales taxes and other amounts to be collected on behalf of third-parties.

Where the goods or services promised within a contract are distinct, they are identified as separate performance obligations and are accounted for separately.

Where separate performance obligations are identified, total revenue is allocated on the basis of relative standalone selling prices or management's best estimate of relative value where standalone selling prices do not exist. Management estimates may include a cost-plus method or comparable product approach, but must be supported by objective evidence. A residual approach may be applied where it is not possible to derive a reliable management estimate for a specific component.

Our subscription and exhibition related revenue streams generally require payment in advance of the service being provided. Payment terms offered to customers are in line with the standard in the markets and geographies we operate in, and contracts do not contain significant financing components. Contracts for our transactional electronic revenue streams generally have payments that vary with volume of usage. Other than that, our contracts do not involve variable consideration.

Revenue is recognised for the various categories as follows:

- Subscriptions – revenue comprises income derived from the periodic distribution or update of a product. Subscription revenue is generally invoiced in advance and recognised systematically over the period of the subscription. Recognition is either on a straight-line basis where the transaction involves the transfer of goods and services to the customer in a consistent manner over a specific period of time; or based on the value received by the customer where the goods and services are not delivered in a consistent manner
- Transactional – revenue is recognised when control of the product is passed to the customer or the service has been performed. For exhibitions, revenue primarily comprises income from exhibitors and attendees at exhibitions. Exhibition revenue is recognised on occurrence of the exhibition

2 Revenue, operating profit and segment analysis (continued)

RELX is a global provider of information-based analytics and decision tools for professional and business customers. Operating in four major market segments: Risk provides customers with information-based analytics and decision tools that combine public and industry-specific content with advanced technology and algorithms to assist them in evaluating and predicting risk and enhancing operational efficiency; Scientific, Technical & Medical provides information and analytics that help institutions and professionals progress science, advance healthcare and improve performance; Legal provides legal, regulatory and business information and analytics that helps customers increase their productivity, improve decision-making and achieve better outcomes; and Exhibitions combines industry expertise with data and digital tools to help customers connect digitally and face-to-face, learn amount markets, source products and complete transactions.

ANALYSIS BY BUSINESS SEGMENT	Revenue			Adjusted operating profit		
	2020 £m	2021 £m	**2022 £m**	2020 £m	2021 £m	**2022 £m**
Risk	2,417	2,474	**2,909**	894	915	**1,078**
Scientific, Technical & Medical	2,692	2,649	**2,909**	1,021	1,001	**1,100**
Legal	1,639	1,587	**1,782**	330	326	**372**
Exhibitions	362	534	**953**	(164)	10	**162**
Sub-total	7,110	7,244	**8,553**	2,081	2,252	**2,712**
Unallocated central costs and other operating items	–	–	**–**	(5)	(42)	**(29)**
Total	7,110	7,244	**8,553**	2,076	2,210	**2,683**

Exceptional costs excluded from adjusted operating profit in 2020 are disclosed on page 171. In 2021, unallocated central costs and other operating items includes a £35m one-off charge relating to reductions in our corporate real estate footprint. In 2022, this includes a charge of £24m relating to STM incurred from exchange rate movements from the translation of working capital items such as accounts receivable and payable, and intercompany balances, into relevant functional currencies and the outcome of STM's hedging programme. The net effect of these amounts was higher in 2022 due to the extent and timing of exchange rate movements in the year and such amounts were insignificant in 2021 and 2020.

2020	Risk	Scientific, Technical & Medical	Legal	Exhibitions	Total
Revenue by geographical market					
North America	1,921	1,224	1,119	43	4,307
Europe	327	621	338	83	1,369
Rest of world	169	847	182	236	1,434
Total revenue	2,417	2,692	1,639	362	7,110
Revenue by format					
Electronic	2,387	2,326	1,422	44	6,179
Face-to-face	19	1	7	318	345
Print	11	365	210	–	586
Total revenue	2,417	2,692	1,639	362	7,110
Revenue by type					
Subscriptions	944	2,048	1,287	–	4,279
Transactional	1,473	644	352	362	2,831
Total revenue	2,417	2,692	1,639	362	7,110

2021	Risk	Scientific, Technical & Medical	Legal	Exhibitions	Total
Revenue by geographical market					
North America	1,957	1,215	1,049	100	4,321
Europe	342	602	341	187	1,472
Rest of world	175	832	197	247	1,451
Total revenue	2,474	2,649	1,587	534	7,244
Revenue by format					
Electronic	2,453	2,334	1,385	58	6,230
Face-to-face	13	2	9	476	500
Print	8	313	193	–	514
Total revenue	2,474	2,649	1,587	534	7,244
Revenue by type					
Subscriptions	989	1,970	1,255	–	4,214
Transactional	1,485	679	332	534	3,030
Total revenue	2,474	2,649	1,587	534	7,244

2 Revenue, operating profit and segment analysis (continued)

2022	Risk	Scientific, Technical & Medical	Legal	Exhibitions	Total
Revenue by geographical market					
North America	**2,317**	**1,391**	**1,213**	**180**	**5,101**
Europe*	**384**	**614**	**357**	**445**	**1,800**
Rest of world	**208**	**904**	**212**	**328**	**1,652**
Total revenue	**2,909**	**2,909**	**1,782**	**953**	**8,553**
Revenue by format					
Electronic	**2,890**	**2,573**	**1,582**	**67**	**7,112**
Face-to-face	**11**	**5**	**10**	**886**	**912**
Print	**8**	**331**	**190**	**–**	**529**
Total revenue	**2,909**	**2,909**	**1,782**	**953**	**8,553**
Revenue by type					
Subscriptions	**1,135**	**2,139**	**1,381**	**–**	**4,655**
Transactional	**1,774**	**770**	**401**	**953**	**3,898**
Total revenue	**2,909**	**2,909**	**1,782**	**953**	**8,553**

* Europe includes revenue of £544m from the United Kingdom (2021: £476m; 2020: £464m).

Over half of RELX's revenue comes from subscription arrangements, and revenue for these is generally recognised on a straight-line basis over the time period covered by the agreement, in line with the provision of services.

There are a number of multi-year contracts, mainly in Risk, where revenue is recognised on the achievement of delivery milestones or other specified performance obligations. As at 31 December 2022, the aggregate amount of the transaction price of such contracts which relates to performance obligations which have not yet been delivered was approximately £100m (2021: £95m). It is expected that revenue will be recognised in relation to this amount over the next six years.

ANALYSIS OF REVENUE BY GEOGRAPHICAL ORIGIN	2020 £m	2021 £m	**2022 £m**
North America	4,192	4,204	**5,002**
Europe	2,436	2,547	**2,974**
Rest of world	482	493	**577**
Total	7,110	7,244	**8,553**

Revenue by geographical origin from the United Kingdom in 2022 was £1,481m (2021: £1,248m; 2020: £1,176m).

ANALYSIS BY BUSINESS SEGMENT	Expenditure on acquired goodwill and intangible assets			Capital expenditure additions			Amortisation of acquired intangible assets			Total depreciation and other amortisation		
	2020 £m	2021 £m	**2022 £m**	2020 £m	2021 £m	**2022 £m**	2020 £m	2021 £m	**2022 £m**	2020 £m	2021 £m	**2022 £m**
Risk	822	208	**155**	93	83	**122**	192	186	**204**	98	93	**94**
Scientific, Technical & Medical	169	58	**206**	94	87	**103**	65	63	**60**	148	144	**119**
Legal	–	12	**33**	153	145	**186**	68	27	**12**	210	220	**229**
Exhibitions	6	9	**–**	24	24	**28**	51	22	**20**	73	30	**49**
Total	997	287	**394**	364	339	**439**	376	298	**296**	529	487	**491**

Capital expenditure comprises additions to property, plant and equipment and internally developed intangible assets.

Amortisation of acquired intangible assets includes amounts in respect of joint ventures of £1m (2021: £1m; 2020: nil) in Exhibitions.

Depreciation and other amortisation includes depreciation on property, plant and equipment and right-of-use assets and amortisation of internally developed intangible assets and pre-publication costs.

In 2020, £38m of depreciation and other amortisation was classified as exceptional in Exhibitions. Excluding this amount gives total depreciation and other amortisation of £491m for 2020.

2 Revenue, operating profit and segment analysis (continued)

ANALYSIS OF NON-CURRENT ASSETS BY GEOGRAPHICAL LOCATION	2021 £m	**2022 £m**
North America	8,657	**9,821**
Europe	2,123	**2,193**
Rest of world	413	**460**
Total	11,193	**12,474**

Non-current assets held in the United Kingdom totalled £1,253m (2021: £1,299m; 2020: £1,158m). Non-current assets by geographical location exclude amounts relating to deferred tax, pension assets and derivative financial instruments.

Operating profit is reconciled to adjusted operating profit as follows:

RECONCILIATION OF OPERATING PROFIT TO ADJUSTED OPERATING PROFIT	2020 £m	2021 £m	**2022 £m**
Operating profit	1,525	1,884	**2,323**
Adjustments:			
Amortisation of acquired intangible assets	376	298	**296**
Acquisition-related items	(12)	21	**62**
Reclassification of tax in joint ventures	5	7	**4**
Reclassification of finance income in joint ventures	(1)	–	**(2)**
Exceptional costs in Exhibitions	183	–	**–**
Adjusted operating profit	2,076	2,210	**2,683**

In 2020, Exhibitions incurred exceptional costs of £183m. Of the £183m exceptional costs, £135m were cash costs, of which £25m were paid in 2022 (2021: £52m; 2020: £51m). All costs were included within administration and other expenses in the income statement.

Acquisition-related items in 2021 included a gain of £27m from the revaluation of a put and call option arrangement relating to a non-controlling interest in a subsidiary within Legal.

The share of post-tax results of joint ventures of £19m (2021: £29m; 2020: £15m) included in operating profit comprised £10m (2021: £19m; 2020: £10m) relating to Exhibitions, £7m (2021: £6m; 2020: £4m;) relating to Legal and £2m (2021: £4m; 2020: £1m) relating to Risk.

3 Operating expenses

Operating profit is stated after charging/(crediting) the following:

	Note	2020 £m	2021 £m	**2022 £m**
Total staff costs	5	2,555	2,549	**2,906**
Depreciation and amortisation				
Amortisation of acquired intangible assets	14	376	297	**294**
Share of joint ventures' amortisation of acquired intangible assets		–	1	**2**
Amortisation of acquired intangible assets including joint ventures' share		376	298	**296**
Amortisation of internally developed intangible assets	14	319	295	**309**
Depreciation of property, plant and equipment	16	60	52	**47**
Depreciation of right-of-use assets		88	80	**63**
Pre-publication amortisation		62	60	**72**
Total depreciation and other amortisation	2	529	487	**491**
Total depreciation and amortisation (including amortisation of acquired intangibles)		905	785	**787**
Other expenses and income				
Cost of sales including pre-publication costs and inventory expenses		2,487	2,562	**3,045**
Short-term and low value lease expenses		21	21	**19**
Operating lease rentals income		(1)	(1)	**(1)**

The amortisation of acquired intangible assets is included within administration and other expenses. In 2020, £38m of depreciation and other amortisation was classified as exceptional in Exhibitions. Excluding this amount gives a total depreciation and other amortisation of £491m for 2020.

4 Auditor's remuneration

	2020 £m	2021 £m	**2022 £m**
Auditor's remuneration			
Payable to the auditors of RELX PLC	0.9	0.9	**0.9**
Payable to the auditors of the Group's subsidiaries	8.3	7.7	**8.2**
Audit services	9.2	8.6	**9.1**
Audit-related assurance services	0.8	0.5	**0.6**
Total auditor's remuneration	10.0	9.1	**9.7**

Amounts payable to the auditors of the Group's subsidiaries include amounts for the audit of internal controls over financial reporting in accordance with the US Sarbanes-Oxley Act. The increase in the 2022 audit fee is mainly due to foreign exchange movements. The previously reported 2021 fees paid to EY for audit services have been revised to include additional amounts for expenses incurred and final fees for statutory audits which took place subsequent to the audit of the RELX consolidated accounts.

5 Personnel

Accounting policy
Share based remuneration
The fair value of share based remuneration is determined at the date of grant and recognised as an expense in the income statement on a straight-line basis over the vesting period, taking account of the estimated number of shares that are expected to vest. Market based performance criteria are taken into account when determining the fair value at the date of grant. Non-market based performance criteria are taken into account when estimating the number of shares expected to vest. The fair value of share based remuneration is determined by use of a binomial or Monte Carlo simulation model as appropriate. All of the Group's share based remuneration is equity settled.

	Note	2020 £m	2021 £m	**2022 £m**
Staff costs				
Wages and salaries		2,173	2,157	**2,453**
Social security costs		232	214	**257**
Pensions	6	125	133	**150**
Share based remuneration		25	45	**46**
Total staff costs		2,555	2,549	**2,906**

The Group provides a number of share based remuneration schemes to directors and employees. The principal share based remuneration schemes are the Executive Share Option Schemes (ESOS), the Long-Term Incentive Plan (LTIP) and the Retention Share Plan (RSP). Share options granted under ESOS are exercisable after three years and up to ten years from the date of grant at a price equivalent to the market value of the respective shares at the date of grant. Conditional shares granted under LTIP and RSP are exercisable after three years for nil consideration if conditions are met. Other awards principally relate to all employee share based saving schemes in the UK and the Netherlands. Further details are provided in the Remuneration Report on pages 121 to 142.

NUMBER OF PEOPLE EMPLOYED: FULL-TIME EQUIVALENTS*	At 31 December			Average during the year		
	2020	2021	**2022**	2020	2021	**2022**
Business segment						
Risk	9,700	10,000	**10,800**	9,600	9,800	**10,400**
Scientific, Technical & Medical	8,600	8,700	**9,500**	8,300	8,600	**9,300**
Legal	10,400	10,500	**11,300**	10,500	10,300	**10,900**
Exhibitions	3,700	3,500	**3,300**	4,200	3,600	**3,300**
Sub-total	32,400	32,700	**34,900**	32,600	32,300	**33,900**
Corporate/shared functions	800	800	**800**	800	800	**800**
Total	33,200	33,500	**35,700**	33,400	33,100	**34,700**
Geographical location						
North America	14,200	14,000	**14,900**	14,200	13,900	**14,500**
Europe	9,500	9,300	**9,800**	9,600	9,400	**9,500**
Rest of world	9,500	10,200	**11,000**	9,600	9,800	**10,700**
Total	33,200	33,500	**35,700**	33,400	33,100	**34,700**

* Reported to the nearest 100.

The number of UK full-time equivalents as at 31 December 2022 was 5,800 (2021: 5,400; 2020: 5,400) and the average during the year was 5,600 (2021: 5,400; 2020: 5,400).

6 Pension schemes

Accounting policy
The expense of defined benefit pension schemes and other post-retirement employee benefits is determined using the projected unit credit method and charged in the income statement as an operating expense, based on actuarial assumptions reflecting market conditions at the beginning of the financial year. Actuarial gains and losses are recognised in full in the statement of comprehensive income in the period in which they occur.

Past service costs and credits are recognised immediately at the earlier of when plan amendments or curtailments occur and when related restructuring costs or termination benefits are recognised. Settlements are recognised when they occur.

Net pension obligations in respect of defined benefit schemes are included in the statement of financial position at the present value of scheme liabilities, less the fair value of scheme assets. Where schemes are in surplus, i.e. assets exceed liabilities, the net pension assets are separately included in the statement of financial position. Any net pension asset is limited to the extent that the asset is recoverable.

The expense of defined contribution pension schemes and other employee benefits is charged in the income statement as incurred.

At 31 December 2022, the Group operates defined benefit pension schemes in the UK and the US. These schemes require management to exercise judgement in: estimating the ultimate cost of providing post-employment benefits, especially given the length of each scheme's liabilities and; for funded schemes in an accounting surplus position, whether the surplus can be recognised.

Key source of estimation uncertainty
Accounting for defined benefit pension schemes involves judgement and estimation about uncertain events, including the life expectancy of the members, inflation and the rate at which the future pension payments are discounted. Estimates for these factors are used in determining the pension cost and liabilities reported in the financial statements. The estimates made around future developments of each of the critical assumptions are made in conjunction with independent actuaries. Each scheme is subject to a periodic review by independent actuaries. The discount rate, inflation rate and mortality assumptions may have a material effect in determining the defined benefit pension obligation and costs which are reported in the financial statements. Information regarding the more significant assumptions used for valuation is provided below, together with a sensitivity analysis.

A number of pension schemes are operated around the world. The largest defined benefit schemes as at 31 December 2022 were in the UK and the US, and are summarised below.

Major defined benefit schemes in place at 31 December 2022
The UK scheme is a final salary scheme and is closed to new hires. Members accrue a portion of their final pensionable earnings based on the number of years of service. The US scheme is a cash balance scheme and was closed to future accruals effective 1 January 2019.

Each of the major defined benefit schemes is administered by a separate fund that is legally separated from the Group. The trustees of the pension funds in the UK and plan fiduciaries of the US scheme are required by law to act in the interest of the funds' beneficiaries. In the UK, the trustees of the pension fund are responsible for the investment policy with regard to the assets of the fund. The board of trustees consists of an equal number of company-appointed and member-nominated Directors. In the US, the fiduciary duties for the scheme are allocated between committees which are staffed by senior employees of the Group; the investment committee has the primary responsibility for the investment and management of plan assets. The funding of the Group's major schemes reflects the different rules within each jurisdiction.

In the UK, the level of funding is determined by statutory triennial actuarial valuations in accordance with pensions legislation. Where the scheme falls below 100% funded status, the Group and the scheme trustees must agree on how the deficit is to be remedied. The UK Pensions Regulator has significant powers and sets out in codes and guidance the parameters for scheme funding. As a result of the 2021 triennial valuation, the Group's remaining deficit funding contributions to the scheme over the period 2023 to 2024 are £76m.

The US scheme has an annual statutory valuation which forms the basis for establishing the employer contribution each year (subject to ERISA and IRS minimums). Should the statutory funded status fall to below 100%, the US Pension Protection Act requires the deficit to be rectified with additional contributions over a seven-year period. The US scheme's funded status is in excess of 100%.

Employer cash contributions to defined benefit pension schemes in respect of 2023 are expected to be approximately £63m including a £50m pension deficit funding contribution relating to the UK scheme recovery plan.

The pension expense (excluding interest amounts) recognised in the income statement consists of:

	2020 £m	2021 £m	**2022 £m**
Defined benefit pension expense	11	24	**19**
Defined contribution pension expense	114	109	**131**
Total	125	133	**150**

£150m (2021: £133m; 2020: £125m) of the total pension cost is recognised within operating profit.

6 Pension schemes (continued)

The amounts recognised in the income statement in respect of defined benefit pension schemes during the year are presented by major scheme as follows:

	2020			2021			**2022**		
	UK £m	US £m	Total £m	UK £m	US £m	Total £m	**UK £m**	**US £m**	**Total £m**
Service cost	21	3	24	21	3	24	**16**	**3**	**19**
Settlement and past service credits	–	(13)	(13)	–	–	–	**–**	**–**	**–**
Defined benefit pension expense	21	(10)	11	21	3	24	**16**	**3**	**19**
Net interest on net defined benefit obligation	9	1	10	8	1	9	**4**	**1**	**5**
Net defined benefit pension expense	30	(9)	21	29	4	33	**20**	**4**	**24**

In 2020, the past service credit relates to changes to the US scheme allowing in-service distributions to be made.

Net interest on net defined benefit pension scheme liabilities is presented within net finance costs in the income statement.

The significant valuation assumptions, determined for each major scheme in conjunction with the respective independent actuaries, are presented below. The net defined benefit pension expense for each year is based on the assumptions and scheme valuations set at 31 December of the prior year.

AS AT 31 DECEMBER	2020		2021		**2022**	
	UK	US	UK	US	**UK**	**US**
Discount rate	1.45%	2.45%	1.95%	2.80%	**4.90%**	**5.35%**
Inflation	2.80%	2.50%	3.30%	2.50%	**3.20%**	**2.50%**

Discount rates are set by reference to high-quality corporate bond yields.

Mortality assumptions make allowance for future improvements in longevity and have been determined by reference to applicable mortality statistics. The average life expectancy assumptions are set out below:

AS AT 31 DECEMBER 2022	**Male average life expectancy**		**Female average life expectancy**	
	UK	US	UK	US
Member currently aged 60 years	85	86	89	88
Member currently aged 45 years	87	86	90	89

6 Pension schemes (continued)

The amount recognised in the statement of financial position in respect of defined benefit pension schemes at the start and end of the year and the movements during the year were as follows:

	2021			**2022**		
	UK £m	US £m	Total £m	**UK £m**	**US £m**	**Total £m**
Defined benefit obligation						
At start of year	(4,668)	(1,062)	(5,730)	**(4,629)**	**(992)**	**(5,621)**
Service cost	(21)	(3)	(24)	**(16)**	**(3)**	**(19)**
Interest on pension scheme liabilities	(67)	(25)	(92)	**(89)**	**(29)**	**(118)**
Actuarial gain on financial assumptions	155	38	193	**1,809**	**224**	**2,033**
Actuarial loss arising from experience assumptions	(152)	(1)	(153)	**(81)**	**(7)**	**(88)**
Contributions by employees	(9)	–	(9)	**(8)**	**–**	**(8)**
Benefits paid	133	69	202	**127**	**54**	**181**
Exchange translation differences	–	(8)	(8)	**–**	**(112)**	**(112)**
At end of year	(4,629)	(992)	(5,621)	**(2,887)**	**(865)**	**(3,752)**
Fair value of scheme assets						
At start of year	4,076	1,077	5,153	**4,390**	**1,007**	**5,397**
Interest income on plan assets	59	24	83	**85**	**28**	**113**
Return on assets excluding amounts included in interest income	318	(39)	279	**(1,573)**	**(247)**	**(1,820)**
Contributions by employer	61	6	67	**69**	**6**	**75**
Contributions by employees	9	–	9	**8**	**–**	**8**
Benefits paid	(133)	(69)	(202)	**(127)**	**(54)**	**(181)**
Exchange translation differences	–	8	8	**–**	**114**	**114**
At end of year	4,390	1,007	5,397	**2,852**	**854**	**3,706**
Opening net balance	(592)	15	(577)	**(239)**	**15**	**(224)**
Service cost	(21)	(3)	(24)	**(16)**	**(3)**	**(19)**
Net interest on net defined benefit obligation	(8)	(1)	(9)	**(4)**	**(1)**	**(5)**
Contributions by employer	61	6	67	**69**	**6**	**75**
Actuarial gains/(losses)	321	(2)	319	**155**	**(30)**	**125**
Exchange translation differences	–	–	–	**–**	**2**	**2**
Net pension balance	(239)	15	(224)	**(35)**	**(11)**	**(46)**
Impact of asset ceiling	(3)	(42)	(45)	**(5)**	**(4)**	**(9)**
Overall net pension balance	(242)	(27)	(269)	**(40)**	**(15)**	**(55)**

As at 31 December 2022, the defined benefit obligations comprised £3,569m (2021: £5,360m) in relation to funded schemes and £183m (2021: £261m) in relation to unfunded schemes.

The weighted average duration of defined benefit scheme liabilities is 15 years in the UK (2021: 19 years) and 9 years in the US (2021: 11 years). Net deferred tax assets of £14m (2021: £68m) are recognised in respect of the net pension balance.

A net pension asset has been recognised in relation to the UK and US funded scheme after considering the guidance in IAS 19 – Employee Benefits and IFRIC 14. The UK funded scheme moved into a surplus position for the first time at the interim reporting date of 30 June 2022. The split between net pension obligations and net pension assets is as follows:

	2021 £m	**2022 £m**
Net pension asset recognised	46	**129**
Net pension obligation	(315)	**(184)**
Overall net pension balance	(269)	**(55)**

6 Pension schemes (continued)

Amounts recognised in the statement of comprehensive income are set out below:

	2020 £m	2021 £m	**2022 £m**
Gains and losses arising during the year:			
Experience gains/(losses) on scheme liabilities	47	(153)	**(88)**
Experience gains/(losses) on scheme assets	426	279	**(1,820)**
Actuarial (losses)/gains on the present value of scheme liabilities due to changes in:			
– discount rates	(671)	463	**2,000**
– inflation	127	(290)	**32**
– other actuarial assumptions	(47)	20	**1**
	(118)	319	**125**
Net cumulative losses at start of year	(828)	(946)	**(627)**
Net cumulative losses at end of year	(946)	(627)	**(502)**

In addition, a gain of £39m (2021: £2m) is recognised in the statement of comprehensive income in relation to the asset ceiling. As at 31 December 2022, the impact of the asset ceiling on the overall net pension obligation is £9m (2021: £45m). In 2022 there was a £4m (2021: nil) foreign exchange gain on the asset ceiling.

The major categories and fair values of scheme assets at the end of the reporting period are as follows:

FAIR VALUE OF SCHEME ASSETS	2021			**2022**		
	UK £m	US £m	Total £m	**UK £m**	**US £m**	**Total £m**
Equities	1,595	5	1,600	**272**	**4**	**276**
Liability matching assets	1,704	977	2,681	**899**	**802**	**1,701**
Property funds and ground leases	743	–	743	**651**	**–**	**651**
Direct lending	208	–	208	**241**	**–**	**241**
Cash and cash equivalents	127	25	152	**788**	**17**	**805**
Other	13	–	13	**1**	**31**	**32**
Total	4,390	1,007	5,397	**2,852**	**854**	**3,706**

Included within liability matching assets of the UK scheme are asset backed securities totalling £375m (2021: £593m), other credit assets of £199m (2021: £205m) and government bonds totalling £1,721m (2021: £1,715m) offset by interest rate swaps of £115m (2021: £2m) and short-term sale and repurchase agreements totalling £1,284m (2021: £808m) whereby the UK scheme funds the purchase of government bonds using existing bonds as security.

Assets and obligations associated with the schemes are sensitive to changes in the market values of assets and the market-related assumptions used to value scheme liabilities. In particular, adverse changes to asset values, discount rates or inflation could increase future pension costs and funding requirements.

Typically, the Group's schemes are exposed to: investment risks, whereby actual rates of return on plan assets may be below those rates used to determine the defined benefit obligations; and interest rate risks, whereby scheme deficits may increase if bond yields in the UK and the US decline and are not offset by returns in liability matching and other assets. The schemes are also exposed to other risks, such as unanticipated future increases in member longevity patterns and inflation, all potentially leading to an increase in scheme liabilities.

Investment policies of each scheme are intended to ensure continuous payment of defined benefit pensions in the short term and long term. Efforts are made to limit risks on marketable securities by adopting investment policies that diversify assets across geographies and among equities, liability matching assets, property funds, cash and other assets. Asset allocations are dependent on a variety of factors including the duration of scheme liabilities and the funded position of the plan. The primary UK scheme uses a liability driven investment (LDI) approach for part of the portfolio, investing primarily in government bonds so that the value of scheme assets change in the same way as the scheme's liabilities and achieve a matching effect for the most significant plan liability assumptions of interest rates and inflation rates.

All equities and bonds have quoted prices in active markets.

6 Pension schemes (continued)

Sensitivity analysis
The valuation of the Group's pension scheme liabilities involves significant actuarial assumptions, being the life expectancy of the members, inflation and the rate at which the future pension payments are discounted. Differences arising from actual experience or future changes in assumptions may materially affect future pension charges. In particular, changes in assumptions for discount rates, inflation and life expectancies that are reasonably possible would have the following approximate effects on the defined benefit pension obligations:

	£m
Increase/decrease of 0.5% in discount rate	**225**
Increase/decrease of 0.25% in the expected inflation rate	**64**
Increase/decrease of one year in assumed life expectancy	**95**

The above analysis has been calculated on the same basis used to determine the defined benefit obligation recognised in the statement of financial position. There has been no change in the methods used to prepare the analysis compared with prior years. This sensitivity analysis may not be representative of the actual change in the defined benefit obligation as it is unlikely that changes in the above assumptions would occur in isolation as some of the assumptions may be correlated.

7 Net finance costs

Accounting policy
Interest on borrowings is expensed as incurred. The cost of issuing borrowings is generally expensed over the period of borrowing so as to produce a constant periodic rate of charge.

	2020 £m	2021 £m	**2022 £m**
Interest on short-term bank loans, overdrafts and commercial paper	(17)	(11)	**(19)**
Interest on term debt	(122)	(106)	**(157)**
Interest on lease liabilities	(12)	(8)	**(6)**
Total borrowing costs	(151)	(125)	**(182)**
Losses on loans and derivatives not designated as hedges	(13)	(16)	**(9)**
Fair value losses on designated fair value hedge relationships	–	–	**(9)**
Net financing charge on defined benefit pension schemes and other	(11)	(9)	**(5)**
Finance costs	(175)	(150)	**(205)**
Interest on bank deposits	2	1	**4**
Interest income on net finance lease receivables	1	–	**–**
Fair value gains on designated fair value hedge relationships	–	7	**–**
Finance income	3	8	**4**
Net finance costs	(172)	(142)	**(201)**

Gains of £2m (2021: losses of £1m; 2020: gains of £3m) on derivatives designated as cash flow hedges were recognised in other comprehensive income and accumulated in the hedge reserve, and may be reclassified to the income statement in future periods. Losses of £1m (2021: nil; 2020: £4m) in total were transferred from the hedge reserve in the period.

8 Disposals and other non-operating items

Accounting policy
Assets of businesses that are available for immediate sale in their current condition and for which a sales process is considered highly probable to complete are classified as assets held for sale and are carried at the lower of carrying value and fair value less costs to sell. Fair value is based on anticipated disposal proceeds, typically derived from firm or indicative offers from potential acquirers. Non-current assets are not amortised or depreciated following their classification as held for sale. Liabilities of businesses held for sale are also separately classified on the statement of financial position. Fair value movements in the venture capital portfolio are reported within disposals and other items – see note 15.

	2020 £m	2021 £m	**2022 £m**
Revaluation of investments	151	16	**9**
(Loss)/gain on disposal of businesses and assets held for sale	(21)	39	**(18)**
Net gain/(loss) on disposals and other non-operating items	130	55	**(9)**

The revaluation of investments relates mainly to venture fund investments, further details of which are provided in note 15.

During the year, net proceeds of £9m were received on the disposal of venture fund investments. In 2021, an investment in Palantir Technologies Inc which was valued at £173m on 31 December 2020 was disposed of in February 2021 for gross proceeds of £187m.

9 Taxation

Accounting policy
Tax expense comprises current and deferred tax. Current and deferred tax are charged or credited in the income statement except to the extent that the tax arises from a transaction or event which is recognised, in the same or a different period, outside the income statement (either in other comprehensive income, directly in equity, or through a business combination), in which case the tax appears in the same statement as the transaction that gave rise to it.

Current tax is the amount of corporate income taxes expected to be payable or recoverable based on the profit for the period as adjusted for items that are not taxable or not deductible, and is calculated using tax rates and laws that were enacted or substantively enacted at the date of the statement of financial position. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. Provisions are established where appropriate on the basis of amounts expected to be paid to the tax authorities.

Current tax includes amounts provided in respect of uncertain tax positions when management expects that, upon examination of the uncertainty by a tax authority in possession of all relevant knowledge, it is more likely than not that an economic outflow will occur. Changes in facts and circumstances underlying these provisions are reassessed at the date of each statement of financial position, and the provisions are remeasured as required to reflect current information.

Deferred tax is recognised on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the statement of financial position. Deferred tax is calculated using tax rates and laws that have been enacted or substantively enacted at the end of the reporting period, and which are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax liabilities are generally recognised for all taxable temporary differences but not recognised for taxable temporary differences arising on investments in subsidiaries, associates and joint ventures where the reversal of the temporary difference can be controlled and it is probable that the difference will not reverse in the foreseeable future.

Deferred tax assets are recognised to the extent it is probable that taxable profits will be available against which the deductible temporary differences can be utilised, and are reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered. The availability of suitable taxable profit is considered probable when an entity has taxable temporary differences (i.e. deferred tax liabilities) relating to the same taxation authority and the same taxable entity, that are expected to reverse in the same period as the deductible temporary difference or unused tax losses or credit.

Deferred tax assets and liabilities are not recognised in respect of temporary differences that arise on initial recognition of assets and liabilities acquired other than in a business combination. Deferred tax is not discounted.

When the acquisition of an asset qualifies to be accounted for as a business combination, deferred tax is generally required to be recognised on the difference between the tax base and the book base of the assets and liabilities acquired and assumed. The assets acquired often include identifiable intangible assets as well as goodwill. In many jurisdictions, the manner in which a business combination is effected will impact the tax deductibility and therefore the deferred tax recognised in relation to such intangibles and goodwill.

In an ‘asset acquisition’, where the buyer acquires the trade and assets of a business, there is often a tax deduction available for the amortisation of the identifiable intangible assets and sometimes for the goodwill. In this situation, deferred tax is recognised on the difference between the tax base and the book base of the assets.

In a ‘share acquisition’, where the buyer acquires the share capital of a legal entity that continues to own the trade and assets, tax deductions for amortisation are usually not available. Intangibles which do not qualify for tax deductions therefore give rise to a deferred tax liability. However, deferred tax liabilities are not recognised on temporary differences that arise from goodwill where that is not deductible for tax purposes.

Key source of estimation uncertainty
The Group is subject to tax in numerous jurisdictions, giving rise to complex tax issues. As a multinational enterprise, our tax returns in the countries in which we operate are subject to tax authority audits as a matter of routine. While the Group is confident that tax returns are appropriately prepared and filed, amounts are provided in respect of uncertain tax positions that reflect the risk with respect to tax matters under active discussion with tax authorities, or which are otherwise considered to involve uncertainty.

The valuation of provisions required in relation to uncertain tax positions involves estimation. Provisions against uncertain tax positions are measured using one of the following methods, depending on which of the methods management expects will better predict the amount it will pay over to the tax authority:

- The Single Best Estimate – where there is a single outcome that is more likely than not to occur. This will happen, for example, where the tax outcome is binary (such as whether an entity can deduct an item of expenditure) or the range of possible outcomes is narrow or concentrated on a single value. The most likely outcome may be that no tax is expected to be payable, in which case the provision is nil; or
- A Probability-Weighted Expected Value – where, on the balance of probabilities, something will be paid to the tax authority but the possible outcomes are widely dispersed with low individual probabilities (i.e. there is no single outcome more likely than not to occur). In this case, the provision is the sum of the probability-weighted amounts in the range.

9 Taxation (continued)

In assessing provisions against uncertain tax positions, management uses in-house tax experts, professional firms and previous experience to inform the evaluation of risk. However, it remains possible that uncertainties will ultimately be resolved at amounts greater or smaller than the liabilities recorded.

In particular, although we report cross-border transactions undertaken between Group subsidiaries on an arm's-length basis in tax returns in accordance with OECD guidelines, transfer pricing relies on the exercise of judgement and it is frequently possible for there to be a range of legitimate and reasonable views. This means that it is impossible to be certain that the returns basis will be sustained on examination. Discussions with tax authorities relating to cross-border transactions and other matters are ongoing in a number of our major trading jurisdictions. Although the timing and amount of final resolution of these uncertain tax positions cannot be reliably predicted, no significant impact on the results of the Group is expected in the next year or foreseeable future.

Estimation of income taxes also includes assessments of the recoverability of deferred tax assets, consistent with the Group's forecasts and annual strategy plan used in the preparation of the annual report and accounts. Deferred tax assets are only recognised to the extent that they are considered recoverable based on existing tax laws and forecasts of future taxable profits against which the underlying tax deductions can be utilised. The recoverability of these assets is reassessed at the end of each reporting period, and changes in recognition of deferred tax assets will affect the tax liability in the period of that reassessment.

	2020 £m	2021 £m	**2022 £m**
Current tax			
United Kingdom	(80)	(46)	**(102)**
Rest of world	(184)	(376)	**(432)**
Total current tax charge	(264)	(422)	**(534)**
Deferred tax	(11)	96	**53**
Tax expense	(275)	(326)	**(481)**

Cash tax paid (net) in the year was £495m (2021: £342m; 2020: £496m), which is different to the tax expense for the year set out above.

There are a number of reasons why the cash tax payments in a particular year will be different from the tax expense in the accounts:

- Tax payments relating to a particular year's profits are typically due partly in the year and partly in the following year. In 2020 there was an acceleration of instalment payments in the UK.
- Tax expense includes deferred tax, an accounting adjustment where an item is included in the income statement in one year but is taxed in another year. The acquisition of intangible assets often results in deferred tax liabilities, the unwind of which does not result in tax payments.
- Current tax expense is the best estimate at the end of the period of cash tax expected to be paid. To the extent the final tax liability is different, any cash tax impact will occur in a later period.
- Some of the benefits of tax deductions related to share based payments, pensions and hedging are credited to equity or other comprehensive income rather than to tax expense.

Set out below is a reconciliation of the difference between tax expense for the period and the theoretical expense calculated by multiplying accounting profit by the applicable tax rate.

We believe the most meaningful applicable rate is that obtained by multiplying the accounting profits and losses of all consolidated entities by the applicable domestic rate in each of those entities' jurisdictions.

The net tax expense charged on profit before tax differs from the theoretical amount that would arise using the weighted average of tax rates applicable to accounting profits and losses of the consolidated entities, as follows:

	2020		2021		**2022**	
	£m	%	£m	%	**£m**	**%**
Profit before tax	1,483		1,797		**2,113**	
Tax at average applicable rates	(331)	22.3 %	(418)	23.3 %	**(498)**	**23.6 %**
Tax effect of share of results of joint ventures	3	(0.2)%	6	(0.3)%	**3**	**(0.1)%**
Income not taxable and expenses not deductible	18	(1.2)%	24	(1.4)%	**21**	**(1.0)%**
Non-deductible costs of share based remuneration	(2)	0.1 %	(2)	0.1 %	**(1)**	**0.0 %**
Non-deductible disposal-related gains and losses	(2)	0.1 %	1	(0.1)%	**(2)**	**0.1 %**
Deferred tax assets of the period not recognised	(19)	1.3 %	(8)	0.4 %	**(17)**	**0.8 %**
Change in recognition and measurement of deferred tax	14	(0.9)%	25	(1.4)%	**5**	**(0.2)%**
Movements in provisions and prior year items	44	(3.0)%	46	(2.5)%	**8**	**(0.4)%**
Tax expense	(275)	18.5 %	(326)	18.1 %	**(481)**	**22.8 %**

9 Taxation (continued)

The weighted average applicable tax rate for the year was 23.6% (2021: 23.3%; 2020: 22.3%), reflecting the applicable rates in the countries where the Group operates. The Group's future tax charge will be sensitive to the geographic mix of profits and losses and the tax rates and laws in force in the jurisdictions in which we operate.

In the US, the Inflation Reduction Act enacted in August 2022 introduced a corporate alternative minimum tax. Based on initial guidance, this is not expected to have any material impact on the Group. We will continue to monitor developments.

In the UK, an increase in the corporation tax rate from 19% to 25% from April 2023 was enacted in 2021. In the Netherlands, an increase in the corporation tax rate from 25% to 25.8% from 2022 and changes to loss recognition rules were also enacted in 2021. In total, the deferred tax effect of changes in tax rates for the year was a tax credit of £3m (2021: £8m; 2020: £14m) in the income statement.

The effective tax rate of 22.8% (2021: 18.1%; 2020: 18.5%) was lower than the weighted average applicable rate of 23.6%. Income not taxable and expenses not deductible include a credit of £13m (2021: £15m; 2020: £16m) relating to research and development and nil (2021: £7m; 2020: £19m) relating to the revaluation of a put and call option arrangement. In 2021, the change in recognition and measurement of deferred tax includes the deferred tax effect of tax rate increases in the UK and the Netherlands of £8m and changes to loss recognition rules in the Netherlands of £15m. In 2020 and 2021, there were tax credits arising from the substantial resolution of prior year tax matters.

The following tax has been recognised in other comprehensive income or directly in equity during the year:

	2020 £m	2021 £m	**2022 £m**
Tax on items that will not be reclassified to profit or loss			
Tax on actuarial movements on defined benefit pension schemes	39	(48)	**(43)**
Tax on items that may be reclassified to profit or loss			
Tax on fair value movements on cash flow hedges	(4)	(1)	**8**
Net tax (charge)/credit recognised in other comprehensive income	35	(49)	**(35)**
Tax credit on share based remuneration recognised directly in equity	5	12	**–**

The £43m tax charge (2021: £48m) on actuarial movements on defined benefit pension schemes includes a £2m tax charge (2021: £13m tax credit) reflecting the revaluation of pension related deferred tax balances to the UK corporation tax rate of 25% (previously 19%) enacted in 2021.

	2021 £m	**2022 £m**
Current tax assets	10	**15**
Current tax liabilities	(192)	**(249)**
Total	(182)	**(234)**

Current tax assets and liabilities are net amounts in countries where there is a legally enforceable right to offset assets and liabilities on a net basis.

The Group maintained provisions for uncertain tax positions. The total carrying amount of these provisions of £239m (2021: £228m) is comprised of a number of individually immaterial amounts. It is not expected that any resolution of the matters to which the provisions relate, or changes in assumptions relating to the provisions, will have a material impact on the Group's financial results in the next year.

	2021 £m	**2022 £m**
Deferred tax assets	210	**146**
Deferred tax liabilities	(591)	**(590)**
Total	(381)	**(444)**

9 Taxation (continued)

Movements in deferred tax liabilities and assets (before taking into consideration the offsetting of balances within the same jurisdiction) are summarised as follows:

	Deferred tax liabilities		Deferred tax assets				
	Acquired intangible assets £m	Other temporary differences £m	Acquired intangible assets £m	Tax losses carried forward £m	Pension balances £m	Other temporary differences £m	Total £m
Deferred tax (liability)/asset at 1 January 2021	(710)	(283)	174	99	125	200	(395)
Credit/(charge) to profit	53	86	(9)	4	(8)	(30)	96
(Charge)/credit to equity/other comprehensive income	–	–	–	–	(48)	7	(41)
Acquisitions	(33)	–	–	6	–	–	(27)
Exchange translation differences	(4)	1	(8)	(2)	(1)	–	(14)
Deferred tax (liability)/asset at 1 January 2022	**(694)**	**(196)**	**157**	**107**	**68**	**177**	**(381)**
Credit/(charge) to profit	**62**	**20**	**(30)**	**(17)**	**(10)**	**28**	**53**
(Charge)/credit to equity/other comprehensive income	**–**	**(32)**	**–**	**–**	**(10)**	**3**	**(39)**
Acquisitions	**(32)**	**–**	**–**	**19**	**–**	**–**	**(13)**
Exchange translation differences	**(71)**	**(23)**	**5**	**9**	**1**	**15**	**(64)**
Deferred tax (liability)/asset at 31 December 2022	**(735)**	**(231)**	**132**	**118**	**49**	**223**	**(444)**

The closing deferred tax liability balance of other temporary differences includes those relating to capitalised development costs of £165m (2021: £161m) and pension surplus of £32m (2021: nil). The closing deferred tax asset balance of other temporary differences includes those relating to accruals and provisions of £118m (2021: £92m), share based remuneration provisions of £41m (2021: £41m) and intercompany interest of £14m (2021: £13m).

As a result of exemptions on dividends from subsidiaries and capital gains on disposal there are no significant taxable temporary differences associated with investments in subsidiaries, branches, associates and interests in joint arrangements.

While a number of entities in Exhibitions suffered losses due to the impact of Covid-19 over the last few years, in no individual country were they material. Following the return to profitability in the Exhibitions business, it is expected that the remaining trading losses will be substantially utilised in the next year. Other deferred tax assets have been recognised including for losses in the US and Netherlands, the majority of which are expected to have been utilised by 2031.

Deferred tax assets in respect of tax losses and other deductible temporary differences have only been recognised to the extent that it is more likely than not that sufficient taxable profits will be available to allow the asset to be recovered.

Tax losses and temporary differences for which no deferred tax asset was recognised:

	2021		2022	
	£m Gross amount	£m Tax effected	**£m Gross amount**	**£m Tax effected**
Trading losses and temporary differences expiring				
Within 10 years	100	29	**123**	**35**
More than 10 years	–	–	**1**	**–**
Available indefinitely	187	50	**208**	**58**
Total	287	79	**332**	**93**
State and local tax losses expiring				
Within 10 years	27	2	**19**	**1**
More than 10 years	46	4	**89**	**6**
Available indefinitely	–	–	**–**	**–**
Total	73	6	**108**	**7**
Capital losses expiring				
Within 10 years	–	–	**–**	**–**
More than 10 years	–	–	**–**	**–**
Available indefinitely	22	5	**22**	**5**
Total	22	5	**22**	**5**

10 Earnings per share

Accounting policy

Earnings per share (EPS) is calculated by taking the reported net profit attributable to shareholders and dividing this by the total weighted average number of shares.

The diluted figures are calculated after taking account of potential additional ordinary shares arising from share options and conditional shares.

Adjusted earnings per share is calculated by dividing adjusted net profit attributable to RELX PLC shareholders by the total weighted average number of shares.

EARNINGS PER SHARE – FOR THE YEAR ENDED 31 DECEMBER	2020 Net profit attributable to shareholders £m	2020 Weighted average number of shares (millions)	2020 EPS (pence)	2021 Net profit attributable to shareholders £m	2021 Weighted average number of shares (millions)	2021 EPS (pence)	**2022 Net profit attributable to shareholders £m**	**2022 Weighted average number of shares (millions)**	**2022 EPS (pence)**
Basic earnings per share	1,224	1,926.2	63.5 p	1,471	1,928.0	76.3 p	**1,634**	**1,918.5**	**85.2p**
Diluted earnings per share	1,224	1,937.8	63.2 p	1,471	1,939.4	75.8 p	**1,634**	**1,929.3**	**84.7p**

ADJUSTED EARNINGS PER SHARE	2020 Adjusted net profit attributable to shareholders £m	2020 Weighted average number of shares (millions)	2020 Adjusted EPS (pence)	2021 Adjusted net profit attributable to shareholders £m	2021 Weighted average number of shares (millions)	2021 Adjusted EPS (pence)	**2022 Adjusted net profit attributable to shareholders £m**	**2022 Weighted average number of shares (millions)**	**2022 Adjusted EPS (pence)**
Adjusted earnings per share	1,543	1,926.2	80.1p	1,689	1,928.0	87.6p	**1,961**	**1,918.5**	**102.2p**

RECONCILIATION OF ADJUSTED NET PROFIT ATTRIBUTABLE TO RELX PLC SHAREHOLDERS

2020	Pre-tax adjustment £m	Tax on adjustment £m	**Total £m**
Net profit attributable to shareholders			**1,224**
Adjustments:			
Amortisation of acquired intangible assets	360	35	**395**
Other deferred tax credits from intangible assets*	–	(78)	**(78)**
Acquisition-related items	(12)	(6)	**(18)**
Net interest on net defined benefit pension obligation and other	11	(2)	**9**
Disposals and other non-operating items	(130)	3	**(127)**
Exceptional costs in Exhibitions	183	(45)	**138**
Adjusted net profit attributable to shareholders			**1,543**

2021	Pre-tax adjustment £m	Tax on adjustment £m	**Total £m**
Net profit attributable to shareholders			**1,471**
Adjustments:			
Amortisation of acquired intangible assets	294	22	**316**
Other deferred tax credits from intangible assets*	–	(61)	**(61)**
Acquisition-related items	21	(11)	**10**
Net interest on net defined benefit pension obligation and other	9	(2)	**7**
Disposals and other non-operating items	(55)	1	**(54)**
Adjusted net profit attributable to shareholders			**1,689**

2022	Pre-tax adjustment £m	Tax on adjustment £m	**Total £m**
Net profit attributable to shareholders			**1,634**
Adjustments:			
Amortisation of acquired intangible assets	296	30	**326**
Other deferred tax credits from intangible assets*	–	(64)	**(64)**
Acquisition-related items	62	(13)	**49**
Net interest on net defined benefit pension obligation and other	5	(1)	**4**
Disposals and other non-operating items	9	3	**12**
Adjusted net profit attributable to shareholders			**1,961**

* Movements on deferred tax liabilities arising on acquired intangible assets that do not qualify for tax amortisation.

11 Statement of cash flows

Accounting policy
Cash and cash equivalents comprise cash balances, call deposits and other short-term highly liquid investments and are held in the statement of financial position at fair value.

RECONCILIATION OF OPERATING PROFIT TO CASH GENERATED FROM OPERATIONS	2020 £m	2021 £m	**2022 £m**
Operating profit	1,525	1,884	**2,323**
Share of results of joint ventures	(15)	(29)	**(19)**
Amortisation of acquired intangible assets	376	297	**294**
Amortisation of internally developed intangible assets	319	295	**309**
Amortisation of pre-publication costs	62	60	**72**
Depreciation of property, plant and equipment	60	52	**47**
Depreciation of right-of-use assets	88	80	**63**
Share based remuneration	25	45	**46**
Total non-cash items	930	829	**831**
Increase in inventories and pre-publication costs	(80)	(73)	**(103)**
(Increase)/decrease in receivables	149	(103)	**(251)**
(Decrease)/increase in payables	(245)	(32)	**280**
Increase in working capital	(176)	(208)	**(74)**
Cash generated from operations	2,264	2,476	**3,061**

CASH FLOW ON ACQUISITIONS	Note	2020 £m	2021 £m	**2022 £m**
Purchase of businesses	12	(864)	(235)	**(373)**
Deferred payments relating to prior year acquisitions		(5)	(19)	**(21)**
Total		(869)	(254)	**(394)**

RECONCILIATION OF NET DEBT	2020 £m	2021 £m	**Cash and cash equivalents £m**	**Debt £m**	**Related derivative financial instruments £m**	**Finance lease receivable £m**	**2022 £m**
At start of year	(6,191)	(6,898)	**113**	**(6,167)**	**35**	**2**	**(6,017)**
(Decrease)/increase in cash and cash equivalents	(51)	26	**208**	**–**	**–**	**–**	**208**
Decrease in short-term bank loans, overdrafts and commercial paper	436	200	**–**	**101**	**–**	**–**	**101**
Issuance of term debt	(2,342)	–	**–**	**(397)**	**–**	**–**	**(397)**
Repayment of term debt	1,233	431	**–**	**35**	**–**	**–**	**35**
Repayment of leases	90	76	**–**	**79**	**–**	**(1)**	**78**
Change in net debt resulting from cash flows	(634)	733	**208**	**(182)**	**–**	**(1)**	**25**
Borrowings in acquired businesses	(3)	–	**–**	**(3)**	**–**	**–**	**(3)**
Remeasurement and derecognition of leases	(8)	(4)	**–**	**(5)**	**–**	**–**	**(5)**
Inception of leases	(24)	(24)	**–**	**(34)**	**–**	**5**	**(29)**
Fair value and other adjustments to debt and related derivatives	(4)	2	**–**	**230**	**(245)**	**–**	**(15)**
Exchange translation differences	(34)	174	**13**	**(569)**	**(3)**	**(1)**	**(560)**
At end of year	(6,898)	(6,017)	**334**	**(6,730)**	**(213)**	**5**	**(6,604)**

Net debt comprises cash and cash equivalents, loan capital, lease liabilities and receivables, promissory notes, bank and other loans and derivative financial instruments that are used to hedge certain borrowings. The Group monitors net debt as part of capital and liquidity management.

12 Acquisitions

Accounting policy
Goodwill, being the excess of the consideration over the net tangible and intangible assets acquired, represents benefits which do not qualify for recognition as intangible assets, including: the ability of a business to generate higher returns than individual assets; skilled workforces; and acquisition synergies that are specific to the Group. In addition, goodwill arises on the recognition of deferred tax liabilities in respect of intangible assets for which amortisation does not qualify for tax deductions.

During the year, a number of acquisitions were made. The net assets of the businesses acquired are incorporated at their fair value to the Group. The fair values of the consideration given and of the assets and liabilities acquired are summarised below.

	Fair value 2020 £m	Fair value 2021 £m	**Fair value 2022 £m**
Goodwill	570	131	**269**
Intangible assets	427	156	**125**
Property, plant and equipment	3	1	**1**
Other non-current assets	1	–	**3**
Current assets	20	4	**8**
Current liabilities	(24)	(16)	**(21)**
Borrowings	(3)	–	**(3)**
Deferred tax	(90)	(27)	**(13)**
Net assets acquired	904	249	**369**
Consideration (after taking account of £6m net cash acquired (2020: £29m; 2021: £8m))	904	249	**369**
Change in consideration deferred to future years and changes in contingent consideration relating to prior year acquisitions	(40)	(14)	**4**
Net cash flow	864	235	**373**

During 2022, RELX completed several acquisitions for total consideration of £443m (2021: £255m), or £437m (2021: £249m) adjusted for cash acquired. This includes the acquisition of investments in joint ventures and associates of £61m. Refer to note 15 for further details.

The businesses acquired in 2022 contributed £19m to revenue, decreased adjusted operating profit by £5m, decreased net profit by £24m (after charging £19m of integration costs and amortisation of acquired intangibles) and decreased net cash inflow from operating activities for the part year under the Group's ownership and before taking account of acquisition financing costs by £4m. Had the businesses been acquired at the beginning of the year, on a pro forma basis the Group revenues, adjusted operating profit and net profit attributable to RELX PLC shareholders for the year would have been £8,567m, £2,679m and £1,626m respectively, before taking account of acquisition financing costs.

13 Equity dividends

ORDINARY DIVIDENDS PAID IN THE YEAR	2020 £m	2021 £m	**2022 £m**
RELX PLC	880	920	**983**

Ordinary dividends declared and paid in the year ended 31 December 2022, in amounts per ordinary share, comprise: a 2021 final dividend of 35.5p (2021: 33.4p; 2020: 32.1p) and a 2022 interim dividend of 15.7p (2021: 14.3p; 2020: 13.6p), giving a total of 51.2p (2021: 47.7p; 2020: 45.7p;).

The Directors of RELX PLC have proposed a final dividend of 38.9p (2021: 35.5p; 2020: 33.4p), giving a total for the financial year of 54.6p (2021: 49.8p; 2020: 47.0p). The total cost of funding the proposed final dividend is expected to be £743m, for which no liability has been recognised at the statement of financial position date.

The Employee Benefit Trust has currently waived the right to receive dividends on RELX PLC shares. This waiver has been applied to dividends paid in 2020, 2021 and 2022.

14 Intangible assets

Accounting policy
On acquisition of a subsidiary or business, the purchase consideration is allocated between the net tangible and intangible assets other than goodwill on a fair value basis, with any excess purchase consideration representing goodwill. Goodwill is carried at fair value as at the date of acquisition less impairment charges. Acquired intangible assets are carried at their fair value as at the date of acquisition less accumulated amortisation (including impairment). On disposal of a subsidiary or business, the attributable amount of goodwill is included in the determination of profit or loss recognised in the income statement.

Management judgement is required to identify intangible assets acquired as part of business combinations which comprise: market-related assets (e.g. trademarks, imprints, brands); customer-related assets (e.g. subscription bases, customer lists, customer relationships); editorial content; software and systems (e.g. application infrastructure, product delivery platforms, in-process research and development); and other intangible assets mainly comprising contract and rights-related assets.

The valuation of acquired intangible assets represents the estimated economic value in use, using standard valuation methodologies, including as appropriate, discounted cash flow and comparable market transactions. Judgements involved in estimating valuation of the intangible assets include growth in cash flows over the forecast period, the long-term growth rate assumed thereafter and the discount rate applied to the forecast cash flows.

The selection of appropriate amortisation periods for acquired intangible assets requires management to assess the longevity of brands and imprints, the strength and stability of customer relationships, the market positions of the acquired intangible assets and the technological and competitive risks that they face. Certain intangible assets are in relation to acquired science and medical publishing businesses that have been determined to have indefinite lives. The longevity of these assets is evidenced by their long-established and well regarded journal titles, and their characteristically stable market positions. Intangible assets, other than journal titles determined to have indefinite lives, are amortised on a straight-line basis over their estimated useful lives. The estimated useful lives of intangible assets with finite lives are:

- Market-related assets – 1 to 40 years
- Customer-related assets – 1 to 20 years
- Editorial content – 1 to 40 years
- Software and systems – 1 to 10 years
- Other – 3 to 20 years

Journal titles determined to have indefinite lives are not amortised and are subject to impairment review at least annually, including a review of events and circumstances to ensure that they continue to support an indefinite useful life.

Internally developed intangible assets typically comprise software and systems development where an identifiable asset is created that is probable to generate future economic benefits and are carried at cost less accumulated amortisation. Internally developed intangible assets are amortised on a straight line basis over their estimated useful lives of three to 15 years. Impairment reviews are carried out at least annually or where indicators of impairment are identified.

Impairment reviews
Goodwill and acquired intangible assets with an indefinite life are allocated to cash generating units (CGUs) and tested for impairment at least annually or when there is an indicator that the asset may be impaired. An impairment loss is recognised in the income statement in administration and other expenses to the extent the carrying value of goodwill exceeds its recoverable amount and not subsequently reversed. The recoverable amount is the higher of fair value less costs to sell and value in use. The carrying amounts of all other intangible assets are reviewed where there are indications of possible impairment.

An impairment review involves a comparison of the carrying value of the asset with estimated values in use based on the latest management cash flow projections, approved by the Board. Key areas of judgement in estimating the values in use of businesses are the growth in cash flows over a forecast period of up to five years, the long-term growth rate assumed thereafter and the discount rate applied to the forecast cash flows. These calculations require the use of estimates in respect of forecast cash flows and discount rates. Where the asset does not generate cash flows that are independent from other assets, value in use estimates are made based on the cash flows of the CGU to which the asset belongs.

Critical judgements and key sources of estimation uncertainty
Acquired intangible assets
In 2022, the identification of intangible assets was not considered to be a critical judgement and estimates used in determination of future cash flows and discount rate used in the valuation of intangible assets were not considered to be a key source of estimation uncertainty which could give rise to a risk of material adjustment in the next 12 months given the size and quantum of acquisitions completed during the year.

Development spend
Development spend encompasses investment in new products and other initiatives, ranging from the building of online delivery platforms, to launch costs of new services, to building new infrastructure and applications. Launch costs and other ongoing operating expenses of new products and services are expensed as incurred. The costs of building product applications, platforms and infrastructure are capitalised as internally generated intangible assets, where the investment they represent has demonstrable value and the technical and commercial feasibility is assured. Costs eligible for capitalisation must be incremental, clearly identified and directly attributable to a particular project. The resulting assets are amortised over their estimated useful lives. Judgement is required in the assessment of the potential value of a development project, the identification of costs eligible for capitalisation and the selection of appropriate asset lives. Where indicators of impairment are identified, estimates relating to the future cash flows and discount rates used in calculating the value in use of the intangible asset may have a material effect on the reported amounts of intangible assets.

14 Intangible assets (continued)

	Goodwill	Market related £m	Customer related £m	Editorial content £m	Software and technology £m	Other £m	**Total acquired intangible assets £m**	**Total internally developed intangible assets £m**	**Total intangible assets excluding goodwill £m**
COST									
As at 1 January 2021	7,224	2,391	1,750	614	688	2,381	7,824	3,251	11,075
Acquisitions	131	11	78	11	51	5	156	–	156
Additions	–	–	–	–	–	–	–	310	310
Disposals and other	(3)	(2)	2	(7)	–	(23)	(30)	(19)	(49)
Exchange translation differences	14	15	10	2	1	(13)	15	(31)	(16)
At 1 January 2022	**7,366**	**2,415**	**1,840**	**620**	**740**	**2,350**	**7,965**	**3,511**	**11,476**
Acquisitions	**269**	**18**	**43**	**27**	**37**	**–**	**125**	**–**	**125**
Additions	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**402**	**402**
Disposals and other	**–**	**(2)**	**(4)**	**–**	**–**	**(9)**	**(15)**	**(84)**	**(99)**
Exchange translation differences	**753**	**268**	**197**	**43**	**68**	**177**	**753**	**291**	**1,044**
At 31 December 2022	**8,388**	**2,699**	**2,076**	**690**	**845**	**2,518**	**8,828**	**4,120**	**12,948**
ACCUMULATED AMORTISATION									
As at 1 January 2021	–	1,323	1,054	514	414	2,338	5,643	2,007	7,650
Charge for the year*	–	109	79	39	54	16	297	295	592
Disposals and other	–	(2)	(6)	1	–	(23)	(30)	(19)	(49)
Exchange translation differences	–	8	5	2	(1)	(12)	2	(23)	(21)
At 1 January 2022	**–**	**1,438**	**1,132**	**556**	**467**	**2,319**	**5,912**	**2,260**	**8,172**
Charge for the year*	**–**	**121**	**78**	**29**	**53**	**13**	**294**	**309**	**603**
Disposals and other	**–**	**(2)**	**(4)**	**(5)**	**5**	**(9)**	**(15)**	**(78)**	**(93)**
Exchange translation differences	**–**	**161**	**126**	**37**	**47**	**177**	**548**	**194**	**742**
At 31 December 2022	**–**	**1,718**	**1,332**	**617**	**572**	**2,500**	**6,739**	**2,685**	**9,424**
NET BOOK AMOUNT									
At 31 December 2021	7,366	977	708	64	273	31	2,053	1,251	3,304
At 31 December 2022	**8,388**	**981**	**744**	**73**	**273**	**18**	**2,089**	**1,435**	**3,524**

* Includes impairments of acquired intangible assets of £1m (2021: £13m; 2020: £42m in Legal and £23m in Exhibitions) and an impairment of internally developed intangible assets of £13m in Exhibitions (2021:nil; 2020: £29m). Refer to note 2 for further detail on the exceptional costs in Exhibitions in 2020.

The carrying amount of goodwill is shown after cumulative amortisation of £1,253m (2021: £1,144m), which was charged prior to the adoption of IFRS, and £9m (2021: £8m) of subsequent impairment charges recorded in prior years.

The Legal business has £735m (2021: £663m) of capitalised development costs associated with platforms and infrastructure.

Included in market-related intangible assets are £125m (2021: £112m) of journal titles relating to Scientific, Technical & Medical determined to have indefinite lives based on an assessment of their historical longevity and stable market positions.

Impairment review

There were no charges for impairment of goodwill or indefinite lived intangible assets in 2022 (2021: nil).

Goodwill and indefinite lived intangible assets are compiled and assessed among groups of CGUs, which represent the lowest level at which goodwill is monitored by management. Typically, acquisitions are integrated into existing business areas, and the goodwill arising is allocated to the groups of CGUs that are expected to benefit from the synergies of the acquisition. As the business areas have become increasingly integrated and globalised, the current CGU allocation reflects the global leverage of assets, skills, knowledge and technology platforms, and the monitoring of goodwill by management.

GOODWILL	2021 £m	**2022 £m**
Risk	3,675	**4,167**
Scientific, Technical & Medical	1,683	**2,015**
Legal	1,406	**1,572**
Exhibitions	602	**634**
Total	7,366	**8,388**

14 Intangible assets (continued)

The key assumptions used for each group of CGUs are disclosed below:

KEY ASSUMPTIONS	2021		2022	
	Pre-tax discount rate	Nominal long-term market growth rate	**Pre-tax discount rate**	**Nominal long-term market growth rate**
Risk	9.8 %	3%	**11.2%**	**4%**
Scientific, Technical & Medical	9.1 %	3%	**10.5%**	**3%**
Legal	9.9 %	2%	**10.9%**	**3%**
Exhibitions	11.7%	3%	**13.0%**	**4%**

The pre–tax discount rates used are based on the Group's weighted average cost of capital, adjusted to reflect a risk premium specific to each business. A post-tax discount rate was applied to post-tax cash flows. The equivalent pre-tax discount rate has been estimated by grossing up the post-tax rate. The Group's weighted average cost of capital is derived from a risk free rate, a market risk premium, a risk adjustment (beta) and a cost of debt adjustment. The discount rates and the cash flow projections are in nominal terms and therefore, take into account the impact of inflation. The Group's weighted average cost of capital was calculated as at 30 September 2022 when the impairment review was performed, and there were no indicators of impairment in the intervening period to 31 December 2022.

The key assumptions within the forecast growth in the cash flows over a forecast period of up to five years are revenue growth, operating margin and cash conversion. Revenue growth and operating profit margin forecasts for each CGU are derived from past results adjusted by management based on salient current and future considerations. Cash conversion rates for each CGU are based on historical cash conversion rates. Nominal long-term market growth rates, which are applied after the forecast period of up to five years, do not exceed the long-term average growth prospects for the sectors and territories in which the businesses operate.

A sensitivity analysis has been performed based on changes in key assumptions considered to be reasonably possible by management: increases in the discount rate of 1.5%; a decrease in the compound annual growth rate for cash flow in the five-year forecast period of 2.0; a decrease in the nominal long-term market growth rates of 1%; and a combined increase in discount rate of 1% and a decrease in the nominal long-term market growth rates of 1%. These sensitivity analyses show that no impairment charges would result from these scenarios.

15 Investments

Accounting policy
Investments, other than investments in joint arrangements and associates, are stated in the statement of financial position at fair value. Changes in the fair value of investments held as part of the venture capital portfolio are reported in disposals and other non-operating items in the income statement. All items recognised in the income statement relating to investments, other than investments in joint arrangements and associates, are reported as disposals and other non-operating items.

Venture capital investments and equity investments represent interests in listed and unlisted securities. The fair value of listed securities is based on quoted prices in active markets. The fair value of unlisted securities is based on management's estimate of fair value based on standard valuation techniques, including market comparisons and discounts of future cash flows, having regard to maximising the use of observable inputs and adjusting for risk. Advice from valuation experts is used as appropriate.

All joint arrangements are classified as joint ventures because the Group shares joint control and has rights to the net assets of the arrangements. Investments in joint ventures and associates are accounted for under the equity method and stated in the statement of financial position at cost as adjusted for post-acquisition changes in the Group's share of net assets, less any impairment in value.

	2021 £m	**2022 £m**
Investments in joint ventures and associates	105	**159**
Venture capital investments	107	**127**
Total	212	**286**

The value of venture capital investments and equity investments has been determined by reference to quoted prices in active markets, other observable market inputs or, when these are not available, by reference to inputs we believe would reflect the assumptions market participants would use.

15 Investments (continued)

An analysis of changes in the carrying value of investments in joint ventures and associates is set out below:

	2021 £m	**2022 £m**
At start of year	103	**105**
Share of results of joint ventures	29	**19**
Dividends received from joint ventures	(20)	**(33)**
Acquisitions	–	**62**
Disposals and other	(4)	**1**
Exchange translation differences	(3)	**5**
At end of year	105	**159**

Summarised aggregate information in respect of the Group's share of joint ventures and associates is set out below:

	RELX's share	
	2021 £m	**2022 £m**
Revenue	78	**55**
Net profit for the year	29	**19**
Total assets	136	**190**
Total liabilities	(70)	**(75)**
Net assets	66	**115**
Goodwill	39	**44**
Total	105	**159**

The Group's consolidated other comprehensive income includes no income or losses relating to joint ventures and associates in 2022 and 2021.

16 Property, plant and equipment

Accounting policy
Property, plant and equipment are stated in the statement of financial position at cost less accumulated depreciation. No depreciation is provided on freehold land. Freehold buildings and long leaseholds are depreciated over their estimated useful lives up to a maximum of 50 years. Short leases are written off over the duration of the lease. Depreciation is provided on other assets on a straight-line basis over their estimated useful lives as follows:

- land and buildings: land – not depreciated; leasehold improvements – shorter of life of lease and 10 years
- fixtures and equipment: plant – 3 to 20 years; office furniture, fixtures and fittings – 5 to 10 years; computer systems, communication networks and equipment – 3 to 7 years

	2021			**2022**		
	Land and buildings £m	Fixtures and equipment £m	Total £m	**Land and buildings £m**	**Fixtures and equipment £m**	**Total £m**
Cost						
At start of year	206	527	733	**167**	**516**	**683**
Acquisitions	–	1	1	**1**	**–**	**1**
Capital expenditure	5	23	28	**3**	**33**	**36**
Disposals	(43)	(32)	(75)	**(19)**	**(140)**	**(159)**
Exchange translation differences	(1)	(3)	(4)	**14**	**43**	**57**
At end of year	167	516	683	**166**	**452**	**618**
Accumulated depreciation						
At start of year	143	428	571	**111**	**441**	**552**
Charge for the year	6	46	52	**6**	**41**	**47**
Disposals	(37)	(31)	(68)	**(12)**	**(142)**	**(154)**
Exchange translation differences	(1)	(2)	(3)	**10**	**37**	**47**
At end of year	111	441	552	**115**	**377**	**492**
Net book amount	56	75	131	**51**	**75**	**126**

Included in land and buildings is freehold land of £10m (2021: £10m).

Amounts relating to right-of-use assets under IFRS 16 can be found in note 22.

17 Financial instruments

Accounting policy

Financial instruments comprise investments (other than investments in joint ventures or associates), trade receivables, cash and cash equivalents, payables and accruals, borrowings and derivative financial instruments.

Investments (other than investments in joint ventures and associates) are described in note 15. The fair value of such investments is based on standard valuation techniques, including market comparisons and discounts of future cash flows, having regard to maximising the use of observable inputs and adjusting for risk. (These investments are typically classified as either Level 2 or 3 in the IFRS 13 fair value hierarchy.)

Trade receivables are carried in the statement of financial position at invoiced value less allowance for expected credit losses. Expected credit losses are based on the ageing of trade receivables, experience and circumstance. Borrowings and payables are recorded initially at fair value and subsequently carried at amortised cost (other than fixed rate borrowings in designated hedging relationships for which the carrying amount of the hedged portion of the borrowings is subsequently adjusted for the gain or loss attributable to the hedged risk).

Derivative financial instruments are used to hedge interest rate and foreign exchange risks. Where an effective hedge is in place against changes in the fair value of fixed rate borrowings, the hedged borrowings are adjusted for changes in fair value attributable to the risk being hedged with a corresponding income or expense included in the income statement within finance costs. The offsetting gains or losses from remeasuring the fair value of the related derivatives are also recognised in the income statement within finance costs. When the related derivative expires, is sold or terminated, or no longer qualifies for hedge accounting, the cumulative change in fair value of the hedged borrowing is amortised in the income statement over the period to maturity of the borrowing using the effective interest method.

Changes in the fair value of derivative financial instruments that are designated and effective as hedges of future cash flows are recognised (net of tax) in other comprehensive income and accumulated in the hedge reserve. The fair value amounts relating to foreign currency basis spreads are recorded in a separate component of equity in the cost of hedging reserve. If a hedged firm commitment or forecasted transaction results in the recognition of a non-financial asset or liability, then, at the time that the asset or liability is recognised, the associated gains or losses on the derivative that had previously been recognised in other comprehensive income are included in the initial measurement of the asset or liability. For hedges that do not result in the recognition of an asset or a liability, amounts deferred in the hedge reserve are recognised in the income statement in the same period in which the hedged item affects net profit or loss. Any ineffective portion of hedges is recognised immediately in the income statement.

Cash flow hedge accounting is discontinued when a hedging instrument expires or is sold, terminated or exercised, or no longer qualifies for hedge accounting. At that time, any cumulative gain or loss on the hedging instrument recognised in other comprehensive income is either retained in the hedge reserve until the firm commitment or forecasted transaction occurs, or, where a hedged transaction is no longer expected to occur, is immediately credited or expensed in the income statement.

Derivative financial instruments that are not designated as hedging instruments are recorded in the statement of financial position at fair value, with changes in fair value recognised in the income statement.

The fair values of derivative financial instruments represent the replacement costs calculated using observable market rates of interest and exchange. The fair value of long-term borrowings is calculated by discounting expected future cash flows at observable market rates. (These instruments are accordingly classified as Level 2 in the IFRS 13 fair value hierarchy.)

The main financial risks faced by the Group are liquidity risk, market risk – comprising interest rate risk and foreign exchange risk – and credit risk. Financial instruments are used to finance the Group’s businesses and to manage interest rate and foreign exchange risks. The Group’s businesses do not enter into speculative derivative transactions. Details of financial instruments subject to liquidity, market and credit risks are described below.

Liquidity risk

The Group maintains a range of borrowing facilities and debt programmes to fund its requirements at competitive rates.

The balance of long-term debt, short-term debt and committed bank facilities is managed to provide security of funding, taking into account the cash generation cycle of the business and the uncertain size and timing of acquisition spend. To accommodate the significant free cash flow generated by the Group and to capitalise on an inexpensive source of funding, a meaningful portion of the overall debt portfolio is typically kept short term as long as there exists acceptable liquidity in the commercial paper markets and sufficient capacity under committed credit lines. The Group’s treasury policies ensure adequate liquidity by requiring that (a) no more than $2bn of term debt matures in any 12-month period, (b) the sum of term debt maturing over the ensuing 12 months plus short-term borrowings is less than the sum of available cash plus committed facilities and (c) minimum levels of borrowing with maturities over three and five years are maintained.

The treasury policies ensure debt efficiency by (a) targeting certain levels of short-term borrowings across a given year, (b) maintaining a weighted average maturity of the gross debt portfolio of approximately five years and (c) minimising surplus cash balances. From time to time, based on cash flow and market conditions, the Group may redeem term debt early or repurchase outstanding debt in the open market.

17 Financial instruments (continued)

Debt is issued to meet the funding requirements of various jurisdictions and in the currencies that are needed. It is recognised that debt can act as a natural translation hedge of earnings, net assets and net cash flow in currencies other than the reporting currency. For this reason, the majority of the Group's net debt is denominated in US dollars and euros, reflecting the Group's largest geographical markets. There were no changes to the Group's long-term approach to capital and liquidity management during the year.

The remaining contractual maturities for borrowings and derivative financial instruments are shown in the table below. The table shows undiscounted principal and interest cash flows and includes contractual gross cash flows to be exchanged as part of cross-currency interest rate swaps and forward foreign exchange contracts where there is a legal right of set-off.

AT 31 DECEMBER 2021		Contractual cash flow (including interest)						
	Carrying amount £m	Within 1 year £m	1-2 years £m	2-3 years £m	3-4 years £m	4-5 years £m	More than 5 years £m	Total £m
Borrowings								
Fixed rate borrowings	(5,828)	(156)	(741)	(1,106)	(704)	(709)	(3,126)	(6,542)
Floating rate borrowings	(131)	(131)	–	–	–	–	–	(131)
Lease liabilities	(208)	(75)	(63)	(43)	(25)	(4)	(31)	(241)
Derivative financial liabilities								
Cash inflows		371	86	103	2	–	–	562
Cash outflows		(374)	(88)	(105)	(2)	–	–	(569)
Forward foreign exchange contracts	(7)	(3)	(2)	(2)	–	–	–	(7)
Interest rate derivatives	(5)	–	–	(1)	(2)	(2)	(7)	(12)
Cross-currency interest rate swaps	(2)	(32)	(34)	(14)	(501)	–	–	(581)
Derivative financial assets								
Cash inflows		1,399	312	107	26	–	–	1,844
Cash outflows		(1,367)	(294)	(102)	(25)	–	–	(1,788)
Forward foreign exchange contracts	48	32	18	5	1	–	–	56
Interest rate derivatives	19	22	10	4	–	–	–	36
Cross-currency interest rate swaps	16	29	26	7	511	–	–	573
Total	(6,098)	(314)	(786)	(1,150)	(720)	(715)	(3,164)	(6,849)

AT 31 DECEMBER 2022		**Contractual cash flow (including interest)**						
	Carrying amount £m	**Within 1 year £m**	**1-2 years £m**	**2-3 years £m**	**3-4 years £m**	**4-5 years £m**	**More than 5 years £m**	**Total £m**
Borrowings								
Fixed rate borrowings	**(6,446)**	**(847)**	**(1,188)**	**(772)**	**(769)**	**(704)**	**(3,212)**	**(7,492)**
Floating rate borrowings	**(102)**	**(102)**	**–**	**–**	**–**	**–**	**–**	**(102)**
Lease liabilities	**(182)**	**(80)**	**(58)**	**(36)**	**(17)**	**(6)**	**(34)**	**(231)**
Derivative financial liabilities								
Cash inflows		**835**	**242**	**122**	**8**	**–**	**–**	**1,207**
Cash outflows		**(870)**	**(262)**	**(127)**	**(8)**	**–**	**–**	**(1,267)**
Forward foreign exchange contracts	**(53)**	**(35)**	**(20)**	**(5)**	**–**	**–**	**–**	**(60)**
Interest rate derivatives	**(158)**	**(48)**	**(29)**	**(20)**	**(18)**	**(17)**	**(43)**	**(175)**
Cross-currency interest rate swaps	**(58)**	**(56)**	**(31)**	**(567)**	**–**	**–**	**–**	**(654)**
Derivative financial assets								
Cash inflows		**665**	**199**	**126**	**24**			**1,014**
Cash outflows		**(645)**	**(192)**	**(123)**	**(23)**			**(983)**
Forward foreign exchange contracts	**32**	**20**	**7**	**3**	**1**	**–**	**–**	**31**
Interest rate derivatives	**–**	**2**	**–**	**–**	**–**	**–**	**–**	**2**
Cross-currency interest rate swaps	**–**	**29**	**7**	**538**	**–**	**–**	**–**	**574**
Total	**(6,967)**	**(1,117)**	**(1,312)**	**(859)**	**(803)**	**(727)**	**(3,289)**	**(8,107)**

The carrying amount of derivative financial liabilities comprises £215m (2021: £5m) in relation to fair value hedges, £32m (2021: £7m) in relation to cash flow hedges and £22m (2021: £2m) not designated as hedging instruments. The carrying amount of derivative financial assets comprises nil (2021: £35m) in relation to fair value hedges, £24m (2021: £36m) in relation to cash flow hedges and £8m (2021: £12m) not designated as hedging instruments.

The Group has ample liquidity and access to debt capital markets, providing the ability to repay or refinance borrowings as they mature and to fund ongoing requirements. At 31 December 2022, the Group had access to a $3.0bn committed bank facility maturing in April 2025, which was undrawn. This facility backs up short-term borrowings, and has pricing linked to three ESG performance targets. All borrowings that mature within the next two years can be covered by the facility and by utilising available cash resources. The committed bank facility is not subject to a financial covenant and there are no financial covenants in any outstanding public bonds.

17 Financial instruments (continued)

Market risk

The Group's primary market risks are interest rate fluctuations and exchange rate movements. Derivatives are used to manage the risks associated with interest rate and exchange rate movements and the Group does not enter into speculative derivatives. Where the impact of derivatives on the income statement and the statement of financial position could be significant, hedge accounting is applied (subject to satisfying the required criteria) as described in 'Hedge accounting' below. Derivatives used by the Group for hedging a particular risk are not specialised and are generally available from numerous sources. The Group is also exposed to changes in the market value of its venture capital investments as described in note 15. The impact of market risks on net post-employment benefit obligations and taxation is excluded from the following market risk sensitivity analysis.

Interest rate exposure management

The Group's interest rate exposure management policy aims to minimise interest costs with an acceptable level of year-on-year volatility. To achieve this, the Group uses fixed rate term debt and interest rate swaps to give a target mix of fixed rate and floating rate borrowings. Interest rate derivatives are used only to hedge an underlying risk and no net market positions are held.

At 31 December 2022, including the effect of interest rate swaps, 58% of gross bank and bond borrowings were at fixed rates. A 100 basis point reduction in short-term interest rates would result in an estimated decrease in annual net finance costs of £25m (2021: £21m), based on the composition of financial instruments including cash, cash equivalents, bank loans and commercial paper borrowings at 31 December 2022. A 100 basis point rise in short-term interest rates would result in an estimated increase in net finance costs of £25m (2021: £21m).

The impact on net equity of a theoretical change in interest rates as at 31 December 2022 is restricted to the change in carrying value of floating rate to fixed rate interest rate derivatives in a designated cash flow hedge relationship and undesignated interest rate derivatives. A 100 basis point reduction in interest rates would result in an estimated decrease in net equity of nil (2021: nil) and a 100 basis point increase in interest rates would increase net equity by an estimated amount of nil (2021: nil). The impact of a change in interest rates on the carrying value of fixed rate borrowings in a designated fair value hedge relationship would be offset by the change in carrying value of the related interest rate derivative. Fixed rate borrowings not in a designated hedging relationship are carried at amortised cost.

The Group has assessed the impact of the Interbank Offered Rates (IBOR) reform and concluded that there will be no significant impact on the financial statements. The Group is primarily exposed to IBOR through its derivatives which swap fixed rate bond issuances to a floating rate of interest and which are designated in fair value hedge relationships. The table on page 192 details these interest rate derivatives which swap £1,917m of bonds with weighted average maturity of 3.3 years to a floating rate of interest referencing US dollar LIBOR (3 months) and swap £443m of bonds with weighted average maturity of 1.2 years to a floating rate of interest referencing Euribor (3 months). The Group has adopted the ISDA fallback protocol in respect of these derivatives and the fair value hedge designations are expected to remain highly effective throughout the transition to alternative risk free rates.

Foreign currency exposure management

Translation exposures arise on the earnings and net assets of individual businesses whose operational currencies are other than sterling. Some of these exposures are offset by denominating borrowings in US dollars, euros and other currencies. Currency exposures on transactions denominated in a foreign currency are generally hedged using forward contracts. In addition, recurring transactions and future investment exposures may be hedged, in advance of becoming contractual. The precise policy differs according to the specific circumstances of the individual businesses. Highly predictable future cash flows may be covered for transactions expected to occur during the next 24 months (50 months for the Scientific, Technical & Medical subscription businesses) within limits defined according to the period before the transaction is expected to become contractual. Cover takes the form of foreign exchange forward contracts. Further information is provided in 'Cash flow hedges' below.

A theoretical weakening of all currencies by 10% against sterling at 31 December 2022 would decrease the carrying value of net assets, excluding net borrowings, by £892m (2021: £781m). This would be offset to a degree by a decrease in net borrowings of £671m (2021: £677m). A strengthening of all currencies by 10% against sterling at 31 December 2022 would increase the carrying value of net assets, excluding net borrowings, by £892m (2021: £781m) and increase net borrowings by £671m (2021: £677m).

A retranslation of the Group's net profit for the year, assuming a 10% weakening of all foreign currencies against sterling but excluding transactional exposures, would reduce net profit by £126m (2021: £112m). A 10% strengthening of all foreign currencies against sterling on this basis would increase net profit for the year by £126m (2021: £112m).

Credit risk

The Group seeks to manage interest rate risk and limit foreign exchange risks described above by the use of financial instruments and as a result has a credit risk from the potential non-performance by the counterparties to these financial instruments, which are unsecured. The amount of this credit risk is normally restricted to the amounts of any hedge gain and not the principal amount being hedged. The Group also has a credit exposure to counterparties for the full principal amount of cash and cash equivalents. Credit risks are controlled by monitoring the credit quality of these counterparties, principally licensed commercial banks and investment banks with strong long-term credit ratings, and the amounts outstanding with each of them.

The Group has treasury policies in place which do not allow concentrations of risk with individual counterparties and do not allow significant treasury exposures with counterparties which are rated lower than A-/A3 by Standard & Poor's, Moody's and Fitch. At 31 December 2022, cash and cash equivalents totalled £334m (2021: £113m), of which 96% (2021: 89%) was held with banks rated A-/A3 or better.

17 Financial instruments (continued)

The Group also has credit risk with respect to trade receivables due from its customers, which include national and state governments, academic institutions and large and small enterprises including insurance companies, law firms and life science companies. The concentration of credit risk from trade receivables is limited due to the large and broad customer base. Trade receivable exposures are managed locally in the business areas where they arise. Where appropriate, business areas seek to minimise this exposure by taking payment in advance and through management of credit terms. Expected credit losses are based on management's assessment of the risk taking into account the ageing profile, experience and circumstance. The maximum exposure to credit risk is represented by the carrying amount of each financial asset, including derivative financial instruments, recorded in the statement of financial position.

Included within trade receivables are the following amounts which are past due, after considering loss allowance:

	2020 £m	2021 £m	**2022 £m**
Up to one month	170	156	**265**
2 to 3 months	83	96	**115**
4 to 6 months	34	35	**46**
Greater than 6 months	46	18	**23**
Total past due	333	305	**449**

Hedge accounting

The hedging relationships that are designated under IFRS 9 – Financial Instruments are described below.

Fair value hedges

The Group has entered into interest rate swaps and cross-currency interest rate swaps to hedge the exposure to changes in the fair value of fixed rate borrowings due to interest rate and foreign currency movements which could affect the income statement. The table below details the designated fair value hedge relationships that were in place at 31 December 2022, swapping fixed rate term debt issues denominated in US dollars (USD) and euros to floating rate USD and euro debt respectively for the whole or part of their term, together with the related fixed and floating rates.

FAIR VALUE HEDGE RELATIONSHIPS	31 December 2021 Principal amount £m	**31 December 2022 Principal amount £m**	Fixed rate	Floating rate
$700m bond and $700m interest rate swaps maturing 2023	(517)	**(579)**	3.5%	USD LIBOR+0.8%
€500m bond and €500m interest rate swaps maturing 2024	(421)	**(443)**	1.0%	Euribor+0.7%
€600m bond and €600m/$669.3m cross-currency interest rate swaps maturing 2025	(494)	**(553)**	1.3%	USD LIBOR+1.3%
$200m bond and $200m interest rate swaps maturing 2027	(148)	**(165)**	7.2%	USD LIBOR+5.8%
$750m bond and $750m interest rate swaps maturing 2030	(554)	**(620)**	3.0%	USD LIBOR+1.6%
$500m bond and $500m interest rate swaps maturing 2032	–	**(413)**	4.75%	USD SOFR+2.0%
	(2,134)	**(2,773)**		

The gains and losses on the borrowings and related derivatives designated as fair value hedges, which are included in the income statement as part of finance costs, together with the total carrying values of the borrowings and related derivatives included in the statement of financial position, for the three years ended 31 December 2020, 2021 and 2022 were as follows:

GAINS/(LOSSES) ON BORROWINGS AND RELATED DERIVATIVES AND CARRYING VALUES	1 January 2020 £m	Fair value movement gain/(loss) £m	Exchange gain/(loss) £m	31 December 2020 £m	Carrying values £m
USD debt	(13)	(25)	2	(36)	(701)
Related interest rate swaps	13	25	(2)	36	36
	–	–	–	–	(665)
EUR debt	(39)	(47)	3	(83)	(1,467)
Related interest rate swaps	39	47	(3)	83	83
	–	–	–	–	(1,384)
Total relating to USD and EUR debt	(52)	(72)	5	(119)	(2,168)
Total related interest rate swaps	52	72	(5)	119	119
Net gain on borrowings and related derivatives/total carrying value	–	–	–	–	(2,049)

17 Financial instruments (continued)

GAINS/(LOSSES) ON BORROWINGS AND RELATED DERIVATIVES AND CARRYING VALUES

	1 January 2021 £m	Fair value movement gain/(loss) £m	Exchange gain/(loss) £m	31 December 2021 £m	Carrying values £m
USD debt	(36)	35	–	(1)	(1,221)
Related interest rate swaps	36	(28)	–	8	8
	–	7	–	7	(1,213)
EUR debt	(83)	55	1	(27)	(940)
Related interest rate swaps	83	(55)	(1)	27	27
	–	–	–	–	(913)
Total relating to USD and EUR debt	(119)	90	1	(28)	(2,161)
Total related interest rate swaps	119	(83)	(1)	35	35
Net gain on borrowings and related derivatives/total carrying value	–	7	–	7	(2,126)

GAINS/(LOSSES) ON BORROWINGS AND RELATED DERIVATIVES AND CARRYING VALUES

	1 January 2022 £m	**Fair value movement gain/(loss) £m**	**Exchange gain/(loss) £m**	**31 December 2022 £m**	**Carrying values £m**
USD debt	**(1)**	**140**	**2**	**141**	**(1,630)**
Related interest rate swaps	**8**	**(149)**	**(2)**	**(143)**	**(143)**
	7	**(9)**	**–**	**(2)**	**(1,773)**
EUR debt	**(27)**	**96**	**1**	**70**	**(924)**
Related interest rate swaps	**27**	**(96)**	**(1)**	**(70)**	**(70)**
	–	**–**	**–**	**–**	**(994)**
Total relating to USD and EUR debt	**(28)**	**236**	**3**	**211**	**(2,554)**
Total related interest rate swaps	**35**	**(245)**	**(3)**	**(213)**	**(213)**
Net gain/(loss) on borrowings and related derivatives/total carrying value	**7**	**(9)**	**–**	**(2)**	**(2,767)**

All fair value hedges were highly effective throughout the three years ended 31 December 2022.

Gross borrowings as at 31 December 2022 included £10m (2021: £12m) in relation to fair value adjustments to borrowings previously designated in a fair value hedge relationship which were de-designated in 2008. The related derivatives were closed out on de-designation with a cash inflow of £62m. £3m (2021: £3m) of these fair value adjustments were amortised in the year as a reduction to finance costs.

Cash flow hedges

As part of the Group's interest rate exposure management, it has entered into certain cross-currency interest rate derivatives, individual components of which have been accounted for as cash flow hedges (with the remaining components accounted for as fair value hedges, as described above). These comprised interest rate derivatives which swapped a fixed rate €600m bond, issued in May 2015 and maturing in May 2025, to floating rate USD debt for the whole of its term. The component relating to the swap of the euro credit margin to USD is being accounted for as a cash flow hedge under IFRS 9, with the amount associated with foreign currency basis spreads recorded in the cost of hedging reserve.

As part of the Group's foreign currency exposure management, it has entered into forward foreign exchange contracts which fix the exchange rate on a portion of future foreign currency subscription revenues forecast by the businesses for up to 50 months. These have been accounted for as cash flow hedges under IFRS 9 of the forecast foreign currency revenues, with gains and losses on the forward contracts deferred in the hedge reserve until the related revenue is recognised, at which time the accumulated gains and losses are reclassified to the income statement.

Movements in the hedge reserve and the cost of hedging reserve in 2021 and 2022, including gains and losses on cash flow hedging instruments, were as follows:

	Interest rate hedge reserve £m	**Cost of hedging reserve £m**	**Foreign currency hedge reserve £m**	**Total £m**
Hedge reserve at 31 December 2020: gains/(losses) deferred	4	(8)	27	23
(Losses)/gains arising in 2021	(3)	2	11	10
Amounts recognised in income statement	–	–	(9)	(9)
Hedge reserve at 31 December 2021: gains/(losses) deferred	**1**	**(6)**	**29**	**24**
(Losses)/gains arising in 2022	**(3)**	**5**	**(20)**	**(18)**
Amounts recognised in income statement	**1**	**–**	**(18)**	**(17)**
Exchange translation differences	**(1)**	**–**	**1**	**–**
Hedge reserve at 31 December 2022: losses deferred	**(2)**	**(1)**	**(8)**	**(11)**

17 Financial instruments (continued)

All cash flow hedges were highly effective throughout the two years ended 31 December 2022.

A deferred tax credit of £3m (2021: debit of £5m) in respect of the above gains and losses at 31 December 2022 was also deferred in the hedge reserve.

Of the amounts recognised in the income statement in the year, gains of £18m (2021: £9m) were recognised in revenue, and losses of £1m (2021: nil) were recognised in finance costs. A tax debit of £4m (2021: £2m) was recognised in relation to these items.

The deferred gains and losses on foreign currency cash flow hedges at 31 December 2022 are currently expected to be recognised in the income statement in future years as shown in the table below, together with the principal amount of hedges relating to each year and their total carrying values included within derivative assets and liabilities in the statement of financial position:

	Foreign currency hedge reserve £m	Principal amount of hedges £m	Carrying values £m
2023	**4**	**673**	**(11)**
2024	**(10)**	**459**	**(10)**
2025	**(2)**	**250**	**(2)**
2026	**–**	**36**	**–**
Total	**(8)**	**1,418**	**(23)**

The cash flows for these hedges are expected to occur in line with the recognition of the gains and losses in the income statement, or in the preceding year. These cash flows are included in the table on page 190.

18 Inventories and pre-publication costs

Accounting policy
Inventories and pre-publication costs are stated at the lower of cost, including appropriate attributable overhead, and estimated net realisable value. Such costs typically comprise direct internal labour costs and externally commissioned editorial and other fees.

Pre-publication costs, representing costs incurred in the origination of content prior to publication, are expensed systematically reflecting the expected sales profile over the estimated economic lives of the related products, generally up to five years.

Annual reviews are carried out to assess the recoverability of carrying amounts.

	2021 £m	**2022 £m**
Raw materials	2	**3**
Pre-publication costs	218	**264**
Finished goods	33	**42**
Total	253	**309**

During the year, pre-publication costs of £94m (2021: £73m) were capitalised. The related amortisation charge was £72m (2021: £60m).

19 Trade and other receivables

Accounting policy
Trade receivables are stated net of a loss allowance for expected credit losses.

	2021 £m	**2022 £m**
Trade receivables	1,738	**2,193**
Loss allowance	(106)	**(118)**
	1,632	**2,075**
Prepayments and accrued income	316	**310**
Current tax receivable	10	**15**
Net finance lease receivable	2	**5**
Total	1,960	**2,405**

Trade receivables are predominantly non-interest bearing and their carrying amounts approximate to their fair value.

19 Trade and other receivables (continued)

The movements in the loss allowance during the year were as follows:

	2021 £m	**2022 £m**
At start of year	99	**106**
Charge for the year	17	**11**
Trade receivables written off	(8)	**(7)**
Exchange translation differences	(2)	**8**
At end of year	106	**118**

20 Trade and other payables

Accounting policy
Deferred income is recognised when either a customer has paid consideration, or RELX has an unconditional right to an amount of consideration, in advance of the goods and services being delivered.

Trade payables, accruals and other payables are not interest-bearing and are stated at their nominal values.

	2021 £m	**2022 £m**
Trade payables	109	**129**
Accruals	718	**844**
Social security and other taxes	141	**159**
Other payables	351	**517**
Deferred income	1,956	**2,368**
Total	3,275	**4,017**

Trade and other payables are predominantly non-interest bearing and their carrying amounts approximate to their fair value.

Materially all of the opening deferred income balance has been recognised in the reporting period.

21 Debt

Accounting policy
Borrowings are recorded initially at fair value and subsequently carried at amortised cost, other than fixed rate borrowings in designated hedging relationships for which the carrying amount of the hedged portion of the borrowings is subsequently adjusted for the gain or loss attributable to the hedged risk. When the related derivative in such a hedging relationship expires, is sold or terminated, or no longer qualifies for hedge accounting, the cumulative change in fair value of the hedged borrowing is amortised in the income statement over the period to maturity of the borrowing using the effective interest method.

	2021			**2022**		
	Falling due within 1 year £m	Falling due in more than 1 year £m	Total £m	**Falling due within 1 year £m**	**Falling due in more than 1 year £m**	**Total £m**
Financial liabilities measured at amortised cost:						
Short-term bank loans, overdrafts and commercial paper	131	–	131	**102**	**–**	**102**
Term debt	32	3,410	3,442	**–**	**3,641**	**3,641**
Lease liabilities	69	139	208	**67**	**115**	**182**
Term debt in fair value hedging relationships	–	2,161	2,161	**576**	**1,978**	**2,554**
Term debt previously in fair value hedging relationships	–	225	225	**125**	**126**	**251**
Total	232	5,935	6,167	**870**	**5,860**	**6,730**

The total fair value of financial liabilities measured at amortised cost (excluding lease liabilities) is £3,451m (2021: £3,746m). The total fair value of term debt in fair value hedging relationships is £2,688m (2021: £2,268m). The total fair value of term debt previously in fair value hedging relationships is £257m (2021: £255m).

RELX PLC has given guarantees in respect of certain long-term and short-term borrowings issued by subsidiaries. Included within term debt above are debt securities issued by RELX Capital Inc., a 100% indirectly owned finance subsidiary of RELX PLC, which have been registered with the US Securities and Exchange Commission. RELX PLC has fully and unconditionally guaranteed these securities, which are not guaranteed by any other subsidiary of RELX PLC.

21 Debt (continued)

Analysis by year of repayment

	2021				**2022**			
	Short-term bank loans, overdrafts and commercial paper £m	Term debt £m	Lease liabilities £m	Total £m	**Short-term bank loans, overdrafts and commercial paper £m**	**Term debt £m**	**Lease liabilities £m**	**Total £m**
Within 1 year	131	32	69	232	**102**	**701**	**67**	**870**
Within 1 to 2 years	–	641	40	681	**–**	**1,045**	**24**	**1,069**
Within 2 to 3 years	–	1,012	37	1,049	**–**	**623**	**25**	**648**
Within 3 to 4 years	–	628	29	657	**–**	**660**	**24**	**684**
Within 4 to 5 years	–	626	17	643	**–**	**595**	**17**	**612**
After 5 years	–	2,889	16	2,905	**–**	**2,822**	**25**	**2,847**
After 1 year	–	5,796	139	5,935	**–**	**5,745**	**115**	**5,860**
Total	131	5,828	208	6,167	**102**	**6,446**	**182**	**6,730**

Short-term bank loans, overdrafts and commercial paper were backed up at 31 December 2022 by a \$3.0bn (£2.5bn) committed bank facility maturing in 2025. The committed bank facility was undrawn.

Analysis by currency

	2021				**2022**			
	Short-term bank loans, overdrafts and commercial paper £m	Term debt £m	Lease liabilities £m	Total £m	**Short-term bank loans, overdrafts and commercial paper £m**	**Term debt £m**	**Lease liabilities £m**	**Total £m**
US dollar	68	2,691	79	2,838	**2**	**3,160**	**65**	**3,227**
Pound sterling	–	–	51	51	**–**	**–**	**40**	**40**
Euro	15	3,137	47	3,199	**–**	**3,286**	**57**	**3,343**
Other currencies	48	–	31	79	**100**	**–**	**20**	**120**
Total	131	5,828	208	6,167	**102**	**6,446**	**182**	**6,730**

Included in the US dollar amounts for term debt above is £498m (2021: £515m) of debt denominated in euros (€600m) (2021: €600m) that was swapped into US dollars on issuance and against which there are related derivative financial instruments, which, as at 31 December 2022, had a fair value of £55m (2021: £21m).

22 Lease arrangements

Accounting policy

All leases where RELX is the lessee (with the exception of short-term and low-value leases) are recognised in the statement of financial position. A lease liability is recognised based on the present value of the future lease payments, and a corresponding right-of-use asset is recognised. The right-of-use asset is depreciated over the shorter of the lease term or the useful life of the asset. Lease payments are apportioned between finance charges and a reduction of the lease liability.

Low-value items and short-term leases with a term of 12 months or less are not required to be recognised on the balance sheet and payments made in relation to these leases are recognised on a straight-line basis in the income statement.

The leases held by the Group can be split into two categories: property and non-property. The Group leases various properties, principally offices, which have varying terms and renewal rights that are typical to the territory in which they are located.

Non-property includes all other leases, such as cars and printers.

22 Lease arrangements (continued)

Right-of-use assets

	2021 £m	**2022 £m**
At start of year	216	**161**
Additions	25	**34**
Acquisitions	–	**3**
Remeasurement	9	**8**
Disposals	(5)	**(8)**
Depreciation	(66)	**(63)**
Impairment	(14)	**–**
Exchange translation differences	(4)	**10**
At end of year	161	**145**

Lease liability

	2021 £m	**2022 £m**
Current		
Property	(67)	**(65)**
Non-property	(2)	**(2)**
Non-current		
Property	(136)	**(113)**
Non-property	(3)	**(2)**
Total	(208)	**(182)**

Interest expense on the lease liabilities recognised within finance costs was £6m (2021: £8m; 2020: £12m).

As at 31 December 2022, RELX was committed to leases with future cash outflows totalling £32m (31 December 2021: £5m) which had not yet commenced and as such are not accounted for as a liability as at 31 December 2022. A liability and corresponding right-of-use asset will be recognised for these leases at the lease commencement date.

RELX subleases vacant space available within its leased properties. IFRS 16 specifies conditions whereby a sublease is classed as a finance lease for the sub-lessor. The finance lease receivable balance held is as follows:

	2021 £m	**2022 £m**
Net finance lease receivable	2	**5**

Short-term and low-value lease expenses have been included in note 3.

Interest income recognised in relation to finance lease receivables is disclosed in note 7.

23 Share capital and shares held in treasury

Accounting policy
Shares of RELX PLC that are repurchased and not cancelled are classified as shares held in treasury. The consideration paid, including directly attributable costs, is recognised as a deduction from equity. Shares of RELX PLC that are purchased by the Employee Benefit Trust are also classified as shares held in treasury, with the cost recognised as a deduction from equity.

RELX PLC

CALLED UP SHARE CAPITAL – ISSUED AND FULLY PAID	No. of shares	2021 £m	**No. of shares**	**2022 £m**
At start of year	1,982,299,312	286	**1,984,961,632**	**286**
Issue of ordinary shares	2,662,320	–	**1,918,456**	**–**
Cancellation of ordinary shares	–	–	**(52,000,000)**	**(7)**
At end of year	1,984,961,632	286	**1,934,880,088**	**279**

23 Share capital and shares held in treasury (continued)

NUMBER OF ORDINARY SHARES	Year ended 31 December			
	2021 Shares in issue net of treasury shares* (millions)	**Shares in issue (millions)**	**Treasury shares (millions)**	**2022 Shares in issue net of treasury shares* (millions)**
RELX PLC				
At start of year	1,926.0	**1,985.0**	**(55.6)**	**1,929.4**
Issue of ordinary shares	2.7	**1.9**	**–**	**1.9**
Repurchase of ordinary shares	–	**–**	**(21.7)**	**(21.7)**
Net release/(purchase) of shares by the Employee Benefit Trust	0.7	**–**	**(0.1)**	**(0.1)**
Cancellation of ordinary shares	–	**(52.0)**	**52.0**	**–**
At end of year	1,929.4	**1,934.9**	**(25.4)**	**1,909.5**

* At 31 December 2022 the total shares in issue net of treasury shares is 1,909,526,620 (2021: 1,929,425,389).

During the year, RELX PLC repurchased 21.7m (2021: nil; 2020: 7.8m) RELX PLC ordinary shares for an average price of 2,303p; repurchased shares are held in treasury. In 2022 the total consideration for the RELX PLC repurchases was £500m (2021: nil; 2020: £150m).

The Employee Benefit Trust purchases RELX PLC shares which, at the trustees' discretion, can be used in respect of the exercise of share options and to meet commitments under conditional share awards. During the year, the Employee Benefit Trust purchased 2.2m shares for a total cost of £50m (2021: £1m; 2020: £37m). At 31 December 2022, shares held by the Employee Benefit Trust were £101m (2021: £86m; 2020: £97m) at cost.

The issue of ordinary shares in the year relates to the exercise of share options.

All of the RELX PLC ordinary shares rank equally with respect to voting rights and rights to receive dividends, except for shares held in treasury, which do not attract voting or dividend rights. There are no restrictions on the rights to transfer shares.

At 31 December 2022, RELX PLC shares held in treasury related to 5,553,401 (2021: 5,448,564; 2020: 6,192,953) RELX PLC ordinary shares held by the Employee Benefit Trust; and 19,800,067 (2021: 50,087,679; 2020: 50,087,679) RELX PLC ordinary shares held by the parent company. During 2022, 52m (2021: nil; 2020: nil) RELX PLC ordinary shares held in treasury were cancelled.

On 9 December 2022, RELX PLC announced a non-discretionary programme to repurchase further ordinary shares up to the value of £150m. At 31 December 2022, an accrual of £150m was recognised in respect of this non-discretionary commitment. A further 6.3m RELX PLC ordinary shares have been repurchased in January and February 2023 under this programme.

24 Other reserves and translation reserve

	Total 2021 £m	**Translation reserve 2022 £m**	**Hedge reserve 2022 £m**	**Other reserves 2022 £m**	**Total 2022 £m**
At start of year	1,241	**250**	**19**	**2,062**	**2,331**
Profit attributable to shareholders	1,471	**–**	**–**	**1,634**	**1,634**
Dividends paid	(920)	**–**	**–**	**(983)**	**(983)**
Actuarial gains on defined benefit pension schemes	321	**–**	**–**	**164**	**164**
Fair value movements on cash flow hedges	10	**–**	**(18)**	**–**	**(18)**
Transfer to profit from cash flow hedge reserve	(9)	**–**	**(17)**	**–**	**(17)**
Tax recognised in other comprehensive income	(49)	**–**	**8**	**(43)**	**(35)**
Exchange differences on translation of foreign operations	223	**427**	**–**	**–**	**427**
Cancellation of shares	–	**–**	**–**	**(1,120)**	**(1,120)**
Increase in share based remuneration reserve (net of tax)	55	**–**	**–**	**47**	**47**
Settlement of share awards	(12)	**–**	**–**	**(35)**	**(35)**
Disposal of non-controlling interests	–	**–**	**–**	**(1)**	**(1)**
At end of year	2,331	**677**	**(8)**	**1,725**	**2,394**

Other reserves principally comprise retained earnings and the share based remuneration reserve. Movements in reserves during the period includes the effects of profits generated during the period, share repurchases, changes in exchange rates and other items. Dividends paid during 2022 were £983m (2021: £920m). Refer to note 13 for further details.

52m (2021: nil) RELX PLC ordinary shares held in treasury were cancelled resulting in a transfer of £1.1bn between other reserves and shares held in treasury.

The increase of £427m in the translation reserve is due to the net effect of changes in exchange rates during the period which increased net debt by £560m and assets (net of other liabilities) by £987m.

25 Related party transactions

Transactions with related parties were made on normal market terms of trading.

Transactions between RELX PLC and subsidiaries of the Group have been eliminated within the consolidated financial statements. Transactions with joint ventures comprise sales of goods and services of £0.4m (2020: nil; 2021: nil) and the rendering and receiving of goods and services of nil (2021: £0.2m; 2020: £0.1m). As at 31 December 2022, amounts owed by joint ventures were £4.2m (2021: £2.4m; 2020: £0.8m) and amounts due to joint ventures were £1.2m (2021: £1.4m; 2020: £0.4m). See note 6 for details of the Group's participation in defined benefit pension schemes.

Key management personnel are also related parties as defined by IAS 24 – Related Party Disclosures and comprise the Executive and Non-Executive Directors of RELX PLC. Key management personnel remuneration is set out below. For reporting purposes, salary, benefits and annual incentive payments are considered short-term employee benefits.

KEY MANAGEMENT PERSONNEL REMUNERATION	2020 £m	2021 £m	**2022 £m**
Salaries, other short-term employee benefits and non-executive fees	6	7	**7**
Post-employment benefits	1	1	**–**
Share based remuneration*	1	8	**7**
Total	8	16	**14**

EXECUTIVE DIRECTORS		Salary £'000	Benefits £'000	Annual incentive £'000	Share based remuneration* £'000	Pension* £'000	Total £'000
Total Executive Directors	2020	2,034	99	2,623	595	687	6,038
	2021	2,085	97	3,604	7,953	774	14,513
	2022	**2,137**	**97**	**3,251**	**6,857**	**268**	**12,610**

* The figures for share based awards are calculated in accordance with the methodology set out in the UK Regulations. The figure for performance-related share based awards includes share price appreciation since the date the award was granted. Please see page 124 for further details. Pension is calculated in accordance with the methodology set out in the UK Regulations.

NON-EXECUTIVE DIRECTORS	2020 £'000	2021 £'000	**2022 £'000**
Fees and benefits	1,558	1,598	**1,566**

The remuneration of non-executive directors comprises fees for services, and benefits primarily relating to tax filing support in respect of filings resulting from their directorships. No deemed benefits were provided during 2022 to former directors (2021: nil; 2020: nil). No loans, advances or guarantees have been provided on behalf of any director. The aggregate gains made by Executive Directors on the exercise of options during 2022 were nil (2021: nil; 2020: nil).

26 Exchange rates

The following exchange rates have been applied in preparing the consolidated financial statements:

	Income statement			Statement of financial position	
	2020	2021	**2022**	2021	**2022**
Euro to sterling	1.12	1.16	**1.17**	1.19	**1.13**
US dollar to sterling	1.28	1.38	**1.24**	1.35	**1.21**

27 Approval of financial statements

The consolidated financial statements were approved and authorised for issue by the Board of Directors on 15 February 2023.

28 Related undertakings

A full list of related undertakings (comprising subsidiaries, joint ventures, associates and other significant holdings) is set out below. All are 100% owned directly or indirectly by the Group except where percentage ownership denoted in (x%).

Company name	Share class	Reg office
Australia		
LNRS Data Services (Australia) Pty Ltd	Ordinary	AUS1
Reed Exhibitions Australia Pty Ltd	Ordinary	AUS2
Reed International Books Australia Pty Ltd	Ordinary	AUS2
RELX Australia Pty Ltd	Ordinary	AUS2
ThreatMetrix Pty Ltd	Ordinary	AUS2
Austria		
LexisNexis Verlag ARD ORAC GmbH & Co KG	Partnership Interest	AUT2
ORAC GmbH	Ordinary	AUT2
RELX Austria GmbH	Ordinary	AUT3
RX CEE GmbH	Ordinary	AUT1
RX Salzburg GmbH	Ordinary	AUT3
RX Wien GmbH	Ordinary	AUT1
Standout GmbH	Ordinary	AUT4
Belgium		
LexisNexis BV	Ordinary	BEL1
Brazil		
Elsevier Editora Ltda	Quotas	BRA1
Fircosoft Brasil Consultoria e Servicos de Informatica Ltda	Quotas	BRA2
Gestora de Inteligência de Crédito S.A. (20%)	Common, Preferred	BRA8
LexisNexis Informações e Sistemas Empresariais Ltda	Quotas	BRA6
LexisNexis Serviços de Análise de Risco Ltda	Quotas	BRA7
MLex Brasil Midia Mercadologica Ltda	Quotas	BRA4
Reed Exhibitions Alcântara Machado Ltda	Quotas	BRA3
SST Software do Brasil Ltda	Quotas	BRA5
Canada		
Elsevier Canada Inc.	Common	CAN2
LexisNexis Canada Inc.	Class B	CAN1
RELX Canada Ltd	Common	CAN1
China		
Bakery China Exhibitions Co., Ltd (25%)	Ordinary	CHN1
Beijing Medtime Elsevier Education Technology Co., Ltd (49%)	Common	CHN2
C-One Energy (Guangzhou) Co., Ltd	Ordinary	CHN5
ICIS Consulting (Beijing) Co., Ltd (Liquidation in progress)	Ordinary	CHN18
KeAi Communications Co., Ltd (49%)	Ordinary	CHN15
LexisNexis Information Technology Co. Ltd	Ordinary	CHN19
LexisNexis Risk Solutions (Shanghai) Information Technologies Co. Ltd	Common	CHN7
LNRS Data Services (Shanghai) Co Ltd	Ordinary	CHN13
Reed Elsevier Information Technology (Beijing) Co., Ltd	Common	CHN3
Reed Exhibitions (China) Co., Ltd	Ordinary	CHN4
Reed Exhibitions Hengjin Co., Ltd (51%)	Ordinary	CHN12
Reed Exhibitions (Shanghai) Co., Ltd	Ordinary	CHN10
Reed Huabai Exhibitions (Beijing) Co., Ltd (51%)	Ordinary	CHN4
Reed Huabo Exhibitions (Shenzhen) Co., Ltd (65%)	Ordinary	CHN16
Reed Huaqun Exhibitions Co., Ltd (52%)	Ordinary	CHN4
Reed Exhibitions Kuozhan (Shanghai) Co., Ltd (60%)	Ordinary	CHN8
Reed Sinopharm Exhibitions Co., Ltd (50%)	Ordinary	CHN4
RELX (China) Investment Co., Ltd	Ordinary	CHN9
RX (Shenzhen) Co., Ltd	Ordinary	CHN6
Shanghai Datong Medical Information Technology Co., Ltd	Ordinary	CHN17
Shanghai SinoReal Exhibitions Co., Ltd (27.5%)	Ordinary	CHN11
Z&R Exhibitions Co., Ltd (27.5%)	Ordinary	CHN14
Colombia		
LexisNexis Risk Solutions SAS	Ordinary	COL1
Denmark		
Elsevier A/S	Ordinary	DNK1
Egypt		
Elsevier Egypt LLC	Ordinary	EGY1

Company name	Share class	Reg office
France		
Closd SAS	Ordinary	FRA9
Elsevier Holding France SAS	Ordinary	FRA1
Elsevier Masson SAS	Ordinary	FRA1
Evoluprint SAS	Ordinary	FRA2
Fircosoft SAS	Ordinary	FRA8
GIE EDI Data (83%)	Ordinary	FRA3
GIE Juris Data	Ordinary	FRA3
LexisNexis Business Information Solutions SA	Ordinary	FRA3
LexisNexis Business Information Solutions Holding SA	Ordinary	FRA5
LexisNexis International Development & Services SAS	Ordinary	FRA3
LexisNexis SA	Ordinary	FRA3
Reed Exhibitions ISG SARL	Ordinary	FRA6
RELX France SA	Ordinary	FRA6
RELX France Services SAS	Ordinary	FRA8
RX France SAS	Ordinary	FRA4
SAFI SA (50%)	Ordinary	FRA7
Germany		
BehavioSec GmbH	Ordinary	DEU7
Elsevier GmbH	Ordinary	DEU3
Elsevier Information Systems GmbH	Ordinary	DEU2
IPlytics GmbH	Ordinary	DEU8
LexisNexis GmbH	Ordinary	DEU4
PatentSight GmbH	Ordinary	DEU6
RELX Deutschland GmbH	Ordinary	DEU1
RX Deutschland GmbH	Ordinary	DEU1
Tschach Solutions GmbH	Ordinary	DEU5
Greece		
Mack Brooks Hellas SA (87.36%) (Liquidation in progress)	Ordinary	GRE1
Hong Kong		
Ascend China Holding Ltd	Ordinary	HNK4
JC Exhibition and Promotion Ltd (65%)	Ordinary	HNK4
JYLN Sager Ltd	Ordinary	HNK2
LNRS Data Services (China) Ltd	Ordinary	HNK1
Reed Exhibitions Ltd	Ordinary	HNK4
RELX (Greater China) Ltd	Ordinary	HNK3
India		
FircoSoft India Private Ltd	Ordinary	IND2
Next Events Private Ltd	Ordinary	IND1
Parity Computing India Private Ltd	Ordinary	IND3
Reed Elsevier Publishing (India) Private Ltd	Ordinary	IND1
Reed Manch Exhibitions Private Ltd	Ordinary	IND1
Reed Triune Exhibitions Private Ltd (72%)	Ordinary	IND4
RELX India Private Ltd	Ordinary	IND1
Indonesia		
PT Reed Exhibitions Indonesia (70%)	Class A Preferred Class B Common	IDN1
PT RELX Information Analytics Indonesia	Ordinary	IDN2
Irish Republic		
Elsevier Services Ireland Ltd	Ordinary	IRL2
LexisNexis Risk Solutions (Europe) Ltd	Ordinary	IRL1
LexisNexis Risk Solutions (Ireland) Ltd	Ordinary	IRL1
3D4Medical Ltd	Ordinary	IRL3
Israel		
LexisNexis Israel Ltd	Ordinary	ISR1
Italy		
Elsevier SRL	Registered Capital	ITA1
ICIS Italia SRL	Ordinary	ITA2
RX Italy SRL	Ordinary	ITA1

28 Related undertakings (continued)

Company name	Share class	Reg office
Japan		
Ascend Japan KK	Ordinary	JPN1
Elsevier Japan KK	Ordinary	JPN2
LexisNexis Japan KK	Ordinary	JPN2
PatentSight Japan Inc.	Common	JPN2
RX Japan KK	Ordinary	JPN3
Korea (Republic of)		
Elsevier Korea LLC	Ordinary	KOR1
LexisNexis Legal and Professional Service Korea Ltd	Ordinary	KOR2
Reed Exhibitions Korea Ltd	Ordinary	KOR3
Reed Exporum Ltd (60%)	Ordinary	KOR4
Reed K. Fairs Ltd (70%)	Ordinary	KOR3
Macau		
Reed Exhibitions Macau Ltd	Ordinary	MAC1
Malaysia		
LexisNexis Malaysia Sdn Bhd	Ordinary	MYS1
Mexico		
Masson-Doyma Mexico, S.A.	Ordinary	MEX1
Reed Exhibitions Mexico S.A. de C.V.	Fixed	MEX2
Netherlands		
AGRM Solutions C.V.	Partnership Interest	NLD1
Caselex B.V.	Ordinary	NLD1
Elsevier B.V.	Ordinary	NLD1
ICIS Benchmarking Europe B.V.	Ordinary	NLD1
LexisNexis Business Information Solutions B.V.	Ordinary	NLD1
LNRS Data Services B.V.	Ordinary	NLD1
Misset Uitgeverij B.V. (49%)	Ordinary	NLD2
RELX Employment Company B.V.	Ordinary	NLD1
RELX Finance B.V.	Ordinary	NLD1
RELX Holdings B.V.	Ordinary	NLD1
RELX Nederland B.V.	Ordinary	NLD1
RELX Overseas B.V.	Ordinary RE	NLD1
New Zealand		
LexisNexis NZ Ltd	Ordinary	NZL1
Philippines		
Reed Elsevier Shared Services (Philippines) Inc.	Common	PHL1
Poland		
AI Digital Contracts Sp. z.o.o. (75%)	Ordinary	POL1
Elsevier Sp. z.o.o.	Ordinary	POL2
Russia		
Elsevier LLC (Liquidation in progress)	Participation Shares	RUS2
LexisNexis LLC (Liquidation in progress)	Participation Shares	RUS3
Real Estate Events Direct LLC (80%) (Liquidation in progress)	Participation Shares	RUS1
RELX LLC (Liquidation in progress)	Participation Shares	RUS1
Singapore		
Elsevier (Singapore) Pte Ltd	Ordinary	SGP1
Lexis-Nexis Philippines Pte Ltd	Ordinary-B, Preference	SGP2
LNRS Data Services Pte Ltd	Ordinary	SGP3
RE (HAPL) Pte Ltd	Ordinary	SGP1
RELX (Singapore) Pte Ltd	Ordinary	SGP2
South Africa		
Globalrange SA (Pty) Ltd	Ordinary	ZAF1
LexisNexis (Pty) Ltd (78%)	A-Ordinary	ZAF2
LexisNexis Risk Management (Pty) Ltd (78%)	Ordinary	ZAF2
LexisNexis South Africa Shared Services (Pty) Ltd	Ordinary	ZAF2

Company name	Share class	Reg office
Reed Events Management (Pty) Ltd (90%)	Ordinary	ZAF2
Reed Exhibitions (Pty) Ltd (90%)	Ordinary	ZAF2
Reed Exhibitions Group (Pty) Ltd (90%)	Ordinary	ZAF2
Reed Venue Management (Pty) Ltd (90%)	Ordinary	ZAF2
RELX (Pty) Ltd	Ordinary	ZAF2
Spain		
Elsevier Espana SL	Participations	ESP1
Sweden		
Behaviometrics AB	Ordinary	SWE1
Switzerland		
Fircosoft Schweiz GmbH (Liquidation in progress)	Ordinary	CHE1
Taiwan		
Elsevier Taiwan LLC	Ordinary	TWN1
Thailand		
Reed Tradex Company Ltd (49%)	Ordinary, Preference	THA1
RELX Holding (Thailand) Co., Ltd	Ordinary	THA2
RELX Information Analytics (Thailand) Co., Ltd	Ordinary	THA3
Turkey		
Elsevier STM Bilgi Hizmetleri Limited Şirketi	Ordinary	TUR1
Mack Brooks Fuarcilik A.S.	Registered Capital	TUR3
Reed Tüyap Fuarcilik A.S. (50%)	A Ordinary, B Ordinary	TUR2
United Arab Emirates		
Reed Exhibitions FZ-LLC	Ordinary	UAE1
RELX Middle East FZ-LLC	Ordinary	UAE2
United Kingdom		
3rd Street Group Ltd	Ordinary	GBR3
Butterworths Ltd	Ordinary	GBR4
Cordery Compliance Ltd (71%)	Ordinary	GBR4
Cordery Ltd (71%)	Ordinary	GBR4
Crediva Ltd	Ordinary	GBR5
Digital Foundry Network Ltd (50%)	Ordinary	GBR3
E & P Events LLP (50%)	Membership Interest	GBR3
Elsevier Ltd	Ordinary	GBR6
Emailage Ltd	Ordinary	GBR5
Gamer Network Ltd	Ordinary	GBR3
Gapsquare Ltd	A Ordinary, B Ordinary	GBR2
Hookshot Media Ltd (23.5%)	Ordinary	GBR8
Interfolio UK Ltd	Ordinary	GBR10
LexisNexis Risk Solutions UK Ltd	Ordinary	GBR5
LNRS Data Services Holdings Ltd	Ordinary	GBR1
LNRS Data Services Ltd	Ordinary	GBR2
Mack-Brooks Exhibitions Ltd	Ordinary	GBR3
MCM Expo Ltd	Ordinary	GBR3
Mendeley Ltd	Ordinary	GBR6
MLex Ltd	Ordinary	GBR4
Offshore Europe (Management) Ltd	Ordinary	GBR3
Offshore Europe Partnership (50%)	Partnership Interest	GBR3
Out There Gaming Ltd (70%)	Ordinary	GBR3
Oxford Spires Management Co; Ltd (55%)	Ordinary	GBR7
RE (HPL) Ltd	Ordinary	GBR1
RE (RCB) Ltd	Ordinary	GBR1
RE Secretaries Ltd	Ordinary	GBR1
RE (SOE) Ltd	Ordinary	GBR3
Reed Events Ltd	Ordinary	GBR3
Reed Exhibitions Ltd	Ordinary	GBR3
Reed Nominees Ltd	Ordinary	GBR1
RELX Finance Ltd	Ordinary	GBR1
RELX Group plc	Ordinary	GBR1
RELX (Holdings) Ltd	Ordinary	GBR1

28 Related undertakings (continued)

Company name	Share class	Reg office
RELX (Investments) plc	Ordinary	GBR1
RELX Overseas Holdings Ltd	Ordinary	GBR1
RELX (UK) Ltd	Ordinary	GBR1
REV GP (UK) LLP	Membership Interest	GBR1
REV Venture Partners Ltd	Ordinary	GBR1
REV V LP	Partnership Interest	GBR1
SciBite Ltd	A Ordinary, B Ordinary, C Ordinary	GBR9
Tracesmart Ltd	Ordinary	GBR5
TruNarrative Ltd	Ordinary	GBR5
United States		
Accuity Asset Verification Services Inc.	Common Stock	USA1
Accuity Inc.	Common Stock	USA1
American Textile Machinery Exhibition International Inc. (40%)	Common Stock	USA3
Aries Systems Corporation	Common Stock	USA3
BehavioSec Inc	Common Stock	USA2
Crop Data Management Systems, Inc.	Common Stock	USA2
Dunlap-Hanna Publishers (50%)	Partnership Interest	USA7
Elsevier Holdings Inc.	Common Stock	USA3
Elsevier Inc.	Common Stock	USA3
Elsevier Medical Information LLC	Membership Interest	USA3
Elsevier STM Inc.	Common Stock	USA3
Emailage Corp.	Common Stock	USA2
Enclarity, Inc.	Common Stock	USA2
Flyreel Inc.	Common Stock	USA2
Gaming Business Asia LLC (50%)	Membership Interest	USA3
Health Market Science, Inc.	Common Stock	USA2
ID Analytics LLC	Membership Interest	USA2
IDG-RBI China Publishers LLC (50%)	Membership Interest	USA3
Interfolio, Inc.	Common Stock	USA3
Interfolio Data 180, LLC	Membership Interest	USA3
Knovel Corporation	Common Stock	USA3
Knowable Inc (75%)	Common Stock	USA3
Legal InQuery Solutions Inc.	Common Stock	USA8
LexisNexis Claims Solutions Inc.	Common Stock	USA2
LexisNexis Coplogic Solutions Inc.	Common Stock	USA2
LexisNexis of Puerto Rico Inc.	Common Stock	USA8
LexisNexis Risk Data Management LLC	Membership Interest	USA2
LexisNexis Risk Holdings Inc.	Common Stock	USA2
LexisNexis Risk Solutions Inc.	Common Stock	USA2
LexisNexis Risk Solutions FL Inc.	Common Stock	USA2
LexisNexis Special Services Inc.	Common Stock	USA6
LexisNexis VitalChek Network Inc.	Common Stock	USA2
LNRS Data Services Inc.	Common Stock	USA5
Matthew Bender & Company, Inc.	Common Stock	USA3
MLex US, Inc.	Common Stock	USA3
Parley Pro Inc.	Common Stock	USA3
PCLaw Time Matters LLC (51%)	Membership Interest	USA3
Portfolio Media, Inc.	Common Stock	USA3
Reed Technology and Information Services LLC	Membership Interest	USA3
RELX Capital Inc.	Common Stock	USA4
RELX Inc.	Common Stock	USA3
RELX Risks Inc.	Common Stock	USA9
REV IV Partnership LP	Partnership Interest	USA4
SAFI Americas LLC (50%)	Membership Interest	USA3
SageStream LLC	Membership Interest	USA2
The Reed Elsevier Ventures 2005 Partnership LP	Partnership Interest	USA4
The Reed Elsevier Ventures 2011 Partnership LP	Partnership Interest	USA4
The Reed Elsevier Ventures 2013 Partnership LP	Partnership Interest	USA4
The Remick Publishers (50%)	Partnership Interest	USA7
ThreatMetrix, Inc.	Common Stock	USA2
World Compliance, Inc.	Common Stock	USA4
Vietnam		
Reed Tradex Vietnam LLC (49%)	Membership Interest	VIE1

Registered offices	
Australia	
AUS1:	Building B, Level 2, Unit 11, 1 Maitland Place, Baulkham Hills, NSW 2153
AUS2:	Tower 2, Level 1, 475 Victoria Avenue, Chatswood NSW 2067
Austria	
AUT1:	Messeplatz 1, 1020, Vienna
AUT2:	Trabrennstrasse 2ª,1020, Vienna
AUT3:	Am Messezentrum 6, 5020, Salzburg
AUT4:	Am Messezentrum 7, 5020, Salzburg
Belgium	
BEL1:	Oudenaardseheerweg 129, 9810 Nazareth
Brazil	
BRA1:	Rua da Assembleia no 100, 6th Floor, RJ Centro, Rio de Janiero, 20011-904
BRA2:	Rua Bela Cintra 2305, São Paulo, 01415-009
BRA3:	Rua Bela Cintra no. 1200, 10th floor, São Paulo, 01415-001
BRA4:	Avenida Paulista, 2300-Piso Pilotis room 28, São Paulo, 01310-300
BRA5:	Rua Cel Fonseca, 203 A-Centro, Botucatu, São Paulo, 18600-200
BRA6:	Rua Funchal, 538, conjunto 42, Vila Olímpia, São Paulo - CEP 04551-060
BRA7:	Alameda Rio Negro, 161 Alphaville Industrial, Barueri, São Paulo 06.455-000
BRA8:	Alphaville, Conjuntos 81-84, Centro Empresarial Araguaia, Barueri, São Paulo 2104, 8-9 Andar
Canada	
CAN1:	111 Gordon Baker Road, Suite 900, Toronto, Ontario, M2H 3R1
CAN2:	26E-1501 av. McGill College, Montreal, Quebec, H3A 3N9
China	
CHN1:	Zhongkun Building, Room 612, Gaoliangqiaoxie Street, No. 59, Haidan District, Beijing, 100044
CHN2:	Room 516, 5th Floor, Building 22, Area 11, No. 38, Xueyuan Road, Haidian District, Beijing
CHN3:	Oriental Plaza, No. 1 East Chang An Ave, Tower W1, 7th Floor, Unit 1-7, Dong Cheng District, Beijing, 100738
CHN4:	Ping An International Finance Center, Room 1504, 15th Floor, Tower A-101, 3-24 floor, Xinyuan South Road, Chaoyang District, Beijing, 100027
CHN5:	Unit B1303-1 & 1305, 13F Center Plaza, 161 Linhe Road West, Tianhe District Guangzhou
CHN6:	Unit 303, 3F, Tower 3 Kerry Plaza ,No.1 Zhong Xin Si Road, Fu Tian District, Fu Tian District, Shenzhen
CHN7:	Room 5106, Raffle City, 268 Middle Xizang Road, Huangpu District, Shanghai, 200001
CHN8:	Intercontinental Center, 42F, 100 Yutong Road, Zhabei District, Shanghai, 200070
CHN9:	Room 319, 238 Jiangchangsan Road, Jing'an District, Shanghai
CHN10:	Room 304, Sanlian Building, No.8, Huajing Road, Pudong District, Shanghai, 200070
CHN11:	Building 2, Room No. 3895, Changjiang Avenue, No. 161, Changliang Farm, Chongming County, Shanghai
CHN12:	Floor 2, No.979, Yunhan Road, Nicheng Town, Pudong New District, Shanghai
CHN13:	4/F Block 3, No 999 Jingzhong Road, Changning District, Shanghai
CHN14:	A0208, 1st floor, building 2, Yard 66, Yanfu Road, Yancun Tow, Fangshan District Beijing
CHN15:	16 Donghuangchenggen North Street, Beijing, 100717
CHN16:	Shenzhen International Chamber of Commerce Tower, Room 1801-1802, 1805, Fuhua 3rd Road, Futian District, Shenzhen, 518048
CHN17:	5/F Unit A, Digital China Centre No. 567 Tianshan West Road, ChangNing District, Shanghai, 200335
CHN18:	Room 12B, 7th Floor, Oriental Plaza, 1 East Chang An Avenue, Beijing, 100738
CHN19:	404 F4, No.9 Shangdi 9th Street, Haidian District, Beijing, 100085
Colombia	
COL1:	Philippe Prietocarrizosa & Uria Abogados, Carrera 9 No. 74-08 Oficina 105, Bogota, d.c., 76600
Denmark	
DNK1:	Niels Jernes Vej 10, 9220, Aalborg East
Egypt	
EGY1:	Land Mark Office Building, 2nd Floor, 90th Street, City Center, 5th Settlement, New Cairo, Cairo

28 Related undertakings (continued)

Registered offices	
France	
FRA1:	65, rue Camille Desmoulins, 92130, Issy les Moulineaux
FRA2:	Parc Euronord, 10 rue du Parc, 31150, Bruguieres
FRA3:	141 rue de Javel, 75015, Paris
FRA4:	52 Quai de Dion Bouton, 92800, Puteaux
FRA5:	Immeuble Technopolis, 350 rue Georges Besse, 30000, Nimes
FRA6:	27-33 quai Alphonse Le Gallo, 92100, Boulogne-Billancourt
FRA7:	6-8 Rue Chaptal, 75009, Paris
FRA8:	151-155 Rue de Bercy, 75012, Paris
FRA9:	168 Rue Saint-Denis, 75002, Paris
Germany	
DEU1:	Volklinger Strasse 4, 40219, Dusseldorf
DEU2:	St. Martin Tower, Wing, 2nd floor, Franklinstrasse 61-63, 60486, Frankfurt am Main Hessen
DEU3:	Bernhard-Wicki-Strasse 5, 80636, Munich
DEU4:	Heerdter Sandberg 30, 40549, Dusseldorf
DEU5:	Steinhauserstrasse 9, 76135, Karlsruhe
DEU6:	Joseph-Schumpeter-Allee 33, 53227, Bonn
DEU7:	Fritz-Haber-Strasse 9 OG 13, 06217 Merseburg
DEU8:	Schopenhauer Strasse 93 e, 14129, Berlin
Greece	
GRE1:	188A, Filolaou Str., Athens. 11632
Hong Kong	
HNK1:	5/F, Manulife Place, 348 Kwun Tong Road, Kowloon
HNK2:	Flat 1506, 15/F, Lucky Center, No. 165-171 Wan Chai Road, Wan Chai
HNK3:	11/F Oxford House, Taikoo Place, 979 King's Road, Quarry Bay
HNK4:	17th Floor, One Island East, Taikoo Place, 18 Westlands Road, Quarry Bay
India	
IND1:	818, 8th Floor, Indraprakash Builing, 21 Barakhamba Road, New Delhi, Delhi, 110001
IND2:	Ascendas International Tech Park, Crest Building 12th Floor, Taramani Road, Taramani, Chennai, 600113
IND3:	99/100, Prestige Towers Unit No. 505, Fifth Floor, Residency Road, Bangalore, Karnataka, 560025
IND4:	25, 3rd floor, 8th Main Road, Vasanthnager, Bangalore, Karnataka, 560052
Indonesia	
IDN1:	APL Tower Central Park 26th Floor Unit T3 Jl. S. Parman Kav., 28, Grogol, Pertamburan Jakarta Barat 11470
IDN2:	Gedung World Trade Center, 3 LT 20 Spaces JL Jend Sudirman Kav 29-31 RT/RW 008/003, Karet Kuningan, Setiabudi, Jakarta Selatan, DKI Jakarta 12940
Irish Republic	
IRL1:	80 Harcourt Street, Dublin 2, Dublin, D02 F449
IRL2:	Suite 4320, Atlantic Avenue, Westpark Business Campus, Shannon, Clare, V14 YX01
IRL3:	1F Cedarhurst Building, Arkle Road, Sandyford Business Park, Dublin, D18 X6N2
Israel	
ISR1:	Meitar, Attorneys at Law, 16 Abba Hillel Rd. Ramat Gan 5250608
Italy	
ITA1:	Via Marostica 1, 20146, Milan
ITA2:	Studio Colombo e Associati, Via Cino del Duca 5, 20122, Milan
Japan	
JPN1:	Kyodo Tsushin Kaikam 2F, 2-2-5 Toronomon, Minato-ku, Tokyo, 105-0001
JPN2:	1-9-15, Higashi Azabu, Minato-ku Tokyo, 106-0044
JPN3:	Shinjuku-Nomura Bldg., 1-26-2 Nishi-shinjuku, Shinjuku-ku, Tokyo, 163-0525
Korea (Republic of)	
KOR1:	Chunwoo Building, 4th floor, 534 Itaewon-dong, Yongsan-gu, Seoul, 140-861
KOR2:	206 Noksapyeong-daero, Yongsan-gu, Seoul, 140-861
KOR3:	1622-24 Block A Terra Tower 2, 201 Songpa-daero, Songpa-gu, Seoul
KOR4:	4th floor at 195-6 Jamsil-dong, Songpagu, Seoul
Macau	
MAC1:	Rua De Xangai, No. 175 Edif. Associacao Comercial de Macau, 11 Andar, Bloco K
Malaysia	
MYS1:	Suite 29-1, Level 29, Vertical Corporate, Tower B, Avenue 10, The Vertical, 59200 Bangsar South City, Kuala Lumpur

Registered offices	
Mexico	
MEX1:	Masson-Doyma Mexico S.A., Av Insurgentes Sur 1388 Piso 8, Col Actipan Mixcoac Del. Benito Juarez, Mexico DF, CP 03230
MEX2:	Avenida Paseo de la Reforma 243, Piso 15, Col. Cuauhtemoc, Mexico City, 06500
Netherlands	
NLD1:	Radarweg 29, 1043 NX Amsterdam
NLD2:	Hanzestraat 1, 7006RH Doetinchem
New Zealand	
NZL1:	Level 1, 138 The Terrace, P.O. Box 472, Wellington 6011
Philippines	
PHL1:	Building H, 2nd Floor, U.P. Ayalaland TechnoHub, Commonwealth Avenue, Quezon City, Metro Manila, 1101
Poland	
POL1:	Plac Grunwaldzki 23-27, 50-365 Wroclaw
POL2:	Al. JJana Pawla II, 22, 00-133, Warszawa
Russia	
RUS1:	2nd Syromyatnichesky per, bld.1, Space I, Room 13, 105120, Moscow
RUS2:	Building 1, Facility 1, Room 80, 9/26 Shchipok St., Municipal District Zamoskvorechye, 115054, Moscow
RUS3:	Building 1, facility 1, Room 5, 9/26 Shchipok St., Municipal District Zamoskvorechye, 115054, Moscow
Singapore	
SGP1:	3 Killiney Road, #08-01 Winsland House 1, 239519
SGP2:	80 Robinson Road, #02-00, 068898
SGP3:	1 Changi Business Park Crescent, #06-01 Plaza 8 & CBP, 48602551
South Africa	
ZAF1:	Ground Floor, Pebble Beach, Fourways Golf Park, Roos Street, Fourways Sandton, Johannesburg, Gauteng 2068
ZAF2:	Building 8, Country Club Estate Office Park, 21 Woodlands Drive, Woodmead, Gauteng, 2191
Spain	
ESP1:	C/ Josep Tarradellas 20-30, 1º / 20029, Barcelona
Sweden	
SWE1:	Aurorum 8A 977 75 Lulea
Switzerland	
CHE1:	Bahnhofstrasse 100, 8001 Zurich
Taiwan	
TWN1:	Rm N818, 8F, Chia Hsin Building II, No. 9, Lane 3, Minsheng West Road, Taipei 10449
Thailand	
THA1:	Sathorn Nakorn Building, Floor 32, No. 100/68-69 North Sathon Road, Silom, Bangrak, Bangkok, 10500
THA2:	14th Floor, CTI Tower, 191/70-73 Ratchadapisek Road, Khwaeng Klongtoey, Khet, Klongtoey, Bangkok
THA3:	2 Ploenchit Centre, Room 7, Floor G., Sukhumvit Road, Klongtoey, Bangkok, 10110
Turkey	
TUR1:	Maslak Mah. Bilim Sokak Sun Plaza Kat:13 Sisli-Maslak, Istanbul
TUR2:	Tuyap Fuar ve Kongre Merkezi, Cumhuriyet Mahallesi Eski Hadimkoy Yolu 9/4, 34500 Buyukcekmece, Istanbul
TUR3:	Esentepe Mah. Ali Kaya SK. Polat Plaza B Blok No: 1/1B Sisli, Istanbul
United Arab Emirates	
UAE1:	Office 0225 Podium 2, Yas Creative Hub Tower 2, Abu Dhabi, PO BOX 77899
UAE2:	Al Sufouh Complex, Office nos. 404, 405, 406 & 407, Dubai Media City, Dubai
United Kingdom	
GBR1:	1-3 Strand, London, WC2N 5JR
GBR2:	Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS
GBR3:	Gateway House, 28 The Quadrant, Richmond, Surrey, TW9 1DN
GBR4:	Lexis House, 30 Farringdon Street, London, EC4A 4HH
GBR5:	Global Reach, Dunleavy Drive, Cardiff, CF11 0SN
GBR6:	The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB

28 Related undertakings (continued)

Registered offices	
GBR7:	40 Kimbolton Road, Bedford, MK40 2NR
GBR8:	5 Oakwood Drive, Loughborough, LE11 3QF
GBR9:	Biodata Innovation Centre Wellcome Genome Campus, Hinxton, Cambridge, CB10 1DR
GBR10:	The Barn, Horningsea Road, Cambridge, CB5 8SZ
United States	
USA1:	1007 Church Street, Evanston IL 60201
USA2:	1000 Alderman Dr., Alpharetta, GA 30005
USA3:	230 Park Ave, New York, NY 10169
USA4:	1105 North Market St, Wilmington, DE 19801
USA5:	3355 West Alabama Street, Houston, TX 77098
USA6:	1150 18th St, NW, Washington, DC 20036
USA7:	313 Washington Street, Suite 400, Newton, MA 02458
USA8:	9443 Springboro Pike, Miamisburg, OH 45342
USA9:	76 St. Paul Street, Suite 500, Burlington, VT 05401-4477
Vietnam	
VIE1:	2nd Floor, Kova Center, 92G-92H Nguyen Huu Canh Street, Ward no. 22, District. Binh Thanh, Ho Chi Minh City

The following UK subsidiaries will take advantage of the audit exemption set out with in Section 479A of the Companies Act 2006 supported by guarantees issued by RELX PLC over their liabilities for the year ended 31 December 2022.

Company name	Registration number
Butterworths Limited	2826955
Crediva Limited	6567484
E&P Events LLP	OC328529
Emailage Limited	9282165
Interfolio UK Limited	7820803
Mack-Brooks Exhibitions Limited	967560
MCM Expo Limited	8421024
MLex Limited	5488651
Offshore Europe (Management) Limited	2318214
RE (SOE) Limited	2330299
Reed Events Limited	5893942
RELX (Holdings) Limited	5807690
RELX (Investments) plc	5810043
RELX Overseas Holding Limited	9489059
REV GP (UK) LLP	OC437653
REV Venture Partners Limited	4226986
SciBite Limited	7778456
Tracesmart Limited	3827062
TruNarrative Limited	10241297

5 year summary

	2018 £m	2019 £m	2020 £m	2021 £m	**2022 £m**
RELX consolidated financial information					
Growth rates					
Underlying revenue growth	+4%	+4%	-9 %	+7%	**+9%**
Underlying adjusted operating profit growth	+6%	+5%	-18%	+13%	**+15%**
Adjusted earnings per share growth (at constant currency)	+7%	+7%	-15%	+17%	**+10%**
Adjusted figures					
Revenue	7,492	7,874	7,110	7,244	**8,553**
Operating profit	2,346	2,491	2,076	2,210	**2,683**
Operating margin	31.3%	31.6%	29.2%	30.5%	**31.4%**
Profit before tax	2,145	2,200	1,916	2,077	**2,489**
Net profit attributable to shareholders	1,674	1,808	1,543	1,689	**1,961**
Net margin	22.3%	23.0%	21.7%	23.3 %	**22.9%**
Cash flow	2,243	2,402	2,009	2,230	**2,709**
Cash flow conversion	96%	96%	97%	101 %	**101%**
Return on invested capital	13.2%	13.6%	10.8%	11.9 %	**12.5%**
Earnings per share	84.7p	93.0p	80.1p	87.6 p	**102.2p**
Dividend					
Ordinary dividend per share	42.1p	45.7p	47.0p	49.8p	**54.6p**
Reported figures					
Revenue	7,492	7,874	7,110	7,244	**8,553**
Operating profit	1,964	2,101	1,525	1,884	**2,323**
Profit before tax	1,720	1,847	1,483	1,797	**2,113**
Net profit attributable to shareholders	1,422	1,505	1,224	1,471	**1,634**
Net margin	19.0%	19.1%	17.2%	20.3 %	**19.1%**
Net debt	6,177	6,191	6,898	6,017	**6,604**
Earnings per share (pence)	71.9p	77.4p	63.5p	76.3 p	**85.2p**

(1) Adjusted figures are presented as additional performance measures used by management. Further details on the adjusted measures can be found in the Alternative performance measures section on pages 216 to 224.
(2) Dividend per ordinary share is based on the interim dividend and proposed final dividend for the relevant year.

RELX PLC company only financial statements

In this section

RELX PLC statement of financial position

AS AT 31 DECEMBER	Note	2021 £m	**2022 £m**
Non-current assets			
Investments in subsidiary undertakings	1	18,327	**18,333**
		18,327	**18,333**
Current assets			
Trade and other receivables		1	**–**
Receivables: amounts due from subsidiary undertakings		1,857	**1,469**
Total assets		20,185	**19,802**
Current liabilities			
Taxation		–	**1**
Other payables		3	**154**
Payables: amounts owed to subsidiary undertakings		–	**10**
		3	**165**
Net assets		20,182	**19,637**
Capital and reserves			
Share capital		286	**279**
Share premium		1,491	**1,517**
Shares held in treasury		(789)	**(312)**
Capital redemption reserve		36	**43**
Other reserves		177	**183**
Merger reserve		11,150	**11,150**
Net profit		1,046	**1,056**
Reserves		6,785	**5,721**
Shareholders' equity		20,182	**19,637**

The RELX PLC Company financial statements were approved by the Board of Directors and authorised for issue on 15 February 2023. They were signed on its behalf by:

N L Luff
Chief Financial Officer

RELX PLC statement of changes in equity

	Share capital £m	Share premium £m	Shares held in treasury £m	Capital redemption reserve [1] £m	Other reserves [2] £m	Merger reserve [1] £m	Net profit £m	Reserves [3] £m	Total £m
Balance at 1 January 2021	286	1,459	(789)	36	172	11,150	1,051	6,654	20,019
Total comprehensive income for the year	–	–	–	–	–	–	1,046	–	1,046
Dividends paid [4]	–	–	–	–	–	–	–	(920)	(920)
Issue of ordinary shares, net of expenses	–	32	–	–	–	–	–	–	32
Equity instruments granted to employees of the Group	–	–	–	–	5	–	–	–	5
Transfer of net profit to reserves	–	–	–	–	–	–	(1,051)	1,051	–
Balance at 1 January 2022	**286**	**1,491**	**(789)**	**36**	**177**	**11,150**	**1,046**	**6,785**	**20,182**
Total comprehensive income for the year	**–**	**–**	**–**	**–**	**–**	**–**	**1,056**	**–**	**1,056**
Dividends paid [4]	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**(983)**	**(983)**
Repurchase of ordinary shares	**–**	**–**	**(650)**	**–**	**–**	**–**	**–**	**–**	**(650)**
Cancellation of shares	**(7)**	**–**	**1,127**	**7**	**–**	**–**	**–**	**(1,127)**	**–**
Issue of ordinary shares, net of expenses	**–**	**26**	**–**	**–**	**–**	**–**	**–**	**–**	**26**
Equity instruments granted to employees of the Group	**–**	**–**	**–**	**–**	**6**	**–**	**–**	**–**	**6**
Transfer of net profit to reserves	**–**	**–**	**–**	**–**	**–**	**–**	**(1,046)**	**1,046**	**–**
Balance at 31 December 2022	**279**	**1,517**	**(312)**	**43**	**183**	**11,150**	**1,056**	**5,721**	**19,637**

(1) The capital redemption and merger reserve do not form part of the distributable reserves balance.
(2) Other reserves relate to equity instruments granted to employees of the Group under share based remuneration arrangements, and do not form part of the distributable reserves balance.
(3) Distributable reserves at 31 December 2022 were £6,465m (2021: £7,042m) comprising net profit and reserves, net of shares held in treasury.
(4) Refer to note 13 of the RELX consolidated financial statements on page 184 for further dividend disclosure.

RELX PLC accounting policies

Basis of preparation
RELX PLC meets the definition of a qualifying entity under FRS 100 (Financial Reporting Standard 100) issued by the Financial Reporting Council (FRC). Accordingly, the financial statements are prepared in accordance with FRS 101 (Financial Reporting Standard 101) – Reduced Disclosure Framework as issued by the Financial Reporting Council, incorporating the Amendments to FRS 101 issued by the FRC in July 2015 and the amendments to company law made by The Companies, Partnerships and Groups (Accounts and Reports) Regulations 2015.

As permitted by FRS 101, RELX PLC has taken advantage of the disclosure exemptions available under that standard in relation to share based payments, financial instruments, capital management, presentation of comparative information in respect of certain assets, presentation of a cash flow statement, standards not yet effective, impairment of assets and related party transactions.

The RELX PLC financial statements have been prepared on the historical cost basis.

Unless otherwise indicated, all amounts in the financial statements are in millions of pounds.

The RELX PLC financial statements should be read in conjunction with the Group consolidated financial statements and notes presented on pages 162 to 205, which are also presented as the RELX PLC consolidated financial statements. See the Basis of preparation of the consolidated financial statements on page 167.

The RELX PLC financial statements are prepared on a going concern basis, as explained on page 95.

As permitted by Section 408 of the Companies Act 2006, and in compliance with The Companies, Partnerships and Groups (Accounts and Reports) Regulations 2015, the Company has not presented its own profit and loss account but has presented the net profit for the year on the statement of financial position.

The RELX PLC accounting policies under FRS 101 are set out below.

Investments
Fixed asset investments are stated at cost, less provision, if appropriate, for any impairment in value. The fair value of the award of share options and conditional shares over RELX PLC ordinary shares to employees of the Group are treated as a capital contribution.

Other assets and liabilities are stated at historical cost, less provision, if appropriate, for any impairment in value.

Shares held in treasury
The consideration paid, including directly attributable costs, for shares repurchased is recognised as shares held in treasury and presented as a deduction from total equity. Details of share capital and shares held in treasury are set out in note 23 of the Group consolidated financial statements.

Foreign exchange translation
Transactions entered into in foreign currencies are recorded at the exchange rates applicable at the time of the transaction.

Taxation
Refer to note 9 on pages 178 to 181 of the consolidated financial statements for the taxation accounting policies.

Notes to the RELX PLC financial statements

1 Investments

	Subsidiary undertaking £m	Total £m
At 1 January 2021	18,322	18,322
Equity instruments granted to employees of the Group	5	5
At 1 January 2022	**18,327**	**18,327**
Equity instruments granted to employees of the Group	**6**	**6**
At 31 December 2022	**18,333**	**18,333**

2 Related party transactions

All transactions with subsidiaries and the Group's employees, which are related parties of RELX PLC, are reflected in these financial statements. Transactions with key management personnel including share based remuneration costs are set out in note 25 of the Group consolidated financial statements and details of the Directors' remuneration are included in the Directors' Remuneration Report on pages 110 to 142.

3 Contingent liabilities

There are contingent liabilities in respect of debt of subsidiaries guaranteed by RELX PLC as follows:

	2021 £m	**2022 £m**
Contingent liabilities	5,679	**6,518**

Financial instruments disclosures in respect of the debt covered by the above guarantees are given in note 17 of the Group's consolidated financial statements.

Other financial information

In this section

Summary consolidated financial information in euros

Basis of preparation
The Group's consolidated financial information is presented in sterling. The summary financial information is a simple translation of the Group's consolidated financial statements into euros at the stated rates of exchange.

EXCHANGE RATES FOR TRANSLATION	Income statement			Statement of financial position		
	2020	2021	**2022**	2020	2021	**2022**
Euro to sterling	1.12	1.16	**1.17**	1.12	1.19	**1.13**

Consolidated income statement

FOR THE YEAR ENDED 31 DECEMBER	2020 €m	2021 €m	**2022 €m**
Revenue	7,963	8,403	**10,007**
Operating profit	1,708	2,185	**2,718**
Profit before tax	1,661	2,085	**2,472**
Net profit attributable to shareholders	1,371	1,706	**1,912**
Adjusted operating profit	2,325	2,564	**3,139**
Adjusted profit before tax	2,146	2,409	**2,912**
Adjusted net profit attributable to shareholders	1,728	1,959	**2,294**
Adjusted earnings per ordinary share	€0.897	€1.016	**€1.196**
Basic earnings per ordinary share	€0.712	€0.885	**€0.997**
Net dividend per ordinary share paid in the year	€0.512	€0.553	**€0.599**
Net dividend per ordinary share paid and proposed in relation to the financial year	€0.526	€0.578	**€0.639**

Consolidated statement of cash flows

FOR THE YEAR ENDED 31 DECEMBER	2020 €m	2021 €m	**2022 €m**
Net cash from operating activities	1,788	2,338	**2,809**
Net cash used in investing activities	(1,314)	(445)	**(1,005)**
Net cash used in financing activities	(531)	(1,863)	**(1,561)**
(Decrease)/increase in cash and cash equivalents	(57)	30	**243**
Movement in cash and cash equivalents			
At start of year	163	99	**134**
(Decrease)/increase in cash and cash equivalents	(57)	30	**243**
Exchange translation differences	(7)	5	**0**
At end of year	99	134	**377**
Adjusted cash flow	2,250	2,587	**3,170**

Consolidated statement of financial position

AS AT 31 DECEMBER	2020 €m	2021 €m	**2022 €m**
Non-current assets	13,295	13,686	**14,419**
Current assets	2,547	2,805	**3,468**
Total assets	15,842	16,491	**17,887**
Current liabilities	4,899	4,460	**5,861**
Non-current liabilities	8,590	8,194	**7,783**
Total liabilities	13,489	12,654	**13,644**
Net assets	2,353	3,837	**4,243**

Summary consolidated financial information in US dollars

Basis of preparation

The Group's consolidated financial information is presented in sterling. The summary financial information is a simple translation of the Group's consolidated financial statements into US dollars at the stated rates of exchange. It does not represent a restatement under US GAAP which would be different in some significant respects.

EXCHANGE RATES FOR TRANSLATION	Income statement			Statement of financial position		
	2020	2021	**2022**	2020	2021	**2022**
US dollars to sterling	1.28	1.38	**1.24**	1.37	1.35	**1.21**

Consolidated income statement

FOR THE YEAR ENDED 31 DECEMBER	2020 $m	2021 $m	**2022 $m**
Revenue	9,101	9,997	**10,606**
Operating profit	1,952	2,600	**2,881**
Profit before tax	1,898	2,480	**2,620**
Net profit attributable to shareholders	1,567	2,030	**2,026**
Adjusted operating profit	2,657	3,050	**3,327**
Adjusted profit before tax	2,452	2,866	**3,086**
Adjusted net profit attributable to shareholders	1,975	2,331	**2,432**
Adjusted earnings per American Depositary Share (ADS)	$1.025	$1.209	**$1.268**
Basic earnings per ADS	$0.814	$1.053	**$1.056**
Net dividend per ADS paid in the year	$0.585	$0.658	**$0.635**
Net dividend per ADS paid and proposed in relation to the financial year	$0.602	$0.687	**$0.677**

Consolidated statement of cash flows

FOR THE YEAR ENDED 31 DECEMBER	2020 $m	2021 $m	**2022 $m**
Net cash from operating activities	2,043	2,782	**2,977**
Net cash used in investing activities	(1,501)	(530)	**(1,065)**
Net cash used in financing activities	(607)	(2,216)	**(1,654)**
(Decrease)/increase in cash and cash equivalents	(65)	36	**258**
Movement in cash and cash equivalents			
At start of year	184	121	**153**
(Decrease)/increase in cash and cash equivalents	(65)	36	**258**
Exchange translation differences	2	(4)	**(7)**
At end of year	121	153	**404**
Adjusted cash flow	2,572	3,077	**3,359**

Consolidated statement of financial position

AS AT 31 DECEMBER	2020 $m	2021 $m	**2022 $m**
Non-current assets	16,263	15,526	**15,440**
Current assets	3,115	3,182	**3,713**
Total assets	19,378	18,708	**19,153**
Current liabilities	5,992	5,060	**6,276**
Non-current liabilities	10,508	9,296	**8,334**
Total liabilities	16,500	14,356	**14,610**
Net assets	2,878	4,352	**4,543**

Alternative performance measures

RELX uses a range of alternative performance measures (APMs) in the reporting of financial information, which are not defined by generally accepted accounting principles (GAAP) such as IFRS. These APMs are used by the Board and management as they believe they provide relevant information in assessing the Group's performance, position and cash flows, enable investors to track more clearly the core operational performance of the Group, and provide a clear basis for assessing RELX's ability to raise debt and invest in new business opportunities.

Management also uses these financial measures, along with IFRS financial measures, in evaluating the operating performance of the Group as a whole and of the individual business areas. These measures should not be considered in isolation from, or as a substitute for, financial information presented in compliance with IFRS. The measures may not be directly comparable to similarly reported measures by other companies.

See below for a list of key APMs used by the Group, along with a description of each measure, its purpose, details of the closest equivalent IFRS measure (where applicable) and a reference to where it has been used in the financial statements.

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Income statement				
Constant currency growth	No direct equivalent	Constant currency growth measures are calculated using the previous financial year's full-year average and hedge exchange rates.	Provides a measure of year-on-year growth excluding the impact of exchange rate movements.	Financial highlights Chair's statement CEO report Business overview Market segments Financial review Directors' remuneration report
Underlying growth	No direct equivalent	Underlying growth rates are calculated at constant currencies, excluding the results of acquisitions until 12 months after purchase, and excluding the results of disposals and assets held for sale. Underlying revenue growth rates also exclude exhibition cycling.	This is a key financial measure as it provides an assessment of year-on-year growth excluding the impact of acquisitions, disposals, exhibition cycling and exchange rate movements.	Financial highlights Chair's statement CEO report Business overview Market segments Financial review Directors' remuneration report

	Note	2021 £m	**2022 £m**	2021 %	**2022 %**
Reported revenue growth	2	134	**1,309**	2%	**18%**
Components of reported revenue growth					
Underlying revenue growth		481	656	7%	**9%**
Exhibitions cycling		48	106	1%	**2%**
Acquisitions		47	38	1%	**0%**
Disposals		(28)	(34)	(1)%	**0%**
Total revenue growth at constant currency		548	766	8%	**11%**
Currency effect		(414)	543	(6)%	**7%**
Reported revenue growth		134	1,309	2%	**18%**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Underlying growth (continued)				

	Note	2021 £m	**2022 £m**	2021 %	**2022 %**
Reported adjusted operating profit growth		134	**473**	6%	**21%**
Components of adjusted operating profit growth					
Underlying adjusted operating profit growth		269	**326**	13%	**15%**
Acquisitions		11	**(6)**	1%	**0%**
Disposals		(8)	**(14)**	(1)%	**(1)%**
Total adjusted operating profit growth at constant currency		272	**306**	13%	**14%**
Currency impact		(138)	**167**	(7)%	**7%**
Reported adjusted operating profit growth		134	**473**	6%	**21%**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Adjusted operating profit	Operating profit	Operating profit before amortisation of acquired intangible assets, acquisition-related items, and grossed up to exclude the equity share of finance income, finance costs and taxes in joint ventures.	This is the key financial measure used by management to evaluate performance and allocate resources.	Financial highlights Chair's statement CEO report Business overview Market segments Financial review Directors' remuneration report Note 2

	Note	2021 £m	**2022 £m**
Operating profit	2,3	1,884	**2,323**
Adjustments:			
Amortisation of acquired intangible assets	2	298	**296**
Acquisition-related items		21	**62**
Reclassification of tax in joint ventures		7	**4**
Reclassification of net finance income in joint ventures		–	**(2)**
Adjusted operating profit		2,210	**2,683**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Adjusted operating margin	No direct equivalent	Calculated as adjusted operating profit divided by revenue.	As above.	Financial highlights Financial review
Earnings before interest, tax, depreciation and amortisation (EBITDA)	No direct equivalent	Calculated as adjusted operating profit before depreciation of property, plant and equipment (PPE) and right-of-use assets and amortisation of internally developed intangible assets, including pre-publication costs.	Provides a measure of the operating performance of the business that is widely used by relevant stakeholders in evaluating company performance.	Chair's statement Financial review

	Note	2021 £m	**2022** **£m**
Adjusted operating profit	2	2,210	**2,683**
Total depreciation and other amortisation*	2,3	487	**491**
EBITDA		2,697	**3,174**

* Excludes amortisation of acquired intangibles.

Adjusted interest expense	Interest expense	Reported interest expense, less the pension financing charge, plus the share of net finance income from joint ventures.	Provides a measure of the Group's interest expense for the funding of business operations that is comparable from year to year.	Financial review

	Note	2021 £m	**2022** **£m**
Interest expense	7	142	**201**
Pension financing charge	6	(9)	**(5)**
Share of net finance income from joint ventures		–	**(2)**
Adjusted interest expense		133	**194**

Adjusted profit before tax	Profit before tax	Profit before tax before amortisation of acquired intangible assets, acquisition-related items, reclassification of taxes in joint ventures, net interest on the net defined benefit pension obligation and disposals and other non-operating items.	Provides a measure used by management to evaluate performance and allocate resources.	Financial highlights Financial review

	Note	2021 £m	**2022** **£m**
Profit before tax		1,797	**2,113**
Adjustments:			
Amortisation of acquired intangible assets	2	298	**296**
Acquisition-related items	2	21	**62**
Reclassification of tax in joint ventures		7	**4**
Net interest on net defined benefit pension obligation and other	6	9	**5**
Disposals and other non-operating items	8	(55)	**9**
Adjusted profit before tax		2,077	**2,489**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Adjusted tax charge	Income tax expense	Tax expense excluding the deferred tax movements associated with goodwill and acquired intangible assets, tax on other acquisition-related items, reclassification of tax on joint ventures, tax on net interest payments on the net defined benefit pension obligation and on disposals and other non-operating items.	Provides a measure of the Group's tax expense relating to operating activities.	Financial review

	Note	2021 £m	**2022 £m**
Tax charge	9	(326)	**(481)**
Adjustments:			
Deferred tax movements on goodwill and acquired intangible assets*		22	**30**
Other deferred tax credits from intangible assets**		(61)	**(64)**
Tax on acquisition-related items		(11)	**(13)**
Reclassification of tax in joint ventures		(7)	**(4)**
Tax on net interest on net defined benefit pension obligation and other		(2)	**(1)**
Tax on disposals and other non-operating items		1	**3**
Adjusted tax charge		(384)	**(530)**

* The adjusted tax charge excludes the movements in deferred tax assets and liabilities related to goodwill and acquired intangible assets, but includes the benefit of tax amortisation where available on acquired goodwill and intangible assets.
** Movements on deferred tax liabilities arising on acquired intangible assets that do not qualify for tax amortisation.

Effective tax rate	Income tax rate	Income tax expense expressed as a percentage of profit before tax. For a reconciliation between the net tax expense charged on profit before tax and the theoretical amount that would arise using the weighted average of tax rates applicable to accounting profits and losses of the consolidated entities, refer to note 9.	Provides a measure of the Group's tax charge relative to its profit before tax that is comparable from year to year.	Financial review Note 9
Adjusted effective tax rate	No direct equivalent	Calculated as the adjusted tax charge as a percentage of adjusted profit before tax.	Provides a measure of the Group's tax charge relative to its profit before tax that is comparable from year to year.	Financial review

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	ANNUAL REPORT AND ACCOUNTS REFERENCE
Adjusted net profit attributable to shareholders	Net profit attributable to shareholders	Net profit attributable to shareholders before amortisation of acquired intangible assets, other deferred tax credits from intangible assets and items treated as exceptional, acquisition-related items, net interest on the net defined benefit obligation, disposals and other non-operating items.	Provides a measure of the Group's profitability after tax attributable to shareholders.	Financial highlights Financial review Note 10

	Note	2021 £m	**2022** **£m**
Net profit attributable to shareholders		1,471	**1,634**
Adjustments (post-tax):			
Amortisation of acquired intangible assets		316	**326**
Other deferred tax credits from intangible assets*		(61)	**(64)**
Acquisition-related items		10	**49**
Net interest on net defined benefit pension obligation and other		7	**4**
Disposals and other non-operating items		(54)	**12**
Adjusted net profit attributable to shareholders		1,689	**1,961**

* Movements on deferred tax liabilities arising on acquired intangible assets that do not qualify for tax amortisation.

Adjusted earnings per share	Earnings per share	Adjusted net profit attributable to shareholders divided by the weighted average number of shares.	Provides a measure of the Group's earnings per share that is comparable from year to year.	Financial highlights Chair's statement CEO report Business overview Financial review Note 10

	Note	2021	**2022**
Adjusted net profit attributable to shareholders (£m)	10	1,689	**1,961**
Weighted average number of shares (m)	10	1,928.0	**1,918.5**
Adjusted earnings per share (p)		87.6	**102.2**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Cash flow statement				
Adjusted cash flow	Cash generated from operations	Cash generated from operations plus dividends from joint ventures less net capital expenditure on property, plant and equipment (PPE) and internally developed intangible assets, repayment of lease principal and sublease payments received and excluding pension deficit payments and payments in relation to acquisition-related items. Exceptional cash costs in the Exhibitions business have also been excluded.	Provides a measure of the Group's operating cash flow that is comparable from year to year.	Financial highlights Financial review

	Note	2021 £m	**2022 £m**
Cash generated from operations	11	2,476	**3,061**
Adjustments:			
Dividends received from joint ventures	15	20	**33**
Purchases of PPE	16	(28)	**(36)**
Proceeds from disposals of PPE		5	**–**
Expenditure on internally developed intangible assets		(309)	**(400)**
Payments in relation to acquisition-related items		46	**54**
Pension recovery payment		44	**50**
Repayment of lease principal*		(77)	**(79)**
Sublease payments received		1	**1**
Exceptional costs in Exhibitions		52	**25**
Adjusted cash flow		2,230	**2,709**

* Excludes repayments and receipts in respect of disposal-related vacant property and is net of sublease receipts.

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Adjusted cash flow conversion	No direct equivalent	Adjusted cash flow divided by adjusted operating profit.	Provides a measure of turning operating profit into cash.	Financial highlights Business overview Financial review

	Note	2021 £m	**2022 £m**
Adjusted cash flow		2,230	**2,709**
Adjusted operating profit	2	2,210	**2,683**
Adjusted cash flow conversion		101%	**101%**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Free cash flow	Cash inflow from operating activities	Adjusted cash flow less net interest paid, cash tax paid, acquisition-related payments and exceptional costs paid in relation to the Exhibitions business.	Provides a measure of cash flows that could be used for organic investment in the business, acquisitions, distribution of dividends, share buybacks or the repayment of debt.	Financial review Note 17

	Note	2021 £m	**2022 £m**
Adjusted cash flow		2,230	**2,709**
Interest paid (net)		(118)	**(165)**
Cash tax paid*	9	(342)	**(495)**
Exceptional costs in Exhibitions		(52)	**(25)**
Acquisition-related items		(46)	**(54)**
Free cash flow		1,672	**1,970**

* Net of cash tax relief on acquisition-related items and including cash tax impact of disposals.

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Dividend cover	No direct equivalent	The number of times the total interim and proposed final dividends for the year is covered by the adjusted earnings per share. It is calculated as adjusted earnings per share divided by ordinary dividends per share.	Provides a measure of the Group's earnings relative to ordinary dividend payments.	Financial review Directors' report

	Note	2021	2022
Adjusted earnings per share	10	87.6p	**102.2p**
Ordinary dividends per share	13	49.8p	**54.6p**
Dividend cover		1.8x	**1.9x**

	Note	2021	2022
Basic earnings per share	10	76.3	**85.2**
Ordinary dividends per share	13	49.8p	**54.6p**
Basic dividend cover		1.5x	**1.6x**

Net capital employed	No direct equivalent	Net goodwill and acquired intangible assets, net internally developed intangible assets, net property, plant and equipment, right-of-use assets and investments less net pension obligations and working capital.	Provides a measure of the capital used in operations.	Financial review

	Note	2021 £m	2022 £m
Goodwill and acquired intangible assets*		9,419	**10,477**
Internally developed intangible assets*	14	1,251	**1,435**
Property, plant and equipment*, right-of-use assets* and investments		504	**557**
Net pension obligations	6	(269)	**(55)**
Working capital		(1,095)	**(1,325)**
Net capital employed		9,810	**11,089**

* Net of accumulated depreciation and amortisation.

Invested capital/ capital employed	No direct equivalent	Net capital employed, adjusted to add back accumulated amortisation and impairment of acquired intangible assets and goodwill, to remove non-operating investments and the gross up to goodwill in respect of deferred tax, and other items.	Used to calculate the return on invested capital (see below).	Financial review Directors' report

	Note	2021 £m	2022 £m
Net capital employed		9,810	**11,089**
Accumulated amortisation and impairment of acquired intangible assets and goodwill		7,065	**8,000**
Non-operating investments	15	(107)	**(127)**
Deferred tax on goodwill and other		(1,234)	**(1,392)**
Invested capital/capital employed		15,534	**17,570**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Return on invested capital (ROIC)	No direct equivalent	Post tax adjusted operating profit expressed as a percentage of average capital employed.	This is a key financial measure used by management that demonstrates the efficiency of the use of capital.	Financial highlights Business overview Financial review

	Note	2021	**2022**
Adjusted operating profit	2	2,210	**2,683**
Tax at adjusted effective rate		(409)	**(571)**
Adjusted effective tax rate		18.5%	**21.3%**
Adjusted operating profit after tax		1,801	**2,112**
Average invested capital*		15,108	**16,920**
ROIC		11.9%	**12.5%**

* Average of invested capital at the beginning and the end of the year, retranslated at average exchange rates for the year.

Capital expenditure	No direct equivalent	Additions to property, plant and equipment and internally developed intangible assets.	Provides a measure of the amounts invested in new products and related infrastructure across the business.	Chair's statement Financial review Directors' report Governance Note 2

	Note	2021 £m	**2022 £m**
Additions to property, plant and equipment	16	28	**36**
Additions to internally developed intangible assets	14	309	**400**
Capital expenditure		337	**436**

APM	CLOSEST EQUIVALENT IFRS MEASURE	DEFINITION AND RECONCILIATION TO CLOSEST EQUIVALENT IFRS MEASURE	PURPOSE	FINANCIAL STATEMENT REFERENCE
Statement of financial position				
Net debt excluding pensions / net debt including pensions	No direct equivalent	Net debt excluding pensions: debt less cash and cash equivalents, related derivative financial instruments and finance lease receivables.	Provides a measure of the Group's level of indebtedness.	Financial highlights Chair's statement Financial review Governance Directors' report Note 17

	Note	2021 £m	**2022 £m**
Debt	11,21	6,167	**6,730**
Cash and cash equivalents	11	(113)	**(334)**
Related derivative financial instruments	11	(35)	**213**
Finance lease receivables	11	(2)	**(5)**
Net debt excluding pensions	11	6,017	**6,604**
Pension deficit	6	315	**184**
Net debt including pensions		6,332	**6,788**

Leverage ratios	No direct equivalent	For details of the closest equivalent IFRS measures to net debt and EBITDA, see above. For the purpose of calculating leverage ratios, share of results in joint ventures, the equity share of finance income, finance costs, taxes and amortisation in joint ventures, and acquisition-related items are deducted from EBITDA.	Provides a measure of the financial leverage of the Group.	Chair's statement Financial review Governance

	Note	2021 £m	**2022 £m**	2021 $m*	**2022 $m***
EBITDA		2,697	**3,174**	3,722	**3,936**
Less joint venture adjusted operating profit		(37)	**(22)**	(51)	**(27)**
Acquisition-related items**	2	(48)	**(62)**	(66)	**(77)**
EBITDA for leverage ratio		2,612	**3,090**	3,605	**3,832**
Net debt excluding pensions (A)		6,017	**6,604**	8,123	**7,991**
Net debt including pensions (B)		6,332	**6,788**	8,548	**8,213**
EBITDA for leverage ratio (C)		2,612	**3,090**	3,605	**3,832**
Leverage ratio excluding pensions (A/C)				2.3x	2.1x
Leverage ratio including pensions (B/C)				2.4x	2.1x

* EBITDA and net debt have been translated from sterling to US dollars using, respectively, average and year end exchange rates, as shown on page 215.
** In 2021, this excludes gains of £27m from the revaluation of a put and call option arrangement relating to a non-controlling interest in a subsidiary within Legal.