IFRS financial statements

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Report on the audit of the financial statements

Opinion

In our opinion, Aviva plc's Group financial statements and Company financial statements (the 'financial statements'):

- give a true and fair view of the state of the Group's and of the Company's affairs as at 31 December 2018 and of the Group's and the Company's profit and cash flows for the year then ended;
- have been properly prepared in accordance with International Financial Reporting Standards ('IFRS') as adopted by the European Union; and
- have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

We have audited the financial statements, included within the Annual report and accounts (the 'Annual report') which comprise:

- the Consolidated and Company statements of financial position as at 31 December 2018;
- the Consolidated and Company income statements and statements of comprehensive income for the year then ended;
- the Reconciliation of Group adjusted operating profit to profit for the year then ended;
- the Consolidated and Company statements of changes in equity for the year then ended;
- the Consolidated and Company statements of cash flows for the year then ended;
- the principal accounting policies adopted in the preparation of the financial statements; and
- the notes to the financial statements, which include other explanatory information.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ('ISAs (UK)') and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' 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 remained independent of the Group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the Company.

Other than those disclosed in Note 13 to the consolidated financial statements, we have provided no non-audit services to the Group or the Company in the period from 1 January 2018 to 31 December 2018.

Our audit approach

Overview

- Overall Group materiality: £156.0 million *(2017: £147.0 million)*, based on 5% of Group adjusted operating profit before tax attributable to shareholders' profits after the deduction of integration and restructuring costs.
- Overall Company materiality: £105.0 million *(2017: £55.5 million)*, based on 5% of IFRS profit before tax.
- Based on the output of our risk assessment, along with our understanding of the Aviva Group structure, we performed full scope audits over the following components; UK Life, UK General Insurance, Canada and France Life.
- We identified a further two components, Aviva Investors and Italy Life, where specific account balances were considered to be significant in size in relation to the Group, and scoped our audit to include detailed testing of those account balances.
- We completed review procedures over other components not subject to full scope audits, including the remaining components that make up Aviva's eight major markets.
- We also performed audit procedures over the head office operations and the consolidation process, as well as over certain other group activities, including specific account balances in the Aviva Employment Services and Aviva Group Holdings components.
- Our risk assessment analysis identified the following as areas of focus for the financial statements:
  - Valuation of life insurance contract liabilities
  - Valuation of non-life insurance contract liabilities
  - Valuation of hard to value investments
  - Valuation of a specific UK Life provision

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain.

Capability of the audit in detecting irregularities, including fraud

Based on our understanding of the Group, Company and its industry, we identified that the principal risks of non-compliance with laws and regulations related to breaches of UK and European regulatory principles, such as those governed by the Prudential Regulation Authority and the Financial Conduct Authority, and we considered the extent to which non-compliance might have a material effect on the financial statements of the Group and Company. We also considered those laws and regulations that have a direct impact on the financial statements of the Group and Company such as the Companies Act 2006, the Listing Rules, the Prudential Regulation Authority's regulations, the Pensions Regulator legislation, the UK tax legislation and equivalent local laws and regulations applicable to in scope components.

We have also evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls) and determined that the principal risks were related to management bias in accounting estimates and judgmental areas of the financial statements as shown in our "Key Audit Matters". Audit procedures performed by the engagement team included:

Discussions with the Board, management, internal audit, senior management involved in the Risk and Compliance functions and the Group and Company's legal function, including consideration of known or suspected instances of non-compliance with laws and regulation and fraud;

- Evaluation and testing of the operating effectiveness of management's controls designed to prevent and detect irregularities;
- Assessment of matters reported on the Group and Company's whistleblowing helpline and fraud register and the results of management's investigation of such matters;
- Reading key correspondence with the Prudential Regulation Authority and the Financial Conduct Authority in relation to compliance with laws and regulations;
- Reviewing relevant meeting minutes including those of the Risk Committee and Audit Committee;
- Making enquiries of the Group Investigations team who are responsible for independently reviewing fraudulent activity across the group, utilising activities including, but not limited to, whistle blowing hotlines and data analytics;
- Identifying and testing journal entries, in particular any journal entries posted with unusual account combinations or posted by senior management;
- Designing audit procedures to incorporate unpredictability around the nature, timing or extent of our testing; and
- Testing transactions entered into outside of the normal course of the Group and Company's business specifically in respect of the acquisitions and disposals

There are inherent limitations in the audit procedures described above and, the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we would become aware of it. Also, 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.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the 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) identified by the auditors, including 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, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key audit matter	How our audit addressed the key audit matter
Valuation of life insurance contract liabilities (Group) Refer to the Audit Committees' Report, Accounting policy (L) Insurance and participating investment contract liabilities – Long-term business provisions and note 42 Insurance liabilities (b) Long-term business liabilities.	
For UK Life insurance contract liabilities, the Directors' valuation of the provisions for the settlement of future claims, involves complex and subjective judgements about future events, both internal and external to the business, for which small changes in assumptions can result in material impacts to the valuation of these liabilities.	The work to address the valuation of the UK Life insurance contract liabilities included the following procedures: • We understood the governance process in place to determine the insurance contract liabilities, including testing the associated financial reporting control framework. • We tested the design and operating effectiveness of controls over the accuracy and completeness of the data used. • Using our actuarial specialist team members, we applied our industry knowledge and experience and we compared the methodology, models and assumptions used against recognised actuarial practices. • We tested the key judgements and controls over the preparation of the liability, including manually calculated components. We focused on the consistency in treatment and methodology period-on-period and with reference to recognised actuarial practice. • We used the results of an independent PwC annual benchmarking survey of assumptions to further challenge the assumption setting process by comparing certain assumptions used relative to the Group's industry peers. • We assessed the disclosures in the financial statements. As part of our consideration of the entire set of assumptions, we focused particularly on the annuitant mortality, credit default and expense assumptions for the UK Life component given their significance to the Group's result and the level of judgement involved. We have also evaluated the implementation of a new actuarial model used to calculate certain life insurance contract liabilities for the UK Life component. These aspects of our work have been considered in greater detail below. *Based on the work performed and the evidence obtained, we consider the assumptions used and the output from the new actuarial model to be appropriate.*

Key audit matter	How our audit addressed the key audit matter
Annuitant mortality assumptions (Group) Refer to the Audit Committees' Report, Accounting policy (L) Insurance and participating investment contract liabilities – Long-term business provisions and note 43 Insurance liabilities methodology and assumptions (a) Long-term business.	
Annuitant mortality assumptions require a high degree of judgement due to the number of factors which may influence mortality experience. The differing factors which affect the assumptions are underlying mortality experience (in the portfolio), industry and management views on the future rate of mortality improvements and external factors arising from developments in the annuity market. There are two main components to the annuitant mortality assumptions: • Mortality base assumption: this component is typically less subjective as it is derived using external Continuous Mortality Investigation (CMI) tables or an equivalent, adjusted for internal experience. However, judgement is required in choosing the appropriate table and fitting internal experience to this table. • Rate of mortality improvements: this component is more subjective given the lack of data and the uncertainty over how life expectancy will change in the future. Management has adopted the most recent CMI 2017 model and dataset in setting this assumption with specific parameters for the long term rate of improvement and tapering at older ages and adjustments to reflect the profile of their portfolio. This reflects their views on the rate of mortality improvement. In addition, a margin for prudence is applied to the annuitant mortality assumptions.	In respect of the annuitant mortality assumptions, we performed the following: • We tested the methodology used by management to derive the assumptions with reference to relevant rules and actuarial guidance and by applying our industry knowledge and experience. This included evaluating management's choice of, and fitting to, the CMI or equivalent base tables and the adoption of the CMI 2017 model and dataset for improvements, together with associated parameters and the margin for prudence. • We assessed the results of the experience investigations carried out by UK Life management for the annuity business to determine whether they provided support for the assumptions used by management. • We compared the mortality assumptions selected by UK Life against those used by their peers. *Based on the work performed and the evidence obtained, we consider the assumptions used for annuitant mortality to be appropriate.*
Credit default assumptions for illiquid assets, specifically: Commercial mortgages and equity release mortgages (Group) Refer to the Audit Committees' Report, Accounting policy (L) Insurance and participating investment contract liabilities – Long-term business provisions and note 43 Insurance liabilities methodology and assumptions (a) Long-term business.	
UK Life has substantial holdings in illiquid asset classes with significant credit risk, notably commercial mortgages and equity release mortgages. Management use an active approach to setting the assumptions. A long term deduction for credit default is made from the current market yields and a supplementary allowance is also held to cover the risk of higher short term default rates along with a margin for prudence.	In addition to the procedures above, in respect of the credit default assumptions, we performed the following: • We tested the methodology and credit risk pricing models used by management for commercial and equity release mortgages to derive the assumptions with reference to relevant rules and actuarial guidance, including the adoption of an appropriate prudence margin and by applying our industry knowledge and experience. • We validated significant assumptions used by management by ensuring consistency with the assumptions used for the valuation of the assets, and against market observable data (to the extent available and relevant) and our experience of market practices. *Based on the work performed and the evidence obtained, we consider the allowance for credit default risk to be appropriate.*
Expense assumptions (Group) Refer to the Audit Committees' Report, Accounting policy (L) Insurance and participating investment contract liabilities – Long-term business provisions and note 43 Insurance liabilities methodology and assumptions (a) Long-term business.	
Future maintenance expenses and expense inflation assumptions are used in the measurement of life insurance contract liabilities. The assumptions reflect the expected future expenses that will be required to maintain the in-force policies at the balance sheet date, including an allowance for project costs and a margin for prudence. The assumptions used require significant judgement.	In addition to the procedures above, in respect of the expense assumptions, we performed the following: • We tested the methodology used by management to derive the assumptions with reference to relevant rules and actuarial guidance and by applying our industry knowledge and experience. This included testing the split of expenses between acquisition and maintenance by agreeing a sample to supporting evidence. • We validated significant assumptions used by management, including the margin for prudence and the rate of inflation against past experience, market observable data (to the extent available and relevant) and our experience of market practices. • We tested that the assumptions appropriately reflect the expected future expenses for maintaining policies in force at the balance sheet date, which includes consideration of the allowance for project costs. *Based on the work performed and the evidence obtained, we consider the expense assumptions to be appropriate.*

Key audit matter	How our audit addressed the key audit matter
Implementation of new actuarial modelling system (Group) Refer to the Audit Committees' Report and note 59 Risk management (e) Life and health insurance risk.	
UK Life has implemented a new actuarial modelling system for non-profit business. During the year ended 31 December 2018, annuities and certain protection products were transferred onto this new modelling system. There is a risk that the new model may not measure the insurance liabilities appropriately due to, for example, the methodology not following relevant rules and actuarial guidance, calculation errors or the incorrect application of policyholder data and actuarial assumptions.	We performed the following: • We assessed the changes to the methodology as a result of adopting the new model relative to relevant rules and actuarial guidance, including understanding the rationale for any differences identified in the liabilities between the new and existing models. • We examined the testing performed by management to check the appropriateness of the liabilities generated by the new model and the comparison to the liabilities from the existing model. • We performed independent testing of the new model by developing our own independent model and recalculating the insurance liabilities for a proportion of the transferred liabilities. *Based on the work performed and the evidence obtained, we consider the output from the new actuarial model to be appropriate in measuring the relevant insurance contract liabilities.*
Valuation of non-life insurance contract liabilities (Group) Refer to the Audit Committees' Report, Accounting policy (L) Insurance and participating investment contract liabilities – General insurance and health provisions and note 43 Insurance liabilities methodology and assumptions (b) General insurance and health.	
The estimation of non-life insurance contract liabilities involves a significant degree of judgement. The liabilities are based on the estimated ultimate cost of all claims incurred but not settled at 31 December 2018, whether reported or not, together with the related claims handling costs. A range of methods, including stochastic projections, may be used to determine these provisions. Underlying these methods are a number of explicit or implicit assumptions relating to the expected settlement amount and settlement patterns of claims. This includes assumptions relating to the settlement of personal injury lump sum compensation amounts. Given their size in relation to the consolidated Group and the complexity of the judgements involved, our work focused on the liabilities in the UK General Insurance and Canada General Insurance components.	In the UK General Insurance and Canada markets, we assessed the Directors' calculation of the non-life insurance liabilities by performing the following procedures: • We tested the underlying data to source documentation on a sample basis. • Using our actuarial specialist team members, we applied our industry knowledge and experience and we compared the methodology, models and assumptions used against recognised actuarial practices. • We understood and tested the governance process in place to determine the insurance contract liabilities, including testing the associated financial reporting control framework. • Using our actuarial specialist team members, we independently estimated the reserves on selected classes of business, particularly focusing on the largest and most uncertain reserves. For these classes we compared our estimated reserves to those booked by management, and sought to understand any significant differences. • For the remaining classes we evaluated the methodology and assumptions, or performed a diagnostic check to identify and investigate any anomalies. • We assessed the disclosures in the financial statements. *Based on the work performed and evidence obtained, we consider the methodology and assumptions used to value the non-life insurance contract liabilities to be appropriate.*
Valuation for hard to value investments (Group) Refer to Audit Committees' Report, Accounting policies (F), (T) and (U) and note 23 Fair Value methodology, note 25 Securitised mortgages and related assets and note 27 Financial Investments.	
The valuation of the investment portfolio involves judgement and continues to be an area of inherent risk. The risk is not uniform for all investment types and is greatest for the following, where the investments are hard to value because quoted prices are not readily available: • Commercial mortgage loans (UK Life). • Equity release and UK securitised mortgage loans (UK Life). • Structured bond-type investments (France Life). • Collateralised loan obligations and non-recourse loans (UK Life).	We assessed the Directors' approach to valuation for these hard to value investments by performing the following procedures: • We agreed data inputs used in the valuation models to underlying documentation on a sample basis. • We evaluated the methodology and assumptions used by management, including yield curves, discounted cash flows, property growth rates, longevity and liquidity premiums as relevant to each asset class. • We tested the operation of data integrity and change management controls for the models, which we baseline every three years. • Using our valuation experts, we performed independent valuations for a sample of collateralised loans, non-recourse loans and structured bonds. • We assessed the disclosures in the financial statements. *Based on the work performed and the evidence obtained, we consider the methodology and assumptions used by management to be appropriate.*

Key audit matter	How our audit addressed the key audit matter
Valuation of a specific UK Life provision (Group) Refer to Audit Committees' Report, Accounting policies (AA) and note 50 Pension deficits and other provisions (b) Movements on restructuring and other provisions.	
UK Life hold a provision relating to a historical issue over pension arrangement advice given by Friends Provident. The valuation of this provision involves a high degree of judgement and estimation uncertainty due to the time that has elapsed since the advice was given. This increases the potential for the valuation to change as investigations continue.	We assessed the Directors' approach to valuation for this provision by performing the following procedures: • We agreed data inputs to underlying documentation on a sample basis. • We evaluated the methodology and key assumptions used by management, including populations of policies impacted. • We tested the calculation of the provision based on the assumptions applied. • We assessed the disclosures in the financial statements. *Based on the work performed and the evidence obtained, we consider the assumptions used by management to be appropriate.*

We determined that there were no key audit matters applicable to the Company to communicate in our report.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed sufficient work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Group and the Company, the financial reporting process and controls, and the industry in which they operate.

Using the outputs of our risk assessment, along with our understanding of Aviva, we scoped our audit based on the significance of the results and financial position of individual components relative to the Group result and financial position. In doing so, we also considered qualitative factors and ensured we had obtained sufficient coverage across all financial statement line items in the consolidated financial statements. Our scoping provided us with audit coverage of over 80% for both IFRS profit before tax and Group adjusted operating profit before tax and after the deduction of integration and restructuring costs (*2017: 80%*). We also obtained audit coverage of 83% for Gross Written Premiums (*2017: 80%*) and 82% for Total Assets (*2017: 84%*).

The Group's primary reporting format aggregates individual operating segments into market reporting lines with supplementary information being given by business activity. The operating segments or 'markets' of the Group are 'United Kingdom' (Life and General Insurance), France, Poland, 'Italy, Ireland, Spain and Other', Canada, Asia, Aviva Investors and 'Other group activities'. Individual components that are used in our risk assessment are a more granular subset of the Group's operating segments. In establishing the overall approach to the Group audit, we determined the type of work that needed to be performed at each of the components by us, as the Group audit team, or auditors of the components within PwC UK or from other PwC network firms operating under our instructions.

As the Group audit team, we determined the level of involvement required at those components to be able to conclude whether sufficient and appropriate audit evidence had been obtained as a basis for our opinion on the financial statements as a whole. In our role as Group auditors, we exercised oversight over the work performed by auditors of the components including performing the following procedures:

- Maintained an active dialogue with reporting component audit teams throughout the year, including holding a workshop for those teams in London during the planning phase of the audit;
- Visited all in-scope components and undertook a detailed review of audit working papers;
- Attended meetings with local management; and
- Attended certain component Audit Committee meetings

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Group financial statements	Company financial statements
Overall materiality	£156.0 million (*2017: £147.0 million*).	£105.0 million (*2017: £55.5 million*).
How we determined it	5% of Group adjusted operating profit before tax attributable to shareholders' profits after the deduction of integration and restructuring costs (rounded up to the nearest £'million).	5% of IFRS profit before tax.
Rationale for benchmark applied	In determining our materiality, we considered financial metrics which we believed to be relevant, and concluded, consistent with last year that Group adjusted operating profit before tax and after the deduction of integration and restructuring costs was the most relevant benchmark. Group adjusted operating profit presents a longer-term assessment of the performance of the entity which is more in line with the operations and time horizons of an insurer where insurance contracts and customer relationships span over multiple years.	In determining our materiality, we considered financial metrics which we believed to be relevant, and concluded, consistent with last year that profit before tax was the most relevant benchmark as the Company is profit-orientated and users of the financial statements will be focused on this benchmark.

For each component in the scope of our Group audit, we allocated a materiality that is less than our overall Group materiality. The range of materiality allocated across components was between £20 million and £120 million. Certain components were audited to a local statutory audit materiality that was also less than our overall Group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £7 million (Group audit) *(2017: £5 million)* and £5.2 million (Company audit) *(2017: £2.8 million)* as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Going concern

In accordance with ISAs (UK) we report as follows:

Reporting obligation	Outcome
We are required to report if we have anything material to add or draw attention to in respect of the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting in preparing the financial statements and the directors' identification of any material uncertainties to the Group's and the Company's ability to continue as a going concern over a period of at least twelve months from the date of approval of the financial statements.	We have nothing material to add or to draw attention to. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's and Company's ability to continue as a going concern. For example, the terms on which the United Kingdom may withdraw from the European Union, which is currently due to occur on 29 March 2019, are not clear, and, in common with other companies, it is difficult to evaluate all of the potential implications on the Group and Company's business, customers, suppliers and the wider economy.
We are required to report if the directors' statement relating to Going Concern in accordance with Listing Rule 9.8.6R(3) is materially inconsistent with our knowledge obtained in the audit.	We have nothing to report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, 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 audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' and Corporate Governance Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006, (CA06), ISAs (UK) and the Listing Rules of the Financial Conduct Authority (FCA) require us also to report certain opinions and matters as described below (required by ISAs (UK) unless otherwise stated).

Strategic report and Directors' and corporate governance report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic report and Directors' and Corporate Governance Report for the year ended 31 December 2018 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements. (CA06)

In light of the knowledge and understanding of the Group and Company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic report and Directors' and Corporate Governance Report. (CA06)

The directors' assessment of the prospects of the Group and of the principal risks that would threaten the solvency or liquidity of the Group

We have nothing material to add or draw attention to regarding:

- The directors' confirmation on page 51 of the Annual Report that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity.
- The disclosures in the Annual Report that describe those risks and explain how they are being managed or mitigated.
- The directors' explanation on page 66 of the Annual Report as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

We have nothing to report having performed a review of the directors' statement that they have carried out a robust assessment of the principal risks facing the Group and statement in relation to the longer-term viability of the Group. Our review was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the UK Corporate Governance Code (the 'Code'); and considering whether the statements are consistent with the knowledge and understanding of the Group and Company and their environment obtained in the course of the audit. (Listing Rules)

Other Code Provisions

We have nothing to report in respect of our responsibility to report when:

- The statement given by the directors, on page 66, that they consider the Annual report taken as a whole to be fair, balanced and understandable, and provides the information necessary for the members to assess the Group's and the Company's position and performance, business model and strategy is materially inconsistent with our knowledge of the Group and the Company obtained in the course of performing our audit.
- The section of the Annual report on page 59 describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.
- The directors' statement relating to the Company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified, under the Listing Rules, for review by the auditors.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006. (CA06)

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Directors' Responsibilities Statement set out on page 67, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they 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's and the 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 Company or to cease operations, or have no realistic alternative but to do so.

Auditors' 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 auditors' 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.

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

Use of this report

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

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

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the audit committee, we were appointed by the members on 3 May 2012 to audit the financial statements for the year ended 31 December 2012 and subsequent financial periods. The period of total uninterrupted engagement is seven years, covering the years ended 31 December 2012 to 31 December 2018.

Marcus Hine (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
6 March 2019

1 The maintenance and integrity of the Aviva plc website is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly the auditors accept no responsibility for any changes that may have occurred to the full annual financial statements since they were initially presented on the website.
2 Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Accounting policies

Aviva plc (the 'Company'), a public limited company incorporated and domiciled in the United Kingdom (UK), together with its subsidiaries (collectively, the 'Group' or 'Aviva') transacts life assurance and long-term savings business, fund management and most classes of general insurance and health business through its subsidiaries, joint ventures, associates and branches in the UK, Ireland, continental Europe, Canada and Asia.

The principal accounting policies adopted in the preparation of these financial statements are set out below. These policies have been consistently applied to all years presented, unless otherwise stated.

(A) Basis of preparation

The consolidated financial statements and those of the Company have been prepared and approved by the Directors in accordance with International Financial Reporting Standards (IFRS) as endorsed by the European Union (EU), and those parts of the Companies Act 2006 applicable to those reporting under IFRS. The consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of land and buildings, investment property, available-for-sale financial assets, and financial assets and financial liabilities (including derivative instruments) at fair value through profit or loss.

In accordance with IFRS 4 *Insurance Contracts*, the Group has applied existing accounting practices for insurance and participating investment contracts, modified as appropriate to comply with the IFRS framework and applicable standards. Further details are given in accounting policy L.

Items included in the financial statements of each of the Group's entities are measured in the currency of the primary economic environment in which that entity operates (the functional currency). The consolidated financial statements are stated in pounds sterling, which is the Company's functional and presentational currency. Unless otherwise noted, the amounts shown in these financial statements are in millions of pounds sterling (£m). The separate financial statements of the Company are on pages 242 to 252.

Comparative figures have been restated for adjustments as detailed in note 1.

New standards, interpretations and amendments to published standards that have been adopted by the Group

The Group and/or the Company has adopted the following amendments to standards which became effective for the annual reporting period beginning on 1 January 2018:

(i) Amendments to IFRS 4, Insurance Contracts

In September 2016, the IASB published amendments to IFRS 4 *Insurance Contracts* that address the accounting consequences of the application of IFRS 9 to insurers prior to implementing the new accounting standard for insurance contracts, IFRS 17, which replaces IFRS 4. The amendments introduce two options for insurers: the deferral approach and the overlay approach. The deferral approach provides an entity, if eligible, with a temporary exemption from applying IFRS 9. The overlay approach allows an entity to remove from profit or loss the effects of some of the accounting mismatches that may occur before the new insurance contracts standard is applied. In November 2018 the IASB recommended an amendment to IFRS 17 to defer the effective date to 1 January 2022. At the same time, they recommended an extension to the fixed expiry date for the temporary exemption for insurers from applying IFRS 9 until 1 January 2022. These amendments are subject to IASB's due process and will be included in an exposure draft expected to be published later in 2019.

The carrying amount of the Group's liabilities connected with insurance exceeded 90% of the carrying amount of the Group's total liabilities as at 31 December 2015, when the assessment was performed in accordance with the date specified in the amendments to IFRS 4. As such, the Group is eligible to apply the deferral approach, as defined by the amendments to IFRS 4. The Group has opted to apply this deferral from 2018. At 31 December 2015 the Group's total liabilities were £369,642 million and liabilities connected with insurance in the statement of financial position at this date primarily included insurance and participating investment contracts within the scope of IFRS 4 (£218,604 million), non-participating investment contract liabilities (£103,125 million), unallocated divisible surplus (£8,811 million), borrowings (£8,770 million), and certain amounts within payables and other financial liabilities which arise in the course of writing insurance business (£10,285 million).

IFRS 9 information relating to entities within the Group which have applied the standard from 1 January 2018 can be found in the entities' publicly available individual financial statements.

(ii) IFRS 9, Financial Instruments (Company only)

In July 2014, the IASB published IFRS 9, *Financial Instruments* which replaced IAS 39 *Financial Instruments: Recognition and Measurement.* The standard incorporates new classification and measurement requirements for financial assets, the introduction of an expected credit loss impairment model which will replace the incurred loss model of IAS 39, and new hedge accounting requirements. Under IFRS 9, all financial assets will be measured at either amortised cost or fair value. The basis of classification will depend on the business model and the contractual cash flow characteristics of the financial assets. The standard retains most of IAS 39's requirements for financial liabilities except for those designated at fair value through profit or loss whereby that part of the fair value changes attributable to own credit is to be recognised in other comprehensive income instead of the income statement. The hedge accounting requirements are more closely aligned with risk management practices and follow a more principle based approach.

The Group has opted to defer the adoption of IFRS 9 from 2018. The impact of the adoption of IFRS 9 on the Group's consolidated financial statements will be largely dependent on the interaction with the new insurance contracts standard IFRS 17. As such, it is not possible to fully assess the effect of the adoption of IFRS 9. IFRS 9 has been endorsed by the EU.

The Group has however been required to apply the additional disclosure requirements of IFRS 9 which are set out in note 53 and note 59.

Although the Group has opted to defer adoption of IFRS 9 as its activities are predominantly related to insurance, the Company is not eligible to apply this deferral option and IFRS 9 was effective for the Company from 1 January 2019. The adoption of IFRS 9 has not had a significant impact on the Company.

(iii) IFRS 15, Revenue from Contracts with Customers

In May 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers*. This standard applies to annual reporting periods beginning on or after 1 January 2018 and has been endorsed by the EU. This standard replaces IAS 18 Revenue.

The scope of IFRS 15 includes all contracts where an Aviva company has agreed to provide goods or services to a customer, except for the following:

- Insurance contracts (IFRS 4)
- Financial instruments (IAS 39/IFRS 9)
- Leases (IAS 17)

The adoption of this standard has resulted in the following minor amendments to the Group accounting policies:

- (I) Other investment contract fee revenue – updated to clarify that fees related to investment management services are recognised as revenue over time, as performance obligations are satisfied. Variable consideration, such as performance fees and commission subject to clawback arrangements, are only recorded as revenue to the extent it is highly probable that it will not be subject to significant reversal.
- (J) Other fee and commission income – updated to clarify that all other fee and commission income is recognised over time as the services are provided.

The retrospective impact of the adoption of IFRS 15 on prior reporting periods is not material to the Group, and prior period comparative figures have not been restated as a result. The adoption of IFRS 15 does not have a significant impact on the Group's consolidated financial statements.

The following amendments to existing standards and IFRIC interpretations have been issued, and are effective from 1 January 2018 or earlier, and do not have an impact on the Group's consolidated financial statements as the clarifications are consistent with our existing interpretation.

(iv) Amendments to IFRS 2: Classification and Measurement of Share-based Payment Transactions

In June 2016, the IASB issued amendments to IFRS 2 *Share-based Payment*. The amendments were endorsed by the EU in February 2018 and are effective from 1 January 2018.

(v) Annual Improvements to IFRSs 2014-2016

These improvements consist of amendments to three IFRSs including IFRS 1 *First-time Adoption of International Financial Reporting Standards*, IFRS 12 *Disclosure of Interests in Other Entities* and IAS 28 *Investments in Associates*. The amendment to IFRS 12 was effective for annual reporting periods beginning on or after 1 January 2017. The amendments to IFRS 1 and IAS 28 are effective for annual reporting periods beginning on or after 1 January 2018. The amendments were endorsed by the EU in February 2018.

(vi) Amendments to IAS 40 – Transfers of Investment Property

In December 2016, the IASB published amendments to IAS 40 *Investment Property*. The amendments are effective from 1 January 2018 and have been endorsed by the EU.

(vii) IFRIC 22, Foreign Currency Transactions and Advance Consideration

In December 2016, the IASB published IFRIC 22 *Foreign Currency Transactions and Advance Consideration.* The standard is effective for annual reporting beginning on or after 1 January 2018 and has been endorsed by the EU.

Standards, interpretations and amendments to published standards that are not yet effective and have not been adopted early by the Group or the Company

The following new standards and amendments to existing standards have been issued, are not yet effective and have not been adopted early by the Group:

(i) IFRS 17, Insurance Contracts

In May 2017, the IASB published IFRS 17 *Insurance Contracts*, a comprehensive new accounting standard for insurance contracts covering recognition and measurement, presentation and disclosure. Once effective, IFRS 17 will replace IFRS 4 that was issued in 2005. IFRS 17 applies to all types of insurance contracts as well as to certain guarantees and financial instruments with discretionary participation features. In contrast to the requirements in IFRS 4, which are largely based on grandfathering of previous local accounting policies, IFRS 17 provides a comprehensive and consistent approach to insurance contracts. The core of IFRS 17 is the general model, supplemented by a specific adaption for contracts with direct participation features (the variable fee approach) and a simplified approach (the premium allocation approach) mainly for short-duration contracts.

The main features of the new accounting model for insurance contracts are, as follows: the measurement of the present value of future cash flows incorporating an explicit risk adjustment and remeasured at each reporting period (the fulfilment cash flows); a contractual service margin that is equal and opposite to any day one gain in the fulfilment cash flows of a group of contracts, representing the unearned profit of the insurance contracts to be recognised in profit or loss over the service period (coverage period); the presentation of insurance revenue and insurance service expenses in the statement of comprehensive income based on the concept of insurance services provided during the period; and extensive disclosures to provide information on the recognised amounts from insurance contracts and the nature and extent of risks arising from these contracts.

The impact of the adoption of IFRS 17 has yet to be fully assessed by the Group but it is expected there will be significant impacts relating to the measurement and presentation of the contracts in scope of the standard. It is expected that the standard will apply to annual reporting periods beginning on or after 1 January 2022 and this standard has not yet been endorsed by the EU.

(ii) IFRS 16, Leases

In January 2016, the IASB published IFRS 16 *Leases* which will replace IAS 17 *Leases*. IFRS 16 introduces a definition of a lease with a single lessee accounting model eliminating the classification of either operating or finance leases. Lessees will be required to account for all leases in a similar manner to the current finance lease accounting recognising lease assets and liabilities on the statement of financial position. Lessor accounting remains similar to current practice.

The impact of the adoption of IFRS 16 on the Group has been assessed. The Group has chosen to adopt the modified retrospective approach on transition permitted by IFRS 16. It is expected that the adoption of the standard will result in a reduction of retained earnings of between £120m and £140m at 1 January 2019. This arises from the value of right of use assets brought onto the balance sheet being lower than the value of lease liabilities due to the different rates of run-off. The gross impact on assets/liabilities is expected to be less than £500m. The impact on profit before tax and group adjusted operating profit is not expected to be material. This standard is applied to annual reporting periods beginning on or after 1 January 2019 and has been endorsed by the EU.

The following new standards and amendments to existing standards have been issued, are not yet effective and are not expected to have a significant impact on the Group's consolidated financial statements:

(iii) IFRIC 23, Uncertainty over Income Tax Treatments

In June 2017, the IASB published IFRIC 23 *Uncertainty over Income Tax Treatments*. The standard is effective for annual

reporting beginning on or after 1 January 2019 and has been endorsed by the EU.

(iv) ***Amendments to IAS 19 – Plan Amendment, Curtailment or Settlement***
In February 2018, the IASB published *Plan Amendment, Curtailment or Settlement (Amendments to IAS 19)*. The amendments are effective for annual reporting beginning on or after 1 January 2019 and have not yet been endorsed by the EU.

(v) ***Amendments to IAS 28: Long-term Interests in Associates and Joint Ventures***
In October 2017, the IASB published *Long-term Interests in Associates and Joint Ventures (Amendments to IAS 28)*. The amendments are effective for annual reporting beginning on or after 1 January 2019 and have been endorsed by the EU.

(vi) ***Annual Improvements to IFRS Standards 2015-2017 Cycle***
These improvements consist of amendments to four IFRSs including IFRS 3 *Business Combinations*, IFRS 11 *Joint Arrangements*, IAS 12 *Income taxes* and IAS 23 *Borrowing Costs*. The amendments are effective for annual reporting beginning on or after 1 January 2019 and have not yet been endorsed by the EU.

(vii) ***Amendments to References to the Conceptual Framework in IFRS Standards***
Published by the IASB in March 2018. The amendments are effective for annual reporting beginning on or after 1 January 2020 and have not yet been endorsed by the EU.

(viii) ***Amendment to IFRS 3, Business Combinations, IAS 1 and IAS 8: Definition of material***
Published by the IASB in October 2018. The amendments are effective for annual reporting beginning on or after 1 January 2020 and have not yet been endorsed by the EU.

(B) Group adjusted operating profit

The long-term nature of much of the Group's operations means that, for management's decision-making and internal performance management of our operating segments, the Group focuses on Group adjusted operating profit, a non-GAAP alternative performance measure (APM) which is not bound by IFRS. The APM incorporates the expected return on investments which supports its long-term and non-long-term businesses.

Group adjusted operating profit for long-term business is based on expected investment returns on financial investments backing shareholder and policyholder funds over the reporting period, with allowance for the corresponding expected movements in liabilities. Variances between actual and expected investment returns, and the impact of changes in economic assumptions on liabilities, are disclosed separately outside Group adjusted operating profit. For non-long-term business, the total investment income, including realised and unrealised gains, is analysed between that calculated using a longer-term return and short-term fluctuations from that level. The exclusion of short-term realised and unrealised investment gains and losses from the Group adjusted operating profit APM reflects the long-term nature of much of our business and presents separately the operating profit APM which is used in managing the performance of our operating segments from the impact of economic factors. Further details of this analysis and the assumptions used are given in notes 9 and 10.

Group adjusted operating profit is presented before and after integration and restructuring costs. These costs are only reported to the extent that they are significant, and not otherwise absorbed within operating costs.

Group adjusted operating profit also excludes impairment of goodwill, associates and joint ventures; amortisation and impairment of other intangibles; amortisation and impairment of acquired value of in-force business; and the profit or loss on disposal and remeasurement of subsidiaries, joint ventures and associates. These items principally relate to mergers and acquisition activity which we view as strategic in nature, hence they are excluded from the operating profit APM as this is principally used to manage the performance of our operating segments when reporting to the Group's chief operating decision maker. Other items are those items that, in the Directors' view, are required to be separately disclosed by virtue of their nature or incidence to enable a full understanding of the Group's financial performance. Details of these items, including an explanation of the rationale for their exclusion, are provided in the Alternative Performance Measures section within 'Other information'.

The Group adjusted operating profit APM should be viewed as complementary to IFRS GAAP measures. It is important to consider Group adjusted operating profit and profit before tax together to understand the performance of the business in the period.

(C) Critical accounting policies and the use of estimates

Critical accounting policies

The preparation of financial statements requires the Group to select accounting policies and make estimates and assumptions that affect items reported in the consolidated income statement, consolidated statement of financial position, other primary statements and notes to the consolidated financial statements.

The Audit Committee reviews the reasonableness of judgements and assumptions applied and the appropriateness of significant accounting policies. The significant issues considered by the Committee in the year are included within the Audit Committee Report on page 58.

The following accounting policies are those that have the most significant impact on the amounts recognised in the financial statements, with those judgements involving estimation summarised thereafter.

Item	Critical accounting judgement	Accounting policy
Consolidation	Assessment of whether the Group controls the underlying entities including consideration of its decision making authority and rights to the variable returns from the entity	D
Insurance and participating investment contract liabilities	Assessment of the significance of insurance risk transferred to the Group in determining whether a contract should be accounted for as insurance or investment contract	G
Financial investments	Classification of investments including the application of the fair value option	T

All estimates are based on management's knowledge of current facts and circumstances, assumptions based on that knowledge and their predictions of future events and actions. Actual results may differ from those estimates, possibly significantly.

The table below sets out those items considered particularly susceptible to changes in estimates and assumptions, and the relevant accounting policy and note disclosures.

Item	Critical accounting estimates	Accounting policy	Note
Measurement of insurance and participating investment contract liabilities	Principal assumptions used in the calculation of life insurance and participating investment contract liabilities include those in respect of annuitant mortality, expenses, valuation interest rates and credit default allowances on corporate bonds and other non-sovereign credit assets.	L	43(a)
	Principal assumptions used in the calculation of general insurance and health liabilities include the discount rates used in determining our latent claim and structured settlements liabilities, and the assumption that past claims experience can be used as a basis to project future claims (estimated using a range of standard actuarial claims projection techniques).		43(b)
Acquired value of in-force business (AVIF) and intangible assets	AVIF is recognised, amortised and tested for impairment by reference to the present value of estimated future profits.	O	18(a)
	Other intangible assets are recognised and tested for impairment using an income approach method. Significant estimates include forecast cash flows, discount rates and determination of useful lives.		18(b)
Fair value of financial instruments and investment property	Where quoted market prices are not available, valuation techniques are used to value financial instruments and investment property. These include broker quotes and models using both observable and unobservable market inputs. The valuation techniques involve judgement with regard to the valuation models used and the inputs to these models can lead to a range of plausible valuation for financial investments.	F,T,U	23(g)
Deferred acquisition costs	Management use estimation techniques to determine the amortisation profile and impairment test by reference to the present value of estimated future profits. These tests are sensitive to expense and lapse assumptions.	X	29(b)
Valuation of a specific UK Life provision	UK Life hold a product governance provision relating to a historical issue over pension arrangement advised sales by Friends Provident. The amount of provision is determined based on the Group's estimation of the expenditure required to settle the obligation at the statement of financial position date. The valuation of the provision involves a high degree of judgement and estimation uncertainty due to the time that has elapsed since the advice was given.	AA	50

During the year management reassessed the critical estimates previously provided and, based on their assessment of qualitative and quantitative risk factors, resolved that an additional critical estimate should be added to cover the valuation of a specific UK Life provision.

(D) Consolidation principles

Subsidiaries

Subsidiaries are those entities over which the Group has control. The Group controls an investee if and only if the Group has all of the following:

- power over the investee,
- exposure, or rights, to variable returns from its involvement with the investee, and
- the ability to use its power over the investee to affect its returns.

The Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including: the purpose and design of an investee, relevant activities, substantive and protective rights, and voting rights and potential voting rights.

The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Subsidiaries are consolidated from the date the Group obtains control and are excluded from consolidation from the date the Group loses control. All intercompany transactions, balances and unrealised surpluses and deficits on transactions between Group companies have been eliminated. Accounting policies of subsidiaries are aligned on acquisition to ensure consistency with Group policies.

The Group is required to use the acquisition method of accounting for business combinations. Under this method, the Group recognises identifiable assets, liabilities and contingent liabilities at fair value, and any non-controlling interest in the acquiree. For each business combination, the Group has the option to measure the non-controlling interest in the acquiree either at fair value or at the proportionate share of the acquiree's identifiable net assets. The excess of the consideration transferred over the fair value of the net assets of the subsidiary acquired is recorded as goodwill (see accounting policy O below). Acquisition-related costs are expensed as incurred.

Transactions with non-controlling interests that lead to changes in the ownership interests in a subsidiary but do not result in a loss of control are treated as equity transactions.

Merger accounting and the merger reserve

Prior to 1 January 2004, the date of first time adoption of IFRS, certain significant business combinations were accounted for using the 'pooling of interests method' (or merger accounting), which treats the merged groups as if they had been combined throughout the current and comparative accounting periods. Merger accounting principles for these combinations gave rise to a merger reserve in the consolidated statement of financial position, being the difference between the nominal value of new shares issued by the Parent Company for the acquisition of the shares of the subsidiary and the subsidiary's own share capital and share premium account. These transactions have not been restated, as permitted by the IFRS 1 transitional arrangements.

The merger reserve is also used where more than 90% of the shares in a subsidiary are acquired and the consideration includes the issue of new shares by the Company, thereby attracting merger relief under the Companies Act 1985 and, from 1 October 2009, the Companies Act 2006.

Investment vehicles

In several countries, the Group has invested in a number of specialised investment vehicles such as Open-ended Investment Companies (OEICs) and unit trusts. These invest mainly in equities, bonds, cash and cash equivalents, and properties, and distribute most of their income. The Group's percentage ownership in these vehicles can fluctuate from day to day according to the Group's and third-party participation in them. When assessing control over investment vehicles, along with the factors determining control

outlined above, the Group considers the scope of its decision-making authority including its ability to direct the relevant activities of the fund and exposure to variability of returns from the perspective of an investor in the fund and of the asset manager. In addition, the Group assesses rights held by other parties including substantive removal rights that may affect the Group's ability to direct the relevant activities and indicate that the Group does not have power. Where the Group is deemed to control such vehicles, they are consolidated, with the interests of parties other than Aviva being classified as liabilities. These appear as 'Net asset value attributable to unitholders' in the consolidated statement of financial position.

Where the Group does not control such vehicles, and these investments are held by its insurance or investment funds, they are carried at fair value through profit or loss within financial investments in the consolidated statement of financial position, in accordance with IAS 39 *Financial Instruments: Recognition and Measurement*.

As part of their investment strategy, long-term business policyholder funds have invested in a number of property limited partnerships (PLPs), either directly or via property unit trusts (PUTs), through a mix of capital and loans. The PLPs are managed by general partners (GPs), in which the long-term business shareholder companies hold equity stakes and which themselves hold nominal stakes in the PLPs. The PUTs are managed by a Group subsidiary.

Accounting for the PUTs and PLPs as subsidiaries, joint ventures, associates or other financial investments depends on whether the Group is deemed to have control or joint control over the PUTs and PLPs' shareholdings in the GPs and the terms of each partnership agreement are considered along with other factors that determine control, as outlined above. Where the Group exerts control over a PUT or a PLP, it has been treated as a subsidiary and its results, assets and liabilities have been consolidated. Where the partnership is managed by an agreement such that there is joint control between the parties, notwithstanding that the Group's partnership share in the PLP (including its indirect stake via the relevant PUT and GP) may be lower or higher than 50%, such PUTs and PLPs have been classified as joint ventures (see below). Where the Group has significant influence over the PUT or PLP, as defined in the following section, the PUT or PLP is classified as an associate. Where the Group holds non-controlling interests in PLPs, with no significant influence or control over their associated GPs, the relevant investments are carried at fair value through profit or loss within financial investments.

Associates and joint ventures

Associates are entities over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control. Generally, it is presumed that the Group has significant influence if it has between 20% and 50% of voting rights. Joint ventures are joint arrangements whereby the Group and other parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control. In a number of these, the Group's share of the underlying assets and liabilities may be greater or less than 50% but the terms of the relevant agreements make it clear that control is not exercised. Such jointly controlled entities are referred to as joint ventures in these financial statements.

Gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Losses are also eliminated, unless the transaction provides evidence of an impairment of the asset transferred between entities.

Other than investments in investment vehicles which are carried at fair value through profit or loss, investments in associates and joint ventures are accounted for using the equity method of accounting. Under this method, the cost of the investment in a given associate or joint venture, together with the Group's share of that entity's post-acquisition changes to shareholders' funds, is included as an asset in the consolidated statement of financial position. As explained in accounting policy O, the cost includes goodwill recognised on acquisition. The Group's share of their post-acquisition profit or losses is recognised in the income statement and its share of post-acquisition movements in reserves is recognised in reserves. Equity accounting is discontinued when the Group no longer has significant influence or joint control over the investment.

If the Group's share of losses in an associate or joint venture equals or exceeds its interest in the undertaking, the Group does not recognise further losses unless it has incurred obligations or made payments on behalf of the entity.

The Company's investments

In the Company's statement of financial position, subsidiaries, associates and joint ventures are stated at cost less impairment. Investments are reviewed annually to test whether any indicators of impairment exist. Where there is objective evidence of such an asset being impaired the investment is impaired to its recoverable value and any unrealised loss is recorded in the income statement.

(E) Foreign currency translation

Income statements and cash flows of foreign entities are translated into the Group's presentation currency at average exchange rates for the year while their statements of financial position are translated at the year-end exchange rates. Exchange differences arising from the translation of the net investment in foreign subsidiaries, associates and joint ventures, and of borrowings and other currency instruments designated as hedges of such investments, are recognised in other comprehensive income and taken to the currency translation reserve within equity. On disposal of a foreign entity, such exchange differences are transferred out of this reserve and are recognised in the income statement as part of the gain or loss on sale. The cumulative translation differences were deemed to be zero at the transition date to IFRS.

Foreign currency transactions are accounted for at the exchange rates prevailing at the date of the transactions. Gains and losses resulting from the settlement of such transactions, and from the translation of monetary assets and liabilities denominated in foreign currencies, are recognised in the income statement.

Translation differences on debt securities and other monetary financial assets measured at fair value and designated as held at fair value through profit or loss (FVTPL) (see accounting policy T) are included in foreign exchange gains and losses in the income statement. For monetary financial assets designated as available for sale (AFS), translation differences are calculated as if they were carried at amortised cost and so are recognised in the income statement, while foreign exchange differences arising from fair value gains and losses are recognised in other comprehensive income and included in the investment valuation reserve within equity. Translation differences on non-monetary items, such as equities which are designated as FVTPL, are reported as part of the fair value gain or loss, whereas such differences on AFS equities are included in the investment valuation reserve.

(F) Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique. This presumes that the transaction takes place in the principal (or most advantageous) market under current market conditions. Fair value is a market-based measure and in the absence of observable market prices in an active market, it is measured using the assumptions that market participants would use when pricing the asset or liability.

The fair value of a non-financial asset is determined based on its highest and best use from a market participant's perspective. When using this approach, the Group takes into account the asset's use that is physically possible, legally permissible and financially feasible.

The best evidence of the fair value of a financial instrument at initial recognition is normally the transaction price i.e. the fair value of the consideration given or received. In certain circumstances, the fair value at initial recognition may differ from the transaction price. If the fair value is evidenced by comparison with other observable current market transactions in the same instrument (i.e. without modification or repackaging), or is based on a valuation technique whose variables include only data from observable markets, then the difference between the fair value at initial recognition and the transaction price is recognised as a gain or loss in the income statement. When unobservable market data has a significant impact on the valuation of financial instruments, the difference between the fair value at initial recognition and the transaction price is not recognised immediately in the income statement, but deferred and recognised in the income statement on an appropriate basis over the life of the instrument but no later than when the valuation is supported wholly by observable market data or the transaction is closed out or otherwise matured.

If an asset or a liability measured at fair value has a bid price and an ask price, the price within the bid-ask spread that is most representative of fair value in the circumstances is used to measure fair value.

(G) Product classification

Insurance contracts are defined as those containing significant insurance risk if, and only if, an insured event could cause an insurer to make significant additional payments in any scenario, excluding scenarios that lack commercial substance, at the inception of the contract. Such contracts remain insurance contracts until all rights and obligations are extinguished or expire. Contracts can be reclassified as insurance contracts after inception if insurance risk becomes significant. Any contracts not considered to be insurance contracts under IFRS are classified as investment contracts. Some insurance and investment contracts contain a discretionary participation feature, which is a contractual right to receive additional benefits as a supplement to guaranteed benefits. These are referred to as participating contracts.

As noted in accounting policy A, insurance contracts and participating investment contracts in general continue to be measured and accounted for under existing accounting practices at the later of the date of transition to IFRS ('grandfathered') or the date of the acquisition of the entity, in accordance with IFRS 4. IFRS accounting for insurance contracts in UK companies was grandfathered at the date of transition to IFRS and determined in accordance with the Statement of Recommended Practice issued by the Association of British Insurers (subsequently withdrawn by the ABI in 2015).

In certain businesses, the accounting policies or accounting estimates have been changed, as permitted by IFRS 4 and IAS 8 respectively, to remeasure designated insurance liabilities to reflect current market interest rates and changes to regulatory capital requirements. When accounting policies or accounting estimates have been changed, and adjustments to the measurement basis have occurred, the financial statements of that year will have disclosed the impacts accordingly. One such example is our adoption of Financial Reporting Standard 27 *Life Assurance* (FRS 27) which was issued by the UK's Accounting Standards Board (ASB) in December 2004 (subsequently withdrawn by the ASB in 2015).

(H) Premiums earned

Premiums on long-term insurance contracts and participating investment contracts are recognised as income when receivable, except for investment-linked premiums which are accounted for when the corresponding liabilities are recognised. For single premium business, this is the date from which the policy is effective. For regular premium contracts, receivables are recognised at the date when payments are due. Premiums are shown before deduction of commission and before any sales-based taxes or duties. Where policies lapse due to non-receipt of premiums, then all the related premium income accrued but not received from the date they are deemed to have lapsed is offset against premiums.

General insurance and health premiums written reflect business incepted during the year, and exclude any sales-based taxes or duties. Unearned premiums are those proportions of the premiums written in a year that relate to periods of risk after the statement of financial position date. Unearned premiums are calculated on either a daily or monthly pro rata basis. Premiums collected by intermediaries, but not yet received, are assessed based on estimates from underwriting or past experience, and are included in premiums written.

Deposits collected under investment contracts without a discretionary participation feature (non-participating contracts) are not accounted for through the income statement, except for the fee income (covered in accounting policy I) and the investment income attributable to those contracts, but are accounted for directly through the statement of financial position as an adjustment to the investment contract liability.

(I) Other investment contract fee revenue

Investment contract policyholders are charged fees for policy administration, investment management, surrenders or other contract services. The fees may be for fixed amounts or vary with the amounts being managed, and will generally be charged as an adjustment to the policyholder's balance. Fees related to investment management services are recognised as revenue over time, as performance obligations are satisfied. In most cases this revenue is recognised in the same period in which the fees are charged to the policyholder. Fees that are related to services to be provided in future periods are deferred and recognised when the performance obligation is fulfilled. Variable consideration, such as performance fees and commission subject to clawback arrangements, is not recognised as revenue until it is reasonably certain that no significant reversal of amounts recognised would occur.

Initiation and other 'front-end' fees (fees that are assessed against the policyholder balance as consideration for origination of the contract) are charged on some non-participating investment and investment fund management contracts. Where the investment contract is recorded at amortised cost, these fees are deferred and recognised over the expected term of the policy by an adjustment to the effective yield. Where the investment contract is measured at fair value, the front-end fees that relate to the provision of investment management services are deferred and recognised as the services are provided. Origination fees are recognised immediately where the sale of fund interests represent a separate performance obligation.

(J) Other fee and commission income

Other fee and commission income consists primarily of fund management fees, distribution fees from mutual funds, commissions on reinsurance ceded, commission revenue from the sale of mutual fund shares and transfer agent fees for shareholder record keeping. Reinsurance commissions receivable are deferred in the same way as acquisition costs, as described in accounting policy X. All other fee and commission income is recognised over time as the services are provided.

(K) Net investment income

Investment income consists of dividends, interest and rents receivable for the year, movements in amortised cost on debt securities, realised gains and losses, and unrealised gains and losses on FVTPL investments (as defined in accounting policy T). Dividends on equity securities are recorded as revenue on the ex-dividend date. Interest income is recognised as it accrues, taking into account the effective yield on the investment. It includes the interest rate differential on forward foreign exchange contracts. Rental income is recognised on an accruals basis, and is recognised on a straight line basis unless there is compelling evidence that benefits do not accrue evenly over the period of the lease.

A gain or loss on a financial investment is only realised on disposal or transfer, and is the difference between the proceeds received, net of transaction costs, and its original cost or amortised cost, as appropriate.

Unrealised gains and losses, arising on investments which have not been derecognised as a result of disposal or transfer, represent the difference between the carrying value at the year end and the carrying value at the previous year end or purchase value during the year, less the reversal of previously recognised unrealised gains and losses in respect of disposals made during the year. Realised gains or losses on investment property represent the difference between the net disposal proceeds and the carrying amount of the property.

(L) Insurance and participating investment contract liabilities

Claims

Long-term business claims reflect the cost of all claims arising during the year, including claims handling costs, as well as policyholder bonuses accrued in anticipation of bonus declarations.

General insurance and health claims incurred include all losses occurring during the year, whether reported or not, related handling costs, a reduction for the value of salvage and other recoveries, and any adjustments to claims outstanding from previous years.

Claims handling costs include internal and external costs incurred in connection with the negotiation and settlement of claims. Internal costs include all direct expenses of the claims department and any part of the general administrative costs directly attributable to the claims function.

Long-term business provisions

Under current IFRS requirements, insurance and participating investment contract liabilities are measured using accounting policies consistent with those adopted previously under existing accounting practices, with the exception of liabilities remeasured to reflect current market interest rates to be consistent with the value of the backing assets, and those relating to UK with-profits and non-profit contracts.

The long-term business provisions are calculated separately for each life operation, based either on local regulatory requirements or existing local GAAP (at the later of the date of transition to IFRS or the date of the acquisition of the entity); and actuarial principles consistent with those applied in each local market. Each calculation represents a determination within a range of possible outcomes, where the assumptions used in the calculations depend on the circumstances prevailing in each life operation. The principal assumptions are disclosed in note 43(a). For the UK with-profits funds, FRS 27 required liabilities to be calculated on the realistic basis adjusted to remove the shareholders' share of future bonuses. FRS 27 was grandfathered from UK regulatory requirements prior to the adoption of Solvency II. For UK non-profit insurance contracts, the liabilities are calculated using the gross premium valuation method. This method uses the amount of contractual premiums payable and includes explicit assumptions for interest and discount rates, mortality and morbidity, persistency and future expenses. These assumptions are set on a prudent basis and can vary by contract type and reflect current and expected future experience. These estimates depend upon the outcome of future events and may need to be revised as circumstances change. The liabilities are based on the UK regulatory requirements prior to the adoption of Solvency II, adjusted to remove certain regulatory reserves and margins in assumptions, notably for annuity business.

Unallocated divisible surplus

In certain participating long-term insurance and investment business, the nature of the policy benefits is such that the division between shareholder reserves and policyholder liabilities is uncertain. Amounts whose allocation to either policyholders or shareholders has not been determined by the end of the financial year are held within liabilities as an unallocated divisible surplus.

If the aggregate carrying value of liabilities for a particular participating business fund is in excess of the aggregate carrying value of its assets, then the difference is held as a negative unallocated divisible surplus balance, subject to recoverability from margins in that fund's participating business. Any excess of this difference over the recoverable amount is charged to net income in the reporting period.

Embedded derivatives

Embedded derivatives that meet the definition of an insurance contract or correspond to options to surrender insurance contracts for a set amount (or based on a fixed amount and an interest rate) are not separately measured. All other embedded derivatives are separated and measured at fair value if they are not considered closely related to the host insurance contract or do not meet the definition of an insurance contract. Fair value reflects own credit risk to the extent the embedded derivative is not fully collateralised.

Liability adequacy

At each reporting date, an assessment is made of whether the recognised long-term business provisions are adequate, using current estimates of future cash flows. If that assessment shows that the carrying amount of the liabilities (less related assets) is insufficient in light of the estimated future cash flows, the deficiency is recognised in the income statement by setting up an additional provision in the statement of financial position.

General insurance and health provisions

Outstanding claims provisions

General insurance and health outstanding claims provisions are based on the estimated ultimate cost of all claims incurred but not settled at the statement of financial position date, whether reported or not, together with related claims handling costs. Significant delays are experienced in the notification and settlement of certain types of general insurance claims, particularly in respect of liability business, including environmental and pollution exposures, the ultimate cost of which cannot be known with certainty at the statement of financial position date. As such, booked claim provisions for general insurance and health insurance are based on the best estimate of the cost of future claim payments plus an

explicit allowance for risk and uncertainty. Any estimate represents a determination within a range of possible outcomes. Further details of estimation techniques are given in note 43(b).

Provisions for latent claims and claims that are settled on an annuity type basis such as structured settlements are discounted, in the relevant currency at the reporting date, having regard to the expected settlement dates of the claims and the nature of the liabilities. The discount rate is set at the start of the accounting period with any change in rates between the start and end of the accounting period being reflected below operating profit as an economic assumption change. The range of discount rates used is described in note 43(b). Outstanding claims provisions are valued net of an allowance for expected future recoveries. Recoveries include non-insurance assets that have been acquired by exercising rights to salvage and subrogation under the terms of insurance contracts. Where material, anticipated recoveries are disclosed under receivables and not deducted from outstanding claims provisions.

Provision for unearned premiums

The proportion of written premiums, gross of commission payable to intermediaries, attributable to subsequent periods is deferred as a provision for unearned premiums. The change in this provision is taken to the income statement as recognition of revenue over the period of risk.

Liability adequacy

At each reporting date, the Group reviews its unexpired risks and carries out a liability adequacy test for any overall excess of expected claims and deferred acquisition costs over unearned premiums, using the current estimates of future cash flows under its contracts after taking account of the investment return expected to arise on assets relating to the relevant general business provisions. If these estimates show that the carrying amount of its insurance liabilities (less related deferred acquisition costs) is insufficient in light of the estimated future cash flows, the deficiency is recognised in the income statement by setting up a provision in the statement of financial position.

Other assessments and levies

The Group is subject to various periodic insurance-related assessments or guarantee fund levies. Related provisions are established where there is a present obligation (legal or constructive) as a result of a past event. Such amounts are not included in insurance liabilities but are included under 'Pension deficits and other provisions' in the statement of financial position.

(M) Non-participating investment contract liabilities

Claims

For non-participating investment contracts with an account balance, claims reflect the excess of amounts paid over the account balance released.

Contract liabilities

Deposits collected under non-participating investment contracts are not accounted for through the income statement, except for the investment income attributable to those contracts, but are accounted for directly through the statement of financial position as an adjustment to the investment contract liability.

The majority of the Group's contracts classified as non-participating investment contracts are unit-linked contracts and are measured at fair value. Certain liabilities for non-linked non-participating contracts are measured at amortised cost.

The liability's fair value is determined using a valuation technique to provide a reliable estimate of the amount for which the liability could be transferred in an orderly transaction between market participants at the measurement date, subject to a minimum equal to the surrender value. For unit-linked contracts, the fair value liability is equal to the current unit fund value, including any unfunded units. In addition, if required, non-unit reserves are held based on a discounted cash flow analysis. For non-linked contracts, the fair value liability is based on a discounted cash flow analysis, with allowance for risk calibrated to match the market price for risk.

Amortised cost is calculated as the fair value of consideration received at the date of initial recognition, less the net effect of payments such as transaction costs and front-end fees, plus or minus the cumulative amortisation (using the effective interest rate method) of any difference between that initial amount and the maturity value, and less any write-down for surrender payments. The effective interest rate is the one that equates the discounted cash payments to the initial amount. At each reporting date, the amortised cost liability is determined as the value of future best estimate cash flows discounted at the effective interest rate.

(N) Reinsurance

The Group assumes and cedes reinsurance in the normal course of business, with retention limits varying by line of business. Premiums on reinsurance assumed are recognised as revenue in the same manner as they would be if the reinsurance were considered direct business, taking into account the product classification of the reinsured business. The cost of reinsurance related to long-duration contracts is accounted for over the life of the underlying reinsured policies, using assumptions consistent with those used to account for these policies.

Where general insurance liabilities are discounted, any corresponding reinsurance assets are also discounted using consistent assumptions.

Gains or losses on buying retroactive reinsurance are recognised in the income statement immediately at the date of purchase and are not amortised. Premiums ceded and claims reimbursed are presented on a gross basis in the consolidated income statement and statement of financial position as appropriate.

Reinsurance assets primarily include balances due from both insurance and reinsurance companies for ceded insurance and investment contract liabilities. This includes balances in respect of investment contracts which are legally reinsurance contracts but do not meet the definition of a reinsurance contract under IFRS. Amounts recoverable from reinsurers are estimated in a manner consistent with the underlying contract liabilities, outstanding claims provisions or settled claims associated with the reinsured policies and in accordance with the relevant reinsurance contract.

Reinsurance of non-participating investment contracts and reinsurance contracts that principally transfer financial risk are accounted for directly through the statement of financial position. A deposit asset or liability is recognised, based on the consideration paid or received less any explicitly identified premiums or fees to be retained by the reinsured. These deposit assets or liabilities are shown within reinsurance assets in the consolidated statement of financial position.

If a reinsurance asset is impaired, the Group reduces the carrying amount accordingly and recognises that impairment loss in the income statement. A reinsurance asset is impaired if there is objective evidence, as a result of an event that occurred after initial recognition of the reinsurance asset, that the Group may not receive all amounts due to it under the terms of the contract, and the event has a reliably measurable impact on the amounts that the Group will receive from the reinsurer.

(O) Goodwill, AVIF and intangible assets

Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of the net assets of the acquired

subsidiary, associate or joint venture at the date of acquisition. Goodwill arising on the Group's investments in subsidiaries is shown as a separate asset, while that on associates and joint ventures is included within the carrying value of those investments.

Goodwill on acquisitions prior to 1 January 2004 (the date of transition to IFRS) is carried at its book value (original cost less cumulative amortisation) on that date, less any impairment subsequently incurred. Goodwill arising before 1 January 1998 was eliminated against reserves and has not been reinstated.

Where negative goodwill arises on an acquisition, this is recognised immediately in the consolidated income statement.

Acquired value of in-force business (AVIF)

The present value of future profits on a portfolio of long-term insurance and investment contracts, acquired either directly or through the purchase of a subsidiary, is recognised as an asset.

If the AVIF results from the acquisition of an investment in a joint venture or an associate, it is held within the carrying amount of that investment. In all cases, the AVIF is amortised over the useful lifetime of the related contracts in the portfolio on a systematic basis. The rate of amortisation is chosen by considering the profile of the additional value of in-force business acquired and the expected depletion in its value.

Non-participating investment contract AVIF is reviewed for evidence of impairment, consistent with reviews conducted for other finite life intangible assets. Insurance and participating investment contract AVIF is reviewed for impairment at each reporting date as part of the liability adequacy requirements of IFRS 4 (see accounting policy L). AVIF is reviewed for evidence of impairment and impairment tested at product portfolio level by reference to a projection of future profits arising from the portfolio.

Intangible assets

Intangible assets consist primarily of contractual relationships such as access to distribution networks, customer lists and software. The economic lives of these are determined by considering relevant factors such as usage of the asset, typical product life cycles, potential obsolescence, maintenance costs, the stability of the industry, competitive position and the period of control over the assets. These intangibles are amortised over their useful lives, which range from three to 30 years, using the straight-line method.

The amortisation charge for the year is included in the income statement under 'Other expenses'. For intangibles with finite lives, impairment charges will be recognised in the income statement where evidence of such impairment is observed. Intangibles with indefinite lives are subject to regular impairment testing, as described below.

Impairment testing

For impairment testing, goodwill and intangible assets with indefinite useful lives have been allocated to cash-generating units. The carrying amount of goodwill and intangible assets with indefinite useful lives is reviewed at least annually or when circumstances or events indicate there may be uncertainty over this value. Goodwill and indefinite life intangibles are written down for impairment where the recoverable amount is insufficient to support its carrying value. Further details on goodwill allocation and impairment testing are given in note 17. Any impairments are charged as expenses in the income statement.

(P) Property and equipment

Owner-occupied properties are carried at their revalued amounts, and movements are recognised in other comprehensive income and taken to a separate reserve within equity. When such properties are sold, the accumulated revaluation surpluses are transferred from this reserve to retained earnings. These properties are depreciated down to their estimated residual values over their useful lives. All other items classed as property and equipment within the statement of financial position are carried at historical cost less accumulated depreciation.

Investment properties under construction are included within property and equipment until completion, and are stated at cost less any provision for impairment in their values until construction is completed or fair value becomes reliably measurable.

Depreciation is calculated on the straight-line method to write down the cost of other assets to their residual values over their estimated useful lives as follows:

• Properties under construction	No depreciation
• Owner-occupied properties, and related mechanical and electrical equipment	25 years
• Motor vehicles	Three years, or lease term (up to useful life) if longer
• Computer equipment	Three to five years
• Other assets	Three to five years

The assets' residual values, useful lives and method of depreciation are reviewed regularly, and at least at each financial year end, and adjusted if appropriate. Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down immediately to its recoverable amount. Gains and losses on disposal of property and equipment are determined by reference to their carrying amount.

Borrowing costs directly attributable to the acquisition and construction of property and equipment are capitalised. All repair and maintenance costs are charged to the income statement during the financial period in which they are incurred. The cost of major renovations is included in the carrying amount of the asset when it is probable that future economic benefits in excess of the most recently assessed standard of performance of the existing asset will flow to the Group and the renovation replaces an identifiable part of the asset. Major renovations are depreciated over the remaining useful life of the related asset.

(Q) Investment property

Investment property is held for long-term rental yields and is not occupied by the Group. Completed investment property is stated at its fair value, as assessed by qualified external valuers or by qualified staff of the Group. Changes in fair values are recorded in the income statement in net investment income.

As described in accounting policy P above, investment properties under construction are included within property and equipment, and are stated at cost less any impairment in their values until construction is completed or fair value becomes reliably measurable.

(R) Impairment of non-financial assets

Property and equipment and other non-financial assets are reviewed for impairment losses whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised in the income statement for the amount by which the carrying amount of the asset exceeds its recoverable amount, which is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest level for which there are separately identifiable cash flows. Non-financial assets, except goodwill which have suffered an impairment, are reviewed for possible reversal of the impairment at each reporting date.

(S) Derecognition and offset of financial assets and financial liabilities

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is derecognised where:

- The rights to receive cash flows from the asset have expired;
- The Group retains the right to receive cash flows from the asset, but has assumed an obligation to pay them in full without material delay to a third party under a 'pass-through' arrangement; or
- The Group has transferred its rights to receive cash flows from the asset and has either transferred substantially all the risks and rewards of the asset, or has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires.

Financial assets and liabilities are offset and the net amount reported in the statement of financial position when there is a currently enforceable legal right to set off the recognised amounts and there is the ability and intention to settle on a net basis, or realise the asset and settle the liability simultaneously.

(T) Financial investments

The Group classifies its investments as either FVTPL or AFS. The classification depends on the purpose for which the investments were acquired, and is determined by local management at initial recognition. The FVTPL category has two subcategories – those that meet the definition as being held for trading and those the Group chooses to designate as FVTPL (referred to in this accounting policy as 'other than trading') upon initial recognition.

In general, the other than trading category is used as, in most cases, the Group's investment or risk management strategy is to manage its financial investments on a fair value basis. Debt securities and equity securities, which the Group acquires with the intention to resell in the short term, are classified as trading, as are non-hedge derivatives (see accounting policy U below). The AFS category is used where the relevant long-term business liability (including shareholders' funds) is passively managed, as well as in certain fund management and non-insurance operations.

Purchases and sales of investments are recognised on the trade date, which is the date that the Group commits to purchase or sell the assets, at their fair values. Debt securities are initially recorded at their fair value, which is taken to be amortised cost, with amortisation credited or charged to the income statement. Investments classified as trading, other than trading and AFS, are subsequently carried at fair value. Changes in the fair value of trading and other than trading investments are included in the income statement in the period in which they arise.

Changes in the fair value of securities classified as AFS are recognised in other comprehensive income and recorded in a separate investment valuation reserve within equity. When securities classified as AFS are sold or impaired, the accumulated fair value adjustments are transferred out of the investment valuation reserve to the income statement with a corresponding movement through other comprehensive income.

Impairment

The Group reviews the carrying value of its AFS investments on a regular basis. If the carrying value of an AFS investment is greater than the recoverable amount, the carrying value is reduced through a charge to the income statement in the period of impairment. The following policies are used to determine the level of any impairment, some of which involve considerable judgement.

AFS debt securities

An AFS debt security is impaired if there is objective evidence that a loss event has occurred which has impaired the expected cash flows, i.e. where all amounts due according to the contractual terms of the security are not considered collectible. An impairment charge, measured as the difference between the security's fair value and amortised cost, is recognised when the issuer is known to be either in default or in financial difficulty. Determining when an issuer is in financial difficulty requires the use of judgement, and we consider a number of factors including industry risk factors, financial condition, liquidity position and near-term prospects of the issuer, credit rating declines and a breach of contract. A decline in fair value below amortised cost due to changes in risk-free interest rates does not necessarily represent objective evidence of a loss event.

For securities identified as being impaired, the cumulative unrealised loss previously recognised within the investment valuation reserve is transferred to realised losses for the year, with a corresponding movement through other comprehensive income. Any subsequent increase in fair value of these impaired securities is recognised in other comprehensive income and recorded in the investment valuation reserve unless this increase represents a decrease in the impairment loss that can be objectively related to an event occurring after the impairment loss was recognised in the income statement. In such an event, the reversal of the impairment loss is recognised as a gain in the income statement.

AFS equity securities

An AFS equity security is considered impaired if there is objective evidence that the cost may not be recovered. In addition to qualitative impairment criteria, such evidence includes a significant or prolonged decline in fair value below cost. Unless there is evidence to the contrary, an equity security is considered impaired if the decline in fair value relative to cost has been either at least 20% for a continuous six-month period or more than 40% at the end of the reporting period, or been in an unrealised loss position for a continuous period of more than 12 months at the end of the reporting period. We also review our largest equity holdings for evidence of impairment, as well as individual equity holdings in industry sectors known to be in difficulty. Where there is objective evidence that impairment exists, the security is written down regardless of the size of the unrealised loss.

For securities identified as being impaired, the cumulative unrealised loss previously recognised within the investment valuation reserve is transferred to realised losses for the year with a corresponding movement through other comprehensive income. Any subsequent increase in fair value of these impaired securities is recognised in other comprehensive income and recorded in the investment valuation reserve.

Reversals of impairments on any of these assets are only recognised where the decrease in the impairment can be objectively related to an event occurring after the write-down (such as an improvement in the debtor's credit rating), and are not recognised in respect of equity instruments.

(U) Derivative financial instruments and hedging

Derivative financial instruments include foreign exchange contracts, interest rate futures, currency and interest rate swaps, currency and interest rate options (both written and purchased) and other financial instruments that derive their value mainly from underlying interest rates, foreign exchange rates, credit or equity indices, commodity values or equity instruments.

All derivatives are initially recognised in the statement of financial position at their fair value, which usually represents their cost. They are subsequently remeasured at their fair value, with the method of recognising movements in this value depending on whether they are designated as hedging instruments and, if so, the nature of the item

being hedged. Fair values are obtained from quoted market prices or, if these are not available, by using valuation techniques such as discounted cash flow models or option pricing models. All derivatives are carried as assets when the fair values are positive and as liabilities when the fair values are negative. Premiums paid for derivatives are recorded as an asset on the statement of financial position at the date of purchase, representing their fair value at that date.

Derivative contracts may be traded on an exchange or over-the-counter (OTC). Exchange-traded derivatives are standardised and include certain futures and option contracts. OTC derivative contracts are individually negotiated between contracting parties and include forwards, swaps, caps and floors. Derivatives are subject to various risks including market, liquidity and credit risk, similar to those related to the underlying financial instruments. Many OTC transactions are contracted and documented under International Swaps and Derivatives Association master agreements or their equivalent, which are designed to provide legally enforceable set-off in the event of default, reducing the Group's exposure to credit risk.

The notional or contractual amounts associated with derivative financial instruments are not recorded as assets or liabilities on the statement of financial position as they do not represent the fair value of these transactions. These amounts are disclosed in note 60(b).

The Group has collateral agreements in place between the individual Group entities and relevant counterparties. Accounting policy W covers collateral, both received and pledged, in respect of these derivatives.

Interest rate and currency swaps

Interest rate swaps are contractual agreements between two parties to exchange fixed rate and floating rate interest by means of periodic payments, calculated on a specified notional amount and defined interest rates. Most interest rate swap payments are netted against each other, with the difference between the fixed and floating rate interest payments paid by one party. Currency swaps, in their simplest form, are contractual agreements that involve the exchange of both periodic and final amounts in two different currencies. Both types of swap contracts may include the net exchange of principal. Exposure to gain or loss on these contracts will increase or decrease over their respective lives as a function of maturity dates, interest and foreign exchange rates, and the timing of payments.

Interest rate futures, forwards and options contracts

Interest rate futures are exchange-traded instruments and represent commitments to purchase or sell a designated security or money market instrument at a specified future date and price. Interest rate forward agreements are OTC contracts in which two parties agree on an interest rate and other terms that will become a reference point in determining, in concert with an agreed notional principal amount, a net payment to be made by one party to the other, depending upon what rate prevails at a future point in time. Interest rate options, which consist primarily of caps and floors, are interest rate protection instruments that involve the potential obligation of the seller to pay the buyer an interest rate differential in exchange for a premium paid by the buyer. This differential represents the difference between current rate and an agreed rate applied to a notional amount. Exposure to gain or loss on all interest rate contracts will increase or decrease over their respective lives as interest rates fluctuate. Certain contracts, known as swaptions, contain features which can act as swaps or options.

Foreign exchange contracts

Foreign exchange contracts, which include spot, forward and futures contracts, represent agreements to exchange the currency of one country for the currency of another country at an agreed price and settlement date. Foreign exchange option contracts are similar to interest rate option contracts, except that they are based on currencies, rather than interest rates.

Derivative instruments for hedging

On the date a derivative contract is entered into, the Group designates certain derivatives as either:

(i) a hedge of the fair value of a recognised asset or liability (fair value hedge);
(ii) a hedge of a future cash flow attributable to a recognised asset or liability, a highly probable forecast transaction or a firm commitment (cash flow hedge); or
(iii) a hedge of a net investment in a foreign operation (net investment hedge).

Hedge accounting is used for derivatives designated in this way, provided certain criteria are met. At the inception of the transaction, the Group documents the relationship between the hedging instrument and the hedged item, as well as the risk management objective and the strategy for undertaking the hedge transaction. The Group also documents its assessment of whether the hedge is expected to be, and has been, highly effective in offsetting the risk in the hedged item, both at inception and on an ongoing basis.

Changes in the fair value of derivatives that are designated and qualify as net investment or cash flow hedges, and that prove to be highly effective in relation to the hedged risk, are recognised in other comprehensive income and a separate reserve within equity. Gains and losses accumulated in this reserve are included in the income statement on disposal of the relevant investment or occurrence of the cash flow as appropriate.

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recognised in the income statement. The gain or loss on the hedged item that is attributable to the hedged risk is recognised in the income statement. This applies even if the hedged item is an available for sale financial asset or is measured at amortised cost. If a hedging relationship no longer meets the criteria for hedge accounting, the cumulative adjustment made to the carrying amount of the hedged item is amortised to the income statement, based on a recalculated effective interest rate over the residual period to maturity. In cases where the hedged item has been derecognised, the cumulative adjustment is released to the income statement immediately.

For a variety of reasons, certain derivative transactions, while providing effective economic hedges under the Group's risk management positions, do not qualify for hedge accounting under the specific IFRS rules and are therefore treated as derivatives held for trading. Their fair value gains and losses are recognised immediately in net investment income.

(V) Loans

Loans with fixed maturities, including policyholder loans, mortgage loans on investment property, securitised mortgages and collateral loans, are recognised when cash is advanced to borrowers. Certain loans are carried at their unpaid principal balances and adjusted for amortisation of premium or discount, non-refundable loan fees and related direct costs. These amounts are deferred and amortised over the life of the loan as an adjustment to loan yield using the effective interest rate method.

However, for the majority of mortgage loans, the Group has taken advantage of the fair value option under IAS 39 to present the mortgages, associated borrowings and derivative financial instruments at fair value, since they are managed as a portfolio on a fair value basis. This presentation provides more relevant information and eliminates any accounting mismatch that would otherwise arise from using different measurement bases for these three items. The fair values of these mortgages are estimated using

discounted cash flow models, based on a risk-adjusted discount rate which reflects the risks associated with these products. They are revalued at each period end, with movements in their fair values being taken to the income statement.

At each reporting date, we review loans carried at amortised cost for objective evidence that they are impaired and uncollectable, either at the level of an individual security or collectively within a group of loans with similar credit risk characteristics. To the extent that a loan is uncollectable, it is written down as impaired to its recoverable amount, measured as the present value of expected future cash flows discounted at the original effective interest rate of the loan, taking into account the fair value of the underlying collateral through an impairment provision account. Subsequent recoveries in excess of the loan's written-down carrying value are credited to the income statement.

The Company classifies and measures loans at either amortised cost, fair value through other comprehensive income, or fair value through profit or loss based on the outcome of an assessment of the Company's business model for managing financial assets and the extent to which the financial assets' contractual cash flows are solely payment of principal and interest.

The Company calculates expected credit losses for all financial assets held at either amortised cost or fair value through other comprehensive income. Expected credit losses are calculated on either a 12-month or lifetime basis depending on the extent to which credit risk has increased significantly since initial recognition.

(W) Collateral

The Group receives and pledges collateral in the form of cash or non-cash assets in respect of stock lending transactions, certain derivative contracts and loans, in order to reduce the credit risk of these transactions. Collateral is also pledged as security for bank letters of credit. The amount and type of collateral required depends on an assessment of the credit risk of the counterparty.

Collateral received in the form of cash, which is not legally segregated from the Group, is recognised as an asset in the statement of financial position with a corresponding liability for the repayment in financial liabilities (note 61). However, where the Group has a currently enforceable legal right of set-off and the ability and intent to net settle, the collateral liability and associated derivative balances are shown net. Non-cash collateral received is not recognised in the statement of financial position unless the transfer of the collateral meets the derecognition criteria from the perspective of the transferor. Such collateral is typically recognised when the Group either (a) sells or repledges these assets in the absence of default, at which point the obligation to return this collateral is recognised as a liability; or (b) the counterparty to the arrangement defaults, at which point the collateral is seized and recognised as an asset.

Collateral pledged in the form of cash, which is legally segregated from the Group, is derecognised from the statement of financial position with a corresponding receivable recognised for its return. Non-cash collateral pledged is not derecognised from the statement of financial position unless the Group defaults on its obligations under the relevant agreement, and therefore continues to be recognised in the statement of financial position within the appropriate asset classification.

(X) Deferred acquisition costs and other assets

Costs relating to the acquisition of new business for insurance and participating investment contracts are deferred in line with existing local accounting practices, to the extent that they are expected to be recovered out of future margins in revenues on these contracts. For participating contracts written in the UK, acquisition costs are generally not deferred as the liability for these contracts is calculated on a realistic basis which was grandfathered from UK regulatory requirements prior to the adoption of Solvency II (see accounting policy L). For non-participating investment and investment fund management contracts, incremental acquisition costs and sales enhancements that are directly attributable to securing an investment management service are also deferred.

Long-term business deferred acquisition costs are amortised systematically over a period no longer than that in which they are expected to be recoverable out of these future margins. Deferred acquisition costs for non-participating investment and investment fund management contracts are amortised over the period in which the service is provided. General insurance and health deferred acquisition costs are amortised over the period in which the related revenues are earned. The reinsurers' share of deferred acquisition costs is amortised in the same manner as the underlying asset.

Deferred acquisition costs are reviewed by category of business at the end of each reporting period and are written-off where they are no longer considered to be recoverable.

Where such business is reinsured, an appropriate proportion of the deferred acquisition costs is attributed to the reinsurer. Recoverability is assessed net of reinsurance, and may result in deferred acquisition costs being written-off if any liability recognised for the reinsurer's share is insufficient.

Other receivables and payables are initially recognised at cost, being fair value. Subsequent to initial measurement they are measured at amortised cost.

(Y) Statement of cash flows

Cash and cash equivalents

Cash and cash equivalents consist of cash at bank and in hand, deposits held at call with banks, treasury bills and other short-term highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of change in value. Such investments are those with less than three months' maturity from the date of acquisition, or which are redeemable on demand with only an insignificant change in their fair values.

For the purposes of the statement of cash flows, cash and cash equivalents also include bank overdrafts, which are included in payables and other financial liabilities on the statement of financial position.

Operating cash flows

Purchases and sales of investment property, loans and financial investments are included within operating cash flows as the purchases are funded from cash flows associated with the origination of insurance and investment contracts, net of payments of related benefits and claims.

(Z) Leases

Leases, where a significant portion of the risks and rewards of ownership is retained by the lessor, are classified as operating leases. Where the Group is the lessee, payments made under operating leases (net of any incentives received from the lessor) are charged to the income statement on a straight-line basis over the term of the relevant leases.

Where the Group is the lessor, lease income from operating leases is recognised in the income statement on a straight-line basis over the lease term.

When assets are subject to finance leases, the present value of the lease payments, together with any unguaranteed residual value, is recognised as a receivable. The Group has not entered into any material finance lease arrangements either as lessor or lessee.

(AA) Provisions and contingent liabilities

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is more probable than not that an outflow of resources embodying economic benefits

will be required to settle the obligation, and a reliable estimate of the amount of the obligation can be made. Restructuring provisions include lease termination penalties and employee termination payments. They comprise only the direct expenditures arising from the restructuring, which are those that are necessarily entailed by the restructuring; and not associated with the ongoing activities of the entity. The amount recorded as a provision is the best estimate of the expenditure required to settle the present obligation at the balance sheet date. Where the effect of the time value of money is material, the provision is the present value of the expected expenditure. Provisions are not recognised for future operating losses.

Where the Group expects a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognised as a separate asset but only when the reimbursement is virtually certain.

The Group recognises a provision for onerous contracts when the expected benefits to be derived from a contract are less than the unavoidable costs of meeting the obligations under the contract. Contingent liabilities are disclosed if there is a possible future obligation as a result of a past event, or if there is a present obligation as a result of a past event but either a payment is not probable or the amount cannot be reasonably estimated.

(AB) Employee benefits

Pension obligations

The Group operates a number of pension schemes, whose members receive benefits on either a defined benefit or defined contribution basis. Under a defined contribution plan, the Group's legal or constructive obligation is limited to the amount it agrees to contribute to a fund and there is no obligation to pay further contributions if the fund does not hold sufficient assets to pay benefits. A defined benefit pension plan is a pension plan that is not a defined contribution plan and typically defines the amount of pension benefit that an employee will receive on retirement.

The defined benefit obligation is calculated by independent actuaries using the projected unit credit method. The pension obligation is measured as the present value of the estimated future cash outflows, using a discount rate based on market yields for high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the terms of the related pension liability. The resultant net surplus or deficit recognised as an asset or liability on the statement of financial position is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets.

Plan assets exclude unpaid contributions due from Group entities to the schemes, and any non-transferrable financial instruments issued by a Group entity and held by the schemes. If the fair value of plan assets exceeds the present value of the defined benefit obligation, the resultant asset is limited to the asset ceiling defined as present value of economic benefits available in the form of future refunds from the plan or reductions in contributions to the plan. In order to calculate the present value of economic benefits, consideration is given to any minimum funding requirements that apply to any plan in the Group.

Remeasurements of defined benefit plans comprise actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions, the return on plan assets (excluding net interest) and the effect of the asset ceiling (if any). The Group recognises remeasurements immediately in other comprehensive income and does not reclassify them to the income statement in subsequent periods.

Service costs comprising current service costs, past service costs, gains and losses on curtailments and net interest expense/income are charged or credited to the income statement.

Past service costs are recognised at the earlier of the date the plan amendment or curtailment occurs or when related restructuring costs are recognised.

The Group determines the net interest expense/income on the net defined benefit liability/asset for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the year to the net defined benefit liability/asset. Net interest expense is charged to finance costs, whereas, net interest income is credited to investment income.

For defined contribution plans, the Group pays contributions to publicly or privately administered pension plans. Once the contributions have been paid, the Group, as employer, has no further payment obligations. The Group's contributions are charged to the income statement in the year to which they relate and are included in staff costs.

Equity compensation plans

The Group offers share award and option plans over the Company's ordinary shares for certain employees, including a Save As You Earn plan (SAYE plan), details of which are given in the Directors' Remuneration Report and in note 33.

The Group accounts for options and awards under equity compensation plans, which were granted after 7 November 2002, until such time as they are fully vested, using the fair value based method of accounting (the 'fair value method'). Under this method, the cost of providing equity compensation plans is based on the fair value of the share awards or option plans at date of grant, which is recognised in the income statement over the expected vesting period of the related employees and credited to the equity compensation reserve, part of shareholders' funds. In certain jurisdictions, awards must be settled in cash instead of shares, and the credit is taken to liabilities rather than reserves. The fair value of these cash-settled awards is recalculated each year, with the income statement charge and liability being adjusted accordingly.

Shares purchased by employee share trusts to fund these awards are shown as deduction from shareholders' equity at their weighted average cost.

When the options are exercised and new shares are issued, the proceeds received, net of any transaction costs, are credited to share capital (par value) and the balance to share premium. Where the shares are already held by employee trusts, the net proceeds are credited against the cost of these shares, with the difference between cost and proceeds being taken to retained earnings. In both cases, the relevant amount in the equity compensation reserve is then credited to retained earnings.

(AC) Income taxes

The current tax expense is based on the taxable profits for the year, after any adjustments in respect of prior years. Tax, including tax relief for losses if applicable, is allocated over profits before taxation and amounts charged or credited to components of other comprehensive income and equity, as appropriate.

Provision is made for deferred tax liabilities, or credit taken for deferred tax assets, using the liability method, on all material temporary differences between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements.

The rates enacted or substantively enacted at the statement of financial position date are used to value the deferred tax assets and liabilities.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised. Where there is a history of tax losses, deferred tax assets are only recognised in excess of deferred tax liabilities if there is convincing evidence that future profits will be available.

Deferred tax is provided on any temporary differences arising from investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference can be

controlled and it is probable that the difference will not reverse in the foreseeable future.

Deferred taxes are not provided in respect of temporary differences arising from the initial recognition of goodwill, or from the initial recognition of an asset or liability in a transaction which is not a business combination and affects neither accounting profit nor taxable profit or loss at the time of the transaction.

Current and deferred tax relating to items recognised in other comprehensive income and directly in equity are similarly recognised in other comprehensive income and directly in equity respectively. Deferred tax related to fair value re-measurement of available for sale investments, pensions and other post-retirement obligations and other amounts charged or credited directly to other comprehensive income is recognised in the statement of financial position as a deferred tax asset or liability. Current tax on interest paid on the direct capital instrument and tier 1 notes is credited directly in equity.

Current and deferred tax includes amounts provided in respect of uncertain tax positions, where management expects it is more likely than not that an economic outflow will occur as a result of examination by a relevant tax authority. Provisions reflect management's best estimate of the ultimate liability based on their interpretation of tax law, precedent and guidance, informed by external tax advice as necessary. The final amounts of tax due may ultimately differ from management's best estimate at the balance sheet date. Changes in facts and circumstances underlying these provisions are reassessed at each balance sheet date, and the provisions are re-measured as required to reflect current information.

In addition to paying tax on shareholders' profits ('shareholder tax'), the Group's life businesses in the UK, Ireland and Singapore pay tax on policyholders' investment returns ('policyholder tax') on certain products at policyholder tax rates. The incremental tax borne by the Group represents income tax on policyholder's investment return. In jurisdictions where policyholder tax is applicable, the total tax charge in the income statement is allocated between shareholder tax and policyholder tax. The shareholder tax is calculated by applying the corporate tax rate to the shareholder profit. The difference between the total tax charge and shareholder tax is allocated to policyholder tax. This calculation methodology is consistent with the legislation relating to the calculation of tax on shareholder profits. The Group has decided to show separately the amounts of policyholder tax to provide a meaningful measure of the tax the Group pays on its profit. In the pro forma reconciliations, the Group adjusted operating profit has been calculated after charging policyholder tax.

(AD) Borrowings

Borrowings are classified as being for either core structural or operational purposes. They are recognised initially at their issue proceeds less transaction costs incurred. Subsequently, most borrowings are stated at amortised cost, and any difference between net proceeds and the redemption value is recognised in the income statement over the period of the borrowings using the effective interest rate method. All borrowing costs are expensed as they are incurred except where they are directly attributable to the acquisition or construction of property and equipment as described in accounting policy P.

Where loan notes have been issued in connection with certain securitised mortgage loans, the Group has taken advantage of the fair value option under IAS 39 to present the mortgages, associated liabilities and derivative financial instruments at fair value, since they are managed as a portfolio on a fair value basis. This presentation provides more relevant information and eliminates any accounting mismatch which would otherwise arise from using different measurement bases for these three items.

(AE) Share capital and treasury shares

Equity instruments

An equity instrument is a contract that evidences a residual interest in the assets of an entity after deducting all its liabilities. Accordingly, a financial instrument is treated as equity if:

(i) there is no contractual obligation to deliver cash or other financial assets or to exchange financial assets or liabilities on terms that may be unfavourable; and

(ii) the instrument is a non-derivative that contains no contractual obligation to deliver a variable number of shares or is a derivative that will be settled only by the Group exchanging a fixed amount of cash or other assets for a fixed number of the Group's own equity instruments.

Share issue costs

Incremental external costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds of the issue and disclosed where material.

Dividends

Interim dividends on ordinary shares are recognised in equity in the period in which they are paid. Final dividends on these shares are recognised when they have been approved by shareholders. Dividends on preference shares are recognised in the period in which they are declared and appropriately approved.

Treasury shares

Where the Company or its subsidiaries purchase the Company's share capital or obtain rights to purchase its share capital, the consideration paid (including any attributable transaction costs net of income taxes) is shown as a deduction from total shareholders' equity. Gains and losses on own shares are charged or credited to the treasury share account in equity.

(AF) Fiduciary activities

Assets and income arising from fiduciary activities, together with related undertakings to return such assets to customers, are excluded from these financial statements where the Group has no contractual rights in the assets and acts in a fiduciary capacity such as nominee, trustee or agent.

(AG) Earnings per share

Basic earnings per share is calculated by dividing net income available to ordinary shareholders by the weighted average number of ordinary shares in issue during the year, excluding the weighted average number of treasury shares.

Earnings per share has also been calculated on Group adjusted operating profit attributable to ordinary shareholders, net of tax, non-controlling interests, preference dividends, the direct capital instrument (the DCI) and tier one notes as the directors believe this figure provides a better indication of operating performance. Details are given in note 15.

For the diluted earnings per share, the weighted average number of ordinary shares in issue is adjusted to assume conversion of all dilutive potential ordinary shares, such as convertible debt and share options granted to employees.

Potential or contingent share issuances are treated as dilutive when their conversion to shares would decrease net earnings per share.

(AH) Operations held for sale

Assets and liabilities held for disposal as part of operations which are held for sale are shown separately in the consolidated statement of financial position. Operations held for sale are recorded at the lower of their carrying amount and their fair value less the estimated selling costs.

Consolidated income statement

For the year ended 31 December 2018

	Note	2018 £m	2017 £m
Income	6		
Gross written premiums		**28,659**	27,606
Premiums ceded to reinsurers		**(2,326)**	(2,229)
Premiums written net of reinsurance		**26,333**	25,377
Net change in provision for unearned premiums		**(81)**	(153)
Net earned premiums	H	**26,252**	25,224
Fee and commission income	I & J	**2,180**	2,187
Net investment (expense)/income	K	**(10,847)**	22,066
Share of profit after tax of joint ventures and associates		**112**	41
Profit on the disposal and remeasurement of subsidiaries, joint ventures and associates	4(a)	**102**	135
		17,799	49,653
Expenses	7		
Claims and benefits paid, net of recoveries from reinsurers		**(23,142)**	(24,113)
Change in insurance liabilities, net of reinsurance	41(b)	**6,246**	(1,074)
Change in investment contract provisions		**5,321**	(13,837)
Change in unallocated divisible surplus	48	**3,237**	294
Fee and commission expense		**(3,393)**	(4,329)
Other expenses		**(3,843)**	(3,537)
Finance costs	8	**(573)**	(683)
		(16,147)	(47,279)
Profit before tax		**1,652**	2,374
Tax attributable to policyholders' returns	14(d)	**477**	(371)
Profit before tax attributable to shareholders' profits		**2,129**	2,003
Tax credit/(expense)	AC & 14	**35**	(728)
Less: tax attributable to policyholders' returns	14(d)	**(477)**	371
Tax attributable to shareholders' profits	14(d)	**(442)**	(357)
Profit for the year		**1,687**	1,646
Attributable to:			
Equity holders of Aviva plc		**1,568**	1,497
Non-controlling interests	40	**119**	149
Profit for the year		**1,687**	1,646
Earnings per share	AG & 15		
Basic (pence per share)		**38.2p**	35.0p
Diluted (pence per share)		**37.8p**	34.6p

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Consolidated statement of comprehensive income

For the year ended 31 December 2018

	Note	2018 £m	2017 £m
Profit for the year		**1,687**	1,646
Other comprehensive income:			
Items that may be reclassified subsequently to income statement			
Investments classified as available for sale			
Fair value gains/(losses)	38	**57**	(7)
Fair value gains transferred to profit on disposals	38	**(78)**	(2)
Share of other comprehensive (loss)/income of joint ventures and associates	38	**(10)**	6
Foreign exchange rate movements	38, 40	**5**	68
Aggregate tax effect – shareholder tax on items that may be reclassified subsequently to income statement	14(b)	**8**	5
Items that will not be reclassified to income statement			
Owner-occupied properties – fair value gains/(losses)	38	**1**	(1)
Remeasurements of pension schemes	39	**(279)**	(5)
Aggregate tax effect – shareholder tax on items that will not be reclassified subsequently to income statement	14(b)	**43**	5
Total other comprehensive income, net of tax		**(253)**	69
Total comprehensive income for the year		**1,434**	1,715
Attributable to:			
Equity holders of Aviva plc		**1,310**	1,523
Non-controlling interests		**124**	192
		1,434	1,715

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Reconciliation of Group adjusted operating profit to profit for the year

For the year ended 31 December 2018

	Note	2018 £m	2017 £m
Group adjusted operating profit before tax attributable to shareholders' profits			
Life business[1]		**2,999**	2,852
General insurance and health[1]		**704**	704
Fund management		**146**	164
Other:			
Other operations[1]		**(237)**	(143)
Corporate centre		**(216)**	(184)
Group debt costs and other interest		**(280)**	(325)
Group adjusted operating profit before tax attributable to shareholders' profits		**3,116**	3,068
Integration and restructuring costs	7	**—**	(141)
Group adjusted operating profit before tax attributable to shareholders' profits after integration and restructuring costs		**3,116**	2,927
Adjusted for the following:			
Life business: Investment variances and economic assumption changes	9	**(197)**	34
Non-life business: Short-term fluctuation in return on investments	10(a)	**(476)**	(345)
General insurance and health business: Economic assumption changes	10(a)	**1**	(7)
Impairment of goodwill, joint ventures, associates and other amounts expensed	17(a)	**(13)**	(49)
Amortisation and impairment of intangibles	18	**(209)**	(197)
Amortisation and impairment of acquired value of in-force business	18	**(426)**	(495)
Profit on the disposal and remeasurement of subsidiaries, joint ventures and associates	4(a)	**102**	135
Other[2]		**231**	—
Adjusting items before tax		**(987)**	(924)
Profit before tax attributable to shareholders' profits		**2,129**	2,003
Tax on operating profit	15(a)(i)	**(647)**	(639)
Tax on other activities	15(a)(i)	**205**	282
		(442)	(357)
Profit for the year		**1,687**	1,646

1 Non-insurance businesses in the UK previously included within 'Other operations', such as the savings business, have been reclassified to life business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details. The impact of this change was to reduce life business operating profit by £80 million *(2017: £30 million)* and increase general insurance and health operating profit by £4 million *(2017: £4 million)*.

2 Other includes a movement in the discount rate used for estimating lump sum payments in the settlement of bodily injury claims which resulted in a gain of £190 million (see note 43(b)), a provision release of £78 million relating to the sale of Aviva USA in 2013, a gain of £36 million relating to negative goodwill on the acquisition of Friends First (see note 3), a charge of £63 million relating to the UK defined benefit pension scheme as a result of the requirement to equalise members' benefits for the effects of Guaranteed Minimum Pension (see note 51(b)) and a charge of £10 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35).

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Reconciliation of Group adjusted operating profit to profit for the year continued

Group adjusted operating profit can be further analysed into the following segments (details of segments can be found in note 5):

Year ended 31 December 2018	Long-term business £m	General insurance and health £m	Fund management £m	Other operations £m	Total £m
United Kingdom[1]	**1,871**	**453**	**—**	**—**	**2,324**
Canada	**—**	**46**	**—**	**1**	**47**
France	**436**	**110**	**—**	**(35)**	**511**
Poland	**170**	**20**	**—**	**9**	**199**
Italy, Ireland, Spain and Other	**225**	**90**	**—**	**(14)**	**301**
Asia	**300**	**(16)**	**(4)**	**(18)**	**262**
Aviva Investors	**1**	**—**	**150**	**—**	**151**
Other Group activities	**(4)**	**1**	**—**	**(180)**	**(183)**
	2,999	**704**	**146**	**(237)**	**3,612**
Corporate Centre					**(216)**
Group debt costs and other interest					**(280)**
Total					**3,116**

Year ended 31 December 2017	Long-term business £m	General insurance and health £m	Fund management £m	Other operations £m	Total £m
United Kingdom[1]	1,728	447	—	—	2,175
Canada	—	46	—	—	46
France	425	104	—	(29)	500
Poland	156	21	—	6	183
Italy, Ireland, Spain and Other	292	98	—	(14)	376
Asia	235	(8)	(4)	(32)	191
Aviva Investors	1	—	168	32	201
Other Group activities	15	(4)	—	(106)	(95)
	2,852	704	164	(143)	3,577
Corporate Centre					(184)
Group debt costs and other interest					(325)
Total					3,068

1 Non-insurance businesses in the UK previously included within 'Other operations', such as the savings business, have been reclassified to long-term business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details. The impact of this change was to reduce long-term business operating profit by £80 million *(2017: £30 million)* and increase general insurance and health operating profit by £4 million *(2017: £4 million)*.

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Consolidated statement of changes in equity

For the year ended 31 December 2018

	Ordinary share capital note 32 £m	Preference share capital note 35 £m	Capital reserves[1] note 32b, 37 £m	Treasury shares note 34 £m	Currency translation reserve note 38 £m	Other reserves note 38 £m	Retained earnings note 39 £m	DCI and tier 1 notes note 36 £m	Total equity excluding non-controlling interests £m	Non-controlling interests note 40 £m	Total equity £m
Balance at 1 January	**1,003**	**200**	**10,195**	**(14)**	**1,141**	**(274)**	**4,918**	**731**	**17,900**	**1,235**	**19,135**
Profit for the year	—	—	—	—	—	—	1,568	—	1,568	119	1,687
Other comprehensive income	—	—	—	—	28	(50)	(236)	—	(258)	5	(253)
Total comprehensive income for the year	—	—	—	—	28	(50)	1,332	—	1,310	124	1,434
Dividends and appropriations	—	—	—	—	—	—	(1,189)	—	(1,189)	—	(1,189)
Non-controlling interests share of dividends declared in the year	—	—	—	—	—	—	—	—	—	(90)	(90)
Shares purchased in buy-back[2]	(30)	—	30	—	—	—	(600)	—	(600)	—	(600)
Transfer to profit on disposal of subsidiaries, joint ventures and associates	—	—	—	—	(40)	36	—	—	(4)	—	(4)
Changes in non-controlling interests in subsidiaries	—	—	—	—	(7)	—	1	—	(6)	(306)	(312)
Reserves credit for equity compensation plans	—	—	—	—	—	64	—	—	64	—	64
Shares issued under equity compensation plans	2	—	7	(1)	—	(55)	49	—	2	—	2
Capital contributions from non-controlling interests	—	—	—	—	—	—	—	—	—	3	3
Forfeited dividend income	—	—	—	—	—	—	4	—	4	—	4
Reclassification of tier 1 notes to financial liabilities	—	—	—	—	—	—	—	—	—	—	—
Treasury shares held by subsidiary companies	—	—	—	—	—	—	—	—	—	—	—
Owner-occupied properties fair value gains transferred to retained earnings on disposals	—	—	—	—	—	—	—	—	—	—	—
Aggregate tax effect – shareholder tax	—	—	—	—	—	—	8	—	8	—	8
Balance at 31 December	**975**	**200**	**10,232**	**(15)**	**1,122**	**(279)**	**4,523**	**731**	**17,489**	**966**	**18,455**

1 Capital reserves consist of share premium of £1,214 million, a capital redemption reserve of £44 million and a merger reserve of £8,974 million.
2 On 1 May 2018, the Group announced a share buy-back of ordinary shares for an aggregate purchase price of up to £600 million. On completion in 2018 of this buy-back, £600 million of shares had been purchased and shares with a nominal value of £30 million have been cancelled, giving rise to an additional capital redemption reserve of an equivalent amount. See note 32 for further details of the shares purchased in buy-back.

For the year ended 31 December 2017

	Ordinary share capital note 32 £m	Preference share capital note 35 £m	Capital reserves[1] note 32b, 37 £m	Treasury shares note 34 £m	Currency translation reserve note 38 £m	Other reserves note 38 £m	Retained earnings note 39 £m	DCI and tier 1 notes note 36 £m	Total equity excluding non-controlling interests £m	Non-controlling interests note 40 £m	Total equity £m
Balance at 1 January	1,015	200	10,171	(15)	1,146	(349)	4,835	1,123	18,126	1,425	19,551
Profit for the year	—	—	—	—	—	—	1,497	—	1,497	149	1,646
Other comprehensive income	—	—	—	—	121	(93)	(2)	—	26	43	69
Total comprehensive income for the year	—	—	—	—	121	(93)	1,495	—	1,523	192	1,715
Dividends and appropriations	—	—	—	—	—	—	(1,081)	—	(1,081)	—	(1,081)
Non-controlling interests share of dividends declared in the year	—	—	—	—	—	—	—	—	—	(103)	(103)
Shares purchased in buy-back[2]	(14)	—	14	—	—	—	(300)	—	(300)	—	(300)
Transfer to profit on disposal of subsidiaries, joint ventures and associates	—	—	—	—	(126)	137	1	—	12	—	12
Changes in non-controlling interests in subsidiaries	—	—	—	—	—	—	—	—	—	(315)	(315)
Reserves credit for equity compensation plans	—	—	—	—	—	77	—	—	77	—	77
Shares issued under equity compensation plans	2	—	10	—	—	(44)	42	—	10	—	10
Capital contributions from non-controlling interests	—	—	—	—	—	—	—	—	—	36	36
Reclassification of tier 1 notes to financial liabilities[3]	—	—	—	—	—	—	(92)	(392)	(484)	—	(484)
Treasury shares held by subsidiary companies	—	—	—	1	—	—	—	—	1	—	1
Owner-occupied properties fair value gains transferred to retained earnings on disposals	—	—	—	—	—	(2)	2	—	—	—	—
Aggregate tax effect – shareholder tax	—	—	—	—	—	—	16	—	16	—	16
Balance at 31 December	1,003	200	10,195	(14)	1,141	(274)	4,918	731	17,900	1,235	19,135

1 Capital reserves consist of share premium of £1,207 million, a capital redemption reserve of £14 million and a merger reserve of £8,974 million.
2 On 25 May 2017, the Group announced a share buy-back of ordinary shares for an aggregate purchase price of up to £300 million. On completion in 2017 of this buy-back, £300 million of shares had been purchased and shares with a nominal value of £14 million have been cancelled, giving rise to a capital redemption reserve of an equivalent amount. See note 32 for further details of the shares purchased in buy-back.
3 On 28 September 2017, notification was given that the Group would redeem the $650 million fixed rate tier 1 notes. At that date, the instrument was reclassified as a financial liability of £484 million, representing its fair value on translation into sterling on that date. The resulting foreign exchange loss of £92 million has been charged to retained earnings.

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Consolidated statement of financial position

As at 31 December 2018

	Note	2018 £m	2017 £m
Assets			
Goodwill	O & 17	**1,872**	1,876
Acquired value of in-force business and intangible assets	O & 18	**3,201**	3,455
Interests in, and loans to, joint ventures	D & 19	**1,214**	1,221
Interests in, and loans to, associates	D & 20	**304**	421
Property and equipment	P & 21	**548**	509
Investment property	Q & 22	**11,482**	10,797
Loans	V & 24	**28,785**	27,857
Financial investments	S, T, U & 27	**297,585**	311,082
Reinsurance assets	N & 46	**11,755**	13,492
Deferred tax assets	AC & 49	**185**	144
Current tax assets		**76**	94
Receivables	28	**8,879**	8,285
Deferred acquisition costs	X & 29	**2,965**	2,906
Pension surpluses and other assets	X & 30	**3,341**	3,468
Prepayments and accrued income	X & 30(b)	**2,947**	2,860
Cash and cash equivalents	Y & 58(d)	**46,484**	43,347
Assets of operations classified as held for sale	AH & 4(c)	**8,855**	10,871
Total assets		**430,478**	442,685
Equity			
Capital	AE		
Ordinary share capital	32	**975**	1,003
Preference share capital	35	**200**	200
		1,175	1,203
Capital reserves			
Share premium	32(b)	**1,214**	1,207
Capital redemption reserve	32(b)	**44**	14
Merger reserve	D & 37	**8,974**	8,974
		10,232	10,195
Treasury shares	34	**(15)**	(14)
Currency translation reserve	38	**1,122**	1,141
Other reserves	38	**(279)**	(274)
Retained earnings	39	**4,523**	4,918
Equity attributable to shareholders of Aviva plc		**16,758**	17,169
Direct capital instrument and tier 1 notes	36	**731**	731
Equity excluding non-controlling interests		**17,489**	17,900
Non-controlling interests	40	**966**	1,235
Total equity		**18,455**	19,135
Liabilities			
Gross insurance liabilities	L & 42	**144,077**	148,650
Gross liabilities for investment contracts	M & 44	**202,468**	203,986
Unallocated divisible surplus	L & 48	**5,949**	9,082
Net asset value attributable to unitholders	D	**18,125**	18,327
Pension deficits and other provisions	AA, AB & 50	**1,399**	1,429
Deferred tax liabilities	AC & 49	**1,885**	2,377
Current tax liabilities		**254**	290
Borrowings	AD & 52	**9,420**	10,286
Payables and other financial liabilities	S & 53	**16,882**	16,459
Other liabilities	54	**3,043**	2,791
Liabilities of operations classified as held for sale	AH & 4(c)	**8,521**	9,873
Total liabilities		**412,023**	423,550
Total equity and liabilities		**430,478**	442,685

Approved by the Board on 6 March 2019

Thomas D. Stoddard
Chief Financial Officer

Company number: 2468686

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

Consolidated statement of cash flows

For the year ended 31 December 2018

The cash flows presented in this statement cover all the Group's activities and include flows from both policyholder and shareholder activities. All cash and cash equivalents are available for use by the Group.

	Note	2018 £m	2017 £m
Cash flows from operating activities[1]			
Cash generated from operating activities	58(a)	**6,405**	8,361
Tax paid		**(447)**	(620)
Total net cash from operating activities		**5,958**	7,741
Cash flows from investing activities			
Acquisitions of, and additions to, subsidiaries, joint ventures and associates, net of cash acquired	58(b)	**192**	25
Disposals of subsidiaries, joint ventures and associates, net of cash transferred	58(c)	**381**	(49)
Purchases of property and equipment	21	**(87)**	(69)
Proceeds on sale of property and equipment		**15**	5
Purchases of intangible assets		**(64)**	(107)
Total net cash from/(used in) investing activities		**437**	(195)
Cash flows from financing activities			
Proceeds from issue of ordinary shares		**8**	12
Shares purchased in buy-back	32	**(600)**	(300)
Treasury shares purchased for employee trusts		**(4)**	—
New borrowings drawn down, net of expenses		**3,148**	1,320
Repayment of borrowings[2]		**(4,181)**	(1,904)
Net repayment of borrowings	52(e)	**(1,033)**	(584)
Interest paid on borrowings		**(551)**	(610)
Preference dividends paid	16	**(17)**	(17)
Ordinary dividends paid	16	**(1,128)**	(983)
Forfeited dividend income		**4**	—
Coupon payments on direct capital instrument and tier 1 notes	16	**(44)**	(81)
Capital contributions from non-controlling interests of subsidiaries	40	**3**	36
Dividends paid to non-controlling interests of subsidiaries	40	**(90)**	(103)
Other[3]		**(13)**	—
Total net cash used in financing activities		**(3,465)**	(2,630)
Total net increase in cash and cash equivalents		**2,930**	4,916
Cash and cash equivalents at 1 January		**43,587**	38,405
Effect of exchange rate changes on cash and cash equivalents		**92**	266
Cash and cash equivalents at 31 December	58(d)	**46,609**	43,587

1 Cash flows from operating activities include interest received of £5,093 million *(2017: £5,302 million)* and dividends received of £4,648 million *(2017: £2,606 million)*.
2 Repayment of borrowings includes the redemption of €500 million 6.875% subordinated notes and $575 million 7.875% undated subordinated notes in full at first call dates and the maturity of €350 million 0.100% senior notes.
3 Includes £10 million related to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35) and a £3 million donation of forfeited dividend income to a charitable foundation.

The accounting policies (identified alphabetically) on pages 102 to 115 and notes (identified numerically) on pages 123 to 241 are an integral part of the financial statements.

1 – Presentation changes

During 2018, non-insurance business in the UK which was previously reported within the Other products and services segment, such as the savings business, are now reported within the long-term business or general insurance and health segments, as appropriate, as this is more reflective of the Group's operating segments and consistent with how the businesses are managed. Comparative information in the products and services segmental note 5(b) has been restated to reflect this change. This resulted in a loss before tax of £80 million *(2017: £30 million)* and profit before tax of £4 million *(2017: £4 million)* being transferred from the Other products and services segment to the long-term business and general insurance and health segments respectively. The corresponding net assets amount is £55 million *(2017: £140 million)*. This change has no impact on the Group's adjusted operating profit, profit before tax, net assets or on the operating segmental disclosures in note 5(a).

2 – Exchange rates

The Group's principal overseas operations during the year were located within the eurozone, Canada and Poland. The results and cash flows of these operations have been translated into sterling at the average rates for the year, and the assets and liabilities have been translated at the year end rates as follows:

	2018	2017
Eurozone		
Average rate (€1 equals)	**£0.88**	£0.88
Year end rate (€1 equals)	**£0.90**	£0.89
Canada		
Average rate ($CAD1 equals)	**£0.58**	£0.60
Year end rate ($CAD1 equals)	**£0.57**	£0.59
Poland		
Average rate (PLN1 equals)	**£0.21**	£0.21
Year end rate (PLN1 equals)	**£0.21**	£0.21

3 – Subsidiaries, joint ventures and associates – acquisitions

This note provides details of the acquisitions of subsidiaries, joint ventures and associates that the Group has made during the year.

(i) Wealthify

On 8 February 2018, Aviva acquired a majority shareholding in Wealthify Group Limited, the holding company of Wealthify, for a cash consideration of £17 million. The investment is part of Aviva's strategy to build customer loyalty by providing customers with a wide range of insurance and investment services, all managed through the convenience and simplicity of Aviva's digital hub, MyAviva.

(ii) Friends First

On 13 November 2017, Aviva plc announced the acquisition of Friends First Life Assurance Company DAC (Friends First), an Irish insurer, for a consideration of €146 million (approximately £129 million). Following completion of the transaction on 1 June 2018, Friends First is now a wholly owned subsidiary. As a result of this acquisition, Aviva is now one of the largest composite insurers in Ireland.

The following table summarises the consideration for the acquisition, the fair value of the assets acquired, liabilities assumed and resulting allocation to goodwill.

	1 June 2018 Fair Value £m
Assets	
Acquired value of in-force business and intangible assets	96
Property and equipment	3
Investment property	424
Financial investments	3,207
Reinsurance assets	502
Receivables	33
Tax assets	3
Cash and cash equivalents	354
Total identifiable assets	**4,622**
Liabilities	
Gross Insurance liabilities	1,409
Gross liabilities for investment contracts	2,921
Unallocated divisible surplus	66
Payables and other financial liabilities	33
Other liabilities	28
Total identifiable liabilities	**4,457**
Net identifiable assets acquired	**165**
Consideration	**129**
Negative goodwill arising on acquisition	**36**

The acquisition resulted in a gain from negative goodwill of £36 million, as the fair value of the net assets acquired of £165 million exceeded the consideration paid of £129 million. The gain arose primarily due to differences between the valuation of the pension scheme liability used to determine the transaction price and the recognition and measurement principles defined by IAS 19. The gain has been recognised immediately in the income statement as required by IFRS 3. The receivables balance of £33 million is made up of other receivables, prepayments and accrued income, measured at fair value and assessed as fully recoverable.

In the period 1 June 2018 to 31 December 2018, the profits of the acquired Friends First company have contributed net earned premiums and fees and commission income of £68 million and a loss before tax attributable to shareholders of £0.4 million.

If the acquisition had been effective on 1 January 2018, on a pro-forma basis the contribution to the Group's net earned premiums is estimated at £102 million and profit before tax attributable to shareholders is estimated at £5 million. In determining this amount, management has assumed that the fair value adjustments that arose on the date of acquisition would have been the same if the acquisition occurred on 1 January 2018. The pro-forma results are provided for information purposes only and do not necessarily reflect the actual results that would have occurred had the acquisition taken place on 1 January 2018, nor are they necessarily indicative of the future results of the combined Group.

Subsequent events

On 30 January 2019, Aviva acquired a majority holding in Neos Ventures Limited for a cash consideration of £9 million.

4 – Subsidiaries, joint ventures and associates – disposals and held for sale

This note provides details of the disposals of subsidiaries, joint ventures and associates that the Group has made during the year, together with details of businesses held for sale at the year end.

(a) Summary

The profit on the disposal and remeasurement of subsidiaries, joint ventures and associates comprises:

	2018 £m	2017 £m
Disposals	**113**	237
Held for sale remeasurements	**(13)**	(125)
Remeasurements due to change in control status	**2**	23
Total profit on disposal and remeasurement	**102**	135

The profit on disposal in the period of £113 million *(2017: £237 million)* primarily relates to the disposals of Italy Avipop and three businesses in Spain (see note 4(b)(i) and (ii) below for further details respectively). There has been a £13 million remeasurement loss in relation to Friends Provident International Limited (FPI) (see note 4(c)(i) for further details) and a £2 million remeasurement gain due to change in control status of the Hong Kong business (see note 4(d) for further details).

(b) Disposals of subsidiaries, joint ventures and associates

The following businesses were disposed of in 2018:

	Italy – Avipop (i) £m	Spain (ii) £m	Total £m
Assets			
Goodwill, acquired value of in-force business and intangible assets	439	213	652
Investments	376	457	833
Receivables and other financial assets	17	4	21
Reinsurance assets	75	6	81
Deferred acquisition costs	15	—	15
Prepayments and accrued income	—	6	6
Cash and cash equivalents	42	18	60
Total assets	**964**	**704**	**1,668**
Liabilities			
Gross insurance liabilities	376	381	757
Payables and other financial liabilities	2	19	21
Tax liabilities	143	48	191
Other liabilities	6	21	27
Total liabilities	**527**	**469**	**996**
Net assets	**437**	**235**	**672**
Non-controlling interests before disposal	(213)	(128)	(341)
Group's share of net assets disposed	**224**	**107**	**331**
Cash consideration	235	189	424
Less: transaction costs	(3)	(4)	(7)
Net consideration	**232**	**185**	**417**
Reserves recycled to the income statement	16	(14)	2
Profit on disposal	**24**	**64**	**88**
Other small disposals (iii)			**25**
Total profit on disposal			**113**

(i) Italy – Avipop

On 29 March 2018, Aviva announced that it had completed the sale of its entire shareholding of Avipop Assicurazioni S.p.A and Avipop Vita S.p.A to Banco BPM for cash consideration of €265 million (approximately £235 million). The transaction resulted in a total gain on disposal of £24 million.

(ii) Spain

On 11 July 2018, Aviva announced that it had completed the sale of its entire shareholding in life insurance and pension joint ventures Caja Murcia Vida and Caja Granada Vida to Bankia for a total consideration of €203 million (approximately £180 million). In addition, on 1 October 2018, Aviva completed the sale of its entire 50% shareholding in the small life insurance operation Pelayo Vida to Santa Lucia for a total consideration of €10 million (approximately £9 million). These transactions resulted in a total gain on disposal of £64 million.

(iii) Other

On 19 January 2018, Aviva announced that it had completed the sale of its entire 49% shareholding in its joint venture in Taiwan, First Aviva Life (Aviva Taiwan) to Aviva's joint venture partner, First Financial Holding Company Limited (FFH) for cash consideration of $1. The transaction resulted in a gain of £7 million arising from reserves recycled to the Income Statement. Remeasurement losses arising from the classification of Aviva Taiwan as held for sale were recognised in 2017.

4 – Subsidiaries, joint ventures and associates – disposals and held for sale continued

On 5 November 2018, Aviva Investors completed the sale of its Real Estate Multi-Manager business to LaSalle Investment Management and exited its partnership arrangement in Encore+, a pan-European commercial property fund, also with LaSalle. The assets disposed of represent customer related intangible assets. The gain on disposal was £27 million.

The remaining balance of £9 million loss primarily relates to other currency translation reserve recycling adjustments.

(iv) Disposals of other investments

In the second half of 2018, Aviva France disposed of its investments in the asset management company Primonial Real Estate Investment Management and the breakdown assistance company Opteven. The realised gains on disposal of these investments recognised in net investment income was €107 million (approximately £94 million).

(c) Assets and liabilities of operations classified as held for sale

The assets and liabilities of operations classified as held for sale as at 31 December 2018 are as follows:

	2018 £m	2017 £m
Assets		
Goodwill, acquired value of in-force and other intangibles	**660**	1,467
Property and equipment	**5**	5
Loans	**—**	6
Financial investments	**7,251**	8,306
Reinsurance assets	**45**	123
Other assets	**206**	225
Cash and cash equivalents	**688**	739
Total assets	**8,855**	10,871
Liabilities		
Gross insurance liabilities	**121**	914
Gross liability for investment contracts	**8,341**	8,663
Unallocated divisible surplus	**—**	19
Other liabilities	**59**	277
Total liabilities	**8,521**	9,873
Net assets	**334**	998

Assets and liabilities of operations classified as held for sale as at 31 December 2018 relate to the expected disposal of the international operations of FPI. See below for further details. Assets and liabilities of operations classified as held for sale during 2017 relate to Italy Avipop, Aviva Taiwan and Spain which were disposed of in 2018 and FPI.

(i) FPI

On 19 July 2017, Aviva announced the sale of FPI to RL360 Holding Company Limited, a subsidiary of International Financial Group Limited, for a total consideration of £340 million. The conditions defined in IFRS 5 for a subsidiary to be classified as held for sale include the presumption that the sale will be completed within 12 months of the date of reclassification. The transaction remains subject to regulatory approvals and is now expected to complete in the first half of 2019. As such, the subsidiary continues to be classified as held for sale and has been remeasured at fair value based on the expected sale price less costs to sell, calculated as £334 million. This resulted in a total loss on remeasurement of £118 million in 2017, and an additional remeasurement loss of £13 million in 2018 (see note 18). The goodwill attributable to FPI was fully impaired in 2017 (see note 17). The business remains a consolidated subsidiary of Aviva at the balance sheet date.

(d) Remeasurements due to change in control status

On 13 February 2018, Aviva announced that it has completed the transaction to develop a digital insurance joint venture in Hong Kong (Blue) with Hillhouse Capital Group (Hillhouse) and Tencent Holdings Limited (Tencent). The joint venture commenced operating under its new corporate structure during the first half of 2018. The transaction included the sale of 60% of the shareholding in Aviva Life Insurance Company Limited (Aviva Hong Kong) for cash consideration of HKD 301 million (approximately £29 million). The transaction resulted in a remeasurement gain of £2 million mainly arising through the recycling of reserves to the income statement and, additionally, a loss of £4 million in equity in accordance with IFRS 10 as Aviva has retained control of certain activities under the sale agreement.

(e) Significant restrictions

In certain jurisdictions the ability of subsidiaries to transfer funds to the Group in the form of cash dividends or to repay loans and advances is subject to local corporate or insurance laws and regulations and solvency requirements. There are no protective rights of non-controlling interests which significantly restrict the Group's ability to access or use the assets and settle the liabilities of the Group.

5 – Segmental information

The Group's results can be segmented either by activity or by geography. Our primary reporting format is along market reporting lines, with supplementary information being given by business activity. This note provides segmental information on the consolidated income statement and consolidated statement of financial position.

(a) Operating segments

United Kingdom

The United Kingdom comprises two operating segments – Life and General Insurance. The principal activities of our UK Life operations are life insurance, long-term health and accident insurance, savings, pensions and annuity business. UK General Insurance provides insurance cover to individuals and businesses, for risks associated mainly with motor vehicles, property and liability (such as employers' liability and professional indemnity liability) and medical expenses.

Canada

The principal activity of our operation in Canada is general insurance. In particular it provides personal and commercial lines insurance products principally distributed through insurance brokers.

France

The principal activities of our operations in France are long-term business and general insurance. The long-term business offers a range of long-term insurance and savings products, primarily for individuals, with a focus on the unit-linked market. The general insurance business predominantly sells personal and small commercial lines insurance products through agents and a direct insurer.

Poland

Activities in Poland comprise long-term business and general insurance and includes our long-term business in Lithuania.

Italy, Ireland, Spain and Other

These countries are not individually significant at a Group level, so have been aggregated into a single reporting segment in line with IFRS 8. The principal activities of our operations in Italy and Ireland are long-term business and general insurance. The principal activity of our operation in Spain was the sale of accident and health insurance and a selection of savings products. Our 'Other' operations include our life operations in Turkey. This segment also includes Friends First, which was acquired on 1 June 2018 (see note 3). The results of entities within Spain are included up to the date of disposal (Unicorp Vida and Caja España Vida on 15 September 2017, Caja Murcia Vida and Caja Granada Vida on 11 July 2018 and Pelayo Vida on 1 October 2018) and the results of Avipop, part of our operations in Italy, have been included up to the date of disposal on 29 March 2018 (see note 4).

Asia

Our activities in Asia principally comprise our long-term business operations in China, India, Singapore, Hong Kong, Vietnam, Indonesia, Taiwan (up to 19 January 2018, (see note 4(b))) and FPI (see note 4(c)). This segment also includes general insurance and health operations in Singapore and health operations in Indonesia. This segment includes the results of the digital insurance joint venture in Hong Kong, which commenced operating under its new corporate structure during the first half of 2018.

Aviva Investors

Aviva Investors operates in most of the markets in which the Group operates, in particular the UK, France, North America and Asia Pacific. Aviva Investors manages policyholders' and shareholders' invested funds, provides investment management services for institutional pension fund mandates and manages a range of retail investment products. These include investment funds, unit trusts, open-ended investment companies and individual savings accounts.

Other Group activities

Investment return on centrally held assets and head office expenses, such as Group treasury and finance functions, together with certain taxes and financing costs arising on central borrowings are included in 'Other Group activities', along with central core structural borrowings and certain tax balances in the segmental statement of financial position. The results of our internal reinsurance and digital broker operations and the Group's interest in Wealthify (see note 3) are also included in this segment, as are the elimination entries for certain inter-segment transactions.

5 – Segmental information continued

Measurement basis

The accounting policies of the segments are the same as those for the Group as a whole. Any transactions between the business segments are subject to normal commercial terms and market conditions. The Group evaluates performance of operating segments on the basis of:

(i) profit or loss from operations before tax attributable to shareholders

(ii) profit or loss from operations before tax attributable to shareholders, adjusted for items outside the segment management's control, including investment market performance and fiscal policy changes.

(a) (i) Segmental income statement for the year ended 31 December 2018

	United Kingdom			Europe						
	Life £m	GI £m	Canada[2] £m	France £m	Poland £m	Italy, Ireland, Spain and Other £m	Asia £m	Aviva Investors[3] £m	Other Group activities[4] £m	Total £m
Gross written premiums	7,302	4,504	3,047	5,584	616	6,504	1,102	—	—	28,659
Premiums ceded to reinsurers	(1,666)	(317)	(119)	(77)	(12)	(113)	(20)	—	(2)	(2,326)
Internal reinsurance revenue	—	6	—	—	—	(2)	(7)	—	3	—
Premiums written net of reinsurance	5,636	4,193	2,928	5,507	604	6,389	1,075	—	1	26,333
Net change in provision for unearned premiums	14	(87)	27	(38)	7	9	(13)	—	—	(81)
Net earned premiums	5,650	4,106	2,955	5,469	611	6,398	1,062	—	1	26,252
Fee and commission income	939	122	24	313	94	113	202	368	5	2,180
	6,589	4,228	2,979	5,782	705	6,511	1,264	368	6	28,432
Net investment (expense)/income	(6,693)	16	51	(2,302)	(73)	(1,111)	(286)	37	(486)	(10,847)
Inter-segment revenue	—	—	—	—	—	—	—	259	—	259
Share of profit of joint ventures and associates	78	—	1	9	—	10	14	—	—	112
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates	—	—	—	—	—	89	(5)	27	(9)	102
Segmental income[1]	(26)	4,244	3,031	3,489	632	5,499	987	691	(489)	18,058
Claims and benefits paid, net of recoveries from reinsurers	(10,184)	(2,731)	(1,989)	(4,659)	(356)	(2,595)	(570)	—	(58)	(23,142)
Change in insurance liabilities, net of reinsurance	6,184	351	(133)	557	148	(872)	(40)	—	51	6,246
Change in investment contract provisions	7,540	—	—	27	—	(2,249)	42	(39)	—	5,321
Change in unallocated divisible surplus	270	—	—	1,754	12	1,063	138	—	—	3,237
Fee and commission expense	(741)	(1,225)	(791)	(484)	(146)	(343)	(199)	(33)	569	(3,393)
Other expenses	(1,687)	(220)	(182)	(256)	(106)	(188)	(272)	(449)	(483)	(3,843)
Inter-segment expenses	(232)	(5)	(6)	(1)	(6)	(7)	—	—	(2)	(259)
Finance costs	(157)	(1)	(5)	(1)	—	(5)	(3)	—	(401)	(573)
Segmental expenses	993	(3,831)	(3,106)	(3,063)	(454)	(5,196)	(904)	(521)	(324)	(16,406)
Profit/(loss) before tax	967	413	(75)	426	178	303	83	170	(813)	1,652
Tax attributable to policyholders' returns	469	—	—	—	—	1	7	—	—	477
Profit/(loss) before tax attributable to shareholders' profits	1,436	413	(75)	426	178	304	90	170	(813)	2,129
Adjusting items:										
Reclassification of corporate costs and unallocated interest	—	(16)	31	48	—	(1)	—	5	(67)	—
Life business: Investment variances and economic assumption changes	115	—	—	(6)	10	57	21	—	—	197
Non-life business: Short-term fluctuation in return on investments	—	172	45	44	2	57	—	—	156	476
General insurance and health business: Economic assumption changes	—	4	—	(5)	—	—	—	—	—	(1)
Impairment of goodwill, joint ventures, associates and other amounts expensed	—	—	—	—	2	—	3	—	8	13
Amortisation and impairment of intangibles	73	32	46	2	7	3	13	3	30	209
Amortisation and impairment of AVIF	285	—	—	2	—	6	130	—	3	426
(Profit)/loss on the disposal and remeasurement of subsidiaries, joint ventures and associates	—	—	—	—	—	(89)	5	(27)	9	(102)
Other[5]	—	(190)	—	—	—	(36)	—	—	(5)	(231)
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits after integration and restructuring costs	1,909	415	47	511	199	301	262	151	(679)	3,116
Integration and restructuring costs	—	—	—	—	—	—	—	—	—	—
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	1,909	415	47	511	199	301	262	151	(679)	3,116

1 Total reported income, excluding inter-segment revenue, includes £4,412 million from the United Kingdom (Aviva plc's country of domicile). Income is attributed on the basis of geographical origin which does not differ materially from revenue by geographical destination, as most risks are located in the countries where the contracts were written.

2 Canada adjusted operating profit includes £1 million relating to non-insurance activities.

3 Aviva Investors adjusted operating profit includes £1 million profit relating to Aviva Investors Pooled Pensions business.

4 Other Group activities include Group Reinsurance and net expenses of £99 million associated with supporting the development of the Group's digital business written through its UK insurance intermediary which places business primarily on behalf of UK General Insurance.

5 Other includes a movement in the discount rate used for estimating lump sum payments in settlement of bodily injury claims which resulted in a gain of £190 million (see note 43(b)), a provision release of £78 million relating to the sale of Aviva USA in 2013, a gain of £36 million relating to negative goodwill on the acquisition of Friends First (see note 3), a charge of £63 million relating to the UK defined benefit pension scheme as a result of the requirement to equalise members' benefits for the effects of Guaranteed Minimum Pension (see note 51(b)) and a charge of £10 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35).

5 – Segmental information continued

(a) (ii) Segmental income statement for the year ended 31 December 2017

	United Kingdom			Europe						
	Life £m	GI £m	Canada £m	France £m	Poland £m	Italy, Ireland, Spain and Other £m	Asia £m	Aviva Investors[2] £m	Other Group Activities[3] £m	Total £m
Gross written premiums	6,872	4,355	3,138	5,692	594	5,923	1,032	—	—	27,606
Premiums ceded to reinsurers	(1,531)	(271)	(110)	(78)	(11)	(101)	(127)	—	—	(2,229)
Internal reinsurance revenue	—	(6)	—	—	—	(9)	(10)	—	25	—
Premiums written net of reinsurance	5,341	4,078	3,028	5,614	583	5,813	895	—	25	25,377
Net change in provision for unearned premiums	—	(63)	(84)	23	3	(21)	(11)	—	—	(153)
Net earned premiums	5,341	4,015	2,944	5,637	586	5,792	884	—	25	25,224
Fee and commission income	906	121	24	316	83	141	193	407	(4)	2,187
	6,247	4,136	2,968	5,953	669	5,933	1,077	407	21	27,411
Net investment income	16,202	138	86	2,613	292	811	1,465	136	323	22,066
Inter-segment revenue	—	—	—	—	—	—	—	239	—	239
Share of profit/(loss) of joint ventures and associates	72	—	—	14	—	12	(57)	—	—	41
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates	—	—	—	216	16	28	(118)	—	(7)	135
Segmental income[1]	22,521	4,274	3,054	8,796	977	6,784	2,367	782	337	49,892
Claims and benefits paid, net of recoveries from reinsurers	(10,783)	(2,547)	(1,902)	(5,145)	(397)	(2,799)	(526)	—	(14)	(24,113)
Change in insurance liabilities, net of reinsurance	1,380	78	(221)	(804)	(134)	(928)	(450)	—	5	(1,074)
Change in investment contract provisions	(9,041)	—	—	(1,591)	—	(2,121)	(947)	(137)	—	(13,837)
Change in unallocated divisible surplus	195	—	—	153	(2)	85	(137)	—	—	294
Fee and commission expense	(496)	(1,268)	(796)	(703)	(134)	(421)	(144)	(39)	(328)	(4,329)
Other expenses	(1,385)	(221)	(178)	(281)	(102)	(229)	(298)	(418)	(425)	(3,537)
Inter-segment expenses	(207)	(8)	(6)	2	(6)	(12)	—	—	(2)	(239)
Finance costs	(233)	(1)	(5)	(1)	—	(7)	(3)	—	(433)	(683)
Segmental expenses	(20,570)	(3,967)	(3,108)	(8,370)	(775)	(6,432)	(2,505)	(594)	(1,197)	(47,518)
Profit/(loss) before tax	1,951	307	(54)	426	202	352	(138)	188	(860)	2,374
Tax attributable to policyholders' returns	(330)	—	—	—	—	(4)	(37)	—	—	(371)
Profit/(loss) before tax attributable to shareholders' profits	1,621	307	(54)	426	202	348	(175)	188	(860)	2,003
Adjusting items:										
Reclassification of corporate costs and unallocated interest	—	(12)	28	48	—	—	—	5	(69)	—
Life business: Investment variances and economic assumption changes	(323)	—	—	249	(7)	12	38	—	(3)	(34)
Non-life business: Short-term fluctuation in return on investments	—	56	7	(26)	(3)	27	—	—	284	345
General insurance and health business: Economic assumption changes	—	18	(2)	(9)	—	—	—	—	—	7
Impairment of goodwill, joint ventures, associates and other amounts expensed	—	—	2	—	—	—	47	—	—	49
Amortisation and impairment of intangibles	74	31	50	1	7	5	9	5	15	197
Amortisation and impairment of AVIF	327	—	—	2	—	1	154	—	11	495
(Profit)/loss on the disposal and remeasurement of subsidiaries, joint ventures and associates	—	—	—	(216)	(16)	(28)	118	—	7	(135)
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits after integration and restructuring costs	1,699	400	31	475	183	365	191	198	(615)	2,927
Integration and restructuring costs	65	11	15	25	—	11	—	3	11	141
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	1,764	411	46	500	183	376	191	201	(604)	3,068

1 Total reported income, excluding inter-segment revenue, includes £26,949 million from the United Kingdom (Aviva plc's country of domicile). Income is attributed on the basis of geographical origin which does not differ materially from revenue by geographical destination, as most risks are located in the countries where the contracts were written.
2 Aviva Investors adjusted operating profit includes £1 million profit relating to the Aviva Investors Pooled Pensions business.
3 Other Group activities include Group Reinsurance and net expenses of £48 million associated with supporting the development of the Group's digital business written through its UK insurance intermediary which places business primarily on behalf of UK General Insurance.

5 – Segmental information continued

(a) (iii) Segmental statement of financial position as at 31 December 2018

	United Kingdom			Europe						
	Life £m	GI £m	Canada £m	France £m	Poland £m	Italy, Ireland, Spain and Other £m	Asia £m	Aviva Investors £m	Other Group activities £m	Total £m
Goodwill	663	924	82	—	27	125	51	—	—	1,872
Acquired value of in-force business and intangible assets	2,424	154	220	98	72	96	25	5	107	3,201
Interests in, and loans to, joint ventures and associates	859	—	8	117	—	55	479	—	—	1,518
Property and equipment	71	29	50	258	4	5	5	4	122	548
Investment property	6,124	436	—	3,595	—	807	—	616	(96)	11,482
Loans	27,619	—	164	710	—	255	37	—	—	28,785
Financial investments	169,221	3,627	4,696	71,903	3,423	32,842	5,422	343	6,108	297,585
Deferred acquisition costs	1,361	489	367	354	124	259	11	—	—	2,965
Other assets	38,240	5,311	1,225	8,355	304	4,840	525	1,267	13,600	73,667
Assets of operations classified as held for sale	—	—	—	—	—	—	8,855	—	—	8,855
Total assets	246,582	10,970	6,812	85,390	3,954	39,284	15,410	2,235	19,841	430,478
Insurance liabilities										
Long-term business and outstanding claims provisions	94,181	4,914	3,455	16,778	3,068	12,646	4,069	—	4	139,115
Unearned premiums	214	2,104	1,517	501	109	410	91	—	—	4,946
Other insurance liabilities	—	16	—	—	—	—	—	—	—	16
Gross liabilities for investment contracts	123,406	—	—	54,159	4	23,874	—	1,025	—	202,468
Unallocated divisible surplus	2,244	—	—	3,518	55	(78)	210	—	—	5,949
Net asset value attributable to unitholders	25	—	—	2,427	—	—	—	—	15,673	18,125
External borrowings	1,660	10	—	—	—	46	—	—	7,704	9,420
Other liabilities, including inter-segment liabilities	13,667	(255)	1,011	5,350	230	944	801	589	1,126	23,463
Liabilities of operations classified as held for sale	—	—	—	—	—	—	8,521	—	—	8,521
Total liabilities	235,397	6,789	5,983	82,733	3,466	37,842	13,692	1,614	24,507	412,023
Total equity										18,455
Total equity and liabilities										430,478

(a) (iv) Segmental statement of financial position as at 31 December 2017

	United Kingdom			Europe						
	Life £m	GI £m	Canada £m	France £m	Poland £m	Italy, Ireland, Spain and Other £m	Asia £m	Aviva Investors £m	Other Group activities £m	Total £m
Goodwill	663	924	84	—	29	124	52	—	—	1,876
Acquired value of in-force business and intangible assets	2,751	152	258	90	78	4	26	4	92	3,455
Interests in, and loans to, joint ventures and associates	936	—	9	184	—	68	445	—	—	1,642
Property and equipment	52	30	46	253	4	3	8	4	109	509
Investment property	6,242	324	—	3,322	—	215	—	788	(94)	10,797
Loans	26,695	5	180	739	7	197	34	—	—	27,857
Financial investments	184,428	4,184	4,592	72,886	3,775	27,403	5,007	400	8,407	311,082
Deferred acquisition costs	1,364	487	383	322	118	222	8	2	—	2,906
Other assets	38,800	5,370	1,338	8,567	244	3,591	765	1,020	11,995	71,690
Assets of operations classified as held for sale	—	—	—	—	—	1,685	9,186	—	—	10,871
Total assets	261,931	11,476	6,890	86,363	4,255	33,512	15,531	2,218	20,509	442,685
Insurance liabilities										
Long-term business and outstanding claims provisions[1]	100,183	5,360	3,449	17,213	3,275	10,110	4,056	—	11	143,657
Unearned premiums	228	2,003	1,578	458	119	520	74	—	—	4,980
Other insurance liabilities[1]	—	13	—	—	—	—	—	—	—	13
Gross liabilities for investment contracts	130,890	—	—	53,529	2	18,335	—	1,230	—	203,986
Unallocated divisible surplus	2,514	—	—	5,239	68	922	339	—	—	9,082
Net asset value attributable to unitholders	57	—	—	2,472	—	—	—	—	15,798	18,327
External borrowings	1,566	—	—	1	—	70	—	—	8,649	10,286
Other liabilities, including inter-segment liabilities	14,234	(294)	971	4,927	253	869	618	392	1,376	23,346
Liabilities of operations classified as held for sale	—	—	—	—	—	1,021	8,852	—	—	9,873
Total liabilities	249,672	7,082	5,998	83,839	3,717	31,847	13,939	1,622	25,834	423,550
Total equity										19,135
Total equity and liabilities										442,685

1 Following a review, 2017 comparative amounts have been amended, with a reclassification of £244 million made from 'Other insurance liabilities' to 'Long-term business and outstanding claims provisions' in order to align with note 42(a).

(b) Further analysis by products and services

The Group's results can be further analysed by products and services which comprise long-term business, general insurance and health, fund management and other activities. Non-insurance businesses in the UK previously included within 'Other', such as the savings business, have been reclassified to the long-term business or general insurance and health segments, as appropriate, as this presentation is consistent with how the business is managed (see note 1 for further details). Results for the year ended 31 December 2017 have been restated accordingly.

5 – Segmental information continued

Long-term business

Our long-term business comprises life insurance, long-term health and accident insurance, savings, pensions and annuity business written by our life insurance subsidiaries, including managed pension fund business. Long-term business also includes our share of the other life and related business written in our associates and joint ventures, as well as lifetime mortgage business written in the UK.

General insurance and health

Our general insurance and health business provides insurance cover to individuals and to small and medium-sized businesses, for risks associated mainly with motor vehicles, property and liability, such as employers' liability and professional indemnity liability, and medical expenses.

Fund management

Our fund management business invests policyholders' and shareholders' funds and provides investment management services for institutional pension fund mandates. It manages a range of retail investment products, including investment funds, unit trusts, open-ended investment companies and individual savings accounts. Clients include Aviva Group businesses and third-party financial institutions, pension funds, public sector organisations, investment professionals and private investors.

Other

'Other' includes service companies, head office expenses such as Group treasury and finance functions, and certain financing costs and taxes not allocated to business segments and elimination entries for certain inter-segment transactions.

(b) (i) Segmental income statement – products and services for the year ended 31 December 2018

	Long-term business[2] £m	General insurance and Health[2,3] £m	Fund management £m	Other[2,4] £m	Total £m
Gross written premiums[1]	18,140	10,519	—	—	28,659
Premiums ceded to reinsurers	(1,775)	(551)	—	—	(2,326)
Premiums written net of reinsurance	16,365	9,968	—	—	26,333
Net change in provision for unearned premiums	—	(81)	—	—	(81)
Net earned premiums	16,365	9,887	—	—	26,252
Fee and commission income	1,496	138	365	181	2,180
	17,861	10,025	365	181	28,432
Net investment (expense)/income	(10,375)	63	(1)	(534)	(10,847)
Inter-segment revenue	—	—	263	—	263
Share of profit/(loss) of joint ventures and associates	112	—	—	—	112
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates	84	—	27	(9)	102
Segmental income	7,682	10,088	654	(362)	18,062
Claims and benefits paid, net of recoveries from reinsurers	(16,540)	(6,602)	—	—	(23,142)
Change in insurance liabilities, net of reinsurance	6,044	202	—	—	6,246
Change in investment contract provisions	5,321	—	—	—	5,321
Change in unallocated divisible surplus	3,237	—	—	—	3,237
Fee and commission expense	(1,248)	(2,592)	(31)	478	(3,393)
Other expenses	(2,152)	(596)	(461)	(634)	(3,843)
Inter-segment expenses	(249)	(12)	—	(2)	(263)
Finance costs	(164)	(6)	—	(403)	(573)
Segmental expenses	(5,751)	(9,606)	(492)	(561)	(16,410)
Profit/(loss) before tax	1,931	482	162	(923)	1,652
Tax attributable to policyholders' returns	477	—	—	—	477
Profit/(loss) before tax attributable to shareholders' profits	2,408	482	162	(923)	2,129
Adjusting items	591	222	(16)	190	987
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	2,999	704	146	(733)	3,116

1 Gross written premiums include inward reinsurance premiums assumed from other companies amounting to £56 million, which all relates to property and liability insurance.
2 Non-insurance business in the UK previously included within Other operations, such as the savings business, have been reclassified to long-term business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details. The impact of this change was to reduce long-term operating profit by £80 million and increase general insurance and health operating profit by £4 million.
3 General insurance and health business segment includes gross written premiums of £879 million relating to health business. The remaining business relates to property and liability insurance.
4 Other includes net expenses of £99 million associated with supporting the development of the Group's digital business written through its UK insurance intermediary which places business primarily on behalf of UK General Insurance.

5 – Segmental information continued

(b) (ii) Segmental income statement – products and services for the year ended 31 December 2017 – restated[1]

	Long-term business £m	General insurance and health[3] £m	Fund management £m	Other[4] £m	Total £m
Gross written premiums[2]	17,083	10,523	—	—	27,606
Premiums ceded to reinsurers	(1,741)	(488)	—	—	(2,229)
Premiums written net of reinsurance	15,342	10,035	—	—	25,377
Net change in provision for unearned premiums	—	(153)	—	—	(153)
Net earned premiums	15,342	9,882	—	—	25,224
Fee and commission income	1,486	134	369	198	2,187
	16,828	10,016	369	198	27,411
Net investment income/(expense)	21,468	331	(1)	268	22,066
Inter-segment revenue	—	—	244	—	244
Share of profit of joint ventures and associates	41	—	—	—	41
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates	100	42	—	(7)	135
Segmental income	38,437	10,389	612	459	49,897
Claims and benefits paid, net of recoveries from reinsurers	(17,791)	(6,322)	—	—	(24,113)
Change in insurance liabilities, net of reinsurance	(863)	(211)	—	—	(1,074)
Change in investment contract provisions	(13,837)	—	—	—	(13,837)
Change in unallocated divisible surplus	294	—	—	—	294
Fee and commission expense	(1,210)	(2,668)	(36)	(415)	(4,329)
Other expenses	(1,919)	(626)	(425)	(567)	(3,537)
Inter-segment expenses	(226)	(15)	—	(3)	(244)
Finance costs	(240)	(6)	—	(437)	(683)
Segmental expenses	(35,792)	(9,848)	(461)	(1,422)	(47,523)
Profit/(loss) before tax	2,645	541	151	(963)	2,374
Tax attributable to policyholders' returns	(371)	—	—	—	(371)
Profit/(loss) before tax attributable to shareholders' profits	2,274	541	151	(963)	2,003
Adjusting items	578	163	13	311	1,065
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	2,852	704	164	(652)	3,068

1 Non-insurance business in the UK previously included within 'Other', such as the savings business, have been reclassified to the long-term business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details. The impact of this change was to reduce long-term operating profit by £30 million and increase general insurance and health operating profit by £4 million.
2 Gross written premiums include inward reinsurance premiums assumed from other companies amounting to £91 million, of which £73 million relates to property and liability insurance and £18 million relates to long-term business.
3 General insurance and health business segment includes gross written premiums of £914 million relating to health business. The remaining business relates to property and liability insurance.
4 Other includes net expenses of £48 million associated with supporting the development of the Group's digital business written through its UK insurance intermediary which places business primarily on behalf of UK General Insurance.

(b) (iii) Segmental statement of financial position – products and services as at 31 December 2018

	Long-term business[1] £m	General insurance and health[1] £m	Fund management £m	Other[1] £m	Total £m
Goodwill	**722**	**1,083**	**—**	**67**	**1,872**
Acquired value of in-force business and intangible assets	**2,688**	**403**	**5**	**105**	**3,201**
Interests in, and loans to, joint ventures and associates	**1,502**	**8**	**—**	**8**	**1,518**
Property and equipment	**260**	**147**	**4**	**137**	**548**
Investment property	**10,995**	**584**	**—**	**(97)**	**11,482**
Loans	**28,620**	**165**	**—**	**—**	**28,785**
Financial investments	**280,130**	**11,279**	**66**	**6,110**	**297,585**
Deferred acquisition costs	**1,877**	**1,088**	**—**	**—**	**2,965**
Other assets	**49,316**	**9,243**	**1,117**	**13,991**	**73,667**
Assets of operations classified as held for sale	**8,855**	**—**	**—**	**—**	**8,855**
Total assets	**384,965**	**24,000**	**1,192**	**20,321**	**430,478**
Gross insurance liabilities	**127,709**	**16,368**	**—**	**—**	**144,077**
Gross liabilities for investment contracts	**202,468**	**—**	**—**	**—**	**202,468**
Unallocated divisible surplus	**5,949**	**—**	**—**	**—**	**5,949**
Net asset value attributable to unitholders	**2,451**	**—**	**—**	**15,674**	**18,125**
External borrowings	**1,706**	**10**	**—**	**7,704**	**9,420**
Other liabilities, including inter-segment liabilities	**19,124**	**1,373**	**574**	**2,392**	**23,463**
Liabilities of operations classified as held for sale	**8,521**	**—**	**—**	**—**	**8,521**
Total liabilities	**367,928**	**17,751**	**574**	**25,770**	**412,023**
Total equity					**18,455**
Total equity and liabilities					**430,478**

1 Non-insurance business in the UK previously included within 'Other', such as the savings business, have been reclassified to the long-term business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details.

5 – Segmental information continued

(b) (iv) Segmental statement of financial position – products and services as at 31 December 2017 – restated[1]

	Long-term business £m	General insurance and health £m	Fund management £m	Other £m	Total £m
Goodwill	720	1,084	3	69	1,876
Acquired value of in-force business and intangible assets	2,922	439	4	90	3,455
Interests in, and loans to, joint ventures and associates	1,617	9	—	16	1,642
Property and equipment	240	136	4	129	509
Investment property	10,392	499	—	(94)	10,797
Loans	27,671	186	—	—	27,857
Financial investments	290,840	11,934	54	8,254	311,082
Deferred acquisition costs	1,804	1,100	2	—	2,906
Other assets	49,118	9,283	905	12,384	71,690
Assets of operations classified as held for sale	10,552	319	—	—	10,871
Total assets	395,876	24,989	972	20,848	442,685
Gross insurance liabilities	131,987	16,663	—	—	148,650
Gross liabilities for investment contracts	203,986	—	—	—	203,986
Unallocated divisible surplus	9,082	—	—	—	9,082
Net asset value attributable to unitholders	2,529	—	—	15,798	18,327
External borrowings	1,601	—	—	8,685	10,286
Other liabilities, including inter-segment liabilities	18,828	1,413	376	2,729	23,346
Liabilities of operations classified as held for sale	9,694	179	—	—	9,873
Total liabilities	377,707	18,255	376	27,212	423,550
Total equity					19,135
Total equity and liabilities					442,685

1 Non-insurance business in the UK previously included within 'Other', such as the savings business, have been reclassified to the long-term business and general insurance and health segments as this presentation is consistent with how the business is managed. See note 1 for further details.

6 – Details of income

This note gives further detail on the items appearing in the income section of the consolidated income statement.

	2018 £m	2017 £m
Gross written premiums		
Long-term:		
Insurance contracts	**11,064**	11,192
Participating investment contracts	**7,076**	5,891
General insurance and health	**10,519**	10,523
	28,659	27,606
Less: premiums ceded to reinsurers	**(2,326)**	(2,229)
Gross change in provision for unearned premiums (note 42(c)(iv))	**(98)**	(158)
Reinsurers' share of change in provision for unearned premiums (note 46(c)(iii))	**17**	5
Net change in provision for unearned premiums	**(81)**	(153)
Net earned premiums	**26,252**	25,224
Fee and commission income		
Fee income from investment contract business	**1,059**	1,062
Fund management fee income	**527**	512
Other fee income	**405**	422
Reinsurance commissions receivable	**26**	33
Other commission income	**164**	161
Net change in deferred revenue	**(1)**	(3)
	2,180	2,187
Total revenue	**28,432**	27,411
Net investment income		
Interest and similar income		
From financial instruments designated as trading and other than trading	**5,051**	4,994
From AFS investments and financial instruments at amortised cost	**54**	42
	5,105	5,036
Dividend income	**4,649**	2,542
Other income from investments designated as trading		
Realised (losses)/gains on disposals	**(922)**	511
Unrealised gains and losses (see accounting policy K)		
(Losses)/gains arising in the year	**(1,726)**	436
Gains/(losses) recognised now realised	**922**	(511)
	(804)	(75)
	(1,726)	436
Other income from investments designated as other than trading		
Realised gains on disposals	**7,278**	6,198
Unrealised gains and losses (see accounting policy K)		
(Losses)/gains arising in the year	**(19,919)**	13,153
Losses recognised now realised	**(7,278)**	(6,198)
	(27,197)	6,955
	(19,919)	13,153
Realised gains on AFS investments		
Gains recognised in prior periods as unrealised in equity	**78**	2
Net income from investment properties		
Rent	**583**	574
Expenses relating to these properties	**(121)**	(101)
Realised gains on disposal	**69**	30
Fair value gains on investment properties (note 22)	**307**	481
	838	984
Foreign exchange gains/(losses) on investments other than trading	**192**	(12)
Other investment expenses	**(64)**	(75)
Net investment (expense)/income	**(10,847)**	22,066
Share of profit after tax of joint ventures (note 19(a)(i))	**91**	89
Share of profit/(loss) after tax of associates (note 20(a)(i))	**21**	(48)
Share of profit after tax of joint ventures and associates	**112**	41
Profit on disposal and remeasurement of subsidiaries, joint ventures and associates (note 4(a))	**102**	135
Total income	**17,799**	49,653

7 – Details of expenses

This note gives further detail on the items appearing in the expenses section of the consolidated income statement.

	2018 £m	2017 £m
Claims and benefits paid		
Claims and benefits paid to policyholders on long-term business		
Insurance contracts	**12,163**	13,547
Participating investment contracts	**6,117**	5,694
Non-participating investment contracts	**8**	20
Claims and benefits paid to policyholders on general insurance and health business	**6,913**	6,647
	25,201	25,908
Less: Claim recoveries from reinsurers		
Insurance contracts	**(1,984)**	(1,772)
Participating investment contracts	**(75)**	(23)
Claims and benefits paid, net of recoveries from reinsurers	**23,142**	24,113
Change in insurance liabilities		
Change in insurance liabilities (note 41(b))	**(6,415)**	623
Change in reinsurance asset for insurance provisions (note 41(b))	**169**	451
Change in insurance liabilities, net of reinsurance	**(6,246)**	1,074
Change in investment contract provisions		
Investment income allocated to investment contracts	**(6,128)**	9,899
Other changes in provisions		
Participating investment contracts (note 44(c)(i))	**540**	2,684
Non-participating investment contracts	**272**	1,247
Change in reinsurance asset for investment contract provisions	**(5)**	7
Change in investment contract provisions	**(5,321)**	13,837
Change in unallocated divisible surplus (note 48)	**(3,237)**	(294)
Fee and commission expense		
Acquisition costs		
Commission expenses for insurance and participating investment contracts	**2,678**	2,776
Change in deferred acquisition costs for insurance and participating investment contracts	**(183)**	(182)
Deferrable costs for non-participating investment contracts	**32**	33
Other acquisition costs	**996**	958
Change in deferred acquisition costs for non-participating investment contracts	**84**	(206)
Investment (income)/expense attributable to unitholders	**(704)**	496
Reinsurance commissions and other fee and commission expense	**490**	454
	3,393	4,329
Other expenses		
Other operating expenses		
Staff costs (note 11(b))	**1,172**	1,115
Central costs and sharesave schemes	**216**	184
Depreciation	**40**	35
Impairment of goodwill on subsidiaries (note 17(a))	**13**	2
Amortisation of acquired value of in-force business on insurance/investment contracts (note 18)	**426**	468
Amortisation of intangible assets (note 18)	**209**	186
Net impairment of acquired value of in-force business (note 18)	**—**	8
Impairment of intangible assets (note 18)	**—**	7
Integration and restructuring costs	**—**	141
Other expenses (see below)	**1,729**	1,335
Impairments		
Net impairment on loans	**1**	2
Net impairment on financial investments	**—**	—
Net impairment on receivables and other financial assets	**9**	4
Net impairment on non-financial assets	**—**	1
Other net foreign exchange losses	**28**	49
Other expenses	**3,843**	3,537
Finance costs (note 8)	**573**	683
Total expenses	**16,147**	47,279

Other types of expenses were £1,729 million *(2017: £1,335 million)* which mainly included costs relating to property, IT and other items. Other items included a provision release of £78 million relating to the sale of Aviva USA in 2013, a gain of £36 million relating to negative goodwill on the acquisition of Friends First, a charge of £63 million relating to the UK defined benefit pension scheme as a result of the requirement to equalise members' benefits for the effects of Guaranteed Minimum Pension and a charge of £10 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35).

The change in insurance liabilities line includes a gain of £190 million relating to the movement in the discount rate used for estimating lump sum payments in settlement of bodily injury claims (see note 43(b)).

8 – Finance costs

This note analyses the interest costs on our borrowings (which are described in note 52) and similar charges. Finance costs comprise:

	2018 £m	2017 £m
Interest expense on core structural borrowings		
Subordinated debt	**364**	391
Long term senior debt	**6**	4
Commercial paper	**(2)**	(2)
	368	393
Interest expense on operational borrowings		
Amounts owed to financial institutions	**20**	34
Securitised mortgage loan notes at fair value	**95**	83
	115	117
Interest on collateral received	**8**	9
Net finance charge on pension schemes (note 51(b)(i))	**22**	24
Unwind of discount on GI reserves	**—**	2
Extinguishment of debt	**—**	47
Other similar charges	**60**	91
Total finance costs	**573**	683

9 – Life business investment variances and economic assumption changes

The long-term nature of much of the Group's operations means that, for management's decision-making and internal performance management, the effects of short-term economic volatility are treated as adjusting items. The Group focuses instead on a Group adjusted operating profit measure that incorporates an expected return on investments supporting its life business, as described below.

(a) Definitions

Group adjusted operating profit for life business is based on expected investment returns on financial investments backing shareholder and policyholder funds over the reporting period, with consistent allowance for the corresponding expected movements in liabilities. Group adjusted operating profit includes the effect of variance in experience for non-economic items, such as mortality, persistency and expenses, and the effect of changes in non-economic assumptions, where not treated as other items. Changes due to economic items, such as market value movements and interest rate changes, which give rise to variances between actual and expected investment returns, and the impact of changes in economic assumptions on liabilities, are disclosed separately outside Group adjusted operating profit.

(b) Economic volatility

The investment variances and economic assumption changes excluded from Group adjusted operating profit for life businesses are as follows:

Life business	2018 £m	2017 £m
Investment variances and economic assumptions	**(197)**	34

Investment variances and economic assumption changes were £197 million negative *(2017: £34 million positive)*, primarily due to negative variances in the UK and Italy. In the UK, these variances were mainly due to an increase in yields, the widening of corporate bond spreads and an increase in the allowance for the possible adverse impact of the decision for the UK to leave the European Union, partially offset by the beneficial impact of our equity hedges. The negative variance in Italy was primarily driven by a widening of sovereign credit spreads and a fall in equity markets.

The Group has kept under review the allowance in our long-term assumptions for future property prices and rental income for the possible adverse impact of the decision for the UK to leave the European Union. This allowance has been determined in line with previous periods and is £395 million as at 31 December 2018, an increase of £109 million from 31 December 2017.

The variance in 2017 was driven by positive variances in the UK, partially offset by negative variances in France. Positive variances in the UK were mainly due to economic modelling developments implemented in 2017. These included developments to align the approach to calculating valuation interest rates across the heritage Aviva and Friends Life portfolios and also a development to the approach to calculating the valuation interest rate for certain deferred annuity business. The negative variance in France was primarily due to an increase in life annuity pension reserves, resulting from a reduction to the discount rate cap used in the calculation of these reserves.

9 – Life business investment variances and economic assumption changes continued

(c) Methodology

The expected investment returns and corresponding expected movements in life business liabilities are calculated separately for each principal life business unit.

The expected return on investments for both policyholders' and shareholders' funds is based on opening economic assumptions applied to the expected funds under management over the reporting period. Expected investment return assumptions are derived actively, based on market yields on risk-free fixed interest assets at the end of each financial year. The same margins are applied on a consistent basis across the Group to gross risk-free yields, to obtain investment return assumptions for equity and property. Expected funds under management are equal to the opening value of funds under management, adjusted for sales and purchases during the period arising from expected operating experience.

The actual investment return is affected by differences between the actual and expected funds under management and changes in asset mix, as well as movements in interest rates. To the extent that these differences arise from the operating experience of the life business, or management decisions to change asset mix, the effect is included in the Group adjusted operating profit. The residual difference between actual and expected investment return is included in investment variances, outside Group adjusted operating profit but included in profit before tax.

The movement in liabilities included in Group adjusted operating profit reflects both the change in liabilities due to the expected return on investments and the impact of experience variances and assumption changes for non-economic items. This would include movements in liabilities due to changes in the discount rate arising from discretionary management decisions that impact on product profitability over the lifetime of products.

The effect of differences between actual and expected economic experience on liabilities, and changes to economic assumptions used to value liabilities, are taken outside Group adjusted operating profit. For many types of life business, including unit-linked and with-profits funds, movements in asset values are offset by corresponding changes in liabilities, limiting the net impact on profit. The profit impact of economic volatility on other life business depends on the degree of matching of assets and liabilities, and exposure to financial options and guarantees.

(d) Assumptions

The expected rate of investment return is determined using consistent assumptions between operations, having regard to local economic and market forecasts of investment return and asset classification under IFRS.

The principal assumptions underlying the calculation of the expected investment return for equity and property are:

	Equity		Property	
	2018 %	2017 %	**2018 %**	2017 %
United Kingdom	**4.8**	4.8	**3.3**	3.3
Eurozone	**4.4**	4.2	**2.9**	2.7

The expected return on equity and property has been calculated by reference to the ten year mid-price swap rate for an AA-rated bank in the relevant currency plus a risk premium. The use of risk premium reflects management's long-term expectations of asset return in excess of the swap yield from investing in different asset classes. The asset risk premiums are set out in the table below:

All territories	**2018 %**	2017 %
Equity risk premium	**3.5**	3.5
Property risk premium	**2.0**	2.0

The ten year mid-price swap rates as at the start of the period are set out in the table below:

Territories	**2018 %**	2017 %
United Kingdom	**1.3**	1.3
Eurozone	**0.9**	0.7

For fixed interest securities classified as fair value through profit or loss, the expected investment returns are based on average prospective yields for the actual assets held less an adjustment for credit risk (assessed on a best estimate basis); this includes an adjustment for credit risk on all eurozone sovereign debt. Where such securities are classified as held for sale, the expected investment return comprises the expected interest or dividend payments and amortisation of the premium or discount at purchase.

10 – Non-life business: short-term fluctuations in return on investments

Group adjusted operating profit for non-life business is based on an expected long-term investment return over the period. Any variance between the total investment return (including realised and unrealised gains) and the expected return over the period is disclosed separately outside Group adjusted operating profit, in short-term fluctuations. The long-term investment return and economic assumption changes for our non-life business is described in more detail below.

(a) The short-term fluctuations in investment return and economic assumption changes attributable to the non-life business result and reported outside operating profit were as follows:

Non-life business	2018 £m	2017 £m
Short-term fluctuations in investment return (see (b) below)	**(476)**	(345)
Economic assumption changes (see (g) below)	**1**	(7)
	(475)	(352)

(b) The long-term investment return and short-term fluctuation are as follows:

Non-life business	2018 £m	2017 £m
Analysis of investment income:		
Net investment (expenses)/income	**(88)**	49
Foreign exchange losses and other charges	**(8)**	(24)
	(96)	25
Analysed between:		
Long-term investment return, reported within operating profit	**380**	370
Short-term fluctuation in investment return, reported outside operating profit		
General insurance and health	**(315)**	(57)
Other operations[1]	**(161)**	(288)
	(476)	(345)
	(96)	25

1 Represents short-term fluctuations on assets backing non-life business in Group centre investments, including the centre hedging programme and Group external borrowings.

(c) The long-term investment return is calculated separately for each principal non-life market. In respect of equities and investment properties, the return is calculated by multiplying the opening market value of the investments, adjusted for sales and purchases during the year, by the long-term rate of investment return.

The long-term rate of investment return is determined using consistent assumptions between operations, having regard to local economic and market forecasts of investment return. The allocated long-term return for other investments (including debt securities) is the actual income receivable for the year. Actual income and long-term investment return both contain the amortisation of the discounts/premium arising on the acquisition of fixed income securities. For other operations, the long-term return reflects assets backing non-life business held in Group centre investments.

Market value movements which give rise to variances between actual and long-term investment returns are disclosed separately in short-term fluctuations outside operating profit.

The impact of realised and unrealised gains and losses on Group centre investments, including the centre hedging programme which is designed to economically protect the total Group's capital against adverse equity and foreign exchange movements, is included in short-term fluctuations on other operations.

The short-term fluctuation of a £476 million loss during 2018 was primarily due to adverse market conditions across most of our major markets. This resulted in losses on fixed interest income securities driven by interest rate increases and widening credit spreads plus significant falls in equities and other adverse market movements on Group centre holdings.

10 – Non-life business: short-term fluctuations in return on investments continued

(d) The total assets supporting the general insurance and health business, which contribute towards the long-term return, are:

	2018 £m	2017 £m
Debt securities	**9,271**	10,054
Equity securities	**866**	772
Investment properties	**584**	499
Cash and cash equivalents	**1,294**	1,115
Other[1]	**2,349**	2,498
Assets supporting general insurance and health business	**14,364**	14,938
Assets supporting other non-life business[2]	**812**	685
Total assets supporting non-life business	**15,176**	15,623

1 Includes the internal loan to Group from UK Insurance.
2 Represents assets backing non-life business in Group centre investments, including the centre hedging programme.

The principal assumptions underlying the calculation of the long-term investment return are:

	Long-term rates of return Equities		Long-term rates of return Investment properties	
	2018 %	2017 %	2018 %	2017 %
United Kingdom	**4.8**	4.8	**3.3**	3.3
Eurozone	**4.4**	4.2	**2.9**	2.7
Canada	**5.9**	5.5	**4.4**	4.0

The long-term rates of return on equities and investment properties have been calculated by reference to the ten-year mid-price swap rate for an AA-rated bank in the relevant currency plus a risk premium. The underlying reference rates and risk premiums for the United Kingdom and Eurozone are shown in note 9.

(e) The table below compares the actual return on investments attributable to the non-life business, after deducting investment management expenses and charges, with the aggregate long-term return over a five-year period.

	2014-2018 £m	2013-2017 £m
Actual return attributable to shareholders	**821**	1,148
Long-term return credited to operating results	**(1,983)**	(2,170)
Excess of actual returns over long-term returns	**(1,162)**	(1,022)

Management continues to view the excess of actual returns over long-term returns as short-term fluctuations. The principal assumptions underlying the calculation of the long-term investment returns are reviewed on a regular basis, having regard to local economic and market forecasts, and are considered appropriate for the purpose of decision making and internal performance management by the Group chief operating decision maker.

(f) The table below shows the sensitivity of the Group's adjusted non-life business Group adjusted operating profit before tax to changes in the long-term rates of return:

Movement in investment return for	By	Change in	2018 £m	2017 £m
Equities	1% higher/lower	Group adjusted operating profit before tax	**8**	3
Investment properties	1% higher/lower	Group adjusted operating profit before tax	**5**	3

(g) The economic assumption changes of £1 million *(2017: £7 million adverse)* arise as a result of a slight increases in interest rates used to value claims reserves for periodic payment orders (PPOs) and latent claims.

As explained in accounting policy L, provisions for latent claims are discounted, using rates based on the relevant swap curve, in the relevant currency at the reporting date, having regard to the duration of the expected settlement of the claims. The discount rate is set at the start of the accounting period, with any change in rates between the start and end of the accounting period being reflected below Group adjusted operating profit as an economic assumption change. The range of discount rates used is disclosed in note 42.

11 – Employee information

This note shows where our staff are employed throughout the world, excluding staff employed by our joint ventures and associates, and analyses the total staff costs.

(a) Employee numbers

The number of persons employed by the Group, including directors under a service contract, was:

	At 31 December		Average for the year[1]	
	2018 Number	2017 Number[2]	**2018 Number**	2017 Number[2]
United Kingdom	**15,746**	14,639	**15,414**	14,785
Canada	**4,334**	4,336	**4,330**	4,320
France	**3,928**	3,959	**3,911**	3,962
Poland	**1,708**	1,718	**1,716**	1,715
Italy, Ireland, Spain and Other	**1,950**	1,687	**1,864**	1,723
Asia	**1,832**	1,789	**1,817**	1,729
Aviva Investors	**1,471**	1,437	**1,460**	1,350
Other Group activities	**734**	764	**720**	748
Total employee numbers	**31,703**	30,329	**31,232**	30,332

1 Average employee numbers have been calculated using a monthly average that takes into account recruitment, leavers, transfers, acquisitions and disposals of businesses during the year.
2 Following a review of employee numbers, comparative amounts have been amended from those previously reported. The effect of this change is to increase the number of employees in Canada by 77, Asia by 231 and in Total by 308, and to increase the average number of employees in Canada by 78, Asia by 164 and in Total by 242.

(b) Staff costs

	2018 £m	2017 £m
Wages and salaries	**1,260**	1,241
Social security costs	**233**	224
Post-retirement obligations		
Defined benefit schemes (note 51(d))	**23**	23
Defined contribution schemes (note 51(d))	**163**	146
Profit sharing and incentive plans	**221**	208
Equity compensation plans (note 33(d))	**64**	77
Termination benefits	**10**	23
Total staff costs	**1,974**	1,942

Staff costs are charged within:

	2018 £m	2017 £m
Acquisition costs	**565**	526
Claims handling expenses	**161**	164
Central costs and sharesave schemes	**76**	100
Other operating expenses (note 7)	**1,172**	1,115
Integration and restructuring costs	**—**	37
Total staff costs	**1,974**	1,942

12 – Directors

Information concerning individual directors' emoluments, interests and transactions is given in the Directors' Remuneration Report in the 'Corporate governance' section of this report. For the purposes of the disclosure required by Schedule 5 to the Companies Act 2006, the total aggregate emoluments of the directors in respect of 2018 was £10 million *(2017: £12 million)*. Employer contributions to pensions for executive directors for qualifying periods were £165,373 *(2017: £50,336)*. The aggregate net value of share awards granted to the directors in the period was £10.2 million *(2017: £10.6 million)*. The net value has been calculated by reference to the closing middle market price of an ordinary share at the date of grant. During the year, no share options were exercised by directors *(2017: no share options)*.

13 – Auditors' remuneration

This note shows the total remuneration payable by the Group, excluding VAT and any overseas equivalent thereof, to our auditors.

	2018 £m	2017 £m
Fees payable to PwC LLP and its associates for the statutory audit of the Aviva Group and Company financial statements	**1.9**	2.6
Fees payable to PwC LLP and its associates for other services		
Audit of Group subsidiaries	**13.4**	14.1
Additional fees related to the prior year audit of Group subsidiaries	**0.4**	0.9
Total audit fees	**15.7**	17.6
Audit related assurance	**4.7**	4.7
Other assurance services	**0.9**	2.2
Total audit and assurance fees	**21.3**	24.5
Tax compliance services	**—**	—
Tax advisory services	**—**	—
Services relating to corporate finance transactions	**—**	—
Other non-audit services not covered above	**1.0**	0.8
Fees payable to PwC LLP and its associates for services to Group companies	**22.3**	25.3
Fees payable to BDO LLP and its associates for the statutory audit of Group subsidiaries in Poland	0.2	—
Fees payable to PwC LLP, BDO LLP and their associates for services to Group companies	**22.5**	**25.3**
Fees payable to PwC LLP and its associates for Group occupational pensions scheme audits	**0.3**	0.3

The table above reflects the disclosure requirements of SI2011/2198 – The Companies (Disclosure of Auditor Remuneration and Liability Limitation Agreements) (Amendment) Regulations 2011.

Fees payable for the audit of the Group's subsidiaries include fees for the statutory audit of the subsidiaries, both inside and outside the UK, and for the work performed by the principal auditors in respect of the subsidiaries for the purpose of the consolidated financial statements of the Group.

Audit related assurance comprises services in relation to statutory and regulatory filings. These include fees for the audit of the Group's Solvency II regulatory returns for 2018, services for the audit of other regulatory returns of the Group's subsidiaries and review of interim financial information under the Listing Rules of the UK Listing Authority. Total audit fees (excluding additional fees relating to the prior year audits of Group subsidiaries) and audit-related assurance fees were £20.0 million *(2017: £21.5 million)*.

Other assurance services in 2018 of £0.9 million *(2017: £2.2 million)* mainly include fees relating to the independent review of the Solvency II internal model that the Company believes is most appropriately performed by the principal auditors.

The 2018 fees for other non-audit services of £1.0 million include a number of individually smaller services.

Details of the Group's process for safeguarding and supporting the independence and objectivity of the external auditors are given in the Audit Committee report.

14 – Tax

This note analyses the tax charge for the year and explains the factors that affect it.

(a) Tax (credited)/charged to the income statement

(i) The total tax (credit)/charge comprises:

	2018 £m	2017 £m
Current tax		
For the period	**559**	651
Prior period adjustments	**(49)**	(46)
Total current tax	**510**	605
Deferred tax		
Origination and reversal of temporary differences	**(531)**	134
Changes in tax rates or tax laws	**(13)**	(8)
Write (back) of deferred tax assets	**(1)**	(3)
Total deferred tax	**(545)**	123
Total tax (credited)/charged to income statement	**(35)**	728

(ii) The Group, as a proxy for policyholders in the UK, Ireland and Singapore, is required to record taxes on investment income and gains each year. Accordingly, the tax benefit or expense attributable to UK, Ireland and Singapore life insurance policyholder returns is included in the tax charge. The tax credit attributable to policyholder returns included in the credit above is £477 million *(2017: charge of £371 million)*.

(iii) The tax credit above, comprising current and deferred tax, can be analysed as follows:

	2018 £m	2017 £m
UK tax	**(236)**	528
Overseas tax	**201**	200
	(35)	728

(iv) Unrecognised tax losses and temporary differences of previous years were used to reduce the current tax expense and deferred tax credit by £nil million and £nil million *(2017: £13 million and £nil million)*, respectively.

(v) Deferred tax (credited)/charged to the income statement represents movements on the following items:

	2018 £m	2017 £m
Long-term business technical provisions and other insurance items	**907**	37
Deferred acquisition costs	**3**	(2)
Unrealised (losses) on investments	**(1,453)**	(33)
Pensions and other post-retirement obligations	**2**	19
Unused losses and tax credits	**7**	19
Subsidiaries, associates and joint ventures	**(7)**	(4)
Intangibles and additional value of in-force long-term business	**(64)**	(85)
Provisions and other temporary differences	**60**	172
Total deferred tax (credited)/charged to income statement	**(545)**	123

(b) Tax (credited)/charged to other comprehensive income

(i) The total tax (credit)/charge comprises:

	2018 £m	2017 £m
Current tax		
In respect of pensions and other post-retirement obligations	**(59)**	(45)
In respect of foreign exchange movements	**(1)**	4
	(60)	(41)
Deferred tax		
In respect of pensions and other post-retirement obligations	**16**	42
In respect of fair value (losses) on owner-occupied properties	**—**	(2)
In respect of unrealised (losses) on investments	**(7)**	(9)
	9	31
Total tax (credited) to other comprehensive income	**(51)**	(10)

(ii) The tax charge attributable to policyholders' returns included above is £nil (*2017: £nil*).

14 – Tax continued

(c) Tax credited to equity

Tax credited directly to equity in the year in respect of coupon payments on the direct capital instrument and tier 1 notes amounted to £8 million *(2017: £16 million)*.

(d) Tax reconciliation

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the tax rate of the home country of the Company as follows:

	Shareholder £m	**Policyholder £m**	**2018 £m**	Shareholder £m	Policyholder £m	2017 £m
Total profit before tax	**2,129**	**(477)**	**1,652**	2,003	371	2,374
Tax calculated at standard UK corporation tax rate of 19.00% *(2017: 19.25%)*	**405**	**(91)**	**314**	386	71	457
Reconciling items						
Different basis of tax – policyholders	**—**	**(385)**	**(385)**	—	301	301
Adjustment to tax charge in respect of prior periods	**(16)**	**—**	**(16)**	(44)	—	(44)
Non-assessable income and items not taxed at the full statutory rate	**(4)**	**—**	**(4)**	(47)	—	(47)
Non-taxable profit on sale of subsidiaries and associates	**(59)**	**—**	**(59)**	(27)	—	(27)
Disallowable expenses	**50**	**—**	**50**	47	—	47
Different local basis of tax on overseas profits	**71**	**(1)**	**70**	82	(1)	81
Change in future local statutory tax rates	**—**	**—**	**—**	(36)	—	(36)
Movement in deferred tax not recognised	**(3)**	**—**	**(3)**	(3)	—	(3)
Tax effect of profit from joint ventures and associates	**(6)**	**—**	**(6)**	(3)	—	(3)
Other	**4**	**—**	**4**	2	—	2
Total tax (credited)/charged to income statement	**442**	**(477)**	**(35)**	357	371	728

The tax (credit)/charge attributable to policyholder returns is removed from the Group's total profit before tax in arriving at the Group's profit before tax attributable to shareholders' profits. As the net of tax profits attributable to with-profits and unit-linked policyholders is zero, the Group's pre-tax profit attributable to policyholders is an amount equal and opposite to the tax charge/(credit) attributable to policyholders included in the total tax charge.

Finance Act 2016 introduced legislation reducing the UK corporation tax rate from 1 April 2020 to 17%. In addition, in France the rate of corporation tax was reduced from 34.43% to 32.02% from 1 January 2019, to 27.37% from 1 January 2021 and 25.83% from 1 January 2022. These reduced rates were used in the calculation of the Group's deferred tax assets and liabilities as at 31 December 2018 and 31 December 2017.

15 – Earnings per share

This note shows how to calculate earnings per share on profit attributable to ordinary shareholders, based both on the present shares in issue (the basic earnings per share) and the potential future shares in issue, including conversion of share options granted to employees (the diluted earnings per share). We have also shown the same calculations based on our Group adjusted operating profit as we believe this gives an important indication of operating performance. Consideration of both these measures gives a full picture of the performance of the business in the period.

(a) Basic earnings per share

(i) The profit attributable to ordinary shareholders is:

	2018			2017		
	Group adjusted operating profit £m	**Adjusting items £m**	**Total £m**	Group adjusted operating profit £m	Adjusting items £m	Total £m
Profit before tax attributable to shareholders' profits	**3,116**	**(987)**	**2,129**	3,068	(1,065)	2,003
Tax attributable to shareholders' profit	**(647)**	**205**	**(442)**	(639)	282	(357)
Profit for the year	**2,469**	**(782)**	**1,687**	2,429	(783)	1,646
Amount attributable to non-controlling interests	**(100)**	**(19)**	**(119)**	(134)	(15)	(149)
Cumulative preference dividends for the year	**(17)**	**—**	**(17)**	(17)	—	(17)
Coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax)	**(36)**	**—**	**(36)**	(65)	—	(65)
Profit attributable to ordinary shareholders	**2,316**	**(801)**	**1,515**	2,213	(798)	1,415

(ii) Basic earnings per share is calculated as follows:

	2018			2017		
	Before tax £m	**Net of tax, NCI, preference dividends and DCI[1] £m**	**Per share p**	Before tax £m	Net of tax, NCI, preference dividends and DCI[1] £m	Per share p
Group adjusted operating profit attributable to ordinary shareholders	**3,116**	**2,316**	**58.4**	3,068	2,213	54.8
Integration and restructuring costs	**—**	**—**	**—**	(141)	(111)	(2.8)
Group adjusted operating profit attributable to ordinary shareholders after integration and restructuring costs	**3,116**	**2,316**	**58.4**	2,927	2,102	52.0
Adjusting items:						
Investment variances and economic assumption changes	**(197)**	**(198)**	**(5.0)**	34	86	2.1
Non-life business: Short-term fluctuation in return on investments	**(476)**	**(378)**	**(9.6)**	(345)	(250)	(6.3)
General insurance and health business: Economic assumption changes	**1**	**(1)**	**—**	(7)	(6)	(0.1)
Impairment of goodwill, joint ventures, associates and other amounts expensed	**(13)**	**(13)**	**(0.3)**	(49)	(49)	(1.2)
Amortisation and impairment of intangibles	**(209)**	**(172)**	**(4.3)**	(197)	(151)	(3.7)
Amortisation and impairment of acquired value of in-force business	**(426)**	**(371)**	**(9.4)**	(495)	(430)	(10.6)
Profit on disposal and remeasurement of subsidiaries, joint ventures and associates	**102**	**102**	**2.6**	135	113	2.8
Other[2]	**231**	**230**	**5.8**	—	—	—
Profit attributable to ordinary shareholders	**2,129**	**1,515**	**38.2**	2,003	1,415	35.0

1 DCI includes the direct capital instrument and tier 1 notes.
2 Other includes a movement in the discount rate used for estimating lump sum payments in the settlement of bodily injury claims which resulted in a gain of £190 million (see note 43(b)), a provision release of £78 million relating to the sale of Aviva USA in 2013, a gain of £36 million relating to negative goodwill on the acquisition of Friends First (see note 3), a charge of £63 million relating to the UK defined benefit pension scheme as a result of the requirement to equalise members' benefits for the effects of Guaranteed Minimum Pension (see note 51(b)) and a charge of £10 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35).

(iii) The calculation of basic earnings per share uses a weighted average of 3,963 million *(2017: 4,041 million)* ordinary shares in issue, after deducting treasury shares. The actual number of shares in issue at 31 December 2018 was 3,902 million *(2017: 4,013 million)* and 3,899 million *(2017: 4,010* million) excluding treasury shares.

(iv) On 1 May 2018 Aviva announced a share buy-back of ordinary shares for an aggregate purchase price of up to £600 million *(2017: £300 million)*, which was carried out in full during the period from 1 May 2018 to 17 September 2018. The number of shares in issue has reduced by 119 million as at 31 December 2018 in respect of shares acquired and cancelled under the buy-back programme. Net of new shares issued during the period, the number of shares in issue reduced by 110 million *(2017: 49* million).

15 – Earnings per share continued

(b) Diluted earnings per share

(i) Diluted earnings per share is calculated as follows:

	2018			2017		
	Total £m	**Weighted average number of shares million**	**Per share p**	Total £m	Weighted average number of shares million	Per share p
Profit attributable to ordinary shareholders	**1,515**	**3,963**	**38.2**	1,415	4,041	35.0
Dilutive effect of share awards and options	**—**	**47**	**(0.4)**	—	48	(0.4)
Diluted earnings per share	**1,515**	**4,010**	**37.8**	1,415	4,089	34.6

(ii) Diluted earnings per share on Group adjusted operating profit attributable to ordinary shareholders is calculated as follows:

	2018			2017		
	Total £m	**Weighted average number of shares million**	**Per share p**	Total £m	Weighted average number of shares million	Per share p
Group adjusted operating profit attributable to ordinary shareholders	**2,316**	**3,963**	**58.4**	2,213	4,041	54.8
Dilutive effect of share awards and options	**—**	**47**	**(0.6)**	—	48	(0.7)
Diluted group adjusted operating profit per share	**2,316**	**4,010**	**57.8**	2,213	4,089	54.1

16 – Dividends and appropriations

This note analyses the total dividends and other appropriations paid during the year. The table below does not include the final dividend proposed after the year end because it is not accrued in these financial statements.

	2018 £m	2017 £m
Ordinary dividends declared and charged to equity in the year		
Final 2017 – 19.00 pence per share, paid on 17 May 2018	**764**	—
Final 2016 – 15.88 pence per share, paid on 17 May 2017	**—**	646
Interim 2018 – 9.25 pence per share, paid on 24 September 2018	**364**	—
Interim 2017 – 8.40 pence per share, paid on 17 November 2017	**—**	337
	1,128	983
Preference dividends declared and charged to equity in the year	**17**	17
Coupon payments on DCI and tier 1 notes	**44**	81
	1,189	1,081

Subsequent to 31 December 2018, the directors proposed a final dividend for 2018 of 20.75 pence per ordinary share *(2017: 19.00 pence)*, amounting to £810 million *(2017: £764 million)* in total. Subject to approval by shareholders at the AGM, the dividend will be paid on 30 May 2019 and will be accounted for as an appropriation of retained earnings in the year ending 31 December 2019.

Interest on the direct capital instrument and tier 1 notes is treated as an appropriation of retained profits and, accordingly, is accounted for when paid. Tax relief is obtained at a rate of 19% *(2017: 19.25%)*.

17 – Goodwill

This note analyses the changes to the carrying amount of goodwill during the year, and details the results of our impairment testing on both goodwill and intangible assets with indefinite lives.

(a) Carrying amount

	2018 £m	2017 £m
Gross amount		
At 1 January	**2,080**	2,292
Acquisitions and additions	**8**	11
Disposals	**(99)**	(241)
Foreign exchange rate movements	**2**	18
At 31 December	**1,991**	2,080
Accumulated impairment		
At 1 January	**(168)**	(247)
Impairment charges	**(13)**	(10)
Disposals	**63**	96
Foreign exchange rate movements	**(1)**	(7)
At 31 December	**(119)**	(168)
Carrying amount at 1 January	**1,912**	2,045
Carrying amount at 31 December	**1,872**	1,912
Less: Assets classified as held for sale	**—**	(36)
Carrying amount at 31 December	**1,872**	1,876

Goodwill from acquisitions and additions in 2018 arose from the acquisition of Wealthify. Goodwill from acquisitions and additions in 2017 arose on the acquisition of VietinBank's 50% shareholding in VietinBank Aviva Life Insurance Company Limited (Aviva Vietnam) which resulted in Aviva Vietnam becoming a wholly owned subsidiary of the Group. Negative goodwill of £36 million arose from the purchase of Friends First and was recognised immediately in the income statement (see note 3).

Disposals in 2018 include the disposal of the Italy Avipop business as well as the remainder of the business in Spain (see note 4).

The total impairment of goodwill in 2018 is a charge of £13 million comprised of impairments of goodwill relating to business in the UK, Asia and Poland. The total impairment of goodwill in 2017 was a charge of £10 million relating to business in Canada and the held for sale adjustments for Friends Provident International Limited (FPI). Impairment tests on goodwill were conducted as described in note 17(b) below.

(b) Goodwill allocation and impairment testing

A summary of the goodwill and intangibles with indefinite useful lives allocated to groups of cash generating units is presented below.

	Carrying amount of goodwill		Carrying amount of intangibles with indefinite useful lives (detailed in note 18)		Total	
	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
United Kingdom – long-term business	**663**	663	**—**	—	**663**	663
United Kingdom – general insurance and health	**924**	924	**—**	—	**924**	924
Canada	**82**	84	**—**	—	**82**	84
France – long-term business	**—**	—	**56**	55	**56**	55
Poland	**27**	29	**7**	7	**34**	36
Italy – general insurance and health	**26**	29	**—**	—	**26**	29
Italy – long-term business	**—**	8	**—**	—	**—**	8
Ireland – general insurance and health	**99**	98	**—**	—	**99**	98
Spain – long-term business	**—**	25	**—**	190	**—**	215
Asia	**51**	52	**—**	—	**51**	52
	1,872	1,912	**63**	252	**1,935**	2,164

Goodwill in all business units is tested for impairment by comparing the carrying value of the cash generating unit to which the goodwill relates, to the recoverable value of that cash generating unit. The recoverable amount is the value in use of the cash generating unit unless otherwise stated. The classification of FPI in Asia remains as held for sale (see note 4(c)). The Group measured the recoverable amount of FPI at the estimated fair value less costs to sell.

Long-term business

Value in use has been calculated based on a shareholder value of the business calculated in accordance with Solvency II principles, adjusted where Solvency II does not represent a best estimate of shareholders' interests. The principal adjustments relate to the exclusion of the benefit of transitional measures on technical provisions and the volatility adjustment under Solvency II, modification of the Solvency II risk margin to an economic view and removal of restrictions on contract boundaries or business scope.

17 – Goodwill continued

The present value of expected profits arising from future new business may be included within the shareholder value and is calculated on an adjusted Solvency II basis, using profit projections based on the most recent three year business plans approved by management. These plans reflect management's best estimate of future profits based on both historical experience and expected growth rates for the relevant cash generating unit. The underlying assumptions of these projections include market share, customer numbers, mortality, morbidity and persistency.

Future new business profits beyond the initial three years are extrapolated using a steady growth rate. Growth rates and expected future profits are set with regards to management estimates, past experience and relevant available market statistics.

Expected profits from future new business are discounted using a risk adjusted discount rate. The discount rate is a combination of a risk-free rate and a risk margin to make prudent allowance for the risk that experience in future years for new business may differ from that assumed.

Key assumptions

The Solvency II non-economic assumptions in relation to mortality, morbidity, persistency and expenses and other items are derived actively, based on management's best estimate assumptions. Economic assumptions are based on market data as at the end of each reporting period. The basic risk-free rate curves used to value the technical provisions reflect the curves, credit risk adjustment and fundamental spread for the matching adjustment published by EIOPA on their website. For the purposes of calculating value in use, the Solvency II risk margin has been modified to an economic view, with a cost of capital rate of 2%.

For the goodwill in the UK Life long-term business that arose on the Friends Life acquisition, the value of the business was sufficient to demonstrate goodwill recoverability on its own. As such it was not necessary to estimate the present value of expected profits from future new business.

General insurance, health, fund management and other businesses

Value in use is calculated as the discounted value of expected future profits of each business. The calculation uses cash flow projections based on business plans approved by management covering a three year period. These plans reflect management's best estimate of future profits based on both historical experience and expected growth rates for the relevant cash generating unit. The underlying assumptions of these projections include market share, customer numbers, premium rate and fee income changes, claims inflation and commission rates.

Cash flows beyond that three year period are extrapolated using a steady growth rate. Growth rates and expected future profits are set with regards to past experience and relevant available market statistics.

Future profits are discounted using a risk adjusted discount rate.

Key assumptions

	Extrapolated future profits growth rate		Future profits discount rate	
	2018 %	2017 %	**2018 (Pre-tax) %**	2017 (Pre-tax) %
United Kingdom general insurance and health	**1**	1	**6.3**	5.8
Ireland general insurance and health	**Nil**	Nil	**6.9**	6.2
Italy general insurance and health	**Nil**	1	**12.5**	11.2
Canada general insurance	**4**	4	**7.8**	7.0

Indefinite life intangible asset

France

The recoverable amount of the indefinite life intangible asset has been assessed based on the fair value less costs to sell of the cash generating unit to which it relates. The fair value less costs to sell was determined based on the quoted market value of Aviva's share of the subsidiary to which it relates.

Results of impairment testing

As a result of the announced sale of the Group's entire shareholding in FPI, the recoverable amount of FPI within the wider Asian cash generating unit was determined based on the agreed consideration less costs to sell. This indicated an impairment of goodwill and AVIF related to non-participating investment contracts of £8 million and £110 million respectively in 2017 (see note 18) as a result of the shortfall of £118 million between FPI's carrying amount and its fair value less costs to sell of £334 million. The estimate of fair value less costs to sell was calculated on the basis of the agreed sales consideration of £340 million (see note 4(c)(i)) after deducting a £6 million reinsurance recapture fee between FPI and Aviva Re Limited which is embedded in the sale agreement. The FPI goodwill balance is fully written down, however, there has been a further impairment of £13 million to AVIF in 2018 (see note 18).

Review of a UK business within the other Group activities operating segment identified the need to impair a balance of £8 million of goodwill due to the current and forecast performance of the related cash generating unit being below the original financial plan.

Management's impairment review in relation to the goodwill allocated to the Asian operating segment indicated the need to write down a balance of £3 million as a result of the current and forecast financial performance of the related cash generating units.

A further impairment of £2 million was identified to the goodwill allocated to the Polish business due to the deterioration of the financial position and forecast financial performance of one of the cash generating units.

Other than for the cash generating units noted above, the recoverable amount exceeds the carrying value of the cash generating units including goodwill, and there is no further impairment of goodwill in 2018.

18 – Acquired value of in-force business (AVIF) and intangible assets

This note shows the movements in cost, amortisation and impairment of the acquired value of in-force business and intangible assets during the year.

	AVIF on insurance contracts[1] (a) £m	AVIF on investment contracts[2] (a) £m	Other intangible assets with finite useful lives (b) £m	Intangible assets with indefinite useful lives (c) £m	Total £m
Gross amount					
At 1 January 2017	2,639	2,704	1,976	367	7,686
Additions and transfers	8	—	184	—	192
Disposals	(40)	(7)	(208)	—	(255)
Foreign exchange rate movements	13	—	14	13	40
At 31 December 2017	**2,620**	**2,697**	**1,966**	**380**	**7,663**
Additions and transfers	**67**	**30**	**153**	**(57)**	**193**
Disposals	**—**	**—**	**(488)**	**(189)**	**(677)**
Foreign exchange rate movements	**5**	**(1)**	**(8)**	**—**	**(4)**
At 31 December 2018	**2,692**	**2,726**	**1,623**	**134**	**7,175**
Accumulated amortisation					
At 1 January 2017	(870)	(583)	(504)	(57)	(2,014)
Amortisation for the year	(206)	(262)	(186)	—	(654)
Disposals and transfers	28	7	146	—	181
Foreign exchange rate movements	(12)	—	—	—	(12)
At 31 December 2017	**(1,060)**	**(838)**	**(544)**	**(57)**	**(2,499)**
Amortisation for the year	**(183)**	**(243)**	**(209)**	**—**	**(635)**
Disposals and transfers	**—**	**—**	**48**	**57**	**105**
Foreign exchange rate movements	**(4)**	**—**	**2**	**—**	**(2)**
At 31 December 2018	**(1,247)**	**(1,081)**	**(703)**	**—**	**(3,031)**
Accumulated Impairment					
At 1 January 2017	(19)	(24)	(81)	(68)	(192)
Impairment losses charged to expenses	(8)	(110)	(7)	—	(125)
Disposals	—	—	43	—	43
Foreign exchange rate movements	—	—	(1)	(3)	(4)
At 31 December 2017	**(27)**	**(134)**	**(46)**	**(71)**	**(278)**
Impairment charges[3]	**—**	**(13)**	**—**	**—**	**(13)**
Disposals	**—**	**—**	**8**	**—**	**8**
Foreign exchange rate movements	**—**	**—**	**—**	**—**	**—**
At 31 December 2018	**(27)**	**(147)**	**(38)**	**(71)**	**(283)**
Carrying amount					
At 1 January 2017	1,750	2,097	1,391	242	5,480
At 31 December 2017	1,533	1,725	1,376	252	4,886
At 31 December 2018	**1,418**	**1,498**	**882**	**63**	**3,861**
Less: Assets classified as held for sale	**(5)**	**(649)**	**(6)**	**—**	**(660)**
	1,413	**849**	**876**	**63**	**3,201**

1 On insurance and participating investment contracts.
2 On non-participating investment contracts.
3 Impairment charges comprise £13 million of AVIF impairment in respect of FPI recognised within profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates due to FPI's classification as held for sale (see note 4 and 17(b)).

(a) Acquired value of in-force business

AVIF on insurance and investment contracts is generally recoverable in more than one year. Of the total AVIF of £2,916 million, £2,904 million *(2017: £2,142 million)* is expected to be recovered more than one year after the statement of financial position date. In 2018, the additions relate to the acquisition of Friends First (see note 3).

Non-participating investment contract AVIF is reviewed for evidence of impairment, consistent with reviews conducted for other finite life intangible assets. Insurance and participating investment contract AVIF is reviewed for impairment at each reporting date as part of the liability adequacy requirements of IFRS 4. AVIF is reviewed for evidence of impairment and impairment tested at product portfolio level by reference to the value of future profits in accordance with Solvency II principles, adjusted where Solvency II does not represent a best estimate of shareholders' interests, consistent with the impairment test for goodwill for long-term business (see note 17(b)).

In 2018, an impairment charge of £13 million *(2017: £110 million)* was recognised in relation to the AVIF on non-participating investment contracts relating to FPI, to write down the AVIF balance to its recoverable amount as explained in note 17(b). In addition, in 2017 £8 million of AVIF on insurance contracts in relation to the book of business reinsured by FPI to Aviva Re Limited was considered to be non-recoverable and was written-off.

18 – Acquired value of in-force business (AVIF) and intangible assets continued

(b) Other intangible assets with finite useful lives

Other intangible assets with finite useful lives consist mainly of the value of bancassurance and other distribution agreements and capitalised software. Additions of intangibles with finite lives in 2018 relate to capitalisation of software costs in relation to the Group's digital initiatives primarily undertaken by the Group's digital company Aviva UK Digital Limited.

Additions of intangibles with finite lives in 2017 related to capitalisation of software costs in relation to the Group's digital initiatives as well as additions of finite life intangibles on the Group balance sheet following the full consolidation of the Group's previously equity accounted joint ventures in Poland.

Disposals in 2018 relate to the sale of the Italy Avipop business (see note 4). Disposals in 2017 relate to the derecognition of intangible assets with finite useful lives in relation to the disposal of part of the Group's Spanish business.

The amortisation charge for 2018 is £209 million *(2017: £186 million)*. No Impairment losses arose in 2018 *(2017: £7 million)* on intangible assets with finite lives.

(c) Intangible assets with indefinite useful lives

Intangible assets with indefinite useful lives primarily comprise the value of distribution channel Union Financière de France Banque in France where the existing life of the asset supports this classification. Impairment testing of these intangible assets is covered in note 17(b). No impairment has been recognised in 2018.

Disposals in 2018 relate to the sale of the Spanish business (see note 4).

19 – Interests in, and loans to, joint ventures

In several businesses, Group companies and other parties jointly control certain entities. This note analyses these interests and describes the principal joint ventures in which we are involved.

(a) Carrying amount and details of joint ventures

(i) The movements in the carrying amount comprised:

	2018			2017		
	Goodwill and intangibles £m	**Equity interests £m**	**Total £m**	Goodwill and intangibles £m	Equity interests £m	Total £m
At 1 January	**57**	**1,164**	**1,221**	92	1,512	1,604
Share of results before tax	**—**	**99**	**99**	—	99	99
Share of tax	**—**	**(3)**	**(3)**	—	(3)	(3)
Share of results after tax	**—**	**96**	**96**	—	96	96
Amortisation of intangibles[1]	**(5)**	**—**	**(5)**	(7)	—	(7)
Loss on remeasurement of joint venture	**—**	**—**	**—**	—	(7)	(7)
Share of (loss)/profit after tax	**(5)**	**96**	**91**	(7)	89	82
Reclassification from/(to) subsidiary	**—**	**5**	**5**	(23)	(34)	(57)
Additions	**—**	**33**	**33**	—	55	55
Disposals	**—**	**(79)**	**(79)**	—	(409)	(409)
Share of (losses)/gains taken to other comprehensive income	**—**	**(10)**	**(10)**	—	6	6
Dividends received from joint ventures	**—**	**(35)**	**(35)**	—	(38)	(38)
Foreign exchange rate movements	**(6)**	**(6)**	**(12)**	(5)	(17)	(22)
At 31 December	**46**	**1,168**	**1,214**	57	1,164	1,221

1 Comprises amortisation of AVIF on insurance contracts of £nil million *(2017: £1 million)* and other intangibles of £5 million *(2017: £6 million)*.

Additions and disposals during the year relate mainly to the Group's holdings in property management undertakings. £20 million of the additions relate to a capital injection into the new Hong Kong JV as detailed below.

On 13 February 2018, Aviva announced that it has completed the transaction to develop a digital insurance joint venture in Hong Kong with Hillhouse Capital Group (Hillhouse) and Tencent Holdings Limited (Tencent). The joint venture commenced operating under its new corporate structure during the first half of 2018. The transaction included the sale of 60% of the shareholding in Aviva Life Insurance Company Limited (Aviva Hong Kong) as detailed in note 4(d). This is reflected as reclassification from subsidiary of £5 million and new capital addition of £20 million in 2018.

In 2017, reclassification to subsidiary reflects changes in the Group's holdings in its Poland and Vietnam undertakings.

On 19 January 2018, Aviva announced that it had completed the sale of its entire 49% shareholding in its joint venture in Taiwan, First Aviva Life (Aviva Taiwan) to Aviva's joint venture partner, First Financial Holding Company Limited (FFH) for cash consideration of $1. The transaction resulted in a gain of £7 million arising from reserves recycled to the Income Statement. Remeasurement losses arising from the classification of Aviva Taiwan as held for sale were recognised in 2017, as explained in note 4(b)(iii).

The Group's share of total comprehensive income related to joint venture entities is £81 million *(2017: £88 million)*.

19 – Interests in, and loans to, joint ventures continued

(ii) The carrying amount at 31 December comprised:

	2018			2017		
	Goodwill and intangibles £m	**Equity interests £m**	**Total £m**	Goodwill and intangibles £m	Equity interests £m	Total £m
Property management undertakings	**—**	**797**	**797**	—	820	820
Long-term business undertakings	**46**	**363**	**409**	57	335	392
General insurance and health undertakings	**—**	**8**	**8**	—	9	9
Total	**46**	**1,168**	**1,214**	57	1,164	1,221

The property management undertakings perform property ownership and management activities, and are incorporated and operate in the UK. All such investments are held by subsidiary entities.

The long-term business undertakings perform life insurance activities. All investments in such undertakings are unlisted with the exception of AvivaSA Emeklilik ve Hayat A.S which has issued publicly a minority portion of shares. All investments in such undertakings are held by subsidiaries, except for the shares in the Chinese joint venture, Aviva-COFCO Life Insurance Company Ltd., which are held by Aviva plc. The Group's share of net assets of that company is £294 million *(2017: £274 million)* and it has a carrying value at cost of £123 million *(2017: £123 million)*.

The investment in general insurance and health undertakings relates to the health insurance operations in our Indonesian joint venture.

(iii) No joint ventures are considered to be material from a Group perspective *(2017: none)*. The Group's principal joint ventures are as follows:

			Proportion of ownership interest	
Name	**Nature of activities**	**Principal place of business**	**2018**	2017
Ascot Real Estate Investments LP	Property management	UK	**50.00%**	50.00%
2-10 Mortimer Street Limited Partnership	Property management	UK	**50.00%**	50.00%
Southgate LP	Property management	UK	**50.00%**	50.00%
Aviva-COFCO Life Insurance Company Ltd.	Life insurance	China	**50.00%**	50.00%
Aviva Life Insurance Company Limited	Life insurance	Hong Kong	**40.00%**	100.00%
PT Astra Aviva Life	Life and Health insurance	Indonesia	**50.00%**	50.00%
AvivaSA Emeklilik ve Hayat A.S	Life insurance	Turkey	**40.00%**	40.00%

The Group has no joint ventures whose non-controlling interest (NCI) is material on the basis of their share of profit/(loss).

(iv) The joint ventures have no significant contingent liabilities to which the Group is exposed. The Group has commitments to provide funding to property management joint ventures of £13 million *(2017: £6 million)*.

In certain jurisdictions the ability of joint ventures to transfer funds in the form of cash dividends or to repay loans and advances made by the Group is subject to local corporate or insurance laws and regulations and solvency requirements.

(b) Impairment testing

Interests in joint ventures are tested for impairment of goodwill and intangibles when there is an indicator of impairment. They are tested for impairment by comparing the carrying value of the cash generating unit to which the goodwill or intangible relates to the recoverable value of that cash generating unit. Recoverable amount for long-term and general insurance businesses is calculated on a consistent basis with that used for impairment testing of goodwill, as set out in note 17(b). The recoverable amount of property management undertakings is the fair value less costs to sell of the joint venture, measured in accordance with the Group's accounting policy for investment property (see accounting policy Q).

20 – Interests in, and loans to, associates

This note analyses our interests in entities which we do not control but where we have significant influence.

(a) Carrying amount and details of associates

(i) The movements in the carrying amount comprised:

	2018			2017		
	Goodwill and intangibles £m	**Equity interests £m**	**Total £m**	Goodwill and intangibles £m	Equity interests £m	Total £m
At 1 January	**—**	**421**	**421**	65	416	481
Share of results before tax	**—**	**22**	**22**	—	22	22
Share of tax	**—**	**(1)**	**(1)**	—	(5)	(5)
Share of results after tax	**—**	**21**	**21**	—	17	17
Impairment	**—**	**—**	**—**	(65)	—	(65)
Share of profit/(loss) after tax	**—**	**21**	**21**	(65)	17	(48)
Additions	**—**	**2**	**2**	—	2	2
Reduction in Group interest	**—**	**(78)**	**(78)**	—	(5)	(5)
Reclassification to investment	**—**	**(54)**	**(54)**	—	—	—
Dividends received from associates	**—**	**(8)**	**(8)**	—	(13)	(13)
Foreign exchange rate movements	**—**	**—**	**—**	—	4	4
Movements in carrying amount	**—**	**(117)**	**(117)**	(65)	5	(60)
At 31 December	**—**	**304**	**304**	—	421	421

20 – Interests in, and loans to, associates continued

The Group's share of total comprehensive income related to associates is £21 million *(2017: £48 million expense)*.

(ii) No associates are considered to be material from a Group perspective *(2017: none)*. All investments in principal associates are held by subsidiaries. The Group's principal associates are as follows:

Name	Nature of activities	Principal place of business	Proportion of ownership interest 2018	2017
Aviva Life Insurance Company India Limited	Life insurance	India	**49.00%**	49.00%
SCPI Ufifrance Immobilier	Property Management	France	**20.40%**	20.40%
SCPI Logipierre 1	Property Management	France	**44.46%**	44.46%
Lend Lease JEM Partners Fund Limited	Investment holding	Singapore	**22.50%**	22.50%
AI UK Commercial Real Estate Debt Fund[1]	Property Management	UK	**17.16%**	15.90%

1 The Group has significant influence over AI UK Commercial Real Estate Debt Fund so it is therefore accounted for as an associate.

A principal property management associate SCPI Selectipierre 2 was disposed of externally to the Group during 2018. The proportion of ownership interest in 2017 was 28.67%.

On 5 November 2018, Aviva Investors exited its partnership arrangement in Encore+, a pan-European commercial property fund, with LaSalle Investment Management, as detailed in note 4(b)(iii). As a result, the Group's 4.8% shareholding in Encore+ has been reclassified from associates to financial investments as the Group no longer has significant influence.

(iii) The associates have no significant contingent liabilities to which the Group is exposed. The Group has commitments to provide funding to property management associates of £5 million *(2017: £2 million)*.

In certain jurisdictions the ability of associates to transfer funds in the form of cash dividends or to repay loans and advances made by the Group is subject to local corporate or insurance laws and regulations and solvency requirements.

(b) Impairment testing

The recoverable amount of property management undertakings is the fair value less costs to sell of the associate, measured in accordance with the Group's accounting policy for investment property (see accounting policy Q).

In 2017, the Group determined that the goodwill of £47 million and AVIF of £18 million of its investment in Aviva Life Insurance Company India Limited (Aviva India) were fully impaired following management's annual impairment review. The total impairment of £65 million was recognised within the income statement as a component of share of profit after tax of joint ventures and associates.

The recoverable amount of Aviva India was determined based on its value in use which was calculated on an embedded value (EV) basis in line with Actuarial Practice Standard 10 (APS 10) as defined by the Institute of Actuaries of India. The EV cash flow projections, based on business plans covering a three year period, were adjusted to reflect a more prudent view of the value of the in-force business by applying higher expense overruns over an extended 7 year period on a run-off rate of 14% and pre-tax discount rate of 12%.

The recoverable amount determined based on this adjusted embedded value calculation and allocated to Aviva's 49% shareholding was £93 million which upon comparison with Aviva India's carrying amount at the time of the impairment assessment indicated that its goodwill and AVIF balances were fully impaired.

21 – Property and equipment

This note analyses our property and equipment, which are primarily properties occupied by Group companies.

	Properties under construction £m	Owner-occupied properties £m	Motor vehicles £m	Computer equipment £m	Other assets £m	Total £m
Cost or valuation						
At 1 January 2017	5	341	3	270	277	896
Additions	1	3	—	18	47	69
Disposals[1]	—	(20)	—	(134)	(61)	(215)
Transfers (to)/from investment property (note 22)	(5)	11	—	—	—	6
Fair value losses	—	(4)	—	—	—	(4)
Foreign exchange rate movements	—	9	—	1	2	12
At 31 December 2017	1	340	3	155	265	764
Additions	**1**	**21**	**1**	**24**	**40**	**87**
Disposals	**(2)**	**(8)**	**—**	**(7)**	**(6)**	**(23)**
Transfers (to)/from investment property (note 22)	**—**	**—**	**—**	**—**	**—**	**—**
Fair value gains	**—**	**3**	**—**	**—**	**—**	**3**
Foreign exchange rate movements	**—**	**3**	**—**	**3**	**7**	**13**
At 31 December 2018	**—**	**359**	**4**	**175**	**306**	**844**
Depreciation and impairment						
At 1 January 2017	—	(20)	(2)	(246)	(141)	(409)
Charge for the year	—	—	—	(13)	(22)	(35)
Disposals[1]	—	15	—	134	54	203
Impairment charge	—	2	—	—	(8)	(6)
Foreign exchange rate movements	—	—	—	—	(3)	(3)
At 31 December 2017	—	(3)	(2)	(125)	(120)	(250)
Charge for the year	**—**	**—**	**(1)**	**(14)**	**(25)**	**(40)**
Disposals	**—**	**—**	**—**	**6**	**2**	**8**
Impairment charge	**—**	**—**	**—**	**—**	**—**	**—**
Foreign exchange rate movements	**—**	**—**	**—**	**(4)**	**(5)**	**(9)**
At 31 December 2018	**—**	**(3)**	**(3)**	**(137)**	**(148)**	**(291)**
Carrying amount						
At 31 December 2017	1	337	1	30	145	514
At 31 December 2018	**—**	**356**	**1**	**38**	**158**	**553**
Less: Amounts classified as held for sale	**—**	**(4)**	**—**	**—**	**(1)**	**(5)**
At 31 December 2018	**—**	**352**	**1**	**38**	**157**	**548**

1 Disposals of computer equipment primarily comprise exhausted assets within Aviva Central Services.

Total net fair value gains of £3 million on owner-occupied properties consist of £1 million of losses in the year *(2017: £6 million losses)* which have been taken to the income statement and £3 million reversal of losses *(2017: £3 million reversal)* taken to the income statement in previous years and £1 million gains *(2017: £1 million losses)* which have been taken to other comprehensive income.

Owner-occupied properties are stated at their revalued amounts, as assessed by qualified external valuers. These values are assessed in accordance with the relevant parts of the current Royal Institute of Chartered Surveyors Appraisal and Valuation Standards in the UK, and with current local valuation practices in other countries. This assessment is in accordance with UK Valuations Standards ('Red book'), and is the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction, after proper marketing wherein the parties had acted knowledgeably and without compulsion, on the basis of the highest and best use of asset that is physically possible, legally permissible and financially feasible. The valuation assessment adopts market-based evidence and is in line with guidance from the International Valuation Standards Committee and the requirements of IAS 16 *Property, Plant and Equipment*.

Similar considerations apply to properties under construction, where an estimate is made of valuation when complete, adjusted for anticipated costs to completion, profit and risk, reflecting market conditions at the valuation date.

If owner-occupied properties were stated on a historical cost basis, the carrying amount would be £364 million *(2017: £349 million)*.

The Group has no material finance leases for property and equipment.

22 – Investment property

This note gives details of the properties we hold for long-term rental yields or capital appreciation.

	2018			2017		
	Freehold £m	**Leasehold £m**	**Total £m**	Freehold £m	Leasehold £m	Total £m
Carrying value						
At 1 January	**9,147**	**1,650**	**10,797**	9,169	1,647	10,816
Acquisitions	**218**	**208**	**426**	—	—	—
Additions	**543**	**97**	**640**	530	12	542
Capitalised expenditure on existing properties	**136**	**15**	**151**	99	31	130
Fair value gains	**307**	**—**	**307**	440	41	481
Disposals	**(713)**	**(177)**	**(890)**	(1,216)	(85)	(1,301)
Transfers to property and equipment (note 21)	**—**	**—**	**—**	(6)	—	(6)
Reclassification[1]	**(82)**	**82**	—	—	—	—
Foreign exchange rate movements	**45**	**6**	**51**	131	4	135
At 31 December	**9,601**	**1,881**	**11,482**	9,147	1,650	10,797

1 A review of part leasehold/part freehold properties held by the Group has resulted in the reclassification of £82m from freehold to leasehold properties in 2018.

Please see note 23 'Fair value methodology' for further information on the fair value measurement and valuation techniques of investment property.

The fair value of investment properties leased to third parties under operating leases at 31 December 2018 was £11,172 million *(2017: £10,513 million)*. Future contractual aggregate minimum lease rentals receivable under the non-cancellable portion of these leases are given in note 56(b)(i).

23 – Fair value methodology

This note explains the methodology for valuing our assets and liabilities measured at fair value, and for fair value disclosures. It also provides an analysis of these according to a 'fair value hierarchy', determined by the market observability of valuation inputs.

(a) Basis for determining fair value hierarchy

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the 'fair value hierarchy' described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1

Inputs to Level 1 fair values are quoted prices (unadjusted) in active markets for identical assets and liabilities that the entity can access at the measurement date.

Level 2

Inputs to Level 2 fair values are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the instrument. Level 2 inputs include the following:

- Quoted prices for similar assets and liabilities in active markets.
- Quoted prices for identical or similar assets and liabilities in markets that are not active, the prices are not current, or price quotations vary substantially either over time or among market makers, or in which little information is released publicly.
- Inputs other than quoted prices that are observable for the asset or liability (for example, interest rates and yield curves observable at commonly quoted intervals, implied volatilities, and credit spreads).
- Market-corroborated inputs.

Where we use broker quotes and no information as to the observability of inputs is provided by the broker, the investments are classified as follows:

- Where the broker price is validated by using internal models with market observable inputs and the values are similar, we classify the investment as Level 2.
- In circumstances where internal models are not used to validate broker prices, or the observability of inputs used by brokers is unavailable, the investment is classified as Level 3.

Level 3

Inputs to Level 3 fair values are unobservable inputs for the asset or liability. Unobservable inputs may have been used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. However, the fair value measurement objective remains the same, i.e. an exit price at the measurement date from the perspective of a market participant that holds the asset or owes the liability. Unobservable inputs reflect the assumptions the business unit considers that market participants would use in pricing the asset or liability. Examples are investment properties and commercial and equity release mortgage loans.

23 – Fair value methodology continued

The majority of the Group's assets and liabilities measured at fair value are based on quoted market information or observable market data. Of the total assets and liabilities measured at fair value 17.7% *(2017: 15.7%)* of assets and 3.4% *(2017: 3.2%)* of liabilities are based on estimates and recorded as Level 3. Where estimates are used, these are based on a combination of independent third-party evidence and internally developed models, calibrated to market observable data where possible. Third-party valuations using significant unobservable inputs validated against Level 2 internally modelled valuations are classified as Level 3, where there is a significant difference between the third-party price and the internally modelled value. Where the difference is insignificant, the instrument would be classified as Level 2.

(b) Changes to valuation techniques

There were no changes in the valuation techniques during the year compared to those described in the 2017 annual consolidated financial statements.

(c) Comparison of the carrying amount and fair values of financial instruments

Set out below is a comparison of the carrying amounts and fair values of financial assets and liabilities, excluding those classified as held for sale. These amounts may differ where the assets or liabilities are carried on a measurement basis other than fair value, e.g. amortised cost.

	2018		2017	
	Fair value £m	**Carrying amount £m**	Fair value £m	Carrying amount £m
Financial assets				
Loans (note 24(a))	**28,731**	**28,785**	27,796	27,857
Financial investments (note 27(a))	**297,585**	**297,585**	311,082	311,082
Fixed maturity securities	**169,289**	**169,289**	174,808	174,808
Equity securities	**82,128**	**82,128**	89,968	89,968
Other investments (including derivatives)	**46,168**	**46,168**	46,306	46,306
Financial liabilities				
Non-participating investment contracts (note 44(a))	**112,013**	**112,013**	116,332	116,332
Net asset value attributable to unitholders	**18,125**	**18,125**	18,327	18,327
Borrowings (note 52(a))[1]	**9,826**	**9,420**	11,538	10,286
Derivative liabilities (note 60(b))	**5,571**	**5,571**	5,751	5,751

1 Within the fair value total, the estimated fair value has been provided for the portion of loans and borrowings that are carried at amortised cost as disclosed in note 23 (h).

Fair value of the following assets and liabilities approximate to their carrying amounts:

- Receivables
- Cash and cash equivalents
- Payables and other financial liabilities

As set out in accounting policy A, the Group has chosen to defer application of IFRS 9 due to its activities being predominantly connected with insurance. To facilitate comparison with entities applying IFRS 9 in full, the table below splits the Group's financial instruments as at the reporting date between those which are considered to have contractual terms which are solely payments of principal and interest (SPPI) on the principal amount outstanding (excluding instruments held for trading or managed and evaluated on a fair value basis), and all other instruments not falling into this category.

	SPPI – Fair value	**Non-SPPI – fair value[1]**
Debt securities	**273**	**169,413**
Equity securities	**—**	**82,338**
Loans	**2,460**	**26,271**
Receivables	**5,849**	**3,041**
Cash and cash equivalents	**13,246**	**33,926**
Accrued income and Interest	**193**	**2,217**
Other financial assets	**10**	**52,802**
Total	**22,031**	**370,008**

1 Instruments within this category include financial assets that meet the definition of held for trading, financial assets that are managed and evaluated on a fair value basis, and instruments with contractual terms that do not give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

There has been a £7 million decrease in the fair value of SPPI instruments, and a £23,645 million decrease in the fair value of non-SPPI instruments during the reporting period.

23 – Fair value methodology continued

(d) Fair value hierarchy analysis

An analysis of assets and liabilities measured at amortised cost and fair value categorised by fair value hierarchy is given below.

2018	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Sub-total Fair value £m	Amortised cost £m	Total carrying value £m
Recurring fair value measurements						
Investment property (note 22)	—	—	11,482	11,482	—	11,482
Loans (note 24(a))	—	518	25,008	25,526	3,259	28,785
Financial investments measured at fair value (note 27(a))						
Fixed maturity securities	102,979	48,732	17,578	169,289	—	169,289
Equity securities	81,714	—	414	82,128	—	82,128
Other investments (including derivatives)	37,780	4,281	4,107	46,168	—	46,168
Financial assets of operations classified as held for sale	5,240	19	1,992	7,251	—	7,251
Total	227,713	53,550	60,581	341,844	3,259	345,103
Financial liabilities measured at fair value						
Non-participating investment contracts[1] (note 44(a))	111,966	47	—	112,013	—	112,013
Net asset value attributable to unit holders	18,100	—	25	18,125	—	18,125
Borrowings (note 52(a))	—	—	1,225	1,225	8,195	9,420
Derivative liabilities (note 60(b))	466	4,571	534	5,571	—	5,571
Financial liabilities of operations classified as held for sale	5,241	—	3,100	8,341	—	8,341
Total	135,773	4,618	4,884	145,275	8,195	153,470

1 In addition to the balances in this table, included within reinsurance assets in the statement of financial position and note 41 are £4,009 million of non-participating investment contracts, which are legally reinsurance but do not meet the definition of a reinsurance contract under IFRS. These assets are financial instruments measured at fair value through profit and loss and are classified as Level 1 assets.

2018	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total fair value £m
Non-recurring fair value measurement				
Properties occupied by group companies	—	—	352	352
Total	—	—	352	352

IFRS 13, Fair Value Measurement, permits assets and liabilities to be measured at fair value on either a recurring or non-recurring basis. Recurring fair value measurements are those that other IFRSs require or permit in the statement of financial position at the end of each reporting period, whereas non-recurring fair value measurements of assets or liabilities are those that other IFRSs require or permit in the statement of financial position in particular circumstances. The value of owner-occupied properties measured on a non-recurring basis at 31 December 2018 was £352 million (*2017: £333 million*), stated at their revalued amounts in line with the requirements of IAS 16 *Property, Plant and Equipment.*

2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Sub-total Fair value £m	Amortised cost £m	Total carrying value £m
Recurring fair value measurements						
Investment property (note 22)	—	—	10,797	10,797	—	10,797
Loans (note 24(a))	—	443	23,949	24,392	3,465	27,857
Financial investments measured at fair value (note 27(a))						
Fixed maturity securities	107,771	51,900	15,137	174,808	—	174,808
Equity securities	89,192	—	776	89,968	—	89,968
Other investments (including derivatives)	38,249	5,194	2,863	46,306	—	46,306
Financial assets of operations classified as held for sale	6,192	27	2,093	8,312	—	8,312
Total	241,404	57,564	55,615	354,583	3,465	358,048
Financial liabilities measured at fair value						
Non-participating investment contracts[1] (note 44(a))	116,123	209	—	116,332	—	116,332
Net asset value attributable to unit holders	18,314	—	13	18,327	—	18,327
Borrowings (note 52(a))	—	—	1,180	1,180	9,106	10,286
Derivative liabilities (note 60(b))	521	4,872	358	5,751	—	5,751
Financial liabilities of operations classified as held for sale	5,346	26	3,306	8,678	—	8,678
Total	140,304	5,107	4,857	150,268	9,106	159,374

1 In addition to the balances in this table, included within reinsurance assets in the statement of financial position and note 41 are £6,094 million of non-participating investment contracts, which are legally reinsurance but do not meet the definition of a reinsurance contract under IFRS. These assets are financial instruments measured at fair value through profit and loss and are classified as Level 1 assets

2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total fair value £m
Non-recurring fair value measurement				
Properties occupied by group companies	—	—	333	333
Total	—	—	333	333

23 – Fair value methodology continued

(e) Valuation approach for fair value assets and liabilities classified as Level 2

Please see note 23(a) for a description of typical Level 2 inputs.

Debt securities, in line with market practice, are generally valued using an independent pricing service. These valuations are determined using independent external quotations from multiple sources and are subject to a number of monitoring controls, such as monthly price variances, stale price reviews and variance analysis. Pricing services, where available, are used to obtain the third-party broker quotes. Where pricing services providers are used, a single valuation is obtained and applied. When prices are not available from pricing services, quotes are sourced from brokers.

Over-the-counter derivatives are valued using broker quotes or models such as option pricing models, simulation models or a combination of models. The inputs for these models include a range of factors which are deemed to be observable, including current market and contractual prices for underlying instruments, period to maturity, correlations, yield curves and volatility of the underlying instruments.

Unit Trusts and other investment funds included under the other investments category are valued using net asset values which are not subject to a significant adjustment for restrictions on redemption or for limited trading activity.

(f) Transfers between levels of the fair value hierarchy

For financial instruments that are recognised at fair value on a recurring basis, the Group determines whether transfers have occurred between levels of the fair value hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of the reporting period.

Transfers between Level 1 and Level 2

There were no significant transfers between Level 1 and Level 2 during the year.

Transfers to/from Level 3

£1.4 billion of assets transferred into Level 3 and £0.6 billion of assets transferred out of Level 3 relate principally to debt securities held by our businesses in the UK and France. These are transferred between Levels 2 and 3 depending on the availability of observable inputs and whether the counterparty and broker quotes are corroborated using valuation models with observable inputs.

There were no significant transfers of liabilities into and out of Level 3 during the year.

(g) Further information on Level 3 assets and liabilities:

The table below shows movement in the Level 3 assets and liabilities measured at fair value.

	Assets										Liabilities
2018	Investment Property £m	Loans £m	Debt securities £m	Equity securities £m	Other investments (including derivatives) £m	Financial assets of operations classified as held for sale £m	Non participating investment contracts £m	Net asset value attributable to unitholders £m	Derivative liabilities £m	Borrowings £m	Financial liabilities of operations classified as held for sale £m
Opening balance at 1 January 2018	**10,797**	**23,949**	**15,137**	**776**	**2,863**	**2,093**	**—**	**(13)**	**(358)**	**(1,180)**	**(3,306)**
Total net gains/(losses) recognised in the income statement[1]	**376**	**(530)**	**(363)**	**(102)**	**(69)**	**(73)**	**—**	**—**	**(136)**	**(81)**	**74**
Purchases	**1,185**	**3,451**	**3,175**	**189**	**1,761**	**201**	**(108)**	**—**	**(59)**	**—**	**(95)**
Issuances	**—**	**200**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Disposals	**(927)**	**(2,065)**	**(1,221)**	**(544)**	**(554)**	**(191)**	**108**	**(12)**	**20**	**36**	**189**
Transfers into Level 3	**—**	**—**	**1,242**	**95**	**77**	**20**	**—**	**—**	**—**	**—**	**(20)**
Transfers out of Level 3	**—**	**—**	**(503)**	**(2)**	**—**	**(58)**	**—**	**—**	**—**	**—**	**58**
Reclassification to held for sale	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Foreign exchange rate movements	**51**	**3**	**111**	**2**	**29**	**—**	**—**	**—**	**(1)**	**—**	**—**
Balance at 31 December 2018	**11,482**	**25,008**	**17,578**	**414**	**4,107**	**1,992**	**—**	**(25)**	**(534)**	**(1,225)**	**(3,100)**

1 Total net gains/(losses) recognised in the income statement includes realised gains/(losses) on disposals.

	Assets										Liabilities
2017	Investment Property £m	Loans £m	Debt securities £m	Equity securities £m	Other investments (including derivatives) £m	Financial assets of operations classified as held for sale £m	Non participating investment contracts £m	Net asset value attributable to unitholders £m	Derivative liabilities £m	Borrowings £m	Financial liabilities of operations classified as held for sale £m
Opening balance at 1 January 2017	10,768	20,923	16,447	913	4,001	980	(3,408)	(20)	(1,600)	(1,110)	—
Total net gains/(losses) recognised in the income statement[1]	511	643	(795)	(179)	55	162	—	7	(105)	(97)	(165)
Purchases	672	3,252	1,745	66	944	267	(153)	—	(9)	—	(113)
Issuances	—	151	—	—	—	(1)	—	—	—	—	—
Disposals	(1,289)	(1,025)	(1,771)	(12)	(439)	(1,383)	153	—	180	27	377
Transfers into Level 3	—	—	899	2	10	132	—	—	(164)	—	(132)
Transfers out of Level 3	—	—	(1,399)	—	(83)	(135)	—	—	1,342	—	135
Reclassification to held for sale	—	—	(340)	(19)	(1,682)	2,041	3,408	—	—	—	(3,408)
Foreign exchange rate movements	135	5	351	5	57	30	—	—	(2)	—	—
Balance at 31 December 2017	10,797	23,949	15,137	776	2,863	2,093	—	(13)	(358)	(1,180)	(3,306)

1 Total net gains/(losses) recognised in the income statement includes realised gains/(losses) on disposals.

23 – Fair value methodology continued

Total net losses recognised in the income statement in the year ended 31 December 2018 in respect of Level 3 assets measured at fair value amounted to £761 million *(2017: net gains of £397 million)* with net losses in respect of liabilities of £143 million *(2017: net losses of £360 million)*. Net losses of £529 million *(2017: net gains of £200 million)* attributable to assets and net losses of £178 million *(2017: net losses of £212 million)* attributable to liabilities relate to those still held at the end of the year.

The principal assets classified as Level 3, and the valuation techniques applied to them, are described below.

(i) Investment property

- Investment property is valued in the UK at least annually by external chartered surveyors in accordance with guidance issued by The Royal Institution of Chartered Surveyors, and using estimates during the intervening period. Outside the UK, valuations are produced by external qualified professional appraisers in the countries concerned. Investment properties are valued on an income approach that is based on current rental income plus anticipated uplifts at the next rent review, lease expiry, or break options taking into consideration lease incentives and assuming no further growth in the estimated rental value of the property. The uplift and discount rates are derived from rates implied by recent market transactions on similar properties. These inputs are deemed unobservable.

(ii) Loans

- Commercial mortgage loans and Primary Healthcare loans held by our UK Life business are valued using a Portfolio Credit Risk Model. This model calculates a Credit Risk Adjusted Value for each loan. The risk adjusted cash flows are discounted using a yield curve, taking into account the term dependent gilt yield curve and global assumptions for the liquidity premium. Loans valued using this model have been classified as Level 3 as the liquidity premium is deemed to be non-market observable. The liquidity premium used in the discount rate ranges between 65 bps to 195 bps.
- Equity release mortgage loans held by our UK Life business are valued using an internal model, with fair value initially being equal to the transaction price. The value of these loans is dependent on the expected term of the mortgage and the forecast property value at the end of the term, and is calculated by adjusting future cash flows for credit risk and discounting using a yield curve plus an allowance for illiquidity. At 31 December 2018 the illiquidity premium used in the discount rate was 210 bps.
  The mortgages have a no negative equity guarantee ('NNEG') such that the cost of any potential shortfall between the value of the loan and the realised value of the property, at the end of the term, is recognised by a deduction to the value of the loan. Property valuations at the reporting date are obtained by taking the most recent valuation for the property and indexing using market observable regional house price indices.
  NNEG is calculated using base property growth rates reduced for the cost of potential dilapidations, using a stochastic model. In addition, a cost of capital charge is applied to reflect the variability in these cashflows. The base property growth rate assumption is RPI +0.75% which equates to a long-term average growth rate of 4.3% pa. After applying the cost of capital charge, dilapidations and the stochastic distribution, the effective net long-term growth rate equates to 0.6% pa.
- Mortgage loan assumptions for future property prices and rental income also include an allowance for the possible adverse impact of the decision for the UK to leave the European Union (see note 9).
- Infrastructure and Private Finance Initiative (PFI) loans held by our UK Life business are valued using a discounted cash flow model. This adds spreads for credit and illiquidity to a risk-free discount rate. Credit spreads used in the discount rate are calculated using an internally developed methodology which depends on the credit rating of each loan, credit spreads on publicly traded bonds and an estimated recovery rate in event of default and are deemed to be unobservable. The liquidity premium used in the discount rate is 65 bps.

(iii) Debt securities

- Structured bond-type and non-standard debt products held by our business in France and bonds held by our UK business have no active market. These debt securities are valued either using counterparty or broker quotes and validated against internal or third-party models. These bonds have been classified as Level 3 because either (i) the third-party models includes a significant unobservable liquidity adjustment, or (ii) differences between the valuation provided by the counterparty and broker quotes and the validation model are sufficiently significant to result in a Level 3 classification.
- Privately placed notes held by our UK Life business have been valued using broker quotes or a discounted cash flow model using discount factors based on swap curves of similar maturity, plus internally derived spreads for credit risk. As these spreads have been deemed to be unobservable these notes have been classified as Level 3.
- Debt securities held by our French business and by our UK and Asia businesses which are not traded in an active market have been valued using third party or counterparty valuations. These prices are considered to be unobservable due to infrequent market transactions.

(iv) Equity securities

- Equity securities which primarily comprise private equity holdings held in the UK are valued by a number of third party specialists. These are valued using a range of techniques, including earnings multiples, forecast cash flows and price/earnings ratios which are deemed to be unobservable.

(v) Property Funds

- Property funds are valued based on external valuation reports received from fund managers.

(vi) Financial assets of operations classified as held for sale

- Financial assets of operations classified as held for sale are held by our Asia business and consist primarily of discretionary managed funds of £1.4 billion *(2017: £1.6 billion)* and debt securities which are not traded in an active market and have been valued using third party or counterparty valuations of £0.4 billion *(2017: £0.4 billion)*. These assets are included within the relevant asset category within the sensitivity table below.

23 – Fair value methodology continued

(vii) Liabilities

The principal liabilities classified as Level 3, and the valuation techniques applied to them, are:

- £3.1 billion *(2017: £3.3 billion)* of non-participating investment contract liabilities which are included within financial liabilities of operations classified as held for sale. These are classified as Level 3, either because the underlying unit funds are classified as Level 3 or because the liability relates to unfunded units or other non-unit adjustments which are based on a discounted cash flow analysis using unobservable market data and assumptions. These liabilities are included within the relevant asset category within the sensitivity table below.
- Securitised mortgage loan notes, presented within Borrowings, are valued using a similar technique to the related Level 3 securitised mortgage assets.

Where these valuations are at a date other than the balance sheet date, as in the case of some private equity funds, adjustments are made to reflect items such as subsequent drawdowns and distributions and the fund manager's carried interest.

Sensitivities

Where possible, the Group tests the sensitivity of the fair values of Level 3 assets and liabilities to changes in unobservable inputs to reasonable alternatives. Level 3 valuations are sourced from independent third parties when available and, where appropriate, validated against internally-modelled valuations, third-party models or broker quotes. Where third-party pricing sources are unwilling to provide a sensitivity analysis for their valuations, the Group undertakes, where feasible, sensitivity analysis on the following basis:

- For third-party valuations validated against internally-modelled valuations using significant unobservable inputs, the sensitivity of the internally-modelled valuation to changes in unobservable inputs to a reasonable alternative is determined.
- For third-party valuations either not validated or validated against a third-party model or broker quote, the third-party valuation in its entirety is considered an unobservable input. Sensitivities are determined by flexing inputs of internal models to a reasonable alternative, including the yield, NAV multiple or other suitable valuation multiples of the financial instrument implied by the third-party valuation. For example, for a fixed income security the implied yield would be the rate of return which discounts the security's contractual cash flows to equal the third-party valuation.

The table below shows the sensitivity of the fair value of Level 3 assets and liabilities at 31 December 2018 to changes in unobservable inputs to a reasonable alternative:

	2018 Fair value £bn	Most significant unobservable input	Reasonable alternative	Sensitivities Positive Impact £bn	Sensitivities Negative Impact £bn
Investment property	**11.6**	Equivalent rental yields	+/- 5-10%	**0.9**	**(0.9)**
Loans					
Commercial mortgage loans and Primary Healthcare loans	**11.5**	Illiquidity premium	+/- 20 bps	**0.2**	**(0.2)**
Equity release mortgage loans	**9.7**	Base property growth rate	+/- 10%	**0.5**	**(0.5)**
		Current property market values	+/- 10%	**0.3**	**(0.4)**
Infrastructure and Private Finance Initiative (PFI) loans	**3.4**	Illiquidity premium	+/- 25 bps[1]	**0.1**	**(0.1)**
Other	**0.4**	Illiquidity premium	+/- 25 bps[1]	**—**	**—**
Debt securities					
Structured bond-type and non-standard debt products	**6.6**	Market spread (credit, liquidity and other)	+/- 25 bps	**0.1**	**(0.1)**
Privately placed notes	**1.6**	Credit spreads	+/- 25 bps[1]	**0.1**	**—**
Other debt securities	**9.8**	Credit and liquidity spreads	+/- 20-25 bps	**0.4**	**(0.4)**
Equity securities	**0.3**	Market spread (credit, liquidity and other)	+/- 25 bps	**—**	**—**
Other investments					
Property Funds	**0.8**	Market multiples applied to net asset values	+/- 15-20%	**0.1**	**(0.1)**
Other investments (including derivatives)	**4.9**	Market multiples applied to net asset values	+/- 10-40%[2]	**0.7**	**(0.6)**
Liabilities					
Non-participating investment contract liabilities	**(3.1)**	Fair value of the underlying unit funds	+/- 20-25%	**0.4**	**(0.4)**
Borrowings	**(1.2)**	Illiquidity premium	+/- 50 bps	**—**	**—**
Other liabilities (including derivatives)	**(0.6)**	Independent valuation vs counterparty	N/A	**—**	**—**
Total Level 3 investments	**55.7**			**3.8**	**(3.7)**

1 On discount spreads.
2 Dependent on investment category.

The above table demonstrates the effect of a change in one unobservable input while other assumptions remain unchanged. In reality, there may be a correlation between the unobservable inputs and other factors. It should also be noted that some of these sensitivities are non-linear, and larger or smaller impacts should not be interpolated or extrapolated from these results.

23 – Fair value methodology continued

(h) Assets and liabilities not carried at fair value for which fair value is disclosed

The table below shows the fair value and fair value hierarchy for those assets and liabilities not carried at fair value.

2018	Notes	As recognised in the consolidated statement of financial position line item	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total fair value £m
Assets and liabilities not carried at fair value						
Loans	24(b)	**3,259**	**—**	**1,454**	**1,751**	**3,205**
Borrowings	52(a)	**8,195**	**7,979**	**213**	**409**	**8,601**

2017	Notes	As recognised in the consolidated statement of financial position line item	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total fair value £m
Assets and liabilities not carried at fair value						
Loans	24(b)	3,465	—	1,280	2,124	3,404
Borrowings	52(a)	9,106	9,779	205	374	10,358

24 – Loans

This note analyses the loans our Group companies have made, the majority of which are mortgage loans.

(a) Carrying amounts

The carrying amounts of loans at 31 December 2018 and 2017 were as follows:

	2018			2017		
	At fair value through profit or loss other than trading £m	**At amortised cost £m**	**Total £m**	At fair value through profit or loss other than trading £m	At amortised cost £m	Total £m
Policy loans	**1**	**769**	**770**	1	792	793
Loans to banks	**303**	**1,620**	**1,923**	554	1,970	2,524
Healthcare, infrastructure & PFI other loans	**5,358**	**—**	**5,358**	3,563	—	3,563
UK securitised mortgage loans (see note 25)	**2,437**	**—**	**2,437**	2,463	—	2,463
Non-securitised mortgage loans	**17,427**	**—**	**17,427**	17,817	—	17,817
Loans to brokers and other intermediaries	**—**	**164**	**164**	—	180	180
Other loans	**—**	**706**	**706**	—	523	523
Total	**25,526**	**3,259**	**28,785**	24,398	3,465	27,863
Less: Amounts classified as held for sale	**—**	**—**	**—**	(6)	—	(6)
	25,526	**3,259**	**28,785**	24,392	3,465	27,857

Of the above total loans, £26,696 million *(2017: £26,206 million)* are due to be recovered in more than one year after the statement of financial position date.

Loans at fair value

Fair values have been calculated by using cash flow models appropriate for each portfolio of mortgages. Further details of the fair value methodology and models utilised are given in note 23 (g).

The cumulative change in fair value of loans attributable to changes in credit risk to 31 December 2018 was a £1,304 million loss *(2017: £1,090 million loss)*.

Non-securitised mortgage loans include £7.3 billion *(2017: £6.8 billion)* of residential equity release mortgages, £7.3 billion *(2017: £7.6 billion)* of commercial mortgages and £2.8 billion *(2017: £3.4 billion)* relating to UK primary healthcare and PFI businesses. The healthcare and PFI mortgage loans are secured against General Practitioner premises, other primary health-related premises or other emergency services related premises. For all such loans, government support is provided through either direct funding or reimbursement of rental payments to the tenants to meet income service and provide for the debt to be reduced substantially over the term of the loan. Although the loan principal is not government-guaranteed, the nature of these businesses and premises provides considerable comfort of an ongoing business model and low risk of default.

Healthcare, Infrastructure and PFI other loans of £5.4 billion *(2017: £3.6 billion)* are secured against the income from healthcare and educational premises.

Loans at amortised cost

The fair value of these loans at 31 December 2018 was £3,205 million *(2017: £3,404 million)*.

(b) Analysis of loans carried at amortised cost

	2018			2017		
	Amortised Cost £m	**Impairment £m**	**Carrying Value £m**	Amortised Cost £m	Impairment £m	Carrying Value £m
Policy loans	**769**	**—**	**769**	792	—	792
Loans to banks	**1,620**	**—**	**1,620**	1,970	—	1,970
Non-securitised mortgage loans	**9**	**(9)**	**—**	9	(9)	—
Loans to brokers and other intermediaries	**164**	**—**	**164**	180	—	180
Other loans	**707**	**(1)**	**706**	523	—	523
Total	**3,269**	**(10)**	**3,259**	3,474	(9)	3,465

The movements in the impairment provisions on these loans for the years ended 31 December 2018 and 2017 were as follows:

	2018 £m	2017 £m
At 1 January	**(9)**	(7)
Increase during the year	**(1)**	(2)
At 31 December	**(10)**	(9)

24 – Loans continued

(c) Collateral

Loans to banks include cash collateral received under stock lending arrangements (see note 61 for further discussion regarding these collateral positions). The obligation to repay this collateral is included in payables and other financial liabilities (note 53).

The Group holds collateral in respect of loans where it is considered appropriate in order to reduce the risk of non-recovery. This collateral generally takes the form of liens or charges over properties and, in the case of policy loans, the underlying policy for the majority of the loan balances above. In all other situations, the collateral must be in a readily realisable form, such as listed securities, and is held in segregated accounts.

25 – Securitised mortgages and related assets

The Group, in its UK Life business, has loans receivable, secured by mortgages, which have then been securitised through non-recourse borrowings. This note gives details of the relevant transactions.

(a) Description of current arrangements

In a UK long-term business subsidiary, Aviva Equity Release UK Limited (AER), the beneficial interest in certain portfolios of lifetime mortgages has been transferred to five special purpose securitisation companies (the ERF companies), in return for initial consideration and, at later dates, deferred consideration. The deferred consideration represents receipts accrued within the ERF companies after meeting all their obligations to the note holders, loan providers and other third parties in the priority of payments. The purchases of the mortgages were funded by the issue of fixed and floating rate notes by the ERF companies.

All the shares in the ERF companies are held by independent companies, whose shares are held on trust. Although AER does not own, directly or indirectly, any of the share capital of the ERF companies or their parent companies, it has control of the securitisation companies, and they have therefore been treated as subsidiaries in the consolidated financial statements. AER has no right to repurchase the benefit of any of the securitised mortgage loans, other than in certain circumstances where AER is in breach of warranty or loans are substituted in order to effect a further advance.

AER has purchased subordinated notes and granted subordinated loans to some of the ERF companies. In addition, Group companies have invested £239 million *(2017: £231 million)* in loan notes issued by the ERF companies. These have been eliminated on consolidation through offset against the borrowings of the ERF companies in the consolidated statement of financial position.

In all of the above transactions, the Company and its subsidiaries are not obliged to support any losses that may be suffered by the note holders and do not intend to provide such support. Additionally, the notes were issued on the basis that note holders are only entitled to obtain payment, of both principal and interest, to the extent that the available resources of the respective special purpose securitisation companies, including funds due from customers in respect of the securitised loans, are sufficient and that note holders have no recourse whatsoever to other companies in the Aviva Group.

(b) Carrying values

The following table summarises the securitisation arrangements:

	2018		2017	
	Securitised assets £m	**Securitised liabilities £m**	Securitised assets £m	Securitised liabilities £m
Securitised mortgage loans (note 24) and loan notes issued	**2,437**	**(1,464)**	2,463	(1,411)
Other securitisation assets/(liabilities)	**266**	**(1,239)**	265	(1,317)
	2,703	**(2,703)**	2,728	(2,728)

Loan notes held by third parties are as follows:

	2018 £m	2017 £m
Total loan notes issued, as above	**1,464**	1,411
Less: Loan notes held by Group companies	**(239)**	(231)
Loan notes held by third parties (note 52(c)(i))	**1,225**	1,180

26 – Interests in structured entities

A structured entity is defined as an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only, or when the relevant activities are directed by means of contractual arrangements. The Group has interests in both consolidated and unconsolidated structured entities as described below.

The Group holds redeemable shares or units in investment vehicles, which consist of:

- Debt securities comprising securitisation vehicles that Aviva does not originate. These investments are comprised of a variety of debt instruments, including asset-backed securities and other structured securities.
- Investment funds which include: hedge funds, liquidity funds, private equity funds, unit trusts, mutual funds and Private Finance Initiatives (PFIs).
- Specialised investment vehicles include Open Ended Investment Companies (OEICs), Property Limited Partnerships (PLPs), Sociétés d'Investissement a Capital Variable (SICAVs), Tax Transparent Funds (TTFs) and other investment vehicles.

The Group's holdings in investment vehicles are subject to the terms and conditions of the respective investment vehicle's offering documentation and are susceptible to market price risk arising from uncertainties about future values of those investment vehicles. The investment manager makes investment decisions after extensive due diligence of the underlying investment vehicle including consideration of its strategy and the overall quality of the underlying investment vehicle's manager.

All of the investment vehicles in the investment portfolio are managed by portfolio managers who are compensated by the respective investment vehicles for their services. Such compensation generally consists of an asset-based fee and a performance-based incentive fee, and is reflected in the valuation of the investment vehicles.

(a) Interests in consolidated structured entities

The Group has determined that where it has control over investment vehicles, these investments are consolidated structured entities. As at 31 December 2018 the Group has granted loans to consolidated PLPs for a total of £84 million *(2017: £82 million)*. The purpose of these loans is to assist the consolidated PLPs to purchase or construct properties. The Group has also provided support, without having a contractual obligation to do so, to certain consolidated PLPs via letters of support amounting to £51 million *(2017: £72 million)*. The Group has no commitments to provide funding to consolidated structured entities *(2017: £nil)*.

The Group has also given support to five special purpose securitisation companies (the ERF companies) that are consolidated structured entities. As set out in note 25, at the inception of the securitisation vehicles, the UK subsidiary, Aviva Equity Release UK Limited (AER), has granted subordinated loan facilities to some of the ERF companies. AER receives various fees in return for the services provided to the entities. AER receives cash management fees based on the outstanding loan balance at the start of each quarter for the administration of the loan note liabilities. AER receives portfolio administration fees as compensation for managing the mortgage assets. Refer to note 25 for details of securitised mortgages and related assets as at 31 December 2018.

As at the reporting date, the Group has no intentions to provide financial or other support in relation to any other investment vehicles.

26 – Interests in structured entities continued

(b) Interests in unconsolidated structured entities

As part of its investment activities, the Group invests in unconsolidated structured entities. As at 31 December 2018, the Group's total interest in unconsolidated structured entities was £59.0 billion *(2017: £57.5 billion)* on the Group's statement of financial position. The Group's total interest in unconsolidated structured entities is classified as 'Interests in and loans to joint ventures and associates' and 'financial investments held at fair value through profit or loss'. The Group does not sponsor any of the unconsolidated structured entities.

As at 31 December 2018, a summary of the Group's interest in unconsolidated structured entities is as follows:

	2018 £m					2017 £m[1]				
	Interest in, and loans to, joint ventures	**Interest in, and loans to, associates**	**Financial investments**	**Loans**	**Total assets**	Interest in, and loans to, joint ventures	Interest in, and loans to, associates	Financial investments	Loans	Total assets
Structured debt securities[2]	**—**	**—**	**3,434**	**—**	**3,434**	—	—	3,482	—	3,482
Other investments and equity securities	**797**	**217**	**47,663**	**—**	**48,677**	820	326	47,609	—	48,755
Analysed as:										
Unit trust and other investment vehicles	**—**	**—**	**45,212**	**—**	**45,212**	—	—	45,666	—	45,666
PLPs and property funds	**797**	**217**	**1,975**	**—**	**2,989**	820	326	1,435	—	2,581
Other (Including other funds and equity securities)	**—**	**—**	**476**	**—**	**476**	—	—	508	—	508
Loans[3]	**—**	**—**	**—**	**6,886**	**6,886**	—	—	—	5,283	5,283
Total	**797**	**217**	**51,097**	**6,886**	**58,997**	820	326	51,091	5,283	57,520

1 Following a review of the Group's investment classifications, comparative amounts in respect of structured debt securities have been amended from those previously reported to include certain government and corporate debt securities that meet the definition of structured entities. The effect of this change is to increase the reported 2017 structured debt securities by £424 million.
2 Primarily reported within 'other debt securities' in note 27a.
3 Loans include Healthcare, infrastructure & PFI other loans along with certain non-securitised mortgage loans.

The Group's maximum exposure to loss related to the interests in unconsolidated structured entities is £59.0 billion *(2017: £57.5 billion)*.

The majority of debt securities above are investment grade securities held by the UK business. In some cases, the Group may be required to absorb losses from an unconsolidated structured entity before other parties when and if Aviva's interest is more subordinated with respect to other owners of the same security.

For commitments to property management joint ventures and associates, please refer to notes 19 and 20, respectively. The Group has not provided any other financial or other support in addition to that described above as at the reporting date, and there are no intentions to provide support in relation to any other unconsolidated structured entities in the foreseeable future.

In relation to risk management, disclosures on debt securities and investment vehicles are given in note 59(b)(ii) 'Risk management'. In relation to other guarantees and commitments that the Group provides in the course of its business, please refer to note 55(f) 'Contingent liabilities and other risk factors'.

Aviva's interest in unconsolidated structured entities that it also manages at 31 December 2018 is £2.1 billion *(2017: £1.9 billion)* and the total funds under management relating to these investments at 31 December 2018 is £16.8 billion *(2017: £16.2 billion)*.

(c) Other interests in unconsolidated structured entities

The Group receives management fees and other fees in respect of its asset management businesses. The Group does not sponsor any of the funds or investment vehicles from which it receives fees. Management fees received for investments that the Group manages but does not have a holding in also represent an interest in unconsolidated structured entities. As these investments are not held by the Group, the investment risk is borne by the external investors and therefore the Group's maximum exposure to loss relates to future management fees. The table below shows the assets under management of entities that the Group manages but does not have a holding in and the fees earned from those entities.

	2018		2017	
	Assets Under Management £m	**Investment Management Fees £m**	Assets Under Management £m	Investment Management Fees £m
Investment funds[1]	**7,473**	**38**	9,411	67
Specialised investment vehicles:	**3,541**	**6**	3,877	12
Analysed as:				
OEICs	**944**	**1**	1,177	3
PLPs	**2,597**	**5**	2,666	9
SICAVs	**—**	**—**	34	—
Total	**11,014**	**44**	13,288	79

1 Investment funds relate primarily to the Group's Polish pension funds.

27 – Financial investments

This note analyses our financial investments by type and shows their cost and fair value. These will change from one period to the next as a result of new business written, claims paid and market movements.

(a) Carrying amount

Financial investments comprise:

	2018				2017			
		At fair value through profit or loss				At fair value through profit or loss		
	Trading £m	Other than trading £m	Available for sale £m	Total £m	Trading £m	Other than trading £m	Available for sale £m	Total £m
Fixed maturity securities								
Debt securities								
UK government	—	27,665	—	27,665	—	30,242	—	30,242
UK local authorities	—	191	—	191	—	19	—	19
Non-UK government (note 27(d))	—	52,799	1,287	54,086	—	51,399	1,342	52,741
Corporate bonds								
Public utilities	—	10,786	17	10,803	—	11,105	24	11,129
Other corporate	—	65,151	291	65,442	—	69,700	281	69,981
Convertibles and bonds with warrants attached	—	—	—	—	—	9	—	9
Other	—	10,291	—	10,291	—	10,801	—	10,801
	—	166,883	1,595	168,478	—	173,275	1,647	174,922
Certificates of deposit	—	1,123	85	1,208	—	947	79	1,026
	—	168,006	1,680	169,686	—	174,222	1,726	175,948
Equity securities								
Ordinary shares								
Public utilities	—	2,383	—	2,383	—	2,402	—	2,402
Banks, trusts and insurance companies[1]	—	18,039	1	18,040	—	18,852	1	18,853
Industrial miscellaneous and all other[1]	—	61,719	—	61,719	—	68,656	8	68,664
	—	82,141	1	82,142	—	89,910	9	89,919
Non-redeemable preference shares	—	196	—	196	—	244	—	244
	—	82,337	1	82,338	—	90,154	9	90,163
Other investments								
Unit trusts and other investment vehicles	—	45,211	1	45,212	—	45,665	1	45,666
Derivative financial instruments (note 60)	4,994	—	—	4,994	5,507	—	—	5,507
Deposits with credit institutions	—	155	—	155	—	161	—	161
Minority holdings in property management undertakings	—	1,975	—	1,975	—	1,435	—	1,435
Other investments – long-term	—	475	—	475	—	507	—	507
Other investments – short-term	—	1	—	1	—	1	—	1
	4,994	47,817	1	52,812	5,507	47,769	1	53,277
Total financial investments	4,994	298,160	1,682	304,836	5,507	312,145	1,736	319,388
Less: assets classified as held for sale								
Fixed maturity securities	—	(397)	—	(397)	—	(1,140)	—	(1,140)
Equity securities	—	(210)	—	(210)	—	(195)	—	(195)
Other investments	—	(6,644)	—	(6,644)	(8)	(6,963)	—	(6,971)
	—	(7,251)	—	(7,251)	(8)	(8,298)	—	(8,306)
	4,994	290,909	1,682	297,585	5,499	303,847	1,736	311,082

1 Following a review of the Group's investment classifications, comparative amounts in the table have been revised. This review has resulted in a reclassification of £5,443 million in Equity securities previously classified as Banks, trusts and insurance companies to Industrial miscellaneous and all other. There is no impact on total Equity securities.

Of the above total, £144,001 million *(2017: £154,835 million)* is due to be recovered in more than one year after the statement of financial position date.

Other debt securities of £10,291 million *(2017: £10,801 million)* include residential and commercial mortgage-backed securities, as well as other structured credit securities.

27 – Financial investments continued

(b) Cost, unrealised gains and fair value

The following is a summary of the cost/amortised cost, gross unrealised gains and losses and fair value of financial investments:

	2018				2017			
	Cost/amortised cost £m	**Unrealised gains £m**	**Unrealised losses and impairments £m**	**Fair value £m**	Cost/amortised cost £m	Unrealised gains £m	Unrealised losses and impairments £m	Fair value £m
Fixed maturity securities	**162,254**	**15,784**	**(8,352)**	**169,686**	162,092	20,244	(6,388)	175,948
Equity securities	**80,917**	**7,763**	**(6,342)**	**82,338**	75,060	16,819	(1,716)	90,163
Other investments								
Unit trusts and other investment vehicles	**41,703**	**6,841**	**(3,332)**	**45,212**	34,271	11,120	275	45,666
Derivative financial instruments	**1,274**	**4,697**	**(977)**	**4,994**	1,328	4,569	(390)	5,507
Deposits with credit institutions	**155**	**—**	**—**	**155**	161	—	—	161
Minority holdings in property management undertakings	**1,784**	**241**	**(50)**	**1,975**	1,332	180	(77)	1,435
Other investments – long-term	**473**	**33**	**(31)**	**475**	477	61	(31)	507
Other investments – short-term	**1**	**—**	**—**	**1**	1	—	—	1
	288,561	**35,359**	**(19,084)**	**304,836**	274,722	52,993	(8,327)	319,388
These are further analysed as follows:								
At fair value through profit or loss	**286,959**	**35,274**	**(19,079)**	**303,154**	273,087	52,891	(8,326)	317,652
Available for sale	**1,602**	**85**	**(5)**	**1,682**	1,635	102	(1)	1,736
	288,561	**35,359**	**(19,084)**	**304,836**	274,722	52,993	(8,327)	319,388

All unrealised gains and losses and impairments on financial investments classified as fair value through profit or loss have been recognised in the income statement.

Unrealised gains and losses on financial investments classified as at fair value through profit or loss, recognised in the income statement in the year, were a net loss of £28,001 million *(2017: £6,880 million net gain)*. Of this net loss, £27,197 million net loss *(2017: £6,955 million net gain)* related to investments designated as other than trading and £804 million net loss *(2017: £75 million net loss)* related to financial investments designated as trading.

The movement in the unrealised gain/loss position reported in the statement of financial position during the year, shown in the table above, includes foreign exchange movements on the translation of unrealised gains and losses on financial investments held by foreign subsidiaries, which are recognised in other comprehensive income, as well as transfers due to the realisation of gains and losses on disposal and the recognition of impairment losses.

(c) Financial investment arrangements

(i) Stock lending arrangements

The Group has entered into stock lending arrangements in the UK and overseas in accordance with established market conventions. The majority of the Group's stock lending transactions occur in the UK, where investments are lent to EEA-regulated, locally domiciled counterparties and governed by agreements written under English law.

The Group receives collateral in order to reduce the credit risk of these arrangements, either in the form of securities or cash. See note 61 for further discussion regarding collateral positions held by the Group.

(ii) Other arrangements

In carrying on its bulk purchase annuity business, the Group's UK Life operation is required to place certain investments in trust on behalf of the policyholders. Amounts become payable from the trust funds to the trustees if the Group were to be in breach of its payment obligations in respect of policyholder benefits. At 31 December 2018, £2,313 million *(2017: £2,402 million)* of financial investments were restricted in this way.

Certain financial investments are also required to be deposited under local laws in various overseas countries as security for the holders of policies issued in those countries. Other investments are pledged as security collateral for bank letters of credit.

27 – Financial investments continued

(d) Non-UK Government Debt Securities (gross of non-controlling interests)

The following is a summary of non-UK government debt by issuer as at 31 December 2018, analysed by policyholder, participating and shareholder funds.

	Policyholder		Participating		Shareholder		Total	
Non-UK Government Debt Securities	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m	2018 £m	2017 £m
Austria	**10**	5	**572**	550	**167**	127	**749**	682
Belgium	**27**	22	**863**	967	**268**	314	**1,158**	1,303
France	**128**	133	**13,992**	13,454	**2,036**	2,093	**16,156**	15,680
Germany	**126**	127	**1,685**	1,437	**490**	615	**2,301**	2,179
Ireland	**3**	3	**840**	679	**138**	84	**981**	766
Italy	**177**	183	**9,526**	8,223	**772**	823	**10,475**	9,229
Netherlands	**32**	43	**605**	88	**340**	322	**977**	453
Poland	**749**	845	**687**	790	**538**	598	**1,974**	2,233
Portugal	**23**	2	**135**	136	**—**	—	**158**	138
Spain	**84**	87	**514**	314	**94**	233	**692**	634
European Supranational debt	**151**	213	**1,733**	1,841	**1,759**	1,777	**3,643**	3,831
Other European countries	**245**	176	**1,426**	2,104	**639**	917	**2,310**	3,197
Europe	**1,755**	1,839	**32,578**	30,583	**7,241**	7,903	**41,574**	40,325
Canada	**29**	23	**118**	53	**2,947**	2,512	**3,094**	2,588
United States	**813**	1,443	**294**	661	**719**	531	**1,826**	2,635
North America	**842**	1,466	**412**	714	**3,666**	3,043	**4,920**	5,223
Singapore	**5**	14	**658**	558	**342**	297	**1,005**	869
Other	**2,282**	2,396	**3,567**	3,520	**738**	408	**6,587**	6,324
Asia Pacific and other	**2,287**	2,410	**4,225**	4,078	**1,080**	705	**7,592**	7,193
Total	**4,884**	5,715	**37,215**	35,375	**11,987**	11,651	**54,086**	52,741
Assets of operations classified as held for sale	**9**	1	**—**	—	**1**	531	**10**	532
Total (excluding assets held for sale)	**4,875**	5,714	**37,215**	35,375	**11,986**	11,120	**54,076**	52,209

At 31 December 2018, the Group's total government (non-UK) debt securities stood at £54.1 billion (*2017: £52.7 billion*). The significant majority of these holdings are within our participating funds where the risk to our shareholders is governed by the nature and extent of our participation within those funds.

Our direct shareholder asset exposure to government (non-UK) debt securities amounts to £12.0 billion *(2017: £11.7 billion)*. The primary exposures, relative to total shareholder (non-UK) government debt exposure, are to Canadian (25%), French (17%), Italian (6%), US (6%), Polish (4%) and German (4%) government debt securities.

The participating funds exposure to (non-UK) government debt amounts to £37.2 billion (*2017: £35.4 billion*). The primary exposures, relative to total (non-UK) government debt exposures included within our participating funds, are to the (non-UK) government debt securities of France (38%), Italy (26%), Germany (5%), Belgium (2%), Ireland (2%) and Poland (2%).

27 – Financial investments continued

(e) Exposure to worldwide banks – debt securities

Direct shareholder and participating fund assets exposures to worldwide bank debt securities (net of non-controlling interests, excluding policyholder assets)

	Shareholder assets			Participating fund assets		
2018	Total senior debt £bn	Total subordinated debt £bn	Total debt £bn	Total senior debt £bn	Total subordinated debt £bn	Total debt £bn
Australia	0.2	—	0.2	0.8	0.2	1.0
Denmark	—	—	—	0.5	—	0.5
France	0.5	0.1	0.6	2.6	0.4	3.0
Germany	—	—	—	0.6	0.2	0.8
Italy	—	—	—	0.1	—	0.1
Netherlands	0.3	0.2	0.5	1.4	0.2	1.6
Spain	0.4	—	0.4	0.5	0.1	0.6
Sweden	0.1	—	0.1	0.3	0.1	0.4
Switzerland	—	—	—	0.7	—	0.7
United Kingdom	1.3	0.4	1.7	1.1	0.5	1.6
United States	1.0	0.2	1.2	1.5	0.1	1.6
Other	0.4	0.1	0.5	1.8	0.2	2.0
Total	**4.2**	**1.0**	**5.2**	**11.9**	**2.0**	**13.9**
Assets of operations classified as held for sale	—	—	—	—	—	—
Total (excluding assets held for sale)	**4.2**	**1.0**	**5.2**	**11.9**	**2.0**	**13.9**
2017 Total	4.4	1.0	5.4	12.1	2.5	14.6

Net of non-controlling interests, our direct shareholder assets exposure to worldwide bank debt securities is £5.2 billion (*2017: £5.4 billion*). The majority of our holding (81%) is in senior debt. The primary exposures are to UK (33%), US (23%), French (12%) and Dutch (10%) banks.

Net of non-controlling interests, the participating fund exposures to worldwide bank debt securities, where the risk to our shareholders is governed by the nature and extent of our participation within those funds, is £13.9 billion *(2017: £14.6 billion)*. The majority of the exposure (86%) is in senior debt. Participating funds are the most exposed to French (22%), UK (12%), Dutch (12%) and US (12%) banks.

Direct shareholder and participating fund assets exposures to worldwide bank debt securities (gross of non-controlling interests, excluding policyholder assets)

	Shareholder assets			Participating fund assets		
2018	Total senior debt £bn	Total subordinated debt £bn	Total debt £bn	Total senior debt £bn	Total subordinated debt £bn	Total debt £bn
Australia	0.2	—	0.2	0.8	0.2	1.0
Denmark	—	—	—	0.5	—	0.5
France	0.5	0.1	0.6	2.7	0.4	3.1
Germany	—	—	—	0.7	0.2	0.9
Italy	—	—	—	0.2	—	0.2
Netherlands	0.3	0.2	0.5	1.5	0.2	1.7
Spain	0.4	—	0.4	0.5	0.1	0.6
Sweden	0.1	—	0.1	0.3	0.1	0.4
Switzerland	—	—	—	0.7	—	0.7
United Kingdom	1.3	0.4	1.7	1.2	0.5	1.7
United States	1.0	0.2	1.2	1.6	0.1	1.7
Other	0.4	0.1	0.5	1.9	0.2	2.1
Total	**4.2**	**1.0**	**5.2**	**12.6**	**2.0**	**14.6**
Assets of operations classified as held for sale	—	—	—	—	—	—
Total (excluding assets held for sale)	**4.2**	**1.0**	**5.2**	**12.6**	**2.0**	**14.6**
2017 Total	4.4	1.0	5.4	12.5	2.5	15.0

Gross of non-controlling interests, our direct shareholder assets exposure to worldwide bank debt securities is £5.2 billion *(2017: £5.4 billion)*. The majority of our holding (81%) is in senior debt. The primary exposures are to UK (33%), US (23%), French (12%) and Dutch (10%) banks.

Gross of non-controlling interests, the participating fund exposures to worldwide bank debt securities, where the risk to our shareholders is governed by the nature and extent of our participation within those funds, is £14.6 billion *(2017: £15.0 billion)*. The majority of the exposure (86%) is in senior debt. Participating funds are most exposed to French (21%), UK (12%), Dutch (12%) and US (12%) banks.

28 – Receivables

This note analyses our total receivables.

	2018 £m	2017 £m
Amounts owed by contract holders	**2,142**	2,154
Amounts owed by intermediaries	**1,318**	1,235
Deposits with ceding undertakings	**93**	103
Amounts due from reinsurers	**311**	348
Amounts due from brokers for investment sales	**295**	206
Amounts receivable for collateral pledged	**2,752**	2,515
Amounts due from government, social security and taxes	**762**	744
Other receivables	**1,217**	1,018
Total	**8,890**	8,323
Less: Amounts classified as held for sale	**(11)**	(38)
	8,879	8,285
Expected to be recovered in less than one year	**8,855**	8,278
Expected to be recovered in more than one year	**35**	45
	8,890	8,323

Concentrations of credit risk with respect to receivables are limited due to the size and spread of the Group's trading base. No further credit risk provision is therefore required in excess of provisions already recognised for doubtful receivables.

29 – Deferred acquisition costs

(a) Deferred acquisition costs – carrying amount

The carrying amount of deferred acquisition costs was as follows:

	2018 £m	2017 £m
Deferred acquisition costs in respect of:		
Insurance contracts – Long-term business	**931**	858
Insurance contracts – General insurance and health business	**1,088**	1,110
Participating investment contracts – Long-term business	**101**	33
Non-participating investment contracts – Long-term business	**1,036**	1,071
Retail fund management business	**—**	2
Total	**3,156**	3,074
Less: Amounts classified as held for sale	**(191)**	(168)
	2,965	2,906

Deferred acquisition costs (DAC) on long-term business are generally recoverable in more than one year whereas such costs on general insurance and health business are generally recoverable within one year. Of the above total, £1,879 million *(2017: £1,521 million)* is expected to be recovered in more than one year after the statement of financial position date. For long-term business where amortisation of the DAC balance depends on projected profits, the amount expected to be recovered is estimated and actual experience will differ.

(b) Deferred acquisition costs – movements in the year

The movements in deferred acquisition costs during the year were:

	Long-term business					
2018	Insurance contracts £m	Participating investment contracts £m	Non-participating investment contracts £m	General insurance and health business £m	Retail fund management business £m	Total £m
Carrying amount at 1 January	**858**	**33**	**1,071**	**1,110**	**2**	**3,074**
Acquisition costs deferred during the year	**265**	**13**	**87**	**2,279**	**—**	**2,644**
Amortisation	**(141)**	**(9)**	**(140)**	**(2,282)**	**(2)**	**(2,574)**
Impact of assumption changes	**14**	**1**	**16**	**—**	**—**	**31**
Effect of portfolio transfers, acquisitions and disposals	**(5)**	**—**	**—**	**(10)**	**—**	**(15)**
Foreign exchange rate movements	**2**	**1**	**2**	**(9)**	**—**	**(4)**
Other movements[1]	**(62)**	**62**	**—**	**—**	**—**	**—**
Carrying amount at 31 December	**931**	**101**	**1,036**	**1,088**	**—**	**3,156**
Less: Amounts classified as held for sale	**—**	**—**	**(191)**	**—**	**—**	**(191)**
	931	**101**	**845**	**1,088**	**—**	**2,965**

1 Following the adoption of IFRS 15, the categorisation of DAC balances has been analysed resulting in a transfer of £62m from insurance contracts to participating investment contracts.

29 – Deferred acquisition costs continued

2017	Long-term business					
	Insurance contracts £m	Participating investment contracts £m	Non-participating investment contracts £m	General insurance and health business £m	Retail fund management business £m	Total £m
Carrying amount at 1 January	694	19	861	1,037	3	2,614
Acquisition costs deferred during the year	200	—	106	2,418	—	2,724
Amortisation	(76)	14	(92)	(2,369)	(1)	(2,524)
Impact of assumption changes	—	—	192	—	—	192
Effect of portfolio transfers, acquisitions and disposals	26	—	—	25	—	51
Foreign exchange rate movements	14	—	4	1	—	19
Other movements	—	—	—	(2)	—	(2)
Carrying amount at 31 December	858	33	1,071	1,110	2	3,074
Less: Amounts classified as held for sale	(34)	—	(124)	(10)	—	(168)
	824	33	947	1,100	2	2,906

DAC for long-term business increased over 2018 mainly due to new business sales across various European markets. DAC for general insurance and health business decreased slightly over 2018 mainly due to the disposal of Avipop in Italy.

Where amortisation of the DAC balance depends on projected profits, changes to economic conditions may lead to a movement in the DAC balance and a corresponding impact on profit. It is estimated that the movement in the DAC balance would reduce profit by £40 million *(2017: £38 million)* if market yields on fixed income investments were to increase by 1% and increase profit by £39 million *(2017: £29 million)* if yields were to reduce by 1%. At both 31 December 2018 and 31 December 2017 the DAC balance has been restricted by the value of projected future profits and hence is more sensitive to changes in the value of those projected profits.

30 – Pension surpluses, other assets, prepayments and accrued income

(a) Pension surpluses and other assets – carrying amount

The carrying amount comprises:

	2018 £m	2017 £m
Surpluses in the staff pension schemes (note 51(a))	**3,256**	3,399
Other assets	**85**	71
Total	**3,341**	3,470
Less: Amounts classified as held for sale	**—**	(2)
	3,341	3,468

Surpluses in the staff pension schemes and £1 million *(2017: £9 million)* of other assets are recoverable more than one year after the statement of financial position date.

(b) Prepayments and accrued income

Prepayments and accrued income of £2,951 million *(2017: £2,876 million)* include assets classified as held for sale of £4 million *(2017: £16 million)* and £9 million (*2017: £7 million*) that is expected to be recovered more than one year after the statement of financial position date.

31 – Assets held to cover linked liabilities

Certain unit-linked products have been classified as investment contracts, while some are included within the definition of an insurance contract. The assets backing these unit-linked liabilities are included within the relevant balances in the consolidated statement of financial position, while the liabilities are included within insurance and investment contract provisions. This note analyses the carrying values of assets backing these liabilities.

	2018 £m	2017 £m
Loans	**9**	8
Debt securities	**29,472**	30,987
Equity securities	**67,152**	74,110
Reinsurance assets	**4,099**	6,103
Cash and cash equivalents	**14,455**	12,000
Units trusts and other investment vehicles	**41,954**	42,368
Other	**8,043**	7,059
Total	**165,184**	172,635
Less: Assets classified as held for sale	**(7,784)**	(8,013)
	157,400	164,622

The reinsurance assets balance in the table above includes £4,009 million *(2017: £6,094 million)* of non-participating investment contracts, which are legally reinsurance but do not meet the definition of a reinsurance contract under IFRS. These assets are financial instruments measured at fair value through profit and loss and are classified as Level 1 assets.

32 – Ordinary share capital

This note gives details of Aviva plc's ordinary share capital and shows the movements during the year.

(a) Details of the Company's ordinary share capital are as follows:

	2018 £m	2017 £m
The allotted, called up and fully paid share capital of the Company at 31 December 2018 was:		
3,902,352,211 *(2017: 4,012,682,691)* ordinary shares of 25 pence each	**975**	1,003

At the 2018 Annual General Meeting, the Company was authorised to allot up to a further maximum nominal amount of:

- £668,883,564 of which £334,441,782 can be in connection with an offer by way of a rights issue
- £100 million of new ordinary shares in relation to any issue of Solvency II compliant capital instruments

(b) During 2018, a total of 119,491,188 ordinary shares of 25 pence each were cancelled and 9,160,708 were allotted and issued by the Company as follows:

	2018				2017			
	Number of shares	Share capital £m	Capital redemption reserve £m	Share premium £m	Number of shares	Share capital £m	Capital redemption reserve £m	Share premium £m
At 1 January	**4,012,682,691**	**1,003**	**14**	**1,207**	4,061,539,206	1,015	—	1,197
Shares issued under the Group's Employee and Executive Share Option Schemes	**9,160,708**	**2**	**—**	**7**	8,867,985	2	—	10
Shares cancelled through buy-back	**(119,491,188)**	**(30)**	**30**	**—**	(57,724,500)	(14)	14	—
At 31 December	**3,902,352,211**	**975**	**44**	**1,214**	4,012,682,691	1,003	14	1,207

Ordinary shares in issue in the Company rank pari passu with any new ordinary shares issued in the Company. All the ordinary shares in issue carry the same right to receive all dividends and other distributions declared, made or paid by the Company.

On 18 September 2018, the Company announced that it had successfully completed the share buy-back programme (the 2018 programme) which was notified to the market on 1 May 2018. As a result of the 2018 programme, Aviva acquired 119,491,188 shares at an average price of £5.0213 per share. These shares with a nominal value of £30 million were bought back and subsequently cancelled during the year, giving rise to a capital redemption reserve of an equivalent amount as required by the Companies Act 2006. The aggregate consideration paid was £600 million which is reflected in retained earnings (see note 39).

On 20 September 2017, the Company announced that it had successfully completed the share buy-back programme (the 2017 programme) which was notified to the market on 25 May 2017. As a result of the 2017 programme, Aviva acquired 57,724,500 shares at an average price of £5.20 per share. These shares with a nominal value of £14 million were bought back and subsequently cancelled during the year, giving rise to a capital redemption reserve of an equivalent amount as required by the Companies Act 2006. The aggregate consideration paid was £300 million which is reflected in retained earnings (see note 39).

33 – Group's share plans

This note describes various equity compensation plans operated by the Group, and shows how the Group values the options and awards of shares in the Company.

(a) Description of the plans

The Group maintains a number of active share option and award plans and schemes (the Group's share plans). These are as follows:

(i) Savings-related options

These are options granted under the tax-advantaged Save As You Earn (SAYE) share option scheme in the UK and Irish revenue-approved SAYE share option scheme in Ireland. The SAYE allows eligible employees to acquire options over the Company's shares at a discount of up to 20% of their market value at the date of grant.

Options are normally exercisable during the six month period following either the third or fifth anniversary of the start of the relevant savings contract. Seven year contracts were offered prior to 2012. Savings contracts are subject to the statutory savings limits of £500 per month in the UK and €500 per month in Ireland. A limit of £250 per month was applied to contracts in the UK prior to 2016.

(ii) Aviva long-term incentive plan awards

These awards have been made under the Aviva Long-Term Incentive Plan 2011 (LTIP), and are described in section (b) below and in the directors' remuneration report.

(iii) Aviva annual bonus plan awards

These awards have been made under the Aviva Annual Bonus Plan 2011 (ABP), and are described in section (b) below and in the directors' remuneration report.

(iv) Aviva recruitment and retention share plan awards

These are conditional awards granted under the Aviva Recruitment and Retention Share Award plan (RRSAP) in relation to the recruitment or retention of senior managers excluding executive directors. The awards vest in tranches on various dates and vesting is conditional upon the participant being employed by the Group on the vesting date and not having served notice of resignation. Some awards can be subject to performance conditions. If a participant's employment is terminated due to resignation or dismissal, any tranche of the award which has vested within the 12 months prior to the termination date will be subject to clawback and any unvested tranches of the award will lapse in full.

(v) Aviva Investors deferred share award plan awards

These awards have been made under the Aviva Investors Deferred Share Award Plan (AI DSAP), where employees can choose to have the deferred element of their bonus deferred into awards over Aviva shares. The awards vest in three equal tranches on the second, third and fourth year following the year of grant.

(vi) Aviva Investors long-term incentive plan awards

These awards have been made under the Aviva Investors Long-Term Incentive Plan 2015 (AI LTIP)

(vii) Various all employee share plans

The Company maintains a number of active stock option and share award voluntary schemes:

a) The global matching share plan
b) Aviva Group employee share ownership scheme
c) Aviva France employee profit sharing scheme.

No new Aviva plc ordinary shares will be issued to satisfy awards made under plans iv, v, vi, vii b) or vii c).

(b) Outstanding options and awards

(i) Share options

At 31 December 2018, options to subscribe for ordinary shares of 25 pence each in the Company were outstanding as follows:

Aviva savings related share option scheme	Option price p	Number of shares	Normally exercisable	Option price p	Number of shares	Normally exercisable
	268	145,323	2018	351	10,508,734	2019 or 2021
	312	267,209	2018	409	4,694,393	2020 or 2022
	380	3,856,295	2018 or 2020	387	7,563,395	2021 or 2023
	419	400,885	2019			

Aviva Ireland savings related share option scheme (in euros)	Option price c	Number of shares	Normally exercisable	Option price c	Number of shares	Normally exercisable
	369	8,259	2018	418	436,262	2019 or 2021
	518	107,293	2018 or 2020	447	233,305	2020 or 2022
	527	11,489	2019	432	425,184	2021 or 2023

33 – Group's share plans continued

The following table summarises information about options outstanding at 31 December 2018:

Range of exercise prices	Outstanding options Number	Weighted average remaining contractual life Years	Weighted average exercise price p
£2.66 – £3.16	420,791	1	296.80
£3.17 – £3.67	10,944,996	2	351.00
£3.68 – £4.19	17,292,239	2	392.43

The comparative figures as at 31 December 2017 were:

Range of exercise prices	Outstanding options Number	Weighted average remaining contractual life Years	Weighted average exercise price p
£2.66 – £3.16	960,378	1	288.10
£3.17 – £3.67	12,227,442	3	351.00
£3.68 – £4.19	11,908,758	3	397.83

(ii) Share awards

At 31 December 2018, awards issued under the Company's executive incentive plans over ordinary shares of 25 pence each in the Company were outstanding as follows:

Aviva long-term incentive plan 2011	Number of shares	Year of vesting
	9,151,821	2019
	6,745,024	2020
	7,898,212	2021

Aviva annual bonus plan 2011	Number of shares	Year of vesting
	5,452,009	2019
	2,764,620	2020
	2,008,514	2021

Aviva recruitment and retention share award plan	Number of shares	Year of vesting
	706,643	2019
	268,812	2020
	83,855	2021
	17,269	2022

Aviva Investors deferred share award plan	Number of shares	Year of vesting
	101,695	2019
	86,024	2020
	50,300	2021

Aviva Investors long-term incentive plan 2015	Number of shares	Year of vesting
	313,419	2020

The global matching share plan	Number of shares	Year of vesting
	20,421	2019
	682,944	2020
	629,422	2021

The vesting of awards under the LTIP is subject to the attainment of performance conditions as described in the directors' remuneration report.

No performance conditions are attached to the awards under the ABP, AI DSAP or some of the awards under the RRSAP except as outlined below. There are no performance conditions attached to LTIP awards granted since 2017, with the exception of grants made to the Group Executive.

Under the RRSAP, some shares are subject to the attainment of the same performance conditions that apply to the LTIP grants as follows:

- Shares which vest in 2019:
  - 102,602 are subject to the same performance conditions that apply to the 2016 LTIP grant
  - 144,980 are subject to the performance conditions relating to the performance of the participant's previous employer
- Shares which vest in 2020:
  - 53,246 are subject to the performance conditions relating to the performance of the participant's previous employer
- Shares which vest in 2021:
  - 5,305 are subject to the performance conditions relating to the performance of the participant's previous employer

These performance conditions are as outlined in the relevant year's directors' remuneration report. Shares which do not vest will lapse.

33 – Group's share plans continued

(iii) Shares to satisfy awards and options

New issue shares are now generally used to satisfy all awards and options granted under plans that have received shareholder approval and where local regulations permit. Further details are given in note 32.

(c) Movements in the year

A summary of the status of the option plans as at 31 December 2017 and 2018, and changes during the years ended on those dates, is shown below.

	2018		2017	
	Number of options	**Weighted average exercise price p**	Number of options	Weighted average exercise price p
Outstanding at 1 January	**25,096,578**	**370.81**	24,253,209	355.08
Granted during the year	**8,139,367**	**387.00**	5,998,098	409.00
Exercised during the year	**(2,111,514)**	**361.96**	(3,094,372)	327.04
Forfeited during the year	**(1,855,638)**	**385.00**	(944,431)	364.03
Cancelled during the year	**(495,646)**	**364.93**	(1,004,017)	361.90
Expired during the year	**(115,121)**	**381.97**	(111,909)	355.32
Outstanding at 31 December	**28,658,026**	**375.20**	25,096,578	370.81
Exercisable at 31 December	**3,457,732**	**369.88**	911,019	366.51

(d) Expense charged to the income statement

The total expense recognised for the year arising from equity compensation plans were as follows:

	2018 £m	2017 £m
Equity-settled expense	**64**	77
Cash-settled expense	**—**	—
Total (note 11(b))	**64**	77

(e) Fair value of options and awards granted after 7 November 2002

The weighted average fair values of options and awards granted during the year, estimated by using the Binomial option pricing model and Monte Carlo Simulation model, were £0.78 and £4.84 *(2017: £1.00 and £4.94)* respectively.

(i) Share options

The fair value of the options was estimated on the date of grant, based on the following weighted average assumptions:

Weighted average assumption	**2018**	2017
Share price	**480p**	506p
Exercise price	**387p**	409p
Expected volatility	**24.85%**	26.04%
Expected life	**3.67 years**	3.70 years
Expected dividend yield	**5.88%**	4.61%
Risk-free interest rate	**1.05%**	0.55%

The expected volatility used was based on the historical volatility of the share price over a period equivalent to the expected life of the option prior to its date of grant. The risk-free interest rate was based on the yields available on UK government bonds as at the date of grant. The bonds chosen were those with a similar remaining term to the expected life of the options. 2,111,514 options granted after 7 November 2002 were exercised during the year *(2017: 3,094,372)*.

(ii) Share awards

The fair value of the awards was estimated on the date of grant based on the following weighted average assumptions:

Weighted average assumption	**2018**	2017
Share price	**500p**	523p
Expected volatility[1]	**25%**	28%
Expected volatility of comparator companies' share price[1]	**25%**	26%
Correlation between Aviva and comparator competitors' share price[1]	**64%**	59%
Expected life[1]	**2.64 years**	2.76 years
Expected dividend yield[2]	**0.00%**	0.00%
Risk-free interest rate[1]	**0.80%**	0.59%

1 For awards with market-based performance conditions only.
2 Expected dividend yield assumption was only used to fair value LTIP awards issued in France. In 2017, LTIP awards with no market performance conditions were issued in France therefore this assumption was not used in the year.

The expected volatility used was based on the historical volatility of the share price over a period equivalent to the expected life of the share award prior to its date of grant. The risk-free interest rate was based on the yields available on UK government bonds as at the date of grant. The bonds chosen were those with a similar remaining term to the expected life of the share awards.

34 – Treasury shares

The following table summarises information about treasury shares at 31 December 2018:

	2018		2017	
	Number	£m	Number	£m
Shares held by employee trusts	**455,986**	**2**	295,906	1
Shares held by subsidiary companies	**2,435,983**	**13**	2,471,599	13
	2,891,969	**15**	2,767,505	14

(a) Shares held by employee trusts

Prior to 2014, we satisfied awards and options granted under the Group's share plans primarily through shares purchased in the market and held by employee share trusts. From 2014 we primarily issue new shares except where it is necessary to use shares held by an employee share trust. This note gives details of the shares held in these trusts. Movements in the carrying value of shares held by employee trusts comprise:

	2018		2017	
	Number	£m	Number	£m
Cost debited to shareholders' funds				
At 1 January	**295,906**	**1**	1,127,473	1
Acquired in the year	**765,582**	**4**	236,585	1
Distributed in the year	**(605,502)**	**(3)**	(1,068,152)	(1)
Balance at 31 December	**455,986**	**2**	295,906	1

The shares are owned by employee share trusts with an undertaking to satisfy awards of shares in the Company under the Company's share plans and schemes. Details of the features of the plans can be found in the directors' remuneration report and/or in note 33.

These shares were either purchased in the market or, in 2015, new shares were issued to the trust and are carried at weighted average cost. At 31 December 2018, they had an aggregate nominal value of £113,997 *(2017: £73,977)* and a market value of £1,712,227 *(2017: £1,498,764)*. The trustees have waived their rights to dividends on the shares held in the trusts.

(b) Shares held by subsidiary companies

At 31 December 2018, the balance of shares held by subsidiary companies of 2,435,983 *(2017: 2,471,599 shares)* had an aggregate nominal value of £608,996 *(2017: £617,900)* and a market value of £9,148,336 *(2017: £13,295,284)*.

35 – Preference share capital

This note gives details of Aviva plc's preference share capital.

The preference share capital of the Company at 31 December was:

	2018 £m	2017 £m
Issued and paid up		
100,000,000 8.375% cumulative irredeemable preference shares of £1 each	**100**	100
100,000,000 8.75% cumulative irredeemable preference shares of £1 each	**100**	100
	200	200

The issued preference shares are non-voting except where their dividends are in arrears, on a winding up or where their rights are altered.

On a winding up, they carry a preferential right of return of capital ahead of the ordinary shares. Holders are entitled to receive dividends out of the profits available for distribution and resolved to be distributed in priority to the payment of dividends to holders of ordinary shares. The Company does not have a contractual obligation to deliver cash or other financial assets to the preference shareholders and therefore the directors may make dividend payments at their discretion.

At the end of 2018 the fair value of Aviva plc's preference share capital was £264 million *(2017: £348 million)*.

Following our statement at the full year 2017 results that we "have the ability to cancel our preference shares", Aviva listened to the views of investors, who expressed concerns, and as a result Aviva subsequently announced on 23 March 2018 that it had decided to take "no action to cancel its preference shares". Under current regulation the preference shares will no longer count as regulatory capital in 2026. Aviva will work towards obtaining regulatory approval for the preference shares, or a suitable substitute, to qualify as capital from 2026 onwards. If as we approach 2026 Aviva needs to reconsider this position, it will do so after taking into account the fair market value of the preference shares at that time.

On 30 April 2018 Aviva announced a charge of £14 million relating to a provision for the goodwill payment scheme to those preference shareholders who sold preference shares in the period from 8 and 22 March (inclusive) at a share price that was lower than the price that the preference shares returned to following the announcement on 23 March 2018. The total cost of the goodwill payment scheme was £10 million relating to the goodwill payments to preference shareholders, and associated administration costs, against our initial estimate of £14 million. The nature of these costs and the restricted time-period that defines eligibility to receive a payment demonstrates that they are non-recurrent and are not reflective of the Group's ongoing financial performance.

At the 2015 Annual General Meeting, the Company was authorised to allot sterling new preference shares, as defined in the Company's articles of association, up to a maximum nominal value of £500 million.

36 – Direct capital instrument and tier 1 notes

Notional amount	2018 £m	2017 £m
5.9021% £500 million direct capital instrument – Issued November 2004	**500**	500
6.875% £210 million STICS – Issued November 2003	**231**	231
Total	**731**	731

The direct capital instrument (the DCI) was issued on 25 November 2004. The DCI has no fixed redemption date but the Company may, at its sole option, redeem all (but not part) of the principal amount on 27 July 2020, at which date the interest rate changes to a variable rate, or on any respective coupon payment date thereafter. The variable rate will be the six month sterling deposit rate plus margin.

The Step-up Tier one Insurance Capital Securities ('STICS') were issued on 21 November 2003 by Friends Life Holdings plc, substituted as issuer by Aviva plc on 1 October 2015. The STICS are irrevocably guaranteed on a subordinated basis by Aviva Life & Pensions UK Limited. Prior to the Part VII transfer of the Friends Life business into UK Life on 1 October 2017 the guarantor for the STICS was Friends Life Limited. The STICS have no fixed redemption date but the Company may, at its sole option, redeem the instrument (in whole or in part) on 21 November 2019, or on the coupon payment date falling on successive fifth anniversaries from this date. For each coupon period beginning 21 November 2019, the STICS will bear interest reset every five years at the rate per annum which is the aggregate of 2.97% and the Gross Redemption Yield of the Benchmark Gilt.

The Company has the option to defer coupon payments on the DCI and the STICS on any relevant payment date.

In relation to the DCI, deferred coupons shall only be satisfied should the Company exercise its sole option to redeem the instruments.

In relation to the STICS, deferred coupons may be satisfied at any time, at the sole option of the Company. The Company is required to satisfy deferred coupons upon the earliest of the following:

- Resumption of payment of coupons on the STICS; or
- Redemption; or
- The commencement of winding up of the issuer.

No interest will accrue on any deferred coupon on the DCI. Interest will accrue on deferred coupons on the STICS at the then current rate of interest on the STICS.

Deferred coupons on the DCI and the STICS will be satisfied by the issue and sale of ordinary shares in the Company at their prevailing market value, to a sum as near as practicable to (and at least equal to) the relevant deferred coupons. In the event of any coupon deferral, the Company will not declare or pay any dividend on its ordinary or preference share capital. These instruments have been treated as equity. Please refer to accounting policy AE.

At the end of 2018 the fair value of the DCI and the STICS was £722 million *(2017: £778 million)*.

37 – Merger reserve

Prior to 1 January 2004, certain significant business combinations were accounted for using the 'pooling of interests method' (or merger accounting), which treats the merged groups as if they had been combined throughout the current and comparative accounting periods. Merger accounting principles for these combinations gave rise to a merger reserve in the consolidated statement of financial position, being the difference between the nominal value of new shares issued by the Parent Company for the acquisition of the shares of the subsidiary and the subsidiary's own share capital and share premium account.

The merger reserve is also used where more than 90% of the shares in a subsidiary are acquired and the consideration includes the issue of new shares by the Company, thereby attracting merger relief under the Companies Act 1985 and, from 1 October 2009, the Companies Act 2006.

The balance of the merger reserve at 31 December 2018 is £8,974 million *(2017: £8,974 million)*.

38 – Currency translation and other reserves

This note gives details of the currency translation and other reserves forming part of the Group's consolidated equity and shows the movements during the year net of non-controlling interests:

		Other reserves				
	Currency translation reserve (see accounting policy E) £m	Owner occupied properties reserve (see accounting policy P) £m	Investment valuation reserve (see accounting policy T) £m	Hedging instruments reserve (see accounting policy U) £m	Equity compensation reserve (see accounting policy AB) £m	Total £m
Balance at 1 January 2017	1,146	28	59	(514)	78	(349)
Arising in the year through other comprehensive income:						
Fair value losses	—	(1)	(7)	—	—	(8)
Fair value gains transferred to profit on disposals	—	—	(2)	—	—	(2)
Share of other comprehensive income of joint ventures and associates	—	—	6	—	—	6
Foreign exchange rate movements[1]	125	—	—	(100)	—	(100)
Aggregate tax effect – shareholders' tax	(4)	2	9	—	—	11
Total other comprehensive income for the year	121	1	6	(100)	—	(93)
Fair value gains transferred to retained earnings on disposals	—	(2)	—	—	—	(2)
Transfer to profit on disposal of subsidiaries, joint ventures and associates	(126)	(1)	—	138	—	137
Changes in non-controlling interests in subsidiaries	—	—	—	—	—	—
Reserves credit for equity compensation plans	—	—	—	—	77	77
Shares issued under equity compensation plans	—	—	—	—	(44)	(44)
Balance at 31 December 2017	**1,141**	**26**	**65**	**(476)**	**111**	**(274)**
Arising in the year through other comprehensive income:						
Fair value gains	**—**	**1**	**57**	**—**	**—**	**58**
Fair value gains transferred to profit on disposals	**—**	**—**	**(78)**	**—**	**—**	**(78)**
Share of other comprehensive income of joint ventures and associates	**—**	**—**	**(10)**	**—**	**—**	**(10)**
Foreign exchange rate movements[1]	**27**	**—**	**—**	**(27)**	**—**	**(27)**
Aggregate tax effect – shareholders' tax	**1**	**—**	**7**	**—**	**—**	**7**
Total other comprehensive income for the year	**28**	**1**	**(24)**	**(27)**	**—**	**(50)**
Fair value gains transferred to retained earnings on disposals	**—**	**—**	**—**	**—**	**—**	**—**
Transfer to profit on disposal of subsidiaries, joint ventures and associates	**(40)**	**—**	**(1)**	**37**	**—**	**36**
Changes in non-controlling interests in subsidiaries	**(7)**	**—**	**—**	**—**	**—**	**—**
Reserves credit for equity compensation plans	**—**	**—**	**—**	**—**	**64**	**64**
Shares issued under equity compensation plans	**—**	**—**	**—**	**—**	**(55)**	**(55)**
Balance at 31 December 2018	**1,122**	**27**	**40**	**(466)**	**120**	**(279)**

1 Foreign exchange rate movements recorded in the consolidated statement of comprehensive income of £5 million *(2017: £68 million)* relate to the currency translation reserve of £27 million *(2017: £125 million)*, the hedging instrument reserve of £(27) million *(2017: £(100) million)* and non-controlling interests (refer to note 40) of £5 million *(2017: £43 million)*.

39 – Retained earnings

This note analyses the movements in the consolidated retained earnings during the year.

	2018 £m	2017 £m
Balance at 1 January	**4,918**	4,835
Profit for the year attributable to equity shareholders	**1,568**	1,497
Remeasurements of pension schemes[1] (note 51)	**(279)**	(5)
Dividends and appropriations (note 16)	**(1,189)**	(1,081)
Shares purchased in buy-back (note 32)	**(600)**	(300)
Net shares issued under equity compensation plans	**49**	42
Effect of changes in non-controlling interests in existing subsidiaries	**1**	—
Forfeited dividend income[2]	**4**	—
Transfer from other reserves on disposal of subsidiaries, joint ventures and associates (note 38)	**—**	1
Reclassification of tier 1 notes to financial liabilities (note 36)	**—**	(92)
Fair value gains realised from other reserves (note 38)	**—**	2
Aggregate tax effect	**51**	19
Balance at 31 December	**4,523**	4,918

1 Net remeasurements of pension schemes recorded in the consolidated statement of comprehensive income of £279 million loss *(2017: £5 million loss)* includes £280 million of remeasurement losses *(2017: £5 million losses)* on the main pension schemes (refer to note 51) with a small amount of gains in relation to other schemes.

2 The Group has commenced a shareholder forfeiture programme, where the shares of shareholders with whom Aviva has lost contact over the last 12 years will be forfeited and sold on. Any associated unclaimed dividends will be reclaimed by the Group. After covering administration costs, the majority of the money will be put into a charitable foundation.

The Group's regulated subsidiaries are required to hold sufficient capital to meet acceptable solvency levels based on applicable local regulations. Their ability to transfer retained earnings to the UK parent companies is therefore restricted to the extent these earnings form part of local regulatory capital.

40 – Non-controlling interests

This note gives details of the Group's non-controlling interests and shows the movements during the year.

Non-controlling interests at 31 December comprised:

	2018 £m	2017 £m
Equity shares in subsidiaries	**288**	423
Share of earnings	**415**	288
Share of other reserves	**13**	274
	716	985
Preference shares in General Accident plc	**250**	250
	966	1,235

Movements in the year comprised:

	2018 £m	2017 £m
Balance at 1 January	**1,235**	1,425
Profit for the year attributable to non-controlling interests	**119**	149
Foreign exchange rate movements	**5**	43
Total comprehensive income attributable to non-controlling interests	**124**	192
Capital contributions from non-controlling interests	**3**	36
Non-controlling interests share of dividends declared in the year	**(90)**	(103)
Changes in non-controlling interests in subsidiaries[1]	**(306)**	(315)
Balance at 31 December	**966**	1,235

1 Changes in non-controlling interests in 2018 primarily relate to the sale of the Group's shareholdings in Avipop (Italy), the sale of the life insurance and pension joint ventures Caja Murcia Vida and Caja Granada Vida (Spain) and the change in control status of Hong Kong. Refer to note 4 for more information. Changes in non-controlling interests in 2017 primarily relate to Aviva's sale of its 50% shareholding in Antarius (France), the sale of its 50% shareholding in life insurance and pension partnerships Unicorp Vida and Caja España Vida (Spain) and the consolidation of joint venture insurance operations in Poland, effective 1 January 2017, as a result of changes to the shareholders' agreement.

The Group has no subsidiaries whose non-controlling interest is material on the basis of their share of profit or loss.

41 – Contract liabilities and associated reinsurance

The Group's liabilities for insurance and investment contracts it has sold, and the associated reinsurance, is covered in the following notes:

- Note 42 covers insurance liabilities
- Note 43 covers the methodology and assumptions used in calculating the insurance liabilities
- Note 44 covers liabilities for investment contracts
- Note 45 details the financial guarantees and options on certain contracts
- Note 46 details the associated reinsurance assets on these liabilities
- Note 47 shows the effects of changes in the assumptions on the liabilities

(a) Carrying amount

The following is a summary of the contract liabilities and related reinsurance assets as at 31 December.

	2018			2017		
	Gross provisions £m	Reinsurance assets £m	Net £m	Gross provisions £m	Reinsurance assets £m	Net £m
Long-term business						
Insurance liabilities	**(125,829)**	**5,836**	**(119,993)**	(130,972)	5,469	(125,503)
Liabilities for participating investment contracts	**(90,455)**	**1**	**(90,454)**	(87,654)	2	(87,652)
Liabilities for non-participating investment contracts	**(120,354)**	**4,009**	**(116,345)**	(124,995)	6,094	(118,901)
	(336,638)	**9,846**	**(326,792)**	(343,621)	11,565	(332,056)
Outstanding claims provisions	**(2,001)**	**89**	**(1,912)**	(1,798)	64	(1,734)
	(338,639)	**9,935**	**(328,704)**	(345,419)	11,629	(333,790)
General insurance and health						
Outstanding claims provisions	**(9,046)**	**789**	**(8,257)**	(8,964)	845	(8,119)
Provisions for claims incurred but not reported	**(2,360)**	**822**	**(1,538)**	(2,837)	884	(1,953)
	(11,406)	**1,611**	**(9,795)**	(11,801)	1,729	(10,072)
Provision for unearned premiums	**(4,946)**	**254**	**(4,692)**	(4,980)	257	(4,723)
Provision arising from liability adequacy tests[1]	**(16)**	**—**	**(16)**	(13)	—	(13)
	(16,368)	**1,865**	**(14,503)**	(16,794)	1,986	(14,808)
Total	**(355,007)**	**11,800**	**(343,207)**	(362,213)	13,615	(348,598)
Less: Amounts classified as held for sale	**8,462**	**(45)**	**8,417**	9,577	(123)	9,454
	(346,545)	**11,755**	**(334,790)**	(352,636)	13,492	(339,144)

1 Provision arising from liability adequacy tests relates to general insurance business only. Liability adequacy test provisions for life operations, where applicable, are included in other line items. At 31 December 2018 this provision is nil for the life operations.

41 – Contract liabilities and associated reinsurance continued

(b) Change in contract liabilities, net of reinsurance, recognised as an expense

The purpose of the following table is to reconcile the change in insurance liabilities, net of reinsurance, shown on the income statement (note 7), to the change in insurance liabilities recognised as an expense in the relevant movement tables in the following notes. The components of the reconciliation are the change in provision for outstanding claims on long-term business (which is not included in a separate movement table), and the unwind of discounting on general insurance reserves (which is included within finance costs in the income statement). For general insurance and health, the change in the provision for unearned premiums is not included in the reconciliation as, within the income statement, this is included within earned premiums.

2018	Gross £m	Reinsurance £m	Net £m
Long-term business			
Change in insurance liabilities (note 42(b)(iii))	**(6,284)**	**61**	**(6,223)**
Change in provision for outstanding claims	**190**	**(11)**	**179**
	(6,094)	**50**	**(6,044)**
General insurance and health			
Change in insurance liabilities (note 42(c)(iii) and 46(c)(ii))[1]	**(313)**	**111**	**(202)**
Less: Unwind of discount	**(8)**	**8**	**—**
	(321)	**119**	**(202)**
Total change in insurance liabilities (note 7)	**(6,415)**	**169**	**(6,246)**

1 Includes £(190) million in the UK General Insurance and health business relating to a change in the discount rate used for estimating lump sum payments in the settlement of bodily injury claims.

2017	Gross £m	Reinsurance £m	Net £m
Long-term business			
Change in insurance liabilities (note 42(b)(iii))	624	315	939
Change in provision for outstanding claims	(65)	(11)	(76)
	559	304	863
General insurance and health			
Change in insurance liabilities (note 42(c)(iii) and 46(c)(ii))	73	138	211
Less: Unwind of discount	(9)	9	—
	64	147	211
Total change in insurance liabilities (note 7)	623	451	1,074

For non-participating investment contracts, deposits collected and amounts withdrawn are not shown on the income statement, but are accounted for directly through the statement of financial position as an adjustment to the gross liabilities for investment contracts. The associated change in investment contract provisions shown on the income statement consists of the attributed investment return. For participating investment contracts, the change in investment contract provisions on the income statement primarily consists of the movement in participating investment contract liabilities (net of reinsurance) over the reporting period.

42 – Insurance liabilities

This note analyses the Group's gross insurance contract liabilities for the long-term and general insurance and health business, describes how the Group calculates these liabilities and presents the movement in these liabilities during the year.

(a) Carrying amount

Insurance liabilities (gross of reinsurance) at 31 December comprised:

	2018 £m	2017 £m
Long-term business		
Participating insurance liabilities	**40,840**	49,928
Unit-linked non-participating insurance liabilities	**14,480**	16,040
Other non-participating insurance liabilities	**70,509**	65,004
	125,829	130,972
Outstanding claims provisions	**2,001**	1,798
	127,830	132,770
General insurance and health		
Outstanding claims provisions	**9,046**	8,964
Provision for claims incurred but not reported	**2,360**	2,837
	11,406	11,801
Provision for unearned premiums	**4,946**	4,980
Provision arising from liability adequacy tests[1]	**16**	13
	16,368	16,794
Total	**144,198**	149,564
Less: Amounts classified as held for sale	**(121)**	(914)
	144,077	148,650

1 Provision arising from liability adequacy tests relates to general insurance business only. Liability adequacy test provisions for life operations, where applicable, are included in other line items. At 31 December 2018 this provision is nil for the life operations.

(b) Long-term business liabilities

(i) Business description

The Group underwrites long-term business in a number of countries as follows:

- In the UK, long-term business is mainly written in the 'Non-Profit' fund and in a number of 'With-Profits' sub-funds. In the 'Non-Profit' fund shareholders are entitled to 100% of the distributed profits. In the 'With-Profits' sub-funds the with-profits policyholders are entitled to between 40% and 100% of distributed profits, depending on the fund rules. There is also the Reattributed Inherited Estate External Support Account (RIEESA), which does not itself underwrite any business, but provides capital support to one of the with-profits sub-funds and receives any surplus or deficit emerging from it. In the RIEESA, shareholders are entitled to 100% of the distributed profits, but these cannot be distributed until the 'lock-in' criteria set by the Reattribution Scheme have been met
- In France, the majority of policyholders' benefits are determined by investment performance, subject to certain guarantees, and shareholders' profits are derived largely from management fees. In addition, a substantial number of policies participate in investment returns, with the balance being attributable to shareholders
- In other operations in Europe and Asia, a range of long-term insurance and savings products are written

(ii) Group practice

The long-term business liabilities are calculated separately for each of the Group's life operations. The provisions for overseas subsidiaries have generally been included on the basis of local regulatory requirements, modified where necessary to reflect the requirements of the Companies Act 2006.

Material judgement is required in calculating the liabilities and is exercised particularly through the choice of assumptions where discretion is permitted. In turn, the assumptions used depend on the circumstances prevailing in each of the life operations. Provisions are most sensitive to assumptions regarding discount rates, mortality and morbidity rates. Where discount rate assumptions are based on current market yields on fixed interest securities, allowance is made for default risk implicit in the yields on the underlying assets.

Bonuses paid during the year are reflected in claims paid, whereas those allocated as part of the bonus declaration are included in the movements in the long-term business liabilities.

A description of the main methodology and most material valuation assumptions can be found in note 43.

42 – Insurance liabilities continued

(iii) Movements

The following movements have occurred in the gross long-term business liabilities during the year:

	2018 £m	2017 £m
Carrying amount at 1 January	**130,972**	137,218
Liabilities in respect of new business	**6,190**	5,731
Expected change in existing business	**(7,952)**	(7,747)
Variance between actual and expected experience	**(1,844)**	1,520
Impact of operating assumption changes	**(1,456)**	(1,175)
Impact of economic assumption changes	**(959)**	2,115
Other movements recognised as an expense[1]	**(263)**	180
Change in liability recognised as an expense (note 41(b))	**(6,284)**	624
Effect of portfolio transfers, acquisitions and disposals[2]	**788**	(8,124)
Foreign exchange rate movements	**413**	1,252
Other movements[3]	**(60)**	2
Carrying amount at 31 December	**125,829**	130,972

1 Other movements during 2017 and 2018 primarily relate to a special bonus distribution to with-profits policyholders in the UK.
2 The movement during 2018 includes the acquisition of Friends First in Ireland offset by the disposal of Spain and Avipop in Italy. The movement during 2017 primarily relates to the disposal of Antarius in France and a major share of the business in Spain offset by the consolidation of the Poland and Vietnam joint ventures.
3 Other movements during 2018 include the reclassification in France from insurance to participating investment contracts (£(56) million).

For many types of long-term business, including unit-linked and participating insurance liabilities, movements in asset values are offset by corresponding changes in liabilities, limiting the net impact on profit. The gross long-term business liabilities decreased by £5.1 billion during 2018 *(2017: £6.2 billion decrease)* mainly driven by the variance between actual and expected experience of £(1.8) billion, which was mainly due to adverse equity returns in France and the reduction in with-profits and unit-linked liabilities in the UK; the impact of non-economic assumption changes of £(1.5) billion mainly due to updates to longevity assumptions (with the impact on profit partially offset by a corresponding reduction in reinsurance assets) in the UK; and the economic assumption changes of £(1.0) billion, which reflects an increase in valuation interest rates in response to widening credit spreads, primarily in respect of immediate annuity and participating insurance contracts in the UK.

For participating insurance liabilities, a movement in liabilities is generally offset by a corresponding adjustment to the unallocated divisible surplus and does not impact profit. Where assumption changes impact profit, these are included in the effect of changes in assumptions and estimates during the year (shown in note 47), together with the impact of movements in related non-financial assets.

(c) General insurance and health liabilities

(i) Business description

The Group underwrites general insurance and health business in a number of countries as follows:

- In the UK, providing individual and corporate customers with a wide range of insurance products
- In Canada, providing a range of personal and commercial lines products
- In Europe and Asia, providing a range of general insurance and health products

(ii) Group practice

Delays occur in the notification and settlement of claims and a substantial measure of experience and judgement is involved in assessing outstanding liabilities, the ultimate cost of which cannot be known with certainty at the statement of financial position date. The liabilities for general insurance and health business are based on information currently available. However, it is inherent in the nature of the business written that the ultimate liabilities may vary as a result of subsequent developments.

Provisions for outstanding claims are established to cover the outstanding expected ultimate liability for losses and loss adjustment expenses (LAE) in respect of all claims that have already occurred. The provisions established cover reported claims and associated LAE, as well as claims incurred but not yet reported and associated LAE.

The Group only establishes reserves for losses that have already occurred. The Group therefore does not establish catastrophe equalisation reserves that defer a share of income in respect of certain lines of business from years in which a catastrophe does not occur to future periods in which catastrophes may occur. When calculating reserves, the Group takes into account estimated future recoveries from salvage and subrogation, and a separate asset is recorded for expected future recoveries from reinsurers after considering their collectability.

42 – Insurance liabilities continued

The table below shows the total general insurance and health liabilities split by outstanding claim provisions and provision for claims incurred but not reported (IBNR provisions), gross of reinsurance, by major line of business.

	As at 31 December 2018			As at 31 December 2017		
	Outstanding claim provisions £m	**IBNR provisions £m**	**Total claim provisions £m**	Outstanding claim provisions £m	IBNR provisions £m	Total claim provisions £m
Motor	**5,019**	**963**	**5,982**	5,039	1,339	6,378
Property	**1,833**	**104**	**1,937**	1,734	114	1,848
Liability	**1,856**	**1,164**	**3,020**	1,814	1,270	3,084
Creditor	**4**	**7**	**11**	24	11	35
Other	**334**	**122**	**456**	353	103	456
	9,046	**2,360**	**11,406**	8,964	2,837	11,801

Outstanding claims provisions are based on undiscounted estimates of future claim payments, except for the following classes of business for which discounted provisions are held:

	Discount rate		Mean term of liabilities	
Class	**2018**	2017	**2018**	2017
Reinsured London Market business	**1.0% to 2.9%**	0.7% to 2.6%	**10 years**	9 years
Latent claims	**1.0% to 2.6%**	0.7% to 1.9%	**11 to 18 years**	8 to 17 years
Structured settlements	**1.0% to 3.0%**	0.5% to 3.0%	**9 to 37 years**	7 to 39 years

The gross outstanding claims provision before discounting was £10,955 million *(2017: £11,346 million)*. The period of time which will elapse before the liabilities are settled has been estimated by modelling the settlement patterns of the underlying claims.

The discount rate that has been applied to latent claims reserves and reinsured London Market business is based on the swap curve in the relevant currency having regard to the expected settlement dates of the claims. The range of discount rates used depends on the duration of the claims and is given in the table above. The duration of the claims span over 35 years, with the average duration being between 10 and 18 years depending on the geographical region.

Any change in discount rates between the start and the end of the accounting period is reflected outside of Group adjusted operating profit as an economic assumption change.

(iii) Movements in general insurance and health claims liabilities

The following changes have occurred in the general insurance and health claims liabilities during the year:

	2018 £m	2017 £m
Carrying amount at 1 January	**11,801**	11,709
Impact of changes in assumptions[1]	**(22)**	(7)
Claim losses and expenses incurred in the current year	**7,158**	6,890
Decrease in estimated claim losses and expenses incurred in prior periods	**(544)**	(172)
Incurred claims losses and expenses	**6,592**	6,711
Less:		
Payments made on claims incurred in the current year	**(3,927)**	(3,642)
Payments made on claims incurred in prior periods	**(3,343)**	(3,283)
Recoveries on claim payments	**357**	278
Claims payments made in the period, net of recoveries	**(6,913)**	(6,647)
Unwind of discounting	**8**	9
Changes in claims reserve recognised as an expense (note 41(b))	**(313)**	73
Effect of portfolio transfers, acquisitions and disposals[2]	**(29)**	3
Foreign exchange rate movements	**(53)**	16
Carrying amount at 31 December	**11,406**	11,801

1 Shown gross of reinsurance. The impact of reinsurance was £23 million, resulting in a net impact of £1 million as per note 47.
2 The movement during 2018 relates to the disposal of Avipop in Italy.

(iv) Movements in general insurance and health unearned premiums

The following changes have occurred in the liabilities for unearned premiums (UPR) during the year:

	2018 £m	2017 £m
Carrying amount at 1 January	**4,980**	4,766
Premiums written during the year	**10,519**	10,523
Less: Premiums earned during the year	**(10,421)**	(10,365)
Changes in UPR recognised as an expense/(income)	**98**	158
Gross portfolio transfers and acquisitions[1]	**(103)**	46
Foreign exchange rate movements	**(29)**	10
Carrying amount at 31 December	**4,946**	4,980

1 The movement during 2018 relates to the disposal of Avipop in Italy. The £46 million in respect of 2017 relates to the full consolidation of the Poland Joint Venture.

42 – Insurance liabilities continued

(v) Analysis of general insurance and health claims development

The tables that follow present the development of claims payments and the estimated ultimate cost of claims for the accident years 2009 to 2018. The upper half of the tables shows the cumulative amounts paid during successive years related to each accident year, while the lower section of the tables shows the original estimated ultimate cost of claims and how these original estimates have increased or decreased, as more information becomes known about the individual claims and overall claim frequency and severity.

Key elements of the development of prior accident year general insurance and health net provisions during 2018 were:

- £372 million release from the UK due to a change in the discount rate used for estimating lump sum payments in settlement of bodily injury claims (for further details see note 43) and favourable claims experience in Personal and Commercial motor
- £78 million release from Canada primarily due to favourable claims experience on personal motor and aligning RBC claims practices with that of the Aviva book
- £127 million release from Europe (including Ireland) mainly due to continued favourable development in France

Key elements of the development of prior accident year general insurance and health net provisions during 2017 were:

- £107 million release from UK due to favourable claims experience in Personal Motor offset by the less favourable experience in 2017 of Commercial Liability claims and large claims in Personal and Commercial Property
- £2 million strengthening from Canada due to the better than expected claims experience following the 2010 Ontario auto reforms tailing off, unfavourable development in the Ontario Accident Benefits coverage in the RBC book in 2017, deterioration of experience in Alberta Auto Bodily Injury and Newfoundland Auto Bodily Injury
- £79 million release from Europe (including Ireland) mainly due to continued favourable development in France and Italy

Gross of reinsurance

Before the effect of reinsurance, the loss development table is:

Accident year	All prior years £m	2009 £m	2010 £m	2011 £m	2012 £m	2013 £m	2014 £m	2015 £m	2016 £m	2017 £m	2018 £m	**Total £m**
Gross cumulative claim payments												
At end of accident year		(3,780)	(3,502)	(3,420)	(3,055)	(3,068)	(3,102)	(2,991)	(3,534)	(3,517)	(3,769)	
One year later		(5,464)	(5,466)	(4,765)	(4,373)	(4,476)	(4,295)	(4,285)	(4,972)	(4,952)		
Two years later		(6,102)	(5,875)	(5,150)	(4,812)	(4,916)	(4,681)	(4,710)	(5,435)			
Three years later		(6,393)	(6,163)	(5,457)	(5,118)	(5,221)	(4,974)	(4,997)				
Four years later		(6,672)	(6,405)	(5,712)	(5,376)	(5,467)	(5,244)					
Five years later		(6,836)	(6,564)	(5,864)	(5,556)	(5,645)						
Six years later		(6,958)	(6,649)	(5,978)	(5,635)							
Seven years later		(7,043)	(6,690)	(6,032)								
Eight years later		(7,078)	(6,718)									
Nine years later		(7,100)										
Estimate of gross ultimate claims												
At end of accident year		7,364	6,911	6,428	6,201	6,122	5,896	5,851	6,947	6,894	7,185	
One year later		7,297	7,006	6,330	6,028	6,039	5,833	5,930	6,931	6,796		
Two years later		7,281	6,950	6,315	6,002	6,029	5,865	5,912	6,864			
Three years later		7,215	6,914	6,292	5,952	6,067	5,842	5,814				
Four years later		7,204	6,912	6,262	6,002	6,034	5,772					
Five years later		7,239	6,906	6,265	5,979	5,996						
Six years later		7,217	6,926	6,265	5,910							
Seven years later		7,256	6,913	6,223								
Eight years later		7,228	6,877									
Nine years later		7,227										
Estimate of gross ultimate claims		7,227	6,877	6,223	5,910	5,996	5, 772	5,814	6,864	6,796	7,185	
Cumulative payments		(7,100)	(6,718)	(6,032)	(5,635)	(5,645)	(5,244)	(4,997)	(5,435)	(4,952)	(3,769)	
	2,388	127	159	191	275	351	528	817	1,429	1,844	3,416	**11,525**
Effect of discounting	(411)	(14)	(25)	(2)	—	(1)	—	—	—	—	—	**(453)**
Present value	1,977	113	134	189	275	350	528	817	1,429	1,844	3,416	**11,072**
Cumulative effect of foreign exchange movements	—	—	(1)	2	6	12	31	101	(7)	(12)	—	**132**
Effect of acquisitions	11	(1)	2	12	15	17	38	57	51	—	—	**202**
Present value recognised in the statement of financial position	**1,988**	**112**	**135**	**203**	**296**	**379**	**597**	**975**	**1,473**	**1,832**	**3,416**	**11,406**

42 – Insurance liabilities continued

Net of reinsurance

After the effect of reinsurance, the loss development table is:

Accident year	All prior years £m	2009 £m	2010 £m	2011 £m	2012 £m	2013 £m	2014 £m	2015 £m	2016 £m	2017 £m	2018 £m	**Total £m**
Net cumulative claim payments												
At end of accident year		(3,650)	(3,386)	(3,300)	(2,925)	(2,905)	(2,972)	(2,867)	(3,309)	(3,483)	(3,718)	
One year later		(5,286)	(5,242)	(4,578)	(4,166)	(4,240)	(4,079)	(4,061)	(4,591)	(4,843)		
Two years later		(5,885)	(5,637)	(4,963)	(4,575)	(4,649)	(4,432)	(4,452)	(5,012)			
Three years later		(6,177)	(5,905)	(5,263)	(4,870)	(4,918)	(4,720)	(4,725)				
Four years later		(6,410)	(6,137)	(5,485)	(5,110)	(5,159)	(4,973)					
Five years later		(6,568)	(6,278)	(5,626)	(5,289)	(5,324)						
Six years later		(6,657)	(6,361)	(5,740)	(5,371)							
Seven years later		(6,708)	(6,411)	(5,798)								
Eight years later		(6,744)	(6,440)									
Nine years later		(6,771)										
Estimate of net ultimate claims												
At end of accident year		7,115	6,650	6,202	5,941	5,838	5,613	5,548	6,489	6,714	6,997	
One year later		7,067	6,751	6,103	5,765	5,745	5,575	5,635	6,458	6,591		
Two years later		7,036	6,685	6,095	5,728	5,752	5,591	5,608	6,377			
Three years later		6,978	6,644	6,077	5,683	5,733	5,559	5,517				
Four years later		6,940	6,634	6,034	5,717	5,689	5,490					
Five years later		6,977	6,614	6,005	5,680	5,653						
Six years later		6,908	6,624	6,003	5,631							
Seven years later		6,897	6,615	5,967								
Eight years later		6,896	6,590									
Nine years later		6,901										
Estimate of net ultimate claims		6,901	6,590	5,967	5,631	5,653	5,490	5,517	6,377	6,591	6,997	
Cumulative payments		(6,771)	(6,440)	(5,798)	(5,371)	(5,324)	(4,973)	(4,725)	(5,012)	(4,843)	(3,718)	
	907	130	150	169	260	329	517	792	1,365	1,748	3,279	**9,646**
Effect of discounting	(157)	(12)	(21)	3	—	4	—	—	—	—	—	**(183)**
Present value	750	118	129	172	260	333	517	792	1,365	1,748	3,279	**9,463**
Cumulative effect of foreign exchange movements	—	—	(1)	1	6	11	30	99	(6)	(12)	—	**128**
Effect of acquisitions	12	(1)	2	12	15	17	39	57	51	—	—	**204**
Present value recognised in the statement of financial position	**762**	**117**	**130**	**185**	**281**	**361**	**586**	**948**	**1,410**	**1,736**	**3,279**	**9,795**

In the loss development tables shown above, the cumulative claim payments and estimates of cumulative claims for each accident year are translated into sterling at the exchange rates that applied at the end of that accident year. The impact of using varying exchange rates is shown at the bottom of each table. Disposals are dealt with by treating all outstanding and IBNR claims of the disposed entity as 'paid' at the date of disposal.

The loss development tables above include information on asbestos and environmental pollution claims provisions from business written before 2008. The undiscounted claim provisions, net of reinsurance, in respect of this business at 31 December 2018 were £94 million (*2017: £95 million*). The movement in the year reflects a reduction of £6 million due to favourable claims development, claim payments net of reinsurance recoveries and foreign exchange movements.

43 – Insurance liabilities methodology and assumptions

(a) Long-term business

The main method used for the actuarial valuation of long-term insurance liabilities is the gross premium method which involves the discounting of projected future cash flows. The cash flows are calculated using the contractual premiums payable together with explicit assumptions for investment returns, discount rates, inflation, mortality, morbidity, persistency and future expenses. These assumptions can vary by contract type and reflect current and expected future experience with an allowance for prudence.

The methodology and assumptions described below relate to the UK and France insurance businesses only.

(i) UK

Non-profit business

The valuation of non-profit business is based on grandfathered regulatory requirements under IFRS 4 prior to the adoption of Solvency II, adjusted to remove certain regulatory reserves and margins in assumptions, notably for annuity business. Conventional non-profit contracts, including those written in the with-profits funds, are valued using the gross premium method. For non-profit business in the ex. Friends Life with-profits funds, the liabilities are measured on a realistic basis with implicit recognition of the present value of future profits.

For unit-linked and some unitised with-profits business, the provisions are valued by adding a prospective non-unit reserve to the bid value of units. The prospective non-unit reserve is calculated by projecting the future non-unit cash flows using prudent assumptions and on the assumption that future premiums cease, unless it is more onerous to assume that they continue.

Discount rates

Valuation discount rate assumptions are set with regard to yields on the supporting assets and the general level of long-term interest rates as measured by gilt yields. An explicit allowance for risk is included by making an explicit deduction from the yields on corporate bonds, mortgages and deposits, based on historical default experience of each asset class. For equity release assets, the risk allowances are consistent with those used in the fair value asset methodology, as described in note 23. A further margin for risk is then deducted for all asset classes.

Valuation discount rates for business in the non-profit funds are as follows:

Valuation discount rates (Gross of investment expenses)	**2018**	2017
Assurances		
Life conventional non-profit	**0.9% to 2.6%**	0.8% to 2.5%
Pensions conventional non-profit	**1.1% to 2.1%**	1.0% to 2.4%
Annuities		
Conventional immediate and deferred annuities	**1.2% to 3.0%**	1.0% to 2.8%
Non-unit reserves on unit-linked business		
Life	**0.9% to 1.3%**	0.8% to 1.2%
Pensions	**0.9% to 1.6%**	0.8% to 1.5%
Income Protection		
Active lives	**1.1% to 2.6%**	1.0% to 2.5%
Claims in payment (level and index linked)	**1.3% to 1.6%**	1.0% to 1.5%

The valuation discount rates are after a reduction for risk, but before allowance for investment expenses. For conventional immediate annuity business, the allowance for risk comprises long-term assumptions on a prudent basis for defaults or (in the case of equity release assets) expected losses arising from the No-Negative-Equity Guarantee. These allowances vary by asset category and for some asset classes by rating.

The risk allowances made for corporate bonds, mortgages (including healthcare mortgages, commercial mortgages and infrastructure assets), and equity release equated to 50 bps, 39-41 bps, and 112 bps respectively at 31 December 2018 (*2017: 47-48 bps, 33- 40 bps, and 102 bps respectively*).

The total valuation allowance in respect of corporate bonds and mortgages, including healthcare mortgages but excluding equity release, was £1.9 billion *(2017: £1.8 billion)* over the remaining term of the portfolio at 31 December 2018. The total valuation allowance in respect of equity release assets was £1.3 billion at 31 December 2018 *(2017: £1.2 billion)*. Total liabilities for the annuity business were £53.7 billion at 31 December 2018 *(2017: £52.0 billion)*.

Expenses

Maintenance expense assumptions for non-profit business are generally expressed as a 'per policy' charge set with regards to an allocation of current year expense levels by broad category of business and using the policy counts for in-force business. The assumptions also include an allowance for prudence and increase by future expense inflation over the lifetime of each contract. Expense inflation is assumed to be in line with RPI, and in line with external agreements for business administered externally. An additional liability is held if projected per-policy expenses in future years are expected to exceed current assumptions. Further, explicit project expense liabilities are held for non-discretionary project costs that typically relate to mandatory requirements. Expense-related liabilities are only held where expenses are not covered by anticipated future profits in the liability methodology, notably for unit-linked contracts. Investment expense assumptions are generally expressed as a proportion of the assets backing the liabilities.

43 – Insurance liabilities methodology and assumptions continued

Mortality

Mortality assumptions for non-profit business are set with regard to recent Company experience and general industry trends. The mortality tables used in the valuation are summarised below:

Mortality tables used	2018	2017
Assurances		
Non-profit	**AM00/AF00 or TM08/TF08 adjusted for smoker status and age/sex specific factors**	AM00/AF00 or TM00/TF00 adjusted for smoker status and age/sex specific factors
Pure endowments and deferred annuities before vesting	**AM00/AF00 adjusted**	AM00/AF00 adjusted
Annuities in payment		
Pensions business and general annuity business	**PMA08 HAMWP/PFA08 HAMWP adjusted plus allowance for future mortality improvement**	PCMA00/PCFA00 adjusted plus allowance for future mortality improvement
Bulk purchase annuities	**CV2**	PCMA00/PCFA00/CV2

For the largest portfolio of pensions annuity business, the underlying mortality assumptions for males are 105.8% of PMA08 HAMWP adjusted *(2017: 104.0% of PCMA00 adjusted)* with base year 2008; for females the underlying mortality assumptions are 99.0% of PFA08 HAMWP adjusted *(2017: 94.5% of PCFA00 adjusted)* with base year 2008.

Improvements are based on 'CMI_2017 (S=7.5) Advanced with adjustments' *(2017: 'CMI_2016 (S=7.5) Advanced with adjustments')* with a long-term improvement rate of 1.75% *(2017: 1.75%)* for males and 1.5% *(2017: 1.5%)* for females, both with an additional improvement for prudence of 0.5% *(2017: 0.5%)* to all future annual improvement adjustments. The CMI_2017 tables have been adjusted by adding 0.25% *(2017: 0.25%)* and 0.35% *(2017: 0.35%)* to the initial rate of mortality improvements for males and females respectively (to allow for greater mortality improvements in the annuitant population relative to the general population on which CMI_2017 is based), and uses the advanced parameters to taper the long-term improvement rates to zero between ages 90 and 115 (the 'core' parameters taper the long-term improvement rates to zero between ages 85 and 110). In addition, on a significant proportion of individual annuity business, year-specific adjustments are made to allow for potential selection effects due to the development of the Enhanced Annuity market and covering possible selection effects from pension freedom reforms.

With-profits business

The Group's UK with-profits funds are evaluated by reference to FRS 27, which was grandfathered under IFRS 4, prior to the adoption of Solvency II. This uses an approach of calculating the realistic liabilities for the contracts. The realistic liabilities include the with-profits benefit reserve (WPBR), and an additional provision for the expected cost of any guarantees and options in excess of the WPBR.

The WPBR for an individual contract is generally calculated on a retrospective basis, and represents the accumulation of the premiums paid on the contract, allowing for investment return, taxation, expenses and any other charges levied on the contract.

Provisions for guarantees and options within realistic liabilities are measured using market-consistent stochastic models. A stochastic approach includes measuring the time value of guarantees and options, which represents the additional cost arising from uncertainty surrounding future economic conditions. Non-market-related assumptions (for example, persistency, mortality and expenses) are assessed on a best estimate basis with reference to Company and wider industry experience, adjusted to take into account future trends.

The with-profits business is valued by adjusting Solvency II Best Estimate Liabilities and results in a valuation in accordance with FRS 27.

Future investment return

A 'risk-free' rate equal to the spot yield on UK swaps is used for the valuation of with-profits business. The rates vary according to the outstanding term of the policy, with a typical rate as at 31 December 2018 of 1.44% *(2017: 1.29%)* for a policy with ten years outstanding.

Volatility of investment return

Volatility assumptions are set with reference to implied volatility data on traded market instruments, where available, or on a best estimate basis where not.

Volatility	2018	2017
Equity returns	**18.0%**	20.9%
Property returns	**15.8%**	16.4%

The equity volatility used depends on term, money-ness and region. The figure shown is for a sample UK equity, at the money, with a ten-year term.

43 – Insurance liabilities methodology and assumptions continued

Future regular bonuses

Annual bonus assumptions for 2019 have been set consistently with the year-end 2018 declaration. Future annual bonus rates reflect the principles and practices of each fund. In particular, the level is set with regard to the projected margin for final bonus and the change from one year to the next is limited to a level consistent with past practice.

Mortality

Mortality assumptions for with-profits business are set with regard to recent Company experience and general industry trends. The mortality tables used in the valuation are summarised below:

Mortality table used	2018	2017
Assurances, pure endowments and deferred annuities before vesting	**Nil or Axx00 adjusted**	Nil or Axx00 adjusted
Pensions business after vesting and pensions annuities in payment	**PMA08 HAMWP/PFA08 HAMWP adjusted plus allowance for future mortality improvement**	PCMA00/PCFA00 adjusted plus allowance for future mortality improvement

Allowance for future mortality improvement is in line with the rates for non-profit business.

Expenses

Maintenance expense assumptions for with-profits business are generally expressed as a fixed 'per policy' charge in line with agreements between Aviva Life Services UK Limited (UKLS) and Aviva Life & Pensions UK Limited (AVLAP). The assumptions increase by a future inflation charge over the lifetime of each contract, which is 50% RPI, 100% RPI or 100% RPI + 1% depending on product type. Any excess of expenses charged by UKLS to AVLAP over the charges specified by the agreements is borne by the non-profit business.

Guarantees and options

The provisions held in respect of guaranteed annuity options for the with-profits and the non-profit business are a prudent assessment of the additional liability incurred under the option on a basis and method consistent with that used to value basic policy liabilities, and includes a prudent assessment of the proportion of policyholders who will choose to exercise the option. For further details see note 45.

(ii) France

The majority of reserves arise from single premium savings products and are based on the accumulated fund values, adjusted to maintain consistency with the value of the assets backing the policyholder liabilities. For traditional business, the net premium method is used for prospective valuations, in accordance with local regulation, where the valuation assumptions depend on the date of issue of the contract. The valuation discount rate also depends on the original duration of the contract and mortality rates are based on industry tables.

	Valuation discount rates		Mortality tables used
	2018	2017	**2018 and 2017**
Life assurances	**0% to 4.5%**	0% to 4.5%	TD73-77,TD88-90,TH00-02 TF00-02, H_AVDBS,F_AVDBS H_SSDBS, F_SSDBS
Annuities	**0% to 2%**	0% to 2%	TGF05/TGH05

(b) General insurance and health

Outstanding claims provisions are estimated based on known facts at the date of estimation. Case estimates are set by skilled claims technicians and established case setting procedures. Claims above certain limits are referred to senior claims handlers for estimate authorisation.

No adjustments are made to the claims technicians' case estimates included in booked claim provisions, except for rare occasions when the estimated ultimate cost of individual large or unusual claims may be adjusted, subject to internal reserve committee approval, to allow for uncertainty regarding, for example, the outcome of a court case. The ultimate cost of outstanding claims is then estimated by using a range of standard actuarial claims projection techniques, such as the Chain Ladder and Bornhuetter-Ferguson methods. Historical claims development is mainly analysed by accident period, although underwriting or notification period is also used where this is considered appropriate.

The assumptions used in most non-life actuarial projection techniques, including future rates of claims inflation or loss ratio assumptions, are implicit in the historical claims development data on which the projections are based. Additional qualitative judgement is used to assess the extent to which past trends may not apply in the future in order to arrive at a point estimate for the ultimate cost of claims that represents the likely outcome, from a range of possible outcomes, taking account of all the uncertainties involved. The range of possible outcomes does not, however, result in the quantification of a reserve range. The following explicit assumptions are made which could materially impact the level of booked net reserves:

43 – Insurance liabilities methodology and assumptions continued

UK mesothelioma claims

The level of uncertainty associated with latent claims is considerable due to the relatively small number of claims and the long-tail nature of the liabilities. UK mesothelioma claims account for a large proportion of the Group's latent claims. The key assumptions underlying the estimation of these claims include claim numbers, the base average cost per claim, future inflation in the average cost of claims and legal fees.

The best estimate of the liabilities reflects the latest available market information and studies. Many different scenarios can be derived by flexing these key assumptions and applying different combinations of these assumptions. An upper and lower scenario can be derived by making reasonably likely changes to these assumptions, resulting in an estimate of £20 million *(2017: £35 million)* greater than the best estimate, or £30 million *(2017: £40 million)* lower than the best estimate. These scenarios do not, however, constitute an upper or lower bound on these liabilities.

Interest rates used to discount latent claim liabilities and structured settlements

The discount rates used in determining our latent claim liabilities and structured settlements are based on the swap curve in the relevant currency at the reporting date, having regard to the duration of the expected settlement of claims. The range of discount rates used (for further details see note 42(c)(ii)) depends on the duration of the claim and the reporting date. At 31 December 2018, it is estimated that a 1% fall in the discount rates used would increase net claim reserves by approximately £104 million *(2017: £110 million)*, excluding the offsetting effect on asset values as assets are not hypothecated across classes of business.

Allowance for risk and uncertainty

The uncertainties involved in estimating loss reserves are allowed for in the reserving process and by the estimation of explicit reserve uncertainty distributions. The reserve estimation basis requires all non-life businesses to calculate booked claim provisions as the best estimate of the cost of future claim payments, plus an explicit allowance for risk and uncertainty. The allowance for risk and uncertainty is calculated by each business unit in accordance with the requirements of the Group non-life reserving policy, taking into account the risks and uncertainties specific to each line of business and type of claim in that territory. The requirements of the Group non-life reserving policy also seek to ensure that the allowance for risk and uncertainty is set consistently across both business units and reporting periods.

Lump sum payments in settlement of bodily injury claims that are decided by the UK courts are calculated in accordance with the Ogden Tables and discount rate. The Ogden discount rate is set by the Lord Chancellor and is applied when calculating the present value of future care costs and loss of earnings for claims settlement purposes. Following the announcement by the Ministry of Justice on 27 February 2017 to decrease the Ogden rate from 2.75% to -0.75%, balance sheet reserves have been calculated using a rate of -0.75%. On 20 March 2018, the Government announced that it will introduce the Civil Liability Bill (the Bill), which includes provisions to amend the discount rate. In December 2018 the Bill became an Act of Parliament, meaning that a new Ogden discount rate will be set by the Lord Chancellor in 2019.

Based upon this, there is certainty that there will be a change in the Ogden rate in 2019, but uncertainty remains around the amount and timing of the final rate. At December 2018, the claim reserves in the UK have been calculated using a discount rate of 0.00% *(2017: -0.75%)* resulting in a release of £190 million, though the rate to be announced by the Lord Chancellor later this year may result in a different discount rate. By way of illustration, should the Ogden discount rate announced in the future be 0.50% then this would be expected to reduce reserves by approximately £80 million with an equivalent positive impact on profit before tax. Alternatively, should the Ogden discount rate announced in the future be -0.50% then this would be expected to increase reserves by approximately £110 million with an equivalent negative impact on profit before tax.

44 – Liabilities for investment contracts

This note analyses our gross liabilities for investment contracts by type of product and describes the calculation of these liabilities.

(a) Carrying amount

The liabilities for investment contracts (gross of reinsurance) at 31 December comprised:

	2018 £m	2017 £m
Long-term business		
Liabilities for participating investment contracts	**90,455**	87,654
Liabilities for non-participating investment contracts	**120,354**	124,995
Total	**210,809**	212,649
Less: Amounts classified as held for sale	**(8,341)**	(8,663)
	202,468	203,986

(b) Group practice

Investment contracts are those that do not transfer significant insurance risk from the contract holder to the issuer, and are therefore treated as financial instruments under IFRS.

Many investment contracts contain a discretionary participation feature in which the contract holder has a contractual right to receive additional benefits as a supplement to guaranteed benefits. These are referred to as participating contracts and are measured according to the methodology for long-term business liabilities as described in note 43. They are not measured at fair value as there is currently no agreed definition of fair valuation for discretionary participation features under IFRS. In the absence of such a definition, it is not possible to provide a range of estimates within which a fair value is likely to fall. The IASB deferred consideration of participating contracts to the IFRS 17 insurance standard, which is expected to be implemented on 1 January 2022.

For participating business, the discretionary participation feature is recognised separately from the guaranteed element and is classified as a liability, referred to as unallocated divisible surplus, except for the with-profits sub-fund supported by the RIEESA. Guarantees on long-term investment products are discussed in note 45.

Investment contracts that do not contain a discretionary participation feature are referred to as non-participating contracts and the liability is measured at either fair value or amortised cost. We currently have no non-participating investment contracts measured at amortised cost.

Of the non-participating investment contracts measured at fair value, £119,402 million at 31 December 2018 *(2017: £123,916 million)* are unit-linked in structure and the fair value liability is equal to the current unit fund value, including any unfunded units, plus if required, additional non-unit reserves based on a discounted cash flow analysis. These contracts are generally classified as 'Level 1' in the fair value hierarchy, as the unit reserve is calculated as the publicly quoted unit price multiplied by the number of units in issue, and any non-unit reserve is insignificant.

For unit-linked business, a deferred acquisition cost asset and deferred income reserve liability are recognised in respect of transaction costs and front-end fees respectively, that relate to the provision of investment management services, and which are amortised on a systematic basis over the contract term. The amount of the related deferred acquisition cost asset is shown in note 29 and the deferred income liability is shown in note 54.

For non-participating investment contracts acquired in a business combination, an acquired value of in-force business asset is recognised in respect of the fair value of the investment management services component of the contracts, which is amortised on a systematic basis over the useful lifetime of the related contracts. The amount of the acquired value of in-force business asset is shown in note 18, which relates primarily to the acquisition of Friends Life in 2015 and Friends First in 2018.

(c) Movements in the year

The following movements have occurred in the gross provisions for investment contracts in the year:

(i) Participating investment contracts

	2018 £m	2017 £m
Carrying amount at 1 January	**87,654**	89,739
Liabilities in respect of new business	**6,301**	5,193
Expected change in existing business	**(4,491)**	(4,986)
Variance between actual and expected experience	**(1,441)**	2,072
Impact of operating assumption changes	**59**	10
Impact of economic assumption changes	**(40)**	411
Other movements recognised as an expense[1]	**152**	(16)
Change in liability recognised as an expense[2]	**540**	2,684
Effect of portfolio transfers, acquisitions and disposals[3]	**427**	(7,243)
Foreign exchange rate movements	**774**	2,452
Other movements[4]	**1,060**	22
Carrying amount at 31 December	**90,455**	87,654

1 Other movements during 2018 and 2017 primarily relate to a special bonus distribution to with-profits policyholders in UK Life.
2 Total interest expense for participating investment contracts recognised in profit or loss is £(419) million *(2017: £2,489 million)*.
3 The movement during 2018 relates to the acquisition of Friends First in Ireland. The movement during 2017 relates to the disposal of Antarius in France.
4 The movement during 2018 relates to the reclassification in France from non- participating investment contracts to participating investment contracts (£151m) and from insurance to participating investment contracts (£56m) and to a reclassification from non-participating investment contracts to participating investment contracts in the UK (£853m).

44 – Liabilities for investment contracts continued

For many types of long-term business, including unit-linked and participating funds, movements in asset values are offset by corresponding changes in liabilities, limiting the net impact on profit.

The variance between actual and expected experience in 2018 of £(1.4) billion is primarily driven by adverse equity returns in the UK and France.

The impact of assumption changes in the analysis shows the resulting movement in the carrying value of participating investment contract liabilities. For participating business, a movement in liabilities is generally offset by a corresponding adjustment to the unallocated divisible surplus and does not impact profit. Where assumption changes do impact profit, these are included in the effect of changes in assumptions and estimates during the year shown in note 47, together with the impact of movements in related non-financial assets.

(ii) Non-participating investment contracts

	2018 £m	2017 £m
Carrying amount at 1 January	**124,995**	114,531
Liabilities in respect of new business	**4,869**	4,484
Expected change in existing business	**(5,509)**	(4,427)
Variance between actual and expected experience	**(5,539)**	10,115
Impact of operating assumption changes	**(10)**	2
Impact of economic assumption changes	**(81)**	(1)
Other movements recognised as an expense	**6**	10
Change in liability	**(6,264)**	10,183
Effect of portfolio transfers, acquisitions and disposals[1]	**2,494**	(4)
Foreign exchange rate movements	**133**	277
Other movements[2]	**(1,004)**	8
Carrying amount at 31 December	**120,354**	124,995

1 The movement during 2018 relates to the acquisition of Friends First in Ireland. The movement during 2017 relates to the disposal of Antarius in France.
2 The movement during 2018 relates to the reclassification in France from non- participating investment contracts to participating investment contracts (£(151)m) and to a reclassification from non-participating investment contracts to participating investment contracts in the UK (£(853)m).

For unit-linked investment contracts, movements in asset values are offset by corresponding changes in liabilities, limiting the net impact on profit. The variance between actual and expected experience in 2018 of £(5.5) billion is primarily driven by the impact of negative equity returns in the UK and Ireland.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of non-participating investment contract liabilities. The impacts of assumption changes on profit are included in the effect of changes in assumptions and estimates during the year shown in note 47, which combines participating and non-participating investment contracts together with the impact of movements in related non-financial assets.

45 – Financial guarantees and options

This note details the financial guarantees and options inherent in some of our insurance and investment contracts.

As a part of their operating activities, various Group companies have provided guarantees and options, including investment return guarantees, on certain long-term insurance and fund management products.

(a) UK non-profit business

The Group's UK non-profit funds are evaluated by reference to statutory reserving rules, which are based on the UK regulatory requirements (grandfathered under IFRS 4), prior to the adoption of Solvency II, adjusted to remove certain regulatory reserves and margins in assumptions, notably for annuity business.

(i) Guaranteed annuity options

The Group's UK non-profit funds have written contracts which contain guaranteed annuity rate options (GAOs), where the policyholder has the option to take the benefits from a policy in the form of an annuity based on guaranteed conversion rates. Provision for these guarantees do not materially differ from a provision based on a market-consistent stochastic model, and amounts to £87 million at 31 December 2018 (*2017: £100 million)*.

(ii) Guaranteed unit price on certain products

Certain pension products linked to long-term life insurance funds provide policyholders with guaranteed benefits at retirement or death. No additional provision is made for this guarantee as the investment management strategy for these funds is designed to ensure that the guarantee can be met from the fund, mitigating the impact of large falls in investment values and interest rates.

(iii) Return of Premium guarantees

German pension products sold in Friends Life between 2006 and 2014 are subject to a Return of Premium guarantee whereby the product guarantees to return the maximum of the unit fund value or total premiums paid (before deductions). Provisions for this guarantee are calculated using a market-consistent stochastic model and amount to £153 million at 31 December 2018 *(2017: £132 million)*.

45 – Financial guarantees and options continued

(b) UK with-profits business

The Group's UK with-profits liabilities are evaluated by reference to FRS 27, which was grandfathered under IFRS 4, prior to the adoption of Solvency II. Under the PRA's rules, provision for guarantees and options within realistic liabilities are measured using market-consistent stochastic models. A stochastic approach includes measuring the time value of guarantees and options, which represents the additional cost arising from uncertainty surrounding future economic conditions.

The material guarantees and options relating to this provision are:

(i) Maturity value and death benefit guarantees

Significant conventional and unitised with-profits business have minimum maturity (and in some cases death benefit) values reflecting the sum assured plus declared annual bonus. In addition, maturity value guarantees are offered on certain unit-linked products. For some unitised with-profits life contracts the amount paid after the fifth policy anniversary is guaranteed to be at least as high as the premium paid increased in line with the rise in RPI or CPI.

(ii) No market valuation reduction (MVR) guarantees

For unitised business, there are circumstances where a 'no MVR' guarantee is applied, for example on certain policy anniversaries, guaranteeing that no market value reduction will be applied to reflect the difference between the accumulated value of units and the market value of the underlying assets.

(iii) Guaranteed annuity options

The Group's UK with-profits funds have written individual and group pension contracts which contain GAOs, where the policyholder has the option to take the benefits from a policy in the form of an annuity based on guaranteed conversion rates. The Group also has exposure to GAOs and similar options on deferred annuities.

Realistic liabilities for GAOs in the UK with-profits funds were £1,644 million at 31 December 2018 (*2017: £2,186 million*). With the exception of the with-profits sub-fund supported by the RIEESA, movements in the realistic liabilities in the with-profits funds are offset by a corresponding movement in the unallocated divisible surplus, with no net impact on IFRS profit. Realistic liabilities for GAOs in the with-profits sub-fund supported by the RIEESA were £155 million at 31 December 2018 (*2017: £206 million*).

(iv) Guaranteed minimum pension

The Group's UK with-profits funds also have certain policies that contain a guaranteed minimum level of pension as part of the condition of the original transfer from state benefits to the policy.

(v) Guaranteed minimum maturity payments on mortgage endowments

The with-profits funds made promises to certain policyholders in relation to their with-profits mortgage endowments. Top-up payments will be made on these policies at maturity to meet the mortgage value up to a maximum of the 31 December 1999 illustrated shortfall.

(c) Overseas life businesses

In addition to guarantees written in the Group's UK businesses, our overseas businesses have also written contracts containing guarantees and options. Details of the significant guarantees and options provided by overseas life businesses are set out below.

(i) France

Guaranteed surrender value, guaranteed minimum bonuses and options

Aviva France has written a number of contracts with a guaranteed surrender value and guaranteed minimum bonuses. The guaranteed surrender value is the accumulated value of the contract including accrued bonuses. Bonuses are based on accounting income from amortised bond portfolios, where the duration of bond portfolios is set in relation to the expected duration of the policies, plus income and releases from realised gains on equity-type investments. Policy reserves are equal to guaranteed surrender values. Local statutory accounting envisages the establishment of a reserve, 'Provision pour Aléas Financiers' (PAF), when accounting income is less than 125% of guaranteed minimum credited returns. No PAF was established at full year 2018 (*2017: no PAF was established*).

The most significant of these contracts is the AFER Eurofund which has total liabilities of £39 billion at 31 December 2018 (*2017: £38 billion*). The guaranteed minimum bonus is agreed between Aviva France and the AFER association at the end of each year, in respect of the following year. The bonus was 2.25% for 2018 (*2017: 2.40%*) compared with an accounting income from the fund of 2.74% (*2017: 2.89%*).

Non-AFER contracts with guaranteed surrender values had liabilities of £11 billion at 31 December 2018 (*2017: £11 billion*) and all guaranteed annual bonus rates are between 0% and 4.5% (*2017: 0% to 4.5%*). For non-AFER business the accounting income return exceeded guaranteed bonus rates in 2018 (*2017: the accounting income return exceeded guaranteed bonus rates*).

In addition, there are a small proportion of contracts with a switch-loss option. Consistent with previous years, the risks associated with switch-loss options are allowed for in the liabilities in accordance with local regulations and IFRS 4.

Guaranteed death and maturity benefits

The Group has also sold a small proportion of unit-linked policies where the death and/or maturity benefit is guaranteed to be at least equal to the premiums paid. The reserve held in the Group's consolidated statement of financial position is calculated on a prudent basis and is in excess of the economic liability.

45 – Financial guarantees and options continued

(ii) Italy

Guaranteed investment returns and guaranteed surrender values

The Group has written contracts containing guaranteed investment returns and guaranteed surrender values in Italy. Liabilities are generally taken as the face value of the contract plus, if required, an explicit provision for guarantees calculated in accordance with local regulations and IFRS 4.

(iii) Ireland

Guaranteed annuity options and guaranteed maturity values

As in the UK, the Group's with-profits liabilities in Ireland are measured on a realistic basis, including realistic liabilities for guarantees and options. Guarantees and options in Ireland include GAOs, minimum maturity values on conventional with-profits business, guaranteed minimum bonus rates on unitised with profits business, and a 'no MVR' guarantee that may apply at certain policy anniversaries.

46 – Reinsurance assets

This note details the reinsurance assets on our insurance and investment contract liabilities.

(a) Carrying amount

The reinsurance assets at 31 December comprised:

	2018 £m	2017 £m
Long-term business		
Insurance contracts	**5,836**	5,469
Participating investment contracts	**1**	2
Non-participating investment contracts[1]	**4,009**	6,094
	9,846	11,565
Outstanding claims provisions	**89**	64
	9,935	11,629
General insurance and health		
Outstanding claims provisions	**789**	845
Provisions for claims incurred but not reported	**822**	884
	1,611	1,729
Provisions for unearned premiums	**254**	257
	1,865	1,986
	11,800	13,615
Less: Amounts classified as held for sale	**(45)**	(123)
Total	**11,755**	13,492

1 Balances in respect of all reinsurance treaties are included under reinsurance assets, regardless of whether they transfer significant insurance risk. The reinsurance assets classified as non-participating investment contracts are financial instruments measured at fair value through profit or loss. During 2018, £3,840 million of reinsurance assets have been reclassified as collective investments in unit-linked funds following a restructure of a reinsurance treaty in UK Life. This is a continuation of activity undertaken in 2017 (£14,353 million).

Of the above total, £10,800 million (*2017: £12,302 million*) is expected to be recovered more than one year after this statement of financial position.

(b) Assumptions

The assumptions, including discount rates, used for reinsurance contracts follow those used for insurance liabilities. Reinsurance assets are valued net of an allowance for recoverability.

46 – Reinsurance assets continued

(c) Movements

The following movements have occurred in the reinsurance assets during the year:

(i) Long-term business liabilities

	2018 £m	2017 £m
Carrying amount at 1 January	**11,565**	24,554
Assets in respect of new business	**1,766**	1,004
Expected change in existing business assets	**(22)**	(786)
Variance between actual and expected experience	**431**	2,264
Impact of non-economic assumption changes	**(460)**	(634)
Impact of economic assumption changes	**21**	94
Other movements[1]	**(3,877)**	(14,529)
Change in assets[2]	**(2,141)**	(12,587)
Effect of portfolio transfers, acquisitions and disposals[3]	**399**	(410)
Foreign exchange rate movements	**23**	8
Carrying amount at 31 December	**9,846**	11,565

1 The movement during 2018 includes £3,840 million of reinsurance assets being reclassified as collective investments in unit-linked funds following the restructure of a reinsurance treaty in UK Life. This is a continuation of activity undertaken in 2017 (£14,353 million).
2 Change in assets does not reconcile with values in note 41(b) due to the inclusion of reinsurance assets classified as non-participating investment contracts where, for such contracts, deposit accounting is applied on the income statement.
3 The movement during 2018 primarily relates to the acquisition of Friends First in Ireland. The movement during 2017 primarily relates to the disposal of Antarius in France.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of reinsurance assets, with corresponding movements in gross insurance contract liabilities. For participating businesses, a movement in reinsurance assets is generally offset by a corresponding adjustment to the unallocated divisible surplus and does not impact profit. Where assumption changes impact profit, these are included in the effect of changes in assumptions and estimates during the year (shown in note 47), together with the impact of movements in related liabilities and other non-financial assets.

46 – Reinsurance assets continued

(ii) General insurance and health claims liabilities

	2018 £m	2017 £m
Carrying amount at 1 January	**1,729**	1,885
Impact of changes in assumptions	**(22)**	(15)
Reinsurers' share of claim losses and expenses		
Incurred in current year	**176**	179
Incurred in prior years	**40**	15
Reinsurers' share of incurred claim losses and expenses	**216**	194
Less:		
Reinsurance recoveries received on claims		
Incurred in current year	**(54)**	(32)
Incurred in prior years	**(259)**	(293)
Reinsurance recoveries received in the year	**(313)**	(325)
Unwind of discounting	**8**	8
Change in reinsurance asset recognised as income (note 41(b))	**(111)**	(138)
Effect of portfolio transfers, acquisitions and disposals[1]	**(9)**	—
Foreign exchange rate movements	**2**	(18)
Carrying amount at 31 December	**1,611**	1,729

1 The movement during 2018 relates to the proportion of reinsurance assets held by Avipop sold by Italy GI.

(iii) General insurance and health unearned premiums

	2018 £m	2017 £m
Carrying amount at 1 January	**257**	250
Premiums ceded to reinsurers in the year	**392**	489
Less: Reinsurers' share of premiums earned during the year	**(375)**	(484)
Changes in reinsurance asset recognised as income	**17**	5
Reinsurers' share of portfolio transfers and acquisitions[1]	**(21)**	—
Foreign exchange rate movements	**1**	2
Carrying amount at 31 December	**254**	257

1 The movement during 2018 relates to the proportion of Avipop sold by Italy GI that was ceded to reinsurers.

47 – Effect of changes in assumptions and estimates during the year

Estimates and assumptions used in determining the liabilities for insurance and investment contracts were changed from 2017 to 2018, affecting the liabilities with an equivalent impact on profit recognised during the year. This note analyses the impact of these changes on liabilities for insurance and investment contracts, and related assets and liabilities, such as unallocated divisible surplus, reinsurance, deferred acquisition costs and acquired value of in-force business, and does not allow for offsetting movements in the value of backing financial assets.

	Effect on profit 2018 £m	Effect on profit 2017 £m
Assumptions		
Long-term insurance business		
Interest rates	**1,061**	(1,720)
Expenses	**9**	(128)
Persistency rates	**23**	(79)
Mortality and morbidity for assurance contracts	**24**	113
Mortality for annuity contracts	**780**	779
Tax and other assumptions	**18**	2
Long-term investment business		
Expenses	**(1)**	—
General insurance and health business		
Change in discount rate assumptions	**1**	(7)
Total	**1,915**	(1,040)

The impact of interest rates on long-term business relates primarily to annuities in the UK (including any change in credit default and reinvestment risk provisions), where an increase in the valuation interest rate in response to widening of credit spreads, has decreased liabilities.

The impact of mortality for annuitant contracts on long-term business relates primarily to the UK. In 2018, there has been a reduction in reserves due to longevity assumptions and modelling which include: updates to mortality to reflect recent experience including the 2008 series tables for individual annuities of £345 million, updates to the rate of mortality improvements including CMI 2017 of £251 million, refinements to modelling of bulk purchase annuities together with a change to base mortality and improvements of £132 million and other less significant movements of £24 million. In Ireland and Singapore there was a slight reduction in the reserves of £28 million following a review of recent experience.

In 2017 the impact of mortality for annuitant contracts on long-term business relates primarily to the UK. This resulted in a reduction in reserves due to recognition of benefits from changes in longevity assumptions including: the impact of completing our review of the allowance for anti-selection risk of £170 million, updates reflecting our recent experience of £200 million, updates to the rate of historic and future mortality improvements, including the adoption of CMI 2016, of £340 million, and other less significant movements of £31 million. In Ireland there was a reduction of £38 million following a review of recent experience.

48 – Unallocated divisible surplus

An unallocated divisible surplus (UDS) is established where the nature of policy benefits is such that the division between shareholder reserves and policyholder liabilities is uncertain at the reporting date. Therefore, the expected duration for settlement of the UDS is undefined.

This note shows the movements in the UDS during the year.

	2018 £m	2017 £m
Carrying amount at 1 January	**9,101**	10,208
Change in participating fund assets	**(4,139)**	406
Change in participating fund liabilities	**902**	(710)
Other movements	**—**	10
Change in liability recognised as an expense	**(3,237)**	(294)
Effect of portfolio transfers, acquisition and disposals[1]	**48**	(1,076)
Foreign exchange rate movements	**37**	263
	5,949	9,101
Less: Amounts classified as held for sale[2]	**—**	(19)
Carrying amount at 31 December	**5,949**	9,082

1 The movement during 2018 relates to the acquisition of Friends First (£66 million), and the disposal of the remainder of the Spanish business (£18 million). The movement during 2017 relates to the disposal of Antarius (£832 million) and majority of Spanish business (£244 million).
2 The amount classified as held for sale in 2017 relates to the remainder of the Spanish business (£19 million).

The amount of UDS at 31 December 2018 has decreased to £5.9 billion *(2017: £9.1 billion)*. The decrease is mainly due to adverse market movements in Europe with credit spreads widening and a reduction in equity markets.

Where the aggregate amount of participating assets is less than the participating liabilities within a fund then the shortfall may be held as negative UDS, subject to recoverability testing as part of the liability adequacy requirements of IFRS 4. As at 31 December 2018 there is negative UDS in five funds in Italy totalling £355 million *(2017: no negative UDS)*. These balances were tested for recoverability and all but one is considered to be recoverable by comparing the excess of IFRS participating liabilities net of any related DAC or AVIF over the adjusted Solvency II best estimate liabilities for the relevant contracts. The Solvency II best estimate liabilities were adjusted where Solvency II does not represent a best estimate of shareholders' interests consistent with the impairment test for goodwill for long-term business (see note 17) and for AVIF on insurance contracts (see note 18). An impairment of £8 million was applied to one fund to reflect no recoverability.

49 – Tax assets and liabilities

This note analyses the tax assets and liabilities that appear in the statement of financial position and explains the movements in these balances in the year.

(a) Current tax

Current tax assets recoverable and liabilities payable in more than one year are £24 million and £9 million *(2017: £19 million and £14 million)*, respectively.

Included within uncertain tax provisions is the impact on the Group as a party to the CFC & Dividend Group Litigation Order, of which Prudential was the test case. The Supreme Court of the United Kingdom delivered its judgement on this case on 25 July 2018 which confirmed the taxpayer had successfully challenged the tax treatment of portfolio dividends received from non-UK entities before 2009. The Group is attempting to recover claims from HMRC covered by this judgement and is also pursuing connected claims in respect of a number of other periods, but there remains significant uncertainty over their recoverability.

The successful claims predominately relate to policyholder funds, where the benefit is not expected to exceed £131 million. There is no current expectation of a material future impact on profit before tax attributable to shareholders' profits or the Group's total equity.

The uncertainty in respect of the remaining claims has resulted in no recoverable amounts being recognised at either 31 December 2017 or 31 December 2018.

(b) Deferred tax

(i) The balances at 31 December comprise:

	2018 £m	2017 £m
Deferred tax assets	**185**	146
Deferred tax liabilities	**(1,885)**	(2,562)
Net deferred tax liability	**(1,700)**	(2,416)
Less: Amounts classified as held for sale	**—**	183
	(1,700)	(2,233)

There are no amounts classified as held for sale within deferred tax at 31 December 2018 *(2017: deferred tax assets £2 million and deferred tax liabilities £185 million)*.

49 – Tax assets and liabilities continued

(ii) The net deferred tax liability arises on the following items:

	2018 £m	2017 £m
Long-term business technical provisions and other insurance items	**663**	1,582
Deferred acquisition costs	**(199)**	(199)
Unrealised gains on investments	**(1,430)**	(2,899)
Pensions and other post-retirement obligations	**(499)**	(502)
Unused losses and tax credits	**147**	166
Subsidiaries, associates and joint ventures	**(9)**	(16)
Intangibles and additional value of in-force long-term business	**(475)**	(721)
Provisions and other temporary differences	**102**	173
Net deferred tax liability	**(1,700)**	(2,416)
Less: Amounts classified as held for sale	**—**	183
	(1,700)	(2,233)

(iii) The movement in the net deferred tax liability was as follows:

	2018 £m	2017 £m
Net liability at 1 January	**(2,416)**	(2,231)
Acquisition and disposal of subsidiaries[1]	**184**	(6)
Amounts credited/(charged) to income statement (note 14(a))	**545**	(123)
Amounts (charged) to other comprehensive income (note 14(b))	**(9)**	(31)
Foreign exchange rate movements	**(10)**	(18)
Other movements	**6**	(7)
Net liability at 31 December	**(1,700)**	(2,416)

1 The movement during 2018 relates mainly to the disposal of Avipop Assicurazioni SpA and Avipop Vita SpA.

Deferred tax assets are recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. In countries where there is a history of tax losses, deferred tax assets are only recognised in excess of deferred tax liabilities if there is convincing evidence that future taxable profits will be available. Where this is the case, the directors have relied on business plans supporting future profits.

The Group has unrecognised gross tax losses (excluding capital losses) and other temporary differences of £798 million *(2017: £787 million)* to carry forward against future taxable income of the necessary category in the companies concerned. Of these, trading losses of £34 million will expire within the next 20 years. The remaining losses have no expiry date.

In addition, the Group has unrecognised gross capital losses of £452 million *(2017: £443 million)*. These have no expiry date.

There are no temporary differences in respect of unremitted overseas retained earnings for which deferred tax liabilities have not been recognised at 31 December 2018 *(2017: £nil)*.

50 – Pension deficits and other provisions

This note details the non-insurance provisions that the Group holds, and shows the movements in these during the year.

(a) Carrying amounts

	2018 £m	2017 £m
Total IAS 19 obligations to main staff pension schemes (note 51(a))	**693**	764
Deficits in other staff pension schemes	**65**	64
Total IAS 19 obligations to staff pension schemes	**758**	828
Restructuring provisions	**64**	92
Other provisions	**577**	515
Total provisions	**1,399**	1,435
Less: Amounts classified as held for sale	**—**	(6)
	1,399	1,429

Other provisions primarily include amounts set aside throughout the Group relating to product governance rectification and staff entitlements.

(b) Movements on restructuring and other provisions

	2018			2017		
	Restructuring provisions £m	Other provisions £m	Total £m	Restructuring provisions £m	Other provisions £m	Total £m
At 1 January	**92**	**515**	**607**	111	501	612
Additional provisions	**1**	**269**	**270**	31	161	192
Provisions released during the period	**—**	**(128)**	**(128)**	(1)	(37)	(38)
Change due to discounting	**—**	**—**	**—**	2	—	2
Charge to income statement	**1**	**141**	**142**	32	124	156
Utilised during the year	**(29)**	**(89)**	**(118)**	(53)	(98)	(151)
Acquisition/(disposal) of subsidiaries	**—**	**5**	**5**	—	(3)	(3)
Foreign exchange rate movements	**—**	**5**	**5**	2	(9)	(7)
At 31 December	**64**	**577**	**641**	92	515	607

Of the total restructuring and other provisions, £402 million *(2017: £182 million)* is expected to be settled more than one year after the statement of financial position date.

Other provisions have increased during the period under review mainly due to an increase of £175 million in respect of a product governance provision in the UK, which is in addition to the £75 million provision set aside at 31 December 2017. This provision relates to a historical issue with over 90% of cases identified being pre-2002 and is limited to advised sales by Friends Provident, where a number of external defined benefit pension arrangements transferred into Friends Provident pension arrangements. We are in the final stages of completing a thorough and detailed review of the suitability of the advice given, and we will ensure that no affected customers are financially disadvantaged. The valuation of this provision involves a high degree of judgement and estimation uncertainty due to the time that has elapsed since the advice was given. The issue does not affect any other part of our business. The Group has notified its professional indemnity insurers and intends to make a claim on its insurance to mitigate the financial impact. This impact on other provisions has been partially offset by a £78 million release of a provision related to the sale of Aviva USA in 2013.

51 – Pension obligations

(a) Introduction

The Group operates a number of defined benefit and defined contribution pension schemes. The material defined benefit schemes are in the UK, Ireland and Canada. The assets and liabilities of these defined benefit schemes as at 31 December 2018 are shown below.

	2018				2017			
	UK £m	**Ireland £m**	**Canada £m**	**Total £m**	UK £m	Ireland £m	Canada £m	Total £m
Total fair value of scheme assets (see b(ii) below)	**17,059**	**775**	**249**	**18,083**	17,744	658	276	18,678
Present value of defined benefit obligation	**(14,246)**	**(950)**	**(324)**	**(15,520)**	(14,824)	(847)	(372)	(16,043)
Net IAS 19 surpluses/(deficits) in the schemes	**2,813**	**(175)**	**(75)**	**2,563**	2,920	(189)	(96)	2,635
Surpluses included in other assets (note 30)	**3,256**	**—**	**—**	**3,256**	3,399	—	—	3,399
Deficits included in provisions (note 50)	**(443)**	**(175)**	**(75)**	**(693)**	(479)	(189)	(96)	(764)
Net IAS 19 surpluses/(deficits) in the schemes	**2,813**	**(175)**	**(75)**	**2,563**	2,920	(189)	(96)	2,635

This note relates to the defined benefit pension schemes included in the table above. There are a number of smaller schemes that are also measured under IAS 19. These are included as a total within Deficits in other staff pension schemes (see note 50). Similarly, while the charges to the income statement for the main schemes are shown in section (b)(i) below, the total charges for all pension schemes are disclosed in section (d) below.

Under the IAS 19 valuation basis, the Group applies the principles of IFRIC 14, '*IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction*', whereby a surplus is only recognised to the extent that the Company is able to access the surplus either through an unconditional right of refund to the surplus or through reduced future contributions relating to ongoing service, which have been substantively enacted or contractually agreed. The Group has determined that it can derive economic benefit from the surplus in the ASPS via a reduction to future employer contributions for DC members, which could theoretically be paid from the surplus funds in the ASPS. In the RAC and FPPS, the Group has determined that the rules set out in the schemes' governing documentation provide for an unconditional right to a refund from any future surplus funds in the schemes.

The assets of the UK, Irish and Canadian schemes are held in separate trustee-administered funds to meet long-term pension liabilities to past and present employees. In all schemes, the appointment of trustees of the funds is determined by their trust documentation and they are required to act in the best interests of the schemes' beneficiaries. The long-term investment objectives of the trustees and the employers are to limit the risk of the assets failing to meet the liabilities of the schemes over the long term, and to maximise returns consistent with an acceptable level of risk so as to control the long-term costs of these schemes.

A funding actuarial valuation of each of the defined benefit schemes is carried out at least every three years for the benefit of scheme trustees and members. Actuarial reports have been submitted for each scheme within this period, using appropriate methods for the respective countries on local funding bases.

The number of scheme members was as follows:

	United Kingdom		Ireland		Canada	
	2018 Number	2017 Number	**2018 Number**	2017 Number	**2018 Number**	2017 Number
Deferred members	**47,977**	50,737	**2,544**	1,855	**519**	581
Pensioners	**38,433**	37,840	**897**	801	**1,318**	1,334
Total members	**86,410**	88,577	**3,441**	2,656	**1,837**	1,915

All schemes are closed to future accrual. Closure of the schemes has removed the volatility associated with additional future accrual for active members.

(i) UK schemes

In the UK, the Group operates three main pension schemes, the Aviva Staff Pension Scheme (ASPS), the smaller RAC (2003) Pension Scheme which was retained after the sale of RAC Limited in September 2011 and the Friends Provident Pension Scheme (FPPS) which was acquired as part of the Friends Life acquisition in 2015. As the defined benefit section of the UK schemes are now closed to both new members and future accrual, existing deferred members in active service and new entrants participate in the defined contribution section of the ASPS. The UK schemes operate within the UK pensions' regulatory framework.

(ii) Other schemes

In Ireland, the Group operates two main pension schemes, the Aviva Ireland Staff Pension Fund (AISPF) and the Friends First Group Retirement and Death Benefits Scheme (FFPS) which was acquired as part of the Friends First acquisition in June 2018 (see note 3). Future accruals for the AISPF and FFPS schemes ceased with effect from 30 April 2013 and 1 April 2014 respectively. The Irish schemes are regulated by the Pensions Authority in Ireland.

The Canadian defined benefit schemes ceased with effect from 31 December 2011. The main Canadian plan is a Registered Pension Plan in Canada and as such is registered with the Canada Revenue Agency and Financial Services Commission of Ontario and is required to comply with the Income Tax of Canada and the various provincial Pension Acts within Canada.

51 – Pension obligations continued

(b) IAS 19 disclosures

Disclosures under IAS 19 for the material defined benefit schemes in the UK, Ireland and Canada, are given below. Where schemes provide both defined benefit and defined contribution pensions, the assets and liabilities shown exclude those relating to defined contribution pensions.

(i) Movements in the scheme surpluses and deficits

Movements in the pension schemes' surpluses and deficits comprise:

2018	Fair Value of Scheme Assets £m	Present Value of defined benefit obligation £m	IAS 19 Pensions net surplus/ (deficits) £m
Net IAS 19 surplus in the schemes at 1 January	**18,678**	**(16,043)**	**2,635**
Past service costs – amendments[1]	**—**	**(63)**	**(63)**
Administrative expenses[2]	**—**	**(19)**	**(19)**
Total pension cost charged to net operating expenses	**—**	**(82)**	**(82)**
Net interest credited/(charged) to investment income/(finance costs)[3]	**442**	**(375)**	**67**
Total recognised in income	**442**	**(457)**	**(15)**
Remeasurements:			
Actual return on these assets	**(182)**	**—**	**(182)**
Less: Interest income on scheme assets	**(442)**	**—**	**(442)**
Return on scheme assets excluding amounts in interest income	**(624)**	**—**	**(624)**
Gains from change in financial assumptions	**—**	**622**	**622**
Losses from change in demographic assumptions	**—**	**(185)**	**(185)**
Experience losses	**—**	**(93)**	**(93)**
Total recognised in other comprehensive income	**(624)**	**344**	**(280)**
Acquisitions	**87**	**(96)**	**(9)**
Employer contributions	**236**	**—**	**236**
Plan participant contributions	**9**	**(9)**	**—**
Benefits paid	**(724)**	**724**	**—**
Administrative expenses paid from scheme assets[2]	**(23)**	**19**	**(4)**
Foreign exchange rate movements	**2**	**(2)**	**—**
Net IAS 19 surplus in the schemes at 31 December	**18,083**	**(15,520)**	**2,563**

1 Past service costs include a charge of £63 million relating to the estimated additional liability arising in the UK defined benefit pension schemes as a result of the requirement to equalise members' benefits for the effects of Guaranteed Minimum Pension (GMP). This additional liability has arisen following the High Court judgement in October 2018 in the case involving Lloyds Banking Group.
2 Administrative expenses are expensed as incurred.
3 Net interest income of £89 million has been credited to investment income and net interest expense of £22 million has been charged to finance costs (see note 8).

The present value of unfunded post-retirement benefit obligations included in the table above is £115 million at 31 December 2018 (*2017: £129 million*).

The decrease in the surplus during the period is primarily due to remeasurements recognised in other comprehensive income relating to updated demographic assumptions in the ASPS, partially offset by employer contributions paid into the schemes.

2017	Fair Value of Scheme Assets £m	Present Value of defined benefit obligation £m	IAS 19 Pensions net surplus/ (deficits) £m
Net IAS 19 surplus in the schemes at 1 January	19,694	(17,347)	2,347
Past service costs – amendments	—	(1)	(1)
Administrative expenses[1]	—	(18)	(18)
Total pension cost charged to net operating expenses	—	(19)	(19)
Net interest credited/(charged) to investment income/(finance costs)[2]	470	(407)	63
Total recognised in income	470	(426)	44
Remeasurements:			
Actual return on these assets	740	—	740
Less: Interest income on scheme assets	(470)	—	(470)
Return on scheme assets excluding amounts in interest income	270	—	270
Losses from change in financial assumptions	—	(182)	(182)
Losses from change in demographic assumptions	—	(30)	(30)
Experience losses	—	(63)	(63)
Total recognised in other comprehensive income	270	(275)	(5)
Employer contributions	259	—	259
Plan participant contributions	9	(9)	—
Benefits paid	(2,021)	2,021	—
Administrative expenses paid from scheme assets[1]	(21)	18	(3)
Foreign exchange rate movements	18	(25)	(7)
Net IAS 19 surplus in the schemes at 31 December	18,678	(16,043)	2,635

1 Administrative expenses are expensed as incurred.
2 Net interest income of £87 million has been credited to investment income and net interest expense of £24 million has been charged to finance costs (see note 8).

51 – Pension obligations continued

(ii) Scheme assets

Scheme assets are stated at their fair values at 31 December 2018.

Total scheme assets are comprised by scheme as follows:

	2018				2017			
	UK £m	**Ireland £m**	**Canada £m**	**Total £m**	UK £m	Ireland £m	Canada £m	Total £m
Bonds								
Fixed interest	**6,121**	**493**	**148**	**6,762**	6,925	408	163	7,496
Index-linked	**10,409**	**293**	**—**	**10,702**	11,744	292	—	12,036
Equities	**—**	**—**	**—**	**—**	129	—	—	129
Property	**353**	**—**	**—**	**353**	365	—	—	365
Pooled investment vehicles	**4,738**	**555**	**100**	**5,393**	4,955	238	107	5,300
Derivatives	**(65)**	**4**	**—**	**(61)**	(34)	4	—	(30)
Cash and other[1]	**(3,877)**	**(570)**	**1**	**(4,446)**	(5,710)	(284)	6	(5,988)
Total fair value of scheme assets	**17,679**	**775**	**249**	**18,703**	18,374	658	276	19,308
Less: consolidation elimination for non-transferable Group insurance policy[2]	**(620)**	**—**	**—**	**(620)**	(630)	—	—	(630)
Total IAS 19 fair value of scheme assets	**17,059**	**775**	**249**	**18,083**	17,744	658	276	18,678

1 Cash and other assets comprise cash at bank, insurance policies, receivables, payables and repurchase agreements. At 31 December 2018, cash and other assets primarily consist of repurchase agreements of £3,741 million *(2017: £5,386 million)*.

2 As at 31 December 2018, the FPPS's cash and other balances include an insurance policy of £620 million *(2017: £630 million)* issued by a Group company that is not transferable under IAS 19 and is consequently eliminated from the Group's IAS 19 scheme assets.

Total scheme assets are analysed by those that have a quoted market price in an active market and other as follows:

	2018			2017		
	Total Quoted £m	**Total Unquoted £m**	**Total £m**	Total Quoted £m	Total Unquoted £m	Total £m
Bonds						
Fixed interest	**3,569**	**3,193**	**6,762**	4,334	3,162	7,496
Index-linked	**10,278**	**424**	**10,702**	11,627	409	12,036
Equities	**—**	**—**	**—**	35	94	129
Property	**—**	**353**	**353**	—	365	365
Pooled investment vehicles	**478**	**4,915**	**5,393**	167	5,133	5,300
Derivatives	**(9)**	**(52)**	**(61)**	4	(34)	(30)
Cash and other[1]	**(1,195)**	**(3,251)**	**(4,446)**	(1,801)	(4,187)	(5,988)
Total fair value of scheme assets	**13,121**	**5,582**	**18,703**	14,366	4,942	19,308
Less: consolidation elimination for non-transferable Group insurance policy[2]	**—**	**(620)**	**(620)**	—	(630)	(630)
Total IAS 19 fair value of scheme assets	**13,121**	**4,962**	**18,083**	14,366	4,312	18,678

1 Cash and other assets comprise cash at bank, insurance policies, receivables, payables and repurchase agreements. At 31 December 2018, cash and other assets primarily consist of repurchase agreements of £3,741 million *(2017: £5,386 million)*.

2 As at 31 December 2018, the FPPS's cash and other balances includes an insurance policy of £620 million *(2017: £630 million)* issued by a Group company that is not transferable under IAS 19 and is consequently eliminated from the Group's IAS 19 scheme assets.

IAS 19 plan assets include investments in Group-managed funds in the consolidated statement of financial position of £2,730 million (*2017: £2,091 million*) and transferable insurance policies with other Group companies of £156 million (*2017: £172 million*) in the ASPS. Where the investment and insurance policies are in segregated funds with specific asset allocations, they are included in the appropriate line in the table above, otherwise they appear in 'Cash and other'. There are no significant judgements involved in the valuation of the scheme assets.

(iii) Assumptions on scheme liabilities

The valuations used for accounting under IAS 19 have been based on the most recent funding actuarial valuations, updated to take account of the standard's requirements in order to assess the liabilities of the material schemes at 31 December 2018.

The projected unit credit method

The inherent uncertainties affecting the measurement of scheme liabilities require these to be measured on an actuarial basis. This involves discounting the best estimate of future cash flows to be paid out by the scheme using the projected unit credit method. This is an accrued benefits valuation method which calculates the past service liability to members and makes allowance for their projected future earnings. It is based on a number of actuarial assumptions, which vary according to the economic conditions of the countries in which the relevant businesses are situated, and changes in these assumptions can materially affect the measurement of the pension obligations.

51 – Pension obligations continued

Financial assumptions

The main financial assumptions used to calculate scheme liabilities under IAS 19 are:

	UK		Ireland		Canada	
	2018	2017	**2018**	2017	**2018**	2017
Inflation rate[1]	**3.3%/2.2%**	3.2%/2.1%	**1.6%**	1.7%	**2.0%**	2.0%
General salary increases[2]	**5.1%**	5.0%	**3.1%**	3.2%	**2.5%**	2.5%
Pension increases[3]	**3.3%/2.2%**	3.2%/2.1%	**0.4%**	0.4%	**1.25%**	1.25%
Deferred pension increases[3]	**3.3%/2.2%**	3.2%/2.1%	**1.6%**	1.7%	**—**	—
Discount rate[4, 5]	**2.7%/ 2.6%(pensioners)/ 2.7%(deferred)**	2.4%/ 2.4%(pensioners)/ 2.4%(deferred)	**1.8%/1.9%**	1.9%	**3.75%**	3.25%
Basis of discount rate	AA-rated corporate bonds		AA-rated corporate bonds		AA-rated corporate bonds	

1 For the UK schemes, assumptions provided for RPI/CPI. In the UK, the assumptions for the ASPS and RAC schemes are the single rates for RPI/CPI; for FPPS, relevant RPI/CPI swap curves are used, which are broadly equivalent to these single rates.
2 In the UK, the only remaining linkage between pension benefits and general salary increases is in respect of a small amount of Guaranteed Minimum Pension benefits, in line with National Average Earnings.
3 For the UK schemes, assumptions provided for RPI/CPI. In the UK, the assumptions for the ASPS and RAC schemes are single rates for RPI/CPI; for FPPS, relevant RPI/CPI swap curves are used, which are broadly equivalent to these single rates. The assumptions are also adjusted to reflect the relevant caps/floors and the inflation volatility.
4 To calculate scheme liabilities in the UK, a single discount rate is used in ASPS/RAC, whereas in FPPS, separate discount rates are used for the defined benefit obligation for pensioners and deferred.
5 For the Irish schemes, a discount rate of 1.8% and 1.9% is used for AISPF and FFPS respectively, reflecting the differences in the duration of the liabilities between the two schemes.

The discount rate and pension increase rate are the two assumptions that have the largest impact on the value of the liabilities, with the difference between them being known as the net discount rate. For each country, the discount rate is based on current average yields of high-quality debt instruments taking account of the maturities of the defined benefit obligations.

Mortality assumptions

Mortality assumptions are material in measuring the Group's obligations under its defined benefit schemes. The assumptions used are summarised in the table below and have been selected to reflect the characteristics and experience of the membership of these schemes.

The mortality tables, average life expectancy and pension duration used at 31 December 2018 for scheme members are as follows:

			Life expectancy/(pension duration) at NRA of a male		Life expectancy/(pension duration) at NRA of a female	
Mortality table		Normal retirement age (NRA)	Currently aged NRA	20 years younger than NRA	Currently aged NRA	20 years younger than NRA
UK – ASPS	Club Vita pooled experience, including an allowance for future improvements	60	88.8 (28.8)	90.7 (30.7)	90.2 (30.2)	92.5 (32.5)
– RAC	SAPS, including allowances for future improvement	65	87.1 (22.1)	89.0 (24.0)	89.0 (24.0)	90.6 (25.6)
– FPPS	SAPS, including allowances for future improvement	60	87.9 (27.9)	90.4 (30.4)	90.5 (30.5)	92.6 (32.6)
Ireland – AISPF	89% PNA00 with allowance for future improvements	61	88.6 (27.6)	92.0 (31.0)	91.5 (30.5)	94.8 (33.8)
– FFPS	88%/91% ILT15 with allowance for future improvements	68	86.8 (18.8)	89.1 (21.1)	89.1 (21.1)	91.1 (23.1)
Canada	Canadian Pensioners' Mortality 2014 Private Table, including allowance for future improvements	65	87.0 (22.0)	88.4 (23.4)	89.5 (24.5)	90.8 (25.8)

The assumptions above are based on commonly used mortality tables. The tables make allowance for observed variations in such factors as age, gender, pension amount, salary and postcode-based lifestyle group, and have been adjusted to reflect recent research into mortality experience. However, the extent of future improvements in longevity is subject to considerable uncertainty and judgement is required in setting this assumption. For the ASPS, which is the most material scheme to the Group, the allowance for mortality improvement is per the actuarial profession's 'CMI_2017 (S=7.5) Advanced with adjustments' model *(2017: 'CMI_2016 (S=7.5) Advanced with adjustments')*, with a long-term improvement rate of 1.75% *(2017: 1.75%)* for males and 1.5% *(2017: 1.5%)* for females. The CMI_2017 tables have been adjusted by adding 0.25% *(2017: 0.25%)* and 0.35% *(2017: 0.35%)* to the initial rate of mortality improvements for males and females respectively (to allow for greater mortality improvements in the pension scheme membership relative to the general population on which CMI_2017 is based), and uses the advanced parameters to taper the long-term improvement rates to zero between ages 90 and 115 (the 'core' parameters taper the long-term improvement rates to zero between ages 85 and 110).

Sensitivity analysis

Significant actuarial assumptions for the determination of the defined benefit obligation are discount rate, inflation rate and mortality. The sensitivity analysis below has been determined by changing the respective assumptions whilst holding all other assumptions constant. The following table summarises how the defined benefit obligation would have increased/(decreased) as a result of the change in the respective assumptions:

Impact on present value of defined benefit obligation

	Increase in discount rate +1% £m	Decrease in discount rate -1% £m	Increase in inflation rate +1% £m	Decrease in inflation rate -1% £m	1 year younger[1] £m
Impact on present value of defined benefit obligation at 31 December 2018	**(2,502)**	**3,317**	**2,275**	**(1,788)**	**536**
Impact on present value of defined benefit obligation at 31 December 2017	(2,680)	3,576	2,526	(1,929)	565

1 The effect of assuming all members in the schemes were one year younger.

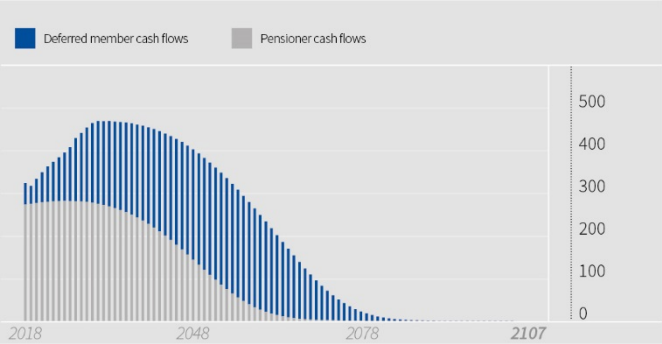
51 – Pension obligations continued

It is unlikely that the changes in assumptions would occur in isolation of one another as some of the assumptions may be correlated. Furthermore, the present value of the defined benefit obligation has been calculated using the projected unit credit method, which is the same as that applied in calculating the defined benefit obligation recognised within the consolidated statement of financial position. In addition, the sensitivities shown are for liabilities only and ignore the impact on assets, which would significantly mitigate the net interest rate and inflation sensitivity impact on the net surplus.

Maturity profile of the defined benefit obligation

The discounted scheme liabilities have an average duration of 19 years in ASPS, 20 years in FPPS, 18 years in the RAC scheme, 19 years in AISPF, 28 years in FFPS and 11 years in the Canadian scheme. The expected undiscounted benefits payable from the main UK defined benefit scheme, ASPS, is shown in the chart below:

Undiscounted benefit payments (£m)



(iv) Risk management and asset allocation strategy

As noted above, the long-term investment objectives of the trustees and the employers are to limit the risk of the assets failing to meet the liabilities of the schemes over the long-term, and to maximise returns consistent with an acceptable level of risk so as to control the long-term costs of these schemes. To meet these objectives, the schemes' assets are invested in a portfolio, consisting primarily of debt securities as detailed in section (b)(ii). The investment strategy will continue to evolve over time and is expected to match the liability profile increasingly closely with swap overlays to improve interest rate and inflation matching. The schemes are generally matched to interest rate risk relative to the funding bases.

Main UK scheme

The Company works closely with the trustee, who is required to consult with the Company on the investment strategy.

Interest rate and inflation rate risks are managed using a combination of liability-matching assets and swaps. Exposure to equity risk has been reducing over time and credit risk is managed within risk appetite. Currency risk is relatively small and is largely hedged. The other principal risk is longevity risk. This risk has reduced due to the ASPS entering into a longevity swap in 2014 covering approximately £5 billion of pensioner in payment scheme liabilities.

Other schemes

The other schemes are considerably less material but their risks are managed in a similar way to those in the main UK scheme. In 2015, the RAC pension scheme entered into a longevity swap covering approximately £600 million of pensioner in payment scheme liabilities.

(v) Funding

Formal actuarial valuations normally take place every three years and where there is a deficit, the Group and the trustees would agree a deficit recovery plan. The assumptions adopted for triennial actuarial valuations are determined by the trustees and agreed with the Group and are normally more prudent than the assumptions adopted for IAS19 purposes, which are best estimate.

For the ASPS, following the latest formal actuarial valuation (with an effective date of 31 March 2015) a schedule of contributions was agreed with the trustees, even though the ASPS was fully funded on its technical provisions basis consistent with the requirements of the UK pension regulations. The ASPS is currently undergoing a triennial actuarial valuation as at 31 March 2018.

Total employer contributions for all schemes in 2019 are currently expected to be £0.2 billion.

(c) Defined contribution (money purchase) section of the ASPS

The trustees have responsibility for selecting a range of suitable funds in which the members can choose to invest in and for monitoring the performance of the available investment funds. Members are responsible for reviewing the level of contributions they pay and the choice of investment fund to ensure these are appropriate to their risk appetite and their retirement plans. Members of this section contribute at least 2% of their pensionable salaries, and depending on the percentage chosen, the Group contributes up to a maximum 14%, together with the cost of the death-in-service benefits. These contribution rates remained unchanged until June 2017. From 1 July 2017, for every 1% additional employee contribution, the Group will contribute an additional 0.1% employer contribution. The amount recognised as an expense for defined contribution schemes is shown in section (d) below.

51 – Pension obligations continued

(d) Charge to staff costs in the income statement

The total pension charge to staff costs for all of the Group's defined benefit and defined contribution schemes were:

	2018 £m	2017 £m
Continuing operations		
UK defined benefit schemes	**22**	22
Overseas defined benefit schemes	**1**	1
Total defined benefit schemes (note 11(b))	**23**	23
UK defined contribution schemes	**143**	121
Overseas defined contribution schemes	**20**	25
Total defined contribution schemes (note 11(b))	**163**	146
Total charge for pension schemes	**186**	169

There were no significant contributions payable or prepaid in the consolidated statement of financial position as at either 31 December 2018 or 2017.

52 – Borrowings

Our borrowings are classified as either core structural borrowings, which are included within the Group's capital employed, or operational borrowings drawn by operating subsidiaries. This note shows the carrying values and contractual maturity amounts of each type, and explains their main features and movements during the year.

(a) Analysis of total borrowings

Total borrowings comprise:

	2018 £m	2017 £m
Core structural borrowings, at amortised cost	**7,699**	8,640
Operational borrowings, at amortised cost	**496**	466
Operational borrowings, at fair value	**1,225**	1,180
	1,721	1,646
	9,420	10,286

(b) Core structural borrowings

(i) The carrying amounts of these borrowings are:

	2018 £m	2017 £m
Subordinated debt		
6.125% £700 million subordinated notes 2036	**694**	694
6.125% £800 million undated subordinated notes	**797**	796
6.875% £600 million subordinated notes 2058	**594**	594
6.875% €500 million subordinated notes 2038	**—**	444
12.000% £162 million subordinated notes 2021	**191**	202
8.250% £500 million subordinated notes 2022	**563**	581
6.625% £450 million subordinated notes 2041	**449**	448
7.875% $575 million undated subordinated notes	**—**	437
6.125% €650 million subordinated notes 2043	**582**	575
3.875% €700 million subordinated notes 2044	**625**	618
5.125% £400 million subordinated notes 2050	**395**	394
3.375% €900 million subordinated notes 2045	**799**	789
4.500% C$450 million subordinated notes 2021	**257**	264
4.375% £400 million subordinated notes 2049	**394**	394
	6,340	7,230
Senior notes		
0.100% €350 million senior notes 2018	**—**	310
0.625% €500 million senior notes 2023	**446**	441
1.875% €750 million senior notes 2027	**667**	—
	1,113	751
Commercial paper	**251**	668
	7,704	8,649
Less: Amount held by Group companies	**(5)**	(9)
Total	**7,699**	8,640

52 – Borrowings continued

In 2018 the Group redeemed two subordinated debt instruments in full at their first call date, reduced the outstanding commercial paper balance and issued further senior debt. Further details are set out below:

- On 22 May 2018, the Group redeemed its €500 million 6.875% subordinated notes in full at first call date
- On 8 November 2018, the Group redeemed its $575 million 7.875% undated subordinated notes in full at first call date
- On 13 November 2018, Aviva plc issued €750 million of senior notes at 1.875% which mature in 2027
- On 13 December 2018, the Group's €350 million 0.100% senior notes matured
- The outstanding commercial paper balance was reduced to £251 million *(2017: £668 million)* during 2018

All the above borrowings are stated at amortised cost.

(ii) The contractual maturity dates of undiscounted cash flows for these borrowings are:

	2018			2017		
	Principal £m	**Interest £m**	**Total £m**	Principal £m	Interest £m	Total £m
Within one year	**251**	**376**	**627**	978	427	1,405
1 to 5 years	**1,370**	**1,353**	**2,723**	928	1,627	2,555
5 to 10 years	**673**	**1,490**	**2,163**	444	1,759	2,203
10 to 15 years	**—**	**1,441**	**1,441**	—	1,756	1,756
Over 15 years	**5,365**	**2,923**	**8,287**	6,216	3,282	9,498
Total contractual undiscounted cash flows	**7,659**	**7,583**	**15,241**	8,566	8,851	17,417

Borrowings are considered current if the contractual maturity dates are within a year. Where subordinated debt is undated or loan notes are perpetual, the interest payments have not been included beyond 15 years. Annual interest payments in future years for these borrowings are £49 million *(2017: £82 million)*.

Contractual undiscounted interest payments are calculated based on underlying fixed interest rates or prevailing market floating rates as applicable. Year end exchange rates have been used for interest projections on loans in foreign currencies.

(c) Operational borrowings

(i) The carrying amounts of these borrowings are:

	2018 £m	2017 £m
Amounts owed to financial institutions		
Loans	**496**	466
Securitised mortgage loan notes		
UK lifetime mortgage business (note 25(b))	**1,225**	1,180
Total	**1,721**	1,646

All the above borrowings are stated at amortised cost, except for the loan notes issued in connection with the UK lifetime mortgage business of £1,225 million *(2017: £1,180 million)*. These loan notes are carried at fair value, their values are modelled on risk-adjusted cash flows for defaults discounted at a risk-free rate plus a market-determined liquidity premium, and are therefore classified as 'Level 3' in the fair value hierarchy. The risk allowances are consistent with those used in the fair value asset methodology, as described in note 23. These have been designated at fair value through profit and loss in order to present the relevant mortgages, borrowings and derivative financial instruments at fair value, since they are managed as a portfolio on a fair value basis. This presentation provides more relevant information and eliminates any accounting mismatch.

The securitised mortgage loan notes are at various fixed, floating and index-linked rates. Further details about these notes are given in note 25.

(ii) The contractual maturity dates of undiscounted cash flows for these borrowings are:

	2018			2017		
	Principal £m	**Interest £m**	**Total £m**	Principal £m	Interest £m	Total £m
Within one year	**257**	**49**	**306**	174	52	226
1 to 5 years	**535**	**185**	**720**	547	202	749
5 to 10 years	**555**	**163**	**718**	548	178	726
10 to 15 years	**180**	**142**	**322**	325	140	465
Over 15 years	**136**	**154**	**290**	208	144	352
Total contractual undiscounted cash flows	**1,663**	**693**	**2,356**	1,802	716	2,518

Contractual undiscounted interest payments are calculated based on underlying fixed interest rates or prevailing market floating rates as applicable. Year-end exchange rates have been used for interest projections on loans in foreign currencies.

52 – Borrowings continued

(d) Description and features

(i) Subordinated debt

A description of each of the subordinated notes is set out in the table below:

Notional amount	Issue date	Redemption date	Callable at par at option of the Company from	In the event the Company does not call the notes, the coupon will reset at each applicable reset date to
£700 million	14 Nov 2001	14 Nov 2036	16 Nov 2026	5 year Benchmark Gilt + 2.85%
£800 million	29 Sep 2003	Undated	29 Sep 2022	5 year Benchmark Gilt + 2.40%
£600 million	20 May 2008	20 May 2058	20 May 2038	3 month LIBOR + 3.26%
£162 million	21 May 2009	21 May 2021	N/A	N/A
£500 million	21 April 2011	21 April 2022	N/A	N/A
£450 million	26 May 2011	3 June 2041	3 June 2021	6 Month LIBOR + 4.136%
€650 million	5 July 2013	5 July 2043	5 July 2023	5 year EUR mid-swaps + 5.13%
€700 million	3 July 2014	3 July 2044	3 July 2024	5 year EUR mid-swaps + 3.48%
£400 million	4 June 2015	4 June 2050	4 December 2030	3 month Euribor + 4.022%
€900 million	4 June 2015	4 December 2045	4 December 2025	3 month Euribor + 3.55%
C$450 million	9 May 2016	10 May 2021	N/A	N/A
£400 million	12 September 2016	12 September 2049	12 September 2029	3 month LIBOR + 4.721%

Subordinated notes issued by the Company rank below its senior obligations and ahead of its preference shares and ordinary share capital. The dated subordinated notes rank ahead of the undated subordinated notes. The fair value of notes at 31 December 2018 was £6,610 million *(2017: £8,348 million)*, calculated with reference to quoted prices.

(ii) Senior notes

All senior notes are at fixed rates and their total fair value at 31 December 2018 was £1,113 million *(2017: £756 million)*.

(iii) Commercial paper

The commercial paper consists of £251 million issued by the Company *(2017: £668 million)* and is considered core structural funding. The fair value of the commercial paper is considered to be the same as its carrying value and all issuances are repayable within one year.

(iv) Loans

Loans owed to financial institutions comprise:

	2018 £m	2017 £m
Non-recourse		
Loans to property partnerships	**61**	61
UK Life reassurance	**177**	111
Other non-recourse loans	**52**	58
	290	230
Other loans	**206**	236
	496	466

As explained in accounting policy D, the UK long-term business policyholder funds have invested in a number of property funds and structures (the 'Property Funds'), some of which have raised external debt, secured on the relevant Property Fund's property portfolio. The lenders are only entitled to obtain payment of interest and principal to the extent there are sufficient resources in the relevant Property Fund and they have no recourse whatsoever to the policyholder or shareholders' funds of any companies in the Group. Loans of £61 million *(2017: £61 million)* included in the table above relate to Property Funds.

At 31 December 2018 the obligations to repay third parties arising out of financial reinsurance operations were £177 million *(2017: £111 million)*.

Other non-recourse loans primarily include external debt raised by special purpose vehicles in the UK long-term business. The lenders have no recourse whatsoever to the shareholders' funds of any companies in the Group. The outstanding balance of these loans at 31 December 2018 was £52 million *(2017: £58 million)*.

Other loans of £206 million *(2017: £236 million)* include external debt raised by overseas long-term businesses to fund operations.

(v) Securitised mortgage loan notes

Loan notes have been issued by special purpose securitisation companies in the UK. Details are given in note 25.

52 – Borrowings continued

(e) Movements during the year

Movements in borrowings during the year were:

	2018			2017		
	Core Structural £m	Operational £m	Total £m	Core Structural £m	Operational £m	Total £m
New borrowings drawn down, excluding commercial paper, net of expenses	**649**	**126**	**775**	—	55	55
Repayment of borrowings, excluding commercial paper[1]	**(1,178)**	**(211)**	**(1,389)**	(488)	(151)	(639)
Movement in commercial paper[2]	**(419)**	**—**	**(419)**	—	—	—
Net cash outflow	**(948)**	**(85)**	**(1,033)**	(488)	(96)	(584)
Foreign exchange rate movements	**42**	**6**	**48**	104	(17)	87
Borrowings reclassified/(loans repaid) for non-cash consideration	**—**	**65**	**65**	484	(13)	471
Fair value movements	**—**	**89**	**89**	—	108	108
Amortisation of discounts and other non-cash items	**(35)**	**—**	**(35)**	(37)	(16)	(53)
Movements in debt held by Group companies[3]	**—**	**—**	**—**	—	(38)	(38)
Movements in the year	**(941)**	**75**	**(866)**	63	(72)	(9)
Balance at 1 January	**8,640**	**1,646**	**10,286**	8,577	1,718	10,295
Balance at 31 December	**7,699**	**1,721**	**9,420**	8,640	1,646	10,286

1 On 28 September 2017, notification was given that the Group would redeem the $650 million fixed rate tier 1 notes. At that date, the instrument was reclassified as a financial liability of £484 million, representing its fair value on translation into Sterling at that date. On 3 November 2017 the instrument was redeemed in full at a cost of £488 million.
2 Gross issuances of commercial paper were £2,372 million in 2018 *(2017: £1,265 million)*, offset by repayments of £2,791 million *(2017: £1,265 million)*.
3 Certain subsidiary companies have purchased issued subordinated notes and securitised loan notes as part of their investment portfolios. In the consolidated statement of financial position, borrowings are shown net of these holdings but movements in such holdings over the year are reflected in the tables above.

All movements in fair value in 2017 and 2018 on securitised mortgage loan notes designated as fair value through profit or loss were attributable to changes in market conditions.

(f) Undrawn borrowings

The Group has the following undrawn committed central borrowing facilities available to them, which are used to support the commercial paper programme:

	2018 £m	2017 £m
Expiring within one year	**—**	—
Expiring beyond one year	**1,650**	1,650
	1,650	1,650

53 – Payables and other financial liabilities

This note analyses our payables and other financial liabilities at the end of the year.

	2018 £m	2017 £m
Payables arising out of direct insurance	**1,374**	1,276
Payables arising out of reinsurance operations	**464**	304
Deposits and advances received from reinsurers	**129**	129
Bank overdrafts (see below)	**563**	499
Derivative liabilities (note 60)	**5,571**	5,766
Amounts due to brokers for investment purchases	**240**	112
Obligations for repayment of cash collateral received	**6,714**	6,817
Other financial liabilities	**1,853**	1,598
Total	**16,908**	16,501
Less: Amounts classified as held for sale	**(26)**	(42)
	16,882	16,459
Expected to be settled within one year	**10,800**	11,460
Expected to be settled in more than one year	**6,108**	5,041
	16,908	16,501

Bank overdrafts amount to £153 million (*2017: £115 million*) in life business operations and £410 million (*2017: £384 million*) in general insurance business and other operations.

All payables and other financial liabilities are carried at cost, which approximates to fair value, except for derivative liabilities, which are carried at their fair values.

54 – Other liabilities

This note analyses our other liabilities at the end of the year.

	2018 £m	2017 £m
Deferred income	**138**	133
Reinsurers' share of deferred acquisition costs	**19**	17
Accruals	**1,266**	1,236
Other liabilities	**1,653**	1,440
Total	**3,076**	2,826
Less: Amounts classified as held for sale	**(33)**	(35)
	3,043	2,791
Expected to be settled within one year	**2,451**	2,276
Expected to be settled in more than one year	**625**	550
	3,076	2,826

55 – Contingent liabilities and other risk factors

This note sets out the main areas of uncertainty over the calculation of our liabilities.

(a) Uncertainty over claims provisions

Note 43 gives details of the estimation techniques used by the Group to determine the general insurance business outstanding claims provisions and of the methodology and assumptions used in determining the long-term business provisions. These approaches are designed to allow for the appropriate cost of policy-related liabilities, with a degree of prudence, to give a result within the normal range of outcomes. However, the actual cost of settling these liabilities may differ, for example because experience may be worse than that assumed, or future general insurance business claims inflation may differ from that expected, and hence there is uncertainty in respect of these liabilities.

(b) Asbestos, pollution and social environmental hazards

In the course of conducting insurance business, various companies within the Group receive general insurance liability claims, and become involved in actual or threatened related litigation arising therefrom, including claims in respect of pollution and other environmental hazards. Amongst these are claims in respect of asbestos production and handling in various jurisdictions, including Europe, Canada and Australia. Given the significant delays that are experienced in the notification of these claims, the potential number of incidents they cover and the uncertainties associated with establishing liability, the ultimate cost cannot be determined with certainty. However, on the basis of current information having regard to the level of provisions made for general insurance claims and substantial reinsurance cover now in place, the directors consider that any additional costs arising are not likely to have a material impact on the financial position of the Group.

(c) Guarantees on long-term savings products

As a normal part of their operating activities, various Group companies have given guarantees and options, including interest rate guarantees, in respect of certain long-term insurance and investment products. Note 45 gives details of these guarantees and options. In providing these guarantees and options, the Group's capital position is sensitive to fluctuations in financial variables including foreign currency exchange rates, interest rates, property values and equity prices. Interest rate guaranteed returns, such as those available on guaranteed annuity options, are sensitive to interest rates falling below the guaranteed level. Other guarantees, such as maturity value guarantees and guarantees in relation to minimum rates of return, are sensitive to fluctuations in the investment return below the level assumed when the guarantee was made. The directors continue to believe that the existing provisions for such guarantees and options are sufficient.

(d) Regulatory compliance

The Group's insurance and investment business is subject to local regulation in each of the countries in which it operates. A number of the Group's UK subsidiaries are dual regulated (directly authorised by both the PRA (for prudential regulation) and the FCA (for conduct regulation) while others are solo regulated (regulated solely by the FCA for both prudential and conduct regulation). Between them, the PRA and FCA have broad powers including the authority to grant, vary the terms of, or cancel a regulated firm's authorisation; to investigate marketing and sales practices; and to require the maintenance of adequate financial resources. The Group's regulators outside the UK typically have similar powers, but in some cases they also operate a system of 'prior product approval'.

The Group's regulated businesses have compliance resources to respond to regulatory enquiries in a constructive way, and take corrective action when warranted. However, all regulated financial services companies face the risk that their regulator could find that they have failed to comply with applicable regulations or have not undertaken corrective action as required.

The impact of any such finding (whether in the UK or overseas) could have a negative impact on the Group's reported results or on its relations with current and potential customers. Regulatory action against a member of the Group could result in adverse publicity for, or negative perceptions regarding, the Group, or could have a material adverse effect on the business of the Group, its results, operations and/or financial condition and divert management's attention from the day-to-day management of the business.

(e) Structured settlements

The Group has purchased annuities from licensed Canadian life insurers to provide for fixed and recurring payments to claimants. As a result of these arrangements, the Group is exposed to credit risk to the extent that any of the life insurers fail to fulfill their obligations. The Group's maximum exposure to credit risk for these types of arrangements is approximately CAD$1,235 million as at 31 December 2018 *(2017: CAD$1,213 million)*. Credit risk is managed by acquiring annuities from a diverse portfolio of life insurers with proven financial stability. This risk is reduced to the extent of coverage provided by Assuris, the Canadian life insurance industry compensation plan. As at 31 December 2018, no information has come to the Group's attention that would suggest any weakness or failure in life insurers from which it has purchased annuities and consequently no provision for credit risk is required.

55 – Contingent liabilities and other risk factors continued

(f) Other

In the course of conducting insurance and investment business, various Group companies receive liability claims, and become involved in actual or threatened related litigation. In the opinion of the directors, adequate provisions have been established for such claims and no material loss will arise in this respect.

In addition, in line with standard business practice, various Group companies have given guarantees, indemnities and warranties in connection with disposals in recent years of subsidiaries and associates to parties outside the Aviva Group. In the opinion of the directors, no material unprovisioned loss will arise in respect of these guarantees, indemnities and warranties.

There are a number of charges registered over the assets of Group companies in favour of other Group companies or third parties. In addition, certain of the Company's assets are charged in favour of certain of its subsidiaries as security for intra-Group loans.

56 – Commitments

This note gives details of our commitments to capital expenditure and under operating leases.

(a) Capital commitments

Contractual commitments for acquisitions or capital expenditures of infrastructure loans, equity funds, investment property and property and equipment, which have not been recognised in the financial statements, are as follows:

	2018 £m	2017 £m
Infrastructure loan advances	**898**	782
Investment property	**42**	42
Property and equipment	**77**	53
Other investment vehicles[1]	**266**	265
	1,283	1,142

1 Represents commitments for further investment in certain private equity vehicles. Such commitments do not expose the Group to the risk of future losses in excess of its investment.

Contractual obligations for future repairs and maintenance on investment properties are £nil *(2017: £nil)*. Notes 19 and 20 set out the commitments the Group has to its joint ventures and associates.

(b) Operating lease commitments

(i) Future contractual aggregate minimum lease rentals receivable under non-cancellable operating leases are as follows:

	2018 £m	2017 £m
Within 1 year	**294**	317
Later than 1 year and not later than 5 years	**921**	980
Later than 5 years	**1,430**	1,408
	2,645	2,705

(ii) Future contractual aggregate minimum lease payments under non-cancellable operating leases are as follows:

	2018 £m	2017 £m
Within 1 year	**94**	101
Later than 1 year and not later than 5 years	**321**	339
Later than 5 years	**313**	413
	728	853
Total future minimum sub-lease payments expected to be received under non-cancellable sub-leases	**33**	44

57 – Group capital management

(a) Introduction

Group capital is represented by Solvency II own funds[1]. At 31 December 2018, the estimated Solvency II shareholder own funds amounts to £23.6 billion *(2017: £24.7 billion)*. The Solvency II position disclosed is based on a 'shareholder view'. The shareholder view is considered by management to be more representative of the shareholders' risk exposure and the Group's ability to cover the Solvency Capital Requirement (SCR) with eligible own funds and aligns with management's approach to dynamically manage its capital position.

In arriving at the shareholder position, the following adjustments are typically made to the regulatory Solvency II own funds:

- The contribution to the Group's own funds of the most material fully ring fenced with-profits funds of £2.6 billion at 31 December 2018 *(2017: £3.3 billion)* and staff pension schemes in surplus of £1.1 billion at 31 December 2018 *(2017: £1.5 billion)* are excluded. These exclusions have no impact on Solvency II surplus. The most material fully ring fenced with-profit funds and staff pension schemes are self-supporting on a Solvency II capital basis with any surplus capital above Solvency Capital Requirements ('SCR') not recognised in the Group position.
- A notional reset of the transitional measure on technical provisions (TMTP), calculated using the same method as used for formal TMTP resets. This presentation avoids step changes to Solvency II own funds that arise only when the formal TMTP reset points are triggered. The 31 December 2018 Solvency II own funds include a notional reset (£0.1 billion decrease in own funds) while the 31 December 2017 Solvency II own funds included a formal, rather than notional, reset of the TMTP in line with the regulatory requirement to reset the TMTP at least every two years or in the event of a material change in the risk profile. The TMTP is amortised on a straight-line basis over 16 years from 1 January 2016 in line with the Solvency II rules.
- Pro forma adjustments are made if the Solvency II shareholder cover ratio does not fully reflect the effect of transactions or capital actions that are known as at each reporting date. Such adjustments may be required in respect of planned acquisitions and disposals, group reorganisations and adjustments to the Solvency II valuation basis arising from changes to the underlying regulations or updated interpretations provided by EIOPA. The 31 December 2018 Solvency II own funds include two pro forma adjustments to reflect known or highly likely events that could materially impact the Group's solvency position post 31 December 2018. These pro forma adjustments relate to the disposal of FPI (£0.1 billion reduction in own funds) and the potential impact of an expected change to Solvency II regulations on the treatment of equity release mortgages (£nil impact on own funds as at 31 December 2018). The 31 December 2017 Solvency II own funds included the pro forma impact of the disposals of FPI (£0.1 billion reduction in own funds) and Avipop in Italy (£0.1 billion increase in own funds).

Solvency II own funds are comprised of a combination of shareholders' funds, preference share capital, direct capital instrument, tier 1 notes, subordinated debt, and deferred tax assets measured on a Solvency II basis. Refer to note 57(c) for further details on Solvency II.

Management also considers a capital employed metric prepared on an IFRS basis in managing capital and measuring business unit performance. The total capital employed comprises of similar items to Solvency II own funds but measured in accordance with IFRS and includes senior debt. In particular, analysis of return on equity calculated based on the capital employed has been used as one of the inputs to management's decision making process for capital allocation purposes.

The primary objective of capital management is to maintain an efficient capital structure, in a manner consistent with our risk profile and the regulatory and market requirements of our business.

Capital is a primary consideration across a wide range of business activities, including product development, pricing, business planning, merger and acquisition transactions and asset and liability management. A Capital Management Standard, applicable Group-wide, sets out minimum standards and guidelines over responsibility for capital management including considerations for capital management decisions and requirements for management information, capital monitoring, reporting, forecasting, planning and overall governance.

1 Own funds is capital available to cover the Solvency Capital Requirement (SCR) and Minimum Capital Requirement (MCR) under Solvency II.

57 – Group capital management continued

The Group manages capital in conjunction with solvency capital requirements, and seeks to, on a consistent basis:

- Match the profile of our assets and liabilities, taking into account the risks inherent in each business
- Maintain sufficient, but not excessive, financial strength in accordance with risk appetite, to support new business growth and satisfy the requirements of our regulators and other stakeholders giving both our customers and shareholders assurance of our financial strength. Refer to note 59 for more information about the Group's risk management approach
- Retain financial flexibility by maintaining strong liquidity, access to a range of capital markets and significant unutilised committed credit lines
- Allocate capital rigorously to support value adding growth and repatriate excess capital where appropriate
- Declare dividends with reference to factors including growth in cash flow and earnings

(b) IFRS basis

The table below shows how our capital is deployed by market and how that capital is funded.

	2018 Capital employed £m	2017 Capital employed £m
Life business		
United Kingdom[1]	**10,266**	11,493
France	**2,885**	2,704
Poland	**319**	352
Italy	**686**	954
Other Europe	**380**	422
Europe	**4,270**	4,432
Asia	**1,691**	1,558
	16,227	17,483
General insurance & health		
United Kingdom General Insurance[1,2]	**1,509**	1,872
United Kingdom Health[1]	**122**	106
Canada	**1,290**	1,364
France	**585**	589
Poland	**131**	140
Italy	**148**	319
Other Europe	**185**	203
Europe	**1,049**	1,251
Asia	**—**	10
	3,970	4,603
Fund management	**545**	520
Corporate and other business[1,2,3]	**5,412**	5,169
Total capital employed	**26,154**	27,775
Financed by		
Equity shareholders' funds	**16,558**	16,969
Non-controlling interests	**966**	1,235
Direct capital instrument and tier 1 notes	**731**	731
Preference shares	**200**	200
Subordinated debt[4]	**6,335**	7,221
Senior debt	**1,364**	1,419
Total capital employed[5]	**26,154**	27,775

1 Non-insurance operations relating to the UK have been reclassified to their respective market segments to better reflect the management of the underlying businesses consistent with the segmental analysis shown in note 5.
2 Capital employed for United Kingdom General Insurance excludes c.£0.9 billion *(2017: c.£0.9 billion)* of goodwill which does not support the general insurance business for capital purposes and is included in Corporate and other business.
3 Corporate and other business includes centrally held tangible net assets, the main UK staff pension scheme surplus and also reflects internal lending arrangements. These internal lending arrangements, which net out on consolidation, include the formal loan arrangement between Aviva Group Holdings Limited and Aviva Insurance Limited.
4 Subordinated debt excludes amounts held by Group companies of £5 million *(2017: £9 million)*.
5 Goodwill, AVIF and other intangibles are maintained within the capital base. Goodwill includes goodwill in subsidiaries of £1,872 million *(2017: £1,876 million)*, goodwill in joint ventures of £13 million *(2017: £17 million)* and goodwill in associates of £nil *(2017: £nil)*. AVIF and other intangibles comprise £3,201 million *(2017: £3,455 million)* of intangibles in subsidiaries, £33 million *(2017: £40 million)* of intangibles in joint ventures and £nil *(2017: £nil)* of intangibles in associates, net of deferred tax liabilities of £(475) million *(2017: £(721) million)* and the non-controlling interest share of intangibles of £(31) million *(2017: £(254) million)*.

Total capital employed is financed by a combination of equity shareholders' funds, preference capital, subordinated debt and other borrowings. At 31 December 2018, the Group had £26.2 billion *(2017: £27.8 billion)* of total capital employed in our trading operations measured on an IFRS basis.

57 – Group capital management continued

During 2018, Aviva has undertaken a number of actions to deploy its excess capital.

On 1 May 2018, the Group announced a share buy-back of ordinary shares, which was completed for an aggregate purchase price of £600 million. Shares totalling 119,491,188 *(2017: 57,724,500 shares)* were purchased and subsequently cancelled bringing the total cancelled under the programme to 177,215,688 shares, completing the share buy-back programme for an aggregate price of £900 million.

During the year, the Group also redeemed two subordinated debt instruments in full at their first call date, reduced the outstanding commercial paper balance and issued one senior debt. Further details are set out below:

- On 22 May 2018, the Group redeemed its €500 million 6.875% subordinated notes in full at first call date
- On 8 November 2018, the Group redeemed its $575 million 7.875% undated subordinated notes in full at first call date
- On 13 November 2018, Aviva plc issued €750 million of senior notes at 1.875% which mature in 2027
- On 13 December 2018, the Group's €350 million 0.100% senior notes matured
- The outstanding commercial paper balance was reduced to £251 million *(2017: £668 million)*

At 31 December 2018, the market value of our external debt (subordinated debt and senior debt), preference shares (including both Aviva plc preference shares of £200 million and General Accident plc preference shares, within non-controlling interests, of £250 million), and direct capital instrument and tier 1 notes was £9,278 million *(2017: £11,311 million)*.

(c) Solvency II basis

Solvency II is the Europe-wide prudential regulatory framework that came into force on 1 January 2016 and put in place a consistent solvency framework for insurers across Europe. This capital regime requires insurers to calculate regulatory capital adequacy at both individual regulated subsidiaries and an aggregate Group level. Non-EEA entities have been included in Group solvency in line with Solvency II requirements. Other financial sector entities (including fund management) are included at their proportional share of the capital requirement according to the relevant sectoral values.

Solvency II surplus at the Group level represents the excess of eligible Solvency II own funds over the Group's solvency capital requirements calculated in accordance with Solvency II requirements. The Group maintained capital in excess of the solvency capital requirement (SCR) at all times during 2018. Further information on the Group's Solvency II position, including details of available capital resources and solvency surplus, determined using the shareholder view of Solvency II, can be found in the Other information section. This information is estimated and is therefore subject to change. It is also unaudited.

In addition, non-EEA businesses including Canada, Hong Kong and Singapore, are subject to the locally applicable capital requirements in the jurisdictions in which they operate.

All regulated subsidiaries complied with their capital requirements throughout the year.

58 – Statement of cash flows

This note gives further detail behind the figures in the statement of cash flows.

(a) The reconciliation of profit before tax to the net cash inflow from operating activities is:

	2018 £m	2017 £m
Profit before tax	**1,652**	2,374
Adjustments for:		
Share of profits of joint ventures and associates	**(112)**	(41)
Dividends received from joint ventures and associates	**43**	51
(Profit)/loss on sale of:		
Investment property	**(69)**	(30)
Property and equipment	**1**	—
Subsidiaries, joint ventures and associates	**(102)**	(135)
Investments	**(6,434)**	(6,711)
	(6,604)	(6,876)
Fair value (gains)/losses on:		
Investment property	**(307)**	(481)
Investments	**27,909**	(6,983)
Borrowings	**89**	108
	27,691	(7,356)
Depreciation of property and equipment	**40**	35
Equity compensation plans, equity settled expense	**64**	77
Impairment and expensing of:		
Goodwill on subsidiaries	**13**	2
Financial investments, loans and other assets	**10**	6
Acquired value of in-force business and intangibles	**—**	15
Non-financial assets	**—**	7
	23	30
Amortisation of:		
Premium/discount on debt securities	**587**	720
Premium/discount on borrowings	**(35)**	(53)
Premium/discount on non-participating investment contracts	**243**	262
Financial instruments	**16**	26
Acquired value of in-force business and intangibles	**392**	392
	1,203	1,347
Change in unallocated divisible surplus	**(3,237)**	(294)
Interest expense on borrowings	**551**	610
Net finance income on pension schemes	**(67)**	(63)
Foreign currency exchange (gains)/losses	**(164)**	61
Changes in working capital		
Decrease in reinsurance assets	**2,191**	12,707
(Increase) in deferred acquisition costs	**(98)**	(389)
(Decrease)/increase in insurance liabilities and investment contracts	**(11,808)**	13,658
(Increase)/decrease in other assets	**(1,708)**	2,174
	(11,423)	28,150
Net purchases of operating assets		
Net purchases of investment property	**(791)**	(672)
Net proceeds on sale of investment property	**959**	1,065
Net sales of financial investments	**(3,423)**	(10,137)
	(3,255)	(9,744)
Total cash generated from operating activities	**6,405**	8,361

The cash flows presented in this statement cover all the Group's activities and include flows from both policyholder and shareholder activities. Operating cash flows reflect the movement in both policyholder and shareholder controlled cash and cash equivalent balances.

During the year the net operating cash inflow reflects a number of factors, including the level of premium income, payments of claims, creditors and surrenders and purchases and sales of operating assets including financial investments. It also includes changes in the size and value of consolidated cash investment funds and changes in the Group participation in these funds.

(b) Cash flows in respect of the acquisition of, and additions to, subsidiaries, joint ventures and associates comprised:

	2018 £m	2017 £m
Cash consideration for subsidiaries, joint ventures and associates acquired and additions	**(165)**	(32)
Less: Cash and cash equivalents acquired with subsidiaries	**357**	57
Total cash flow on acquisitions and additions	**192**	25

58 – Statement of cash flows continued

(c) Cash flows in respect of the disposal of subsidiaries, joint ventures and associates comprised:

	2018 £m	2017 £m
Cash proceeds from disposal of subsidiaries, joint ventures and associates	**441**	861
Less: Net cash and cash equivalents divested with subsidiaries	**(60)**	(910)
Total cash flow on disposals	**381**	(49)

The above figures form part of cash flows from investing activities.

(d) Cash and cash equivalents in the statement of cash flows at 31 December comprised:

	2018 £m	2017 £m
Cash at bank and in hand	**7,615**	6,293
Cash equivalents	**39,557**	37,793
	47,172	44,086
Bank overdrafts	**(563)**	(499)
	46,609	43,587

Cash and cash equivalents reconciles to the statement of financial position as follows:

	2018 £m	2017 £m
Cash and cash equivalents (excluding bank overdrafts)	**47,172**	44,086
Less: Assets classified as held for sale	**(688)**	(739)
	46,484	43,347

59 – Risk management

This note sets out the major risks our businesses and our shareholders face and describes the Group's approach to managing these. It also gives sensitivity analysis around the major economic and non-economic assumptions that can cause volatility in the Group's earnings and capital position.

(a) Risk management framework

The risk management framework in Aviva forms an integral part of the management and Board processes and decision-making framework across the Group. The key elements of our risk management framework comprise risk appetite; risk governance, including risk policies and business standards, risk oversight committees and roles and responsibilities; and the processes we use to identify, measure, manage, monitor and report risks, including the use of our risk models and stress and scenario testing.

For the purposes of risk identification and measurement, and aligned to Aviva's risk policies, risks are usually grouped by risk type: credit, market, liquidity, life insurance (including long-term health), general insurance (including short-term health), asset management and operational risk. Risks falling within these types may affect a number of metrics including those relating to balance sheet strength, liquidity and profit. They may also affect the performance of the products we deliver to our customers and the service to our customers and distributors, which can be categorised as risks to our brand and reputation or as conduct risk.

To promote a consistent and rigorous approach to risk management across all businesses we have a set of risk policies and business standards which set out the risk strategy, appetite, framework and minimum requirements for the Group's worldwide operations. The business chief executive officers make an annual declaration supported by an opinion from the business chief risk officers that the system of governance and internal controls was effective and fit for purpose for their business throughout the year.

A regular top-down key risk identification and assessment process is carried out by the risk function. This includes the consideration of emerging risks and is supported by deeper thematic reviews. This process is replicated at the business unit level. The risk assessment processes are used to generate risk reports which are shared with the relevant risk committees.

Risk models are an important tool in our measurement of risks and are used to support the monitoring and reporting of the risk profile and in the consideration of the risk management actions available. We carry out a range of stress (where one risk factor, such as equity returns, is assumed to vary) and scenario (where combinations of risk factors are assumed to vary) tests to evaluate their impact on the business and the management actions available to respond to the conditions envisaged. For those risk types managed through the holding of capital, being our principal risk types except for liquidity risk, we measure and monitor our risk profile on the basis of the Solvency II solvency capital requirement.

Roles and responsibilities for risk management in Aviva are based around the 'three lines of defence model' where ownership for risk is taken at all levels in the Group. Line management in the business is accountable for risk management, including the implementation of the risk management framework and embedding of the risk culture. The risk function is accountable for quantitative and qualitative oversight and challenge of the risk identification, measurement, monitoring, management and reporting processes and for developing the risk management framework. Internal Audit provides an independent assessment of the risk framework and internal control processes.

Board oversight of risk and risk management across the Group is maintained on a regular basis through its Risk Committee and Governance Committee. The Board has overall responsibility for determining risk appetite, which is an expression of the risk the business is willing to take. Risk appetites are set relative to capital and liquidity at Group and in the business units.

59 – Risk management continued

Risk appetites, requiring management action if breached, are also set for interest rate and foreign exchange risk (calculated on the basis of the Solvency II solvency capital requirement), and liquidity risk (based on stressing forecast central liquid assets and cash inflows and outflows over a specified time horizon). For other risk types the Group sets Solvency II capital tolerances. The Group's position against risk appetite and capital tolerances is monitored and reported to the Board on a regular basis. Long-term sustainability depends upon the protection of franchise value and good customer relationships. As such, Aviva has a risk preference that we will not accept risks that materially impair the reputation of the Group and requires that customers are always treated with integrity. The oversight of risk and risk management at the Group level is supported by the Asset Liability Committee, which focuses on business and financial risks, and the Operational Risk Committee which focuses on operational and reputational risks. Similar committee structures with equivalent terms of reference exist in the business units.

The risk management framework of a small number of our joint ventures and strategic equity holdings differs from the Aviva framework outlined in this note. We work with these entities to understand how their risks are managed and to align them, where possible, with Aviva's framework.

Further information on the types and management of specific risk types is given in sections (b) to (j) below.

(b) Credit risk

Credit risk is the risk of financial loss as a result of the default or failure of third parties to meet their payment obligations to Aviva, or variations in market values as a result of changes in expectations related to these risks. Credit risk is taken so that we can provide the returns required to satisfy policyholder liabilities and to generate returns for our shareholders. In general we prefer to take credit risk over equity and property risks, due to the better expected risk adjusted return, our credit risk analysis capability and the structural investment advantages conferred to insurers with long-dated, relatively illiquid liabilities.

Our approach to managing credit risk recognises that there is a risk of adverse financial impact resulting from fluctuations in credit quality of third parties including default, rating transition and credit spread movements. Our credit risks arise principally through exposures to debt security investments, structured asset investments, bank deposits, derivative counterparties, mortgage lending and reinsurance counterparties.

The Group manages its credit risk at business unit and Group level. All business units are required to implement credit risk management processes (including limits frameworks), operate specific risk management committees, and ensure detailed reporting and monitoring of their exposures against pre-established risk criteria. At Group level, we manage and monitor all exposures across our business units on a consolidated basis, and operate a Group limit framework that must be adhered to by all.

A detailed breakdown of the Group's current credit exposure by credit quality is shown below.

(i) Financial exposures by credit ratings

Financial assets are graded according to current external credit ratings issued. AAA is the highest possible rating. Investment grade financial assets are classified within the range of AAA to BBB ratings. Financial assets which fall outside this range are classified as sub-investment grade. The following table provides information regarding the aggregated credit risk exposure of the Group for financial assets with external credit ratings. 'Not rated' assets capture assets not rated by external ratings agencies.

As at 31 December 2018	AAA	AA	A	BBB	Below BBB	Not rated	Carrying value including held for sale £m	Less: Amounts classified as held for sale £m	Carrying value £m
Debt securities	**10.3%**	**33.6%**	**18.2%**	**25.1%**	**6.5%**	**6.3%**	**169,686**	**(397)**	**169,289**
Reinsurance assets	**—**	**83.1%**	**10.0%**	**2.7%**	**—**	**4.2%**	**11,800**	**(45)**	**11,755**
Other investments	**0.2%**	**0.1%**	**0.3%**	**0.1%**	**—**	**99.3%**	**52,812**	**(6,644)**	**46,168**
Loans	**—**	**5.6%**	**—**	**—**	**—**	**94.4%**	**28,785**	**—**	**28,785**
Total							**263,083**	**(7,086)**	**255,997**

As at 31 December 2017	AAA	AA	A	BBB	Below BBB	Not rated	Carrying value including held for sale £m	Less: Amounts classified as held for sale £m	Carrying value £m
Debt securities	10.6%	32.5%	20.0%	23.3%	7.8%	5.8%	175,948	(1,140)	174,808
Reinsurance assets	—	87.3%	8.2%	1.9%	—	2.6%	13,615	(123)	13,492
Other investments	—	0.2%	0.3%	0.1%	—	99.4%	53,277	(6,971)	46,306
Loans	—	7.1%	—	—	—	92.9%	27,863	(6)	27,857
Total							270,703	(8,240)	262,463

The majority of non-rated debt securities within shareholder assets are held by our businesses in the UK. Of these securities most are allocated an internal rating using a methodology largely consistent with that adopted by an external rating agency, and are considered to be of investment grade credit quality; these include £3.6 billion (*2017: £2.0 billion*) of debt securities held in our UK Life business, predominantly made up of private placements and other corporate bonds, which have been internally rated as investment grade.

59 – Risk management continued

The following table provides information on the Group's exposure by credit ratings to financial assets that meet the definition of 'solely payment of principal and interest' (SPPI). Further information on the assessment criteria for SPPI may be found in note 23(c).

	AAA £m	AA £m	A £m	BBB £m	Below BBB £m	Not rated £m
Loans	—	1,620	—	—	—	894
Receivables	6	213	294	214	—	5,122
Accrued income & interest	—	—	18	—	—	175
Other financial assets	—	—	10	—	—	—
Total	6	1,833	322	214	—	6,191

At the period end, the Group held cash and cash equivalents of £13,246 million that met the SPPI criteria, of which £13,231 million is placed with financial institutions with issuer ratings within the range of AAA to BBB. Further information on the extent to which unrated receivables, including those that meet the SPPI criteria, are past due may be found in section (ix) of this note.

The Group continues to hold a series of macro credit hedges to reduce the overall credit risk exposure. The Group's maximum exposure to credit risk of financial assets, without taking collateral or these hedges into account, is represented by the carrying value of the financial instruments in the statement of financial position. These comprise debt securities, reinsurance assets, derivative assets, loans and receivables. The carrying values of these assets are disclosed in the relevant notes: financial investments (note 27), reinsurance assets (note 46), loans (note 24) and receivables (note 28). The collateral in place for these credit exposures is disclosed in note 61 Financial assets and liabilities subject to offsetting, enforceable master netting arrangements and similar agreements.

(ii) Other investments

Other investments (including assets of operations classified as held for sale) include unit trusts and other investment vehicles; derivative financial instruments, representing positions to mitigate the impact of adverse market movements; and other assets, including deposits with credit institutions and minority holdings in property management undertakings.

The credit quality of the underlying debt securities within investment vehicles is managed by the safeguards built into the investment mandates for these funds which determine the funds' risk profiles. At the Group level, we also monitor the asset quality of unit trusts and other investment vehicles against Group set limits.

A proportion of the assets underlying these investments are represented by equities and so credit ratings are not generally applicable. Equity exposures are managed against agreed benchmarks that are set with reference to overall appetite for market risk.

(iii) Loans

The Group loan portfolio principally comprises:

- Policy loans which are generally collateralised by a lien or charge over the underlying policy;
- Loans and advances to banks which primarily relate to loans of cash collateral received in stock lending transactions. These loans are fully collateralised by other securities;
- Healthcare, infrastructure and PFI loans secured against healthcare, education, social housing and emergency services related premises; and
- Mortgage loans collateralised by property assets.

We use loan to value, interest and debt service cover, and diversity and quality of the tenant base metrics to internally monitor our exposures to mortgage loans. We use credit quality, based on dynamic market measures, and collateralisation rules to manage our stock lending activities. Policy loans are loans and advances made to policyholders, and are collateralised by the underlying policies.

(iv) Credit concentration risk

The long-term and general insurance businesses are generally not individually exposed to significant concentrations of credit risk due to the regulations applicable in most markets and the Group credit policy and limits framework, which limit investments in individual assets and asset classes. Credit concentrations are monitored as part of the regular credit monitoring process and are reported to the Group Asset Liability Committee (ALCO). With the exception of government bonds the largest aggregated counterparty exposure within shareholder assets is to the Swiss Reinsurance Company Ltd (including subsidiaries), representing approximately 2.3% of the total shareholder assets.

(v) Reinsurance credit exposures

The Group is exposed to concentrations of risk with individual reinsurers due to the nature of the reinsurance market and the restricted range of reinsurers that have acceptable credit ratings. The Group operates a policy to manage its reinsurance counterparty exposures, by limiting the reinsurers that may be used and applying strict limits to each reinsurer. Reinsurance exposures are aggregated with other exposures to ensure that the overall risk is within appetite. The Group Capital and Group Risk teams have an active monitoring role with escalation to the Chief Financial Officer (CFO), Chief Risk Officer (CRO), Group ALCO and the Board Risk Committee as appropriate.

The Group's largest reinsurance counterparty is Swiss Reinsurance Company Ltd (including subsidiaries). At 31 December 2018, the reinsurance asset recoverable, including debtor balances, from Swiss Reinsurance Company Ltd was £2,835 million *(2017: £2,902 million)*. Up until late 2018, BlackRock Life Ltd had been the Group's largest reinsurance counterparty as a result of the BlackRock funds offered to UK Life customers via unit-linked contracts. However, as a result of action taken to restructure the agreements with BlackRock Life Ltd the reinsurance asset recoverable, including debtor balances, from BlackRock Life Ltd as at 31 December 2018 has been reduced to £2,457 million *(2017: £5,307 million)*.

(vi) Securities finance

The Group has significant securities financing operations within the UK and smaller operations in some other businesses. The risks within this activity are mitigated by collateralisation and minimum counterparty credit quality requirements.

59 – Risk management continued

(vii) Derivative credit exposures

The Group is exposed to counterparty credit risk through derivative trades. This risk is generally mitigated through holding collateral for most trades. Residual exposures are captured within the Group's credit management framework.

(viii) Unit-linked business

In unit-linked business the policyholder bears the direct market risk and credit risk on investment assets in the unit funds and the shareholders' exposure to credit risk is limited to the extent of the income arising from asset management charges based on the value of assets in the fund.

(ix) Impairment of financial assets

In assessing whether financial assets carried at amortised cost or classified as available for sale are impaired, due consideration is given to the factors outlined in accounting policies (T) and (V). The following table provides information regarding the carrying value of financial assets subject to impairment testing that have been impaired and the ageing of those assets that are past due but not impaired. The table excludes assets carried at fair value through profit or loss and held for sale.

		Financial assets that are past due but not impaired					
As at 31 December 2018	**Neither past due nor impaired £m**	**0–3 months £m**	**3–6 months £m**	**6 months–1 year £m**	**Greater than 1 year £m**	**Financial assets that have been impaired £m**	**Carrying value £m**
Debt securities	**1,675**	**—**	**—**	**5**	**—**	**—**	**1,680**
Reinsurance assets	**7,791**	**—**	**—**	**—**	**—**	**—**	**7,791**
Other investments	**1**	**—**	**—**	**—**	**—**	**—**	**1**
Loans	**3,259**	**—**	**—**	**—**	**—**	**—**	**3,259**
Receivables and other financial assets	**8,776**	**74**	**16**	**11**	**2**	**—**	**8,879**

		Financial assets that are past due but not impaired					
As at 31 December 2017	Neither past due nor impaired £m	0–3 months £m	3–6 months £m	6 months–1 year £m	Greater than 1 year £m	Financial assets that have been impaired £m	Carrying value £m
Debt securities	1,726	—	—	—	—	—	1,726
Reinsurance assets	7,521	—	—	—	—	—	7,521
Other investments	1	—	—	—	—	—	1
Loans	3,465	—	—	—	—	—	3,465
Receivables and other financial assets	8,185	78	12	5	5	—	8,285

Excluded from the tables above are financial and reinsurance assets carried at fair value through profit or loss that are not subject to impairment testing, as follows: £168.0 billion of debt securities *(2017: £174.2 billion)*, £52.8 billion of other investments *(2017: £53.3 billion)*, £25.5 billion of loans *(2017: £24.4 billion)* and £4.0 billion of reinsurance assets *(2017: £6.1 billion)*.

Where assets have been classed as 'past due and impaired', an analysis is made of the risk of default and a decision is made whether to seek to mitigate the risk. There were no material financial assets that would have been past due or impaired had the terms not been renegotiated.

(c) Market risk

Market risk is the risk of adverse financial impact resulting, directly or indirectly from fluctuations in interest rates, inflation, foreign currency exchange rates, equity and property prices. Market risk arises in business units due to fluctuations in both the value of liabilities and the value of investments held. At Group level, it also arises in relation to the overall portfolio of international businesses and in the value of investment assets owned directly by the shareholders. We actively seek some market risks as part of our investment and product strategy. However, we have limited appetite for interest rate risk as we do not believe it is adequately rewarded.

The management of market risk is undertaken at business unit and at Group level. Businesses manage market risks locally using the Group market risk framework and within local regulatory constraints. Group Capital is responsible for monitoring and managing market risk at Group level and has established criteria for matching assets and liabilities to limit the impact of mismatches due to market movements.

In addition, where the Group's long-term savings businesses have written insurance and investment products where the majority of investment risks are borne by its policyholders, these risks are managed in line with local regulations and marketing literature, in order to satisfy the policyholders' risk and reward objectives. The Group writes unit-linked business in a number of its operations. The shareholders' exposure to market risk on this business is limited to the extent that income arising from asset management charges is based on the value of assets in the fund.

The most material types of market risk that the Group is exposed to are described below.

(i) Equity price risk

The Group is subject to direct equity price risk arising from changes in the market values of its equity securities portfolio. Our most material indirect equity price risk exposures are to policyholder unit-linked funds, which are exposed to a fall in the value of the fund thereby reducing the fees we earn on those funds, and participating contracts, which are exposed to a fall in the value of the funds thereby increasing our costs for policyholder guarantees. We also have some equity exposure in shareholder funds through equities held to match inflation-linked liabilities.

59 – Risk management continued

We continue to limit our direct equity exposure in line with our risk preferences. At a business unit level, investment limits and local investment regulations require that business units hold diversified portfolios of assets thereby reducing exposure to individual equities. The Group does not have material holdings of unquoted equity securities.

Equity risk is also managed using a variety of derivative instruments, including futures and options. Businesses actively model the performance of equities through the use of risk models, in particular to understand the impact of equity performance on guarantees, options and bonus rates. An equity hedging strategy remains in place to help control the Group's overall direct and indirect exposure to equities. At 31 December 2018 the Group continues to hold a series of macro equity hedges to reduce the overall shareholder equity risk exposure.

Sensitivity to changes in equity prices is given in section (j) Risk and capital management, below.

(ii) Property price risk

The Group is subject to property price risk directly due to holdings of investment properties in a variety of locations worldwide and indirectly through investments in mortgages and mortgage backed securities. Investment in property is managed at business unit level, and is subject to local regulations on investments, liquidity requirements and the expectations of policyholders.

As at 31 December 2018, no material derivative contracts had been entered into to mitigate the effects of changes in property prices. Exposure to property risk on equity release mortgages from sustained underperformance in the UK House Price Index (HPI) is mitigated by capping loan to value on origination at low levels and regularly monitoring the performance of the mortgage portfolio.

Sensitivity to changes in property prices is given in section (j) Risk and capital management, below.

(iii) Interest rate risk

Interest rate risk arises primarily from the Group's investments in long-term debt and fixed income securities and their movement relative to the value placed on the insurance liabilities. A number of policyholder product features have an influence on the Group's interest rate risk. The major features include guaranteed surrender values, guaranteed annuity options, and minimum surrender and maturity values. Details of material guarantees and options are given in note 45.

Exposure to interest rate risk is monitored through several measures that include duration, capital modelling, sensitivity testing and stress and scenario testing. The impact of exposure to sustained low interest rates is considered within our scenario testing.

The Group typically manages interest rate risk by investing in fixed interest securities which closely match the interest rate sensitivity of the liabilities where such investments are available. In particular, a key objective is to at least match the duration of our annuity liabilities with assets of the same duration, and in some cases where appropriate cash flow matching has been used. These assets include corporate bonds, residential mortgages and commercial mortgages. Should they default before maturity, it is assumed that the Group can reinvest in assets of a similar risk and return profile, which is subject to market conditions. Interest rate risk is also managed in some business units using a variety of derivative instruments, including futures, options, swaps, caps and floors.

Some of the Group's products, principally participating contracts, expose us to the risk that changes in interest rates will impact on profits through a change in the interest spread (the difference between the amounts that we are required to pay under the contracts and the investment income we are able to earn on the investments supporting our obligations under those contracts). The primary markets where Aviva is exposed to this risk are the UK, France and Italy.

Despite the continued pick up in market interest rates from the historical lows experienced in 2016, the continued low interest rate environment in a number of markets around the world has resulted in our current reinvestment yields being lower than the overall current portfolio yield, primarily for our investments in fixed income securities and commercial mortgage loans. As long as market yields remain below the current portfolio level, the portfolio yield, and as a result net investment income, will continue to decline. While we anticipate interest rates may remain below historical averages before the 2008 financial crisis for some time to come, it is also possible that further future increases in interest rates or market anticipation of such increases, if larger and more rapid than expected, could adversely impact market values of our portfolio of fixed income securities and increase the risk of credit defaults and downgrades.

Other product lines of the Group, such as protection, are not significantly sensitive to interest rate or market movements. For unit-linked business, the shareholder margins emerging are typically a mixture of annual management fees and risk/expense charges. Risk and expense margins will be largely unaffected by low interest rates. Annual management fees may increase in the short term as the move towards low interest rates increases the value of unit funds. However, in the medium term, unit funds will grow at a lower rate which will reduce fund charges. For the UK annuities business interest rate exposure is mitigated by closely matching the duration of liabilities with assets of the same duration.

The UK participating business includes contracts with features such as guaranteed surrender values, guaranteed annuity options, and minimum surrender and maturity values. These liabilities are managed through duration matching of assets and liabilities and the use of derivatives, including swaptions. As a result, the Group's exposure to sustained low interest rates on this portfolio is not material. The Group's key exposure to low interest rates arises through its other participating contracts, principally in Italy and France. Some of these contracts also include features such as guaranteed minimum bonuses, guaranteed investment returns and guaranteed surrender values. In a low interest rate environment there is a risk that the yield on assets might not be sufficient to cover these obligations. For certain of its participating contracts the Group is able to amend guaranteed crediting rates. Our ability to lower crediting rates may be limited by competition, bonus mechanisms and contractual arrangements.

59 – Risk management continued

Details of material guarantees and options are given in note 45. In addition, the following table summarises the weighted average minimum guaranteed crediting rates and weighted average book value yields on assets as at 31 December 2018 for our Italian and French participating contracts, where the Group's key exposure to sustained low interest rates arises.

	Weighted average minimum guaranteed crediting rate	Weighted average book value yield on assets	Participating contract liabilities £m
France	0.70%	2.67%	67,956
Italy	0.48%	3.52%	19,010
Other[1]	N/A	N/A	44,329
Total	N/A	N/A	131,295

1 'Other' includes UK participating business

Profit before tax on General Insurance and Health Insurance business is generally a mixture of insurance, expense and investment returns. The asset portfolio is invested primarily in fixed income securities and the reduction in interest rates over the last decade has reduced the investment component of profit, although in 2018 there was a small partial reversal in this long term trend. The portfolio investment yield and average total invested assets in our general insurance and health business are set out in the table below.

	Portfolio investment yield[1]	Average assets £m
2016	2.47%	14,369
2017	2.07%	14,770
2018	2.28%	14,651

1 Before realised and unrealised gains and losses and investment expenses

The nature of the business means that prices in certain circumstances can be increased to maintain overall profitability. This is subject to the competitive environment in each market. To the extent that there are further falls in interest rates the investment yield would be expected to decrease further in future periods.

Sensitivity to changes in interest rates is given in section (j) Risk and capital management, below.

(iv) Inflation risk

Inflation risk arises primarily from the Group's exposure to general insurance claims inflation, to inflation linked benefits within the defined benefit staff pension schemes and within the UK annuity portfolio and to expense inflation. Increases in long-term inflation expectations are closely linked to long-term interest rates and so are frequently considered with interest rate risk. Exposure to inflation risk is monitored through capital modelling, sensitivity testing and stress and scenario testing. The Group typically manages inflation risk through its investment strategy and, in particular, by investing in inflation linked securities and through a variety of derivative instruments, including inflation linked swaps.

59 – Risk management continued

(v) Currency risk

The Group has minimal exposure to currency risk from financial instruments held by business units in currencies other than their functional currencies, as nearly all such holdings are backing either unit-linked or with-profits contract liabilities or are hedged. As a result the foreign exchange gains and losses on investments are largely offset by changes in unit-linked and with-profits liabilities and fair value changes in derivatives attributable to changes in foreign exchange rates recognised in the income statement.

The Group operates internationally and as a result is exposed to foreign currency exchange risk arising from fluctuations in exchange rates of various currencies. Approximately 59% of the Group's premium income arises in currencies other than sterling and the Group's net assets are denominated in a variety of currencies, of which the largest are sterling, euro and Canadian dollars. The Group does not hedge foreign currency revenues as these are substantially retained locally to support the growth of the Group's business and meet local regulatory and market requirements. However, the Group does use foreign currency forward contracts to hedge planned dividends from its subsidiaries.

Businesses aim to maintain sufficient assets in local currency to meet local currency liabilities, however movements may impact the value of the Group's consolidated shareholders' equity which is expressed in sterling. This aspect of foreign exchange risk is monitored and managed centrally, against pre-determined limits. These exposures are managed by aligning the deployment of regulatory capital by currency with the Group's regulatory capital requirements by currency. Currency borrowings and derivatives are used to manage exposures within the limits that have been set. Except where the Group has applied net investment hedge accounting (see note 60(a)), foreign exchange gains and losses on foreign currency borrowings are recognised in the income statement, whereas foreign exchange gains and losses arising on consolidation from the translation of assets and liabilities of foreign subsidiaries are recognised in other comprehensive income. At 31 December 2018 and 2017, the Group's total equity deployment by currency including assets 'held for sale' was:

	Sterling £m	Euro £m	CAD$ £m	Other £m	Total £m
Capital 31 December 2018	**15,720**	**611**	**311**	**1,813**	**18,455**
Capital 31 December 2017	16,776	444	309	1,606	19,135

A 10% change in sterling to euro/Canada$ (CAD$) period-end foreign exchange rates would have had the following impact on total equity.

	10% increase in sterling/euro rate £m	10% decrease in sterling/euro rate £m	10% increase in sterling/CAD$ rate £m	10% decrease in sterling/CAD$ rate £m
Net assets at 31 December 2018	**(61)**	**77**	**(31)**	**31**
Net assets at 31 December 2017	(44)	44	(31)	31

A 10% change in sterling to euro/Canada$ (CAD$) average foreign exchange rates applied to translate foreign currency profits would have had the following impact on profit before tax, including resulting gains and losses on foreign exchange hedges.

	10% increase in sterling/euro rate £m	10% decrease in sterling/euro rate £m	10% increase in sterling/CAD$ rate £m	10% decrease in sterling/CAD$ rate £m
Impact on profit before tax 31 December 2018	**(60)**	**85**	**8**	**(9)**
Impact on profit before tax 31 December 2017	(78)	95	6	(7)

The balance sheet changes arise from retranslation of business unit statements of financial position from their functional currencies into sterling, with above movements being taken through the currency translation reserve. These balance sheet movements in exchange rates therefore have no impact on profit. Net asset and profit before tax figures are stated after taking account of the effect of currency hedging activities.

(vi) Derivatives risk

Derivatives are used by a number of the businesses. Derivatives are primarily used for efficient investment management, risk hedging purposes, or to structure specific retail savings products. Activity is overseen by the Group Capital and Group Risk teams, which monitor exposure levels and approve large or complex transactions.

The Group applies strict requirements to the administration and valuation processes it uses, and has a control framework that is consistent with market and industry practice for the activity that is undertaken.

(vii) Correlation risk

The Group recognises that lapse behaviour and potential increases in consumer expectations are sensitive to and interdependent with market movements and interest rates. These interdependencies are taken into consideration in the internal capital model and in scenario analysis.

59 – Risk management continued

(d) Liquidity risk

Liquidity risk is the risk of not being able to make payments as they become due because there are insufficient assets in cash form. The relatively illiquid nature of insurance liabilities is a potential source of additional investment return by allowing us to invest in higher yielding, but less liquid assets such as commercial mortgages and infrastructure loans. The Group seeks to ensure that it maintains sufficient financial resources to meet its obligations as they fall due through the application of a Group liquidity risk policy and business standard and through the development of its liquidity risk management plan. At Group and business unit level, there is a liquidity risk appetite which requires that sufficient liquid resources be maintained to cover net outflows in a stress scenario. In addition to the existing liquid resources and expected inflows, the Group maintains significant undrawn committed borrowing facilities (£1,650 million) from a range of leading international banks to further mitigate this risk.

Maturity analyses

The following tables show the maturities of our insurance and investment contract liabilities, and of the financial and reinsurance assets held to meet them. A maturity analysis of the contractual amounts payable for borrowings and non-hedge derivatives is given in notes 52 and 60, respectively. Contractual obligations under operating leases and capital commitments are given in note 56.

(i) Analysis of maturity of insurance and investment contract liabilities

For non-linked insurance business, the following table shows the gross liability at 31 December 2018 and 2017 analysed by remaining duration. The total liability is split by remaining duration in proportion to the cash-flows expected to arise during that period, as permitted under IFRS 4, Insurance Contracts.

Almost all linked business and non-linked investment contracts may be surrendered or transferred on demand. For such contracts, the earliest contractual maturity date is therefore the current statement of financial position date, for a surrender amount approximately equal to the current statement of financial position liability. However, we expect surrenders, transfers and maturities to occur over many years, and therefore the tables below reflect the expected cash flows for these contracts, rather than their contractual maturity date. This table includes amounts held for sale.

As at 31 December 2018	Total £m	On demand or within 1 year £m	1-5 years £m	5-15 years £m	Over 15 years £m
Long-term business					
Insurance contracts – non-linked	**106,622**	**8,421**	**25,940**	**40,548**	**31,713**
Investment contracts – non-linked	**75,158**	**5,547**	**19,199**	**28,572**	**21,840**
Linked business	**156,859**	**15,559**	**23,901**	**52,656**	**64,743**
General insurance and health	**16,368**	**6,859**	**6,758**	**2,217**	**534**
Total contract liabilities	**355,007**	**36,386**	**75,798**	**123,993**	**118,830**

As at 31 December 2017	Total £m	On demand or within 1 year £m	1-5 years £m	5-15 years £m	Over 15 years £m
Long-term business					
Insurance contracts – non-linked	109,900	10,105	27,278	41,720	30,797
Investment contracts – non-linked	71,948	5,370	17,088	26,300	23,190
Linked business	163,571	17,609	27,632	55,519	62,811
General insurance and health	16,794	6,877	6,838	2,462	617
Total contract liabilities	362,213	39,961	78,836	126,001	117,415

(ii) Analysis of maturity of financial assets

The following table provides an analysis, by maturity date of the principal, of the carrying value of financial assets which are available to fund the repayment of liabilities as they crystallise. This table excludes assets held for sale.

As at 31 December 2018	Total £m	On demand or within 1 year £m	1-5 years £m	Over 5 years £m	No fixed term (perpetual) £m
Debt securities	**169,289**	**31,282**	**43,876**	**92,985**	**1,146**
Equity securities	**82,128**	**—**	**—**	**—**	**82,128**
Other investments	**46,168**	**41,027**	**77**	**4,301**	**763**
Loans	**28,785**	**2,089**	**4,236**	**22,457**	**3**
Cash and cash equivalents	**46,484**	**46,484**	**—**	**—**	**—**
	372,854	**120,882**	**48,189**	**119,743**	**84,040**

As at 31 December 2017	Total £m	On demand or within 1 year £m	1-5 years £m	Over 5 years £m	No fixed term (perpetual) £m
Debt securities	174,808	28,037	47,289	99,078	404
Equity securities	89,968	—	—	—	89,968
Other investments	46,306	40,500	364	4,680	762
Loans	27,857	1,651	5,053	21,149	4
Cash and cash equivalents	43,347	43,347	—	—	—
	382,286	113,535	52,706	124,907	91,138

59 – Risk management continued

The assets above are analysed in accordance with the earliest possible redemption date of the instrument at the initiation of the Group. Where an instrument is transferable back to the issuer on demand, such as most unit trusts or similar types of investment vehicle, it is included in the 'On demand or within 1 year' column. Debt securities with no fixed contractual maturity date are generally callable at the option of the issuer at the date the coupon rate is reset under the contractual terms of the instrument. The terms for resetting the coupon are such that we expect the securities to be redeemed at this date, as it would be uneconomic for the issuer not to do so, and for liquidity management purposes we manage these securities on this basis. The first repricing and call date is normally ten years or more after the date of issuance. Most of the Group's investments in equity securities and fixed maturity securities are market traded and therefore, if required, can be liquidated for cash at short notice.

(e) Life and health insurance risk

Life insurance risk in the Group arises through its exposure to mortality risk and exposure to worse than anticipated operating experience on factors such as persistency levels, exercising of policyholder options and management and administration expenses. The Group's health insurance business (including private health insurance, critical illness cover, income protection and personal accident insurance, as well as a range of corporate healthcare products) exposes the Group to morbidity risk (the proportion of our customers falling sick) and medical expense inflation. The Group chooses to take measured amounts of life and health insurance risk provided that the relevant business has the appropriate core skills to assess and price the risk and adequate returns are available. The Group's underwriting strategy and appetite is communicated via specific policy statements, related business standards and guidelines. Life insurance risk is managed primarily at business unit level with oversight at the Group level.

The underlying risk profile of our life and health insurance risks, primarily persistency, longevity, mortality and expense risk, has remained stable during 2018, although the current continued relatively low levels of interest rates have increased our sensitivity to longevity shocks compared to historical norms. We are also exposed to longevity risk through the Aviva Staff Pension Scheme, to which our economic exposure has been reduced since 2014 by entering into a longevity swap covering approximately £5 billion of pensioner in payment scheme liabilities. Longevity risk remains the Group's most significant life insurance risk, while persistency risk remains significant and continues to have a volatile outlook with underlying performance linked to some degree to economic conditions. However, businesses across the Group have continued to make progress with a range of customer retention activities. The Group has continued to write considerable volumes of life protection business, and to utilise reinsurance to reduce exposure to potential losses. More generally, life insurance risks are believed to provide a significant diversification against other risks in the portfolio. Life insurance risks are modelled within the internal capital model and subject to sensitivity and stress and scenario testing. Our UK Life business is in the process of implementing a new actuarial modelling system for non-profit business. During the year ended 31 December 2018, annuities and certain protection products were transferred into the new modelling system which had minimal financial impact.

The assumption and management of life and health insurance risks is governed by the Group-wide business standards covering underwriting, pricing, product design and management, in-force management, claims handling, and reinsurance. The individual life and health insurance risks are managed as follows:

- Mortality and morbidity risks are mitigated by use of reinsurance. The Group allows businesses to select reinsurers, from those approved by the Group, based on local factors, but retains oversight of the overall exposures and monitors that the aggregation of risk ceded is within credit risk appetite.
- Longevity risk and internal experience analysis are monitored against the latest external industry data and emerging trends. Whilst individual businesses are responsible for reserving and pricing for annuity business, the Group monitors the exposure to this risk and any associated capital implications. The Group has used reinsurance solutions to reduce the risks from longevity and continually monitors and evaluates emerging market solutions to mitigate this risk further.
- Persistency risk is managed at a business unit level through frequent monitoring of company experience, and benchmarked against local market information. Generally, persistency risk arises from customers lapsing their policies earlier than has been assumed. Where possible the financial impact of lapses is reduced through appropriate product design. Businesses also implement specific initiatives to improve the retention of policies which may otherwise lapse. The Group has developed guidelines on persistency management.
- Expense risk is primarily managed by the business units through the assessment of business unit profitability and frequent monitoring of expense levels.

Embedded derivatives

The Group is exposed to the risk of changes in policyholder behaviour due to the exercise of options, guarantees and other product features embedded in its long-term savings products. These product features offer policyholders varying degrees of guaranteed benefits at maturity or on early surrender, along with options to convert their benefits into different products on pre-agreed terms. The extent of the impact of these embedded derivatives differs considerably between business units and exposes Aviva to changes in policyholder behaviour in the exercise of options as well as market risk.

Examples of each type of embedded derivative affecting the Group are:

- Options: call, put, surrender and maturity options, guaranteed annuity options, options to cease premium payment, options for withdrawals free of market value adjustment, annuity options, and guaranteed insurability options.
- Guarantees: embedded floor (guaranteed return), maturity guarantee, guaranteed death benefit, and guaranteed minimum rate of annuity payment.
- Other: indexed interest or principal payments, maturity value, loyalty bonus.

The impact of these is reflected in the capital model and managed as part of the asset liability framework. Further disclosure on financial guarantees and options embedded in contracts and their inclusion in insurance and investment contract liabilities is provided in note 45.

59 – Risk management continued

(f) General insurance risk

Types of risk

General insurance risk in the Group arises from:

- Fluctuations in the timing, frequency and severity of claims and claim settlements relative to expectations;
- Unexpected claims arising from a single source or cause;
- Inaccurate pricing of risks or inappropriate underwriting of risks when underwritten; and
- Inadequate reinsurance protection or other risk transfer techniques.

Aviva has a preference for general insurance risk in measured amounts for explicit reward, in line with our core skills in underwriting and pricing. The majority of the general insurance business underwritten by the Group continues to be short tail in nature such as motor, household and commercial property insurances. The Group's underwriting strategy and appetite is communicated via specific policy statements, related business standards and guidelines. General insurance risk is managed primarily at business unit level with oversight at the Group level. Claims reserving is undertaken by local actuaries in the various general insurance businesses and is also subject to periodic external reviews. Reserving processes are further detailed in note 42 Insurance liabilities.

The vast majority of the Group's general insurance business is managed and priced in the same country as the domicile of the customer.

Management of general insurance risks

Significant insurance risks will be reported under the risk management framework. Additionally, the capital model is used to assess the risks that each general insurance business unit, and the Group as a whole, is exposed to, quantifying their impact and calculating appropriate capital requirements.

Business units have developed mechanisms that identify, quantify and manage accumulated exposures to contain them within the limits of the appetite of the Group. The business units are assisted by the General Insurance Council which provides technical input for major decisions which fall outside individual delegated limits or escalations outside group risk preferences, group risk accumulation, concentration and profitability limits.

Reinsurance strategy

Significant reinsurance purchases are reviewed annually at both business unit and Group level to verify that the levels of protection being bought reflect any developments in exposure and the risk appetite of the Group. The basis of these purchases is underpinned by analysis of capital, earnings and capital volatility, cash flow and liquidity and the Group's franchise value.

Detailed actuarial analysis is used to calculate the Group's extreme risk profile and then design cost and capital efficient reinsurance programmes to mitigate these risks to within agreed appetites. For businesses writing general insurance we analyse the natural catastrophe exposure using our own internal probabilistic catastrophe model which is benchmarked against external catastrophe models widely used by the rest of the (re)insurance industry.

The Group cedes much of its worldwide catastrophe risk to third-party reinsurers through excess of loss and aggregate excess of loss structures. The Group purchases a Group-wide catastrophe reinsurance programme to protect against catastrophe losses exceeding a 1 in 200 year return period. The total Group potential retained loss from its most concentrated catastrophe exposure peril (Northern Europe Windstorm) is approximately £150 million on a per occurrence basis and £175 million on an annual aggregate basis. Any losses above these levels are covered by the group-wide catastrophe reinsurance programme to a level in excess of a 1 in 200 year return period. In addition the Group purchases a number of GI business line specific reinsurance programmes with various retention levels to protect both capital and earnings, and has reinsured 100% of its latent exposures to its historic UK employers' liability and public liability business written prior to 31 December 2000.

(g) Asset management risk

Aviva is directly exposed to the risks associated with operating an asset management business through its ownership of Aviva Investors. The underlying risk profile of our asset management risk is derived from investment performance, specialist investment professionals and leadership, product development capabilities, fund liquidity, margin, client retention, regulatory developments, fiduciary and contractual responsibilities. Funds invested in illiquid assets such as commercial property are particularly exposed to liquidity risk. The risk profile is regularly monitored.

A client relationship team is in place to manage client retention risk, while all new asset management products undergo a review and approval process at each stage of the product development process, including approvals from legal, compliance and risk functions. Investment performance against client objectives relative to agreed benchmarks is monitored as part of our investment performance and risk management process, and subject to further independent oversight and challenge by a specialist risk team, reporting directly to the Aviva Investors' Chief Risk Officer.

(h) Operational risk

Operational risk is the risk of direct or indirect loss, arising from inadequate or failed internal processes, people and systems, or external events including changes in the regulatory environment. We have limited appetite for operational risk and aim to reduce these risks as far as is commercially sensible.

Our business units are primarily responsible for identifying and managing operational risks within their businesses, within the Group-wide operational risk framework including the risk and control self-assessment process. Businesses must be satisfied that all material risks falling outside our risk tolerances are being mitigated, monitored and reported to an appropriate level. Any risks with a high potential impact are monitored centrally on a regular basis. Businesses use key indicator data to help monitor the status of the risk and control environment. They also identify and capture loss events, taking appropriate action to address actual control breakdowns and promote internal learning.

59 – Risk management continued

The increasing importance to our strategy of digital interaction with our customers and advanced data analytics, the conduct, data protection and financial crime agenda of the European institutions, the FCA and other regulators, as well as the increasing cyber security threat, as evidenced by continuing instances of high profile cyber security breaches for other corporates in the UK and elsewhere, mean that the Group's inherent risk exposure to risks such as data theft, conduct regulatory breaches (including financial crime) and customer service interruption due to IT systems failure increased in 2018 and is expected to continue to increase into the future. The risk of customer service interruption is increased by the age and complexity of the Group's IT infrastructure, which at times during the first half of 2018 resulted in disruption to continuous service to our customers, while our UK long-term savings business also experienced some functionality issues during its update of its platform capability. During 2018 we have continued to take action to reduce our residual exposure to these risks and improve our operational resilience through our conduct risk management framework, financial crime risk mitigation programme and significant investment in upgrading our IT infrastructure (including migrations to a new data centre infrastructure provider and to the Cloud) and IT Security Transformation programme, and by ensuring appropriate consideration of IT infrastructure and security risks in developing our digital strategy, and will continue to do so into the future.

(i) Brand and reputation risk

We are exposed to the risk that litigation, employee misconduct, operational failures, the outcome of regulatory investigations, media speculation and negative publicity, disclosure of confidential client information, inadequate services, whether or not founded, could impact our brands or reputation. Any of our brands or our reputation could also be affected if products or services recommended by us (or any of our intermediaries) do not perform as expected (whether or not the expectations are founded) or customers' expectations for the product change. We seek to reduce this risk to as low a level as commercially sensible.

The FCA regularly considers whether we are meeting the requirement to treat our customers fairly and we make use of various metrics to assess our own performance, including customer advocacy, retention and complaints. Failure to meet these requirements could also impact our brands or reputation.

If we do not manage the perception of our brands and reputation successfully, it could cause existing customers or agents to withdraw from our business and potential customers or agents to choose not to do business with us.

(j) Risk and capital management

(i) Sensitivity test analysis

The Group uses a number of sensitivity tests to understand the volatility of earnings, the volatility of its capital requirements, and to manage its capital more efficiently. Sensitivities to economic and operating experience are regularly produced on the Group's key financial performance metrics to inform the Group's decision making and planning processes, and as part of the framework for identifying and quantifying the risks to which each of its business units, and the Group as a whole, are exposed.

(ii) Life insurance and investment contracts

The nature of long-term business is such that a number of assumptions are made in compiling these financial statements. Assumptions are made about investment returns, expenses, mortality rates and persistency in connection with the in-force policies for each business unit. Assumptions are best estimates based on historic and expected experience of the business. A number of the key assumptions for the Group's central scenario are disclosed elsewhere in these statements.

(iii) General insurance and health business

General insurance and health claim liabilities are estimated by using standard actuarial claims projection techniques. These methods extrapolate the claims development for each accident year based on the observed development of earlier years. In most cases, no explicit assumptions are made as projections are based on assumptions implicit in the historic claims.

(iv) Sensitivity test results

Illustrative results of sensitivity testing for long-term business, general insurance and health business and the fund management and non-insurance business are set out below. For each sensitivity test the impact of a reasonably possible change in a single factor is shown, with other assumptions left unchanged.

Sensitivity factor	Description of sensitivity factor applied
Interest rate and investment return	The impact of a change in market interest rates by a 1% increase or decrease. The test allows consistently for similar changes to investment returns and movements in the market value of backing fixed interest securities.
Credit spreads	The impact of a 0.5% increase in credit spreads over risk-free interest rates on corporate bonds and other non-sovereign credit assets. The test allows for any consequential impact on liability valuations.
Equity/property market values	The impact of a change in equity/property market values by ± 10%.
Expenses	The impact of an increase in maintenance expenses by 10%.
Assurance mortality/morbidity (life insurance only)	The impact of an increase in mortality/morbidity rates for assurance contracts by 5%.
Annuitant mortality (long-term insurance only)	The impact of a reduction in mortality rates for annuity contracts by 5%.
Gross loss ratios (non-long-term insurance only)	The impact of an increase in gross loss ratios for general insurance and health business by 5%.

59 – Risk management continued

Long-term business

Sensitivities as at 31 December 2018

31 December 2018 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Assurance mortality +5%	Annuitant mortality -5%
Insurance participating	(75)	35	(15)	(105)	70	(20)	(5)	(5)
Insurance non-participating	(975)	1,130	(695)	(125)	105	(210)	(115)	(865)
Investment participating	(40)	40	(10)	(15)	(15)	(15)	—	—
Investment non-participating	—	—	—	10	(25)	(20)	—	—
Assets backing life shareholders' funds	(95)	105	(25)	20	(20)	—	—	—
Total	**(1,185)**	**1,310**	**(745)**	**(215)**	**115**	**(265)**	**(120)**	**(870)**

31 December 2018 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Assurance mortality +5%	Annuitant mortality -5%
Insurance participating	(75)	35	(15)	(105)	70	(20)	(5)	(5)
Insurance non-participating	(975)	1,130	(695)	(125)	105	(210)	(115)	(865)
Investment participating	(40)	40	(10)	(15)	(15)	(15)	—	—
Investment non-participating	—	—	—	10	(25)	(20)	—	—
Assets backing life shareholders' funds	(145)	150	(25)	25	(25)	—	—	—
Total	**(1,235)**	**1,355**	**(745)**	**(210)**	**110**	**(265)**	**(120)**	**(870)**

Sensitivities as at 31 December 2017

31 December 2017 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Assurance mortality +5%	Annuitant mortality -5%
Insurance participating	(45)	25	(15)	(20)	(40)	(25)	(5)	(10)
Insurance non-participating	(475)	485	(790)	(135)	115	(215)	(105)	(905)
Investment participating	—	10	(5)	(5)	—	(15)	—	—
Investment non-participating	—	(10)	(5)	10	(10)	(30)	—	—
Assets backing life shareholders' funds	(90)	115	(25)	20	(20)	—	—	—
Total	(610)	625	(840)	(130)	45	(285)	(110)	(915)

31 December 2017 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Assurance mortality +5%	Annuitant mortality -5%
Insurance participating	(45)	25	(15)	(20)	(40)	(25)	(5)	(10)
Insurance non-participating	(475)	485	(790)	(135)	115	(215)	(105)	(905)
Investment participating	—	10	(5)	(5)	—	(15)	—	—
Investment non-participating	—	(10)	(5)	10	(10)	(30)	—	—
Assets backing life shareholders' funds	(150)	175	(35)	20	(20)	—	—	—
Total	(670)	685	(850)	(130)	45	(285)	(110)	(915)

Changes in sensitivities between 2018 and 2017 reflect underlying movements in the value of assets and liabilities, the relative duration of assets and liabilities and asset liability management actions. The sensitivities to economic and demographic movements relate mainly to business in the UK. Our sensitivity to interest rates has increased over the period mainly due to the impacts of our hedging programme which protects Solvency II capital and increased exposure in the UK, predominantly as a result of surplus assets originated in 2018 to back new business in 2019 that would otherwise be invested in cash.

59 – Risk management continued

General insurance and health business sensitivities as at 31 December 2018

31 December 2018 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Gross loss ratios +5%
Gross of reinsurance	**(240)**	**235**	**(115)**	**165**	**(165)**	**(120)**	**(325)**
Net of reinsurance	**(305)**	**295**	**(115)**	**165**	**(165)**	**(120)**	**(315)**

31 December 2018 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Gross loss ratios +5%
Gross of reinsurance	**(240)**	**235**	**(115)**	**170**	**(170)**	**(25)**	**(325)**
Net of reinsurance	**(305)**	**295**	**(115)**	**170**	**(170)**	**(25)**	**(315)**

Sensitivities as at 31 December 2017

31 December 2017 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Gross loss ratios +5%
Gross of reinsurance	(285)	300	(130)	165	(165)	(120)	(335)
Net of reinsurance	(345)	355	(130)	165	(165)	(120)	(325)

31 December 2017 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expenses +10%	Gross loss ratios +5%
Gross of reinsurance	(285)	300	(130)	165	(165)	(25)	(335)
Net of reinsurance	(345)	355	(130)	165	(165)	(25)	(325)

For general insurance and health, the impact of the expense sensitivity on profit also includes the increase in ongoing administration expenses, in addition to the increase in the claims handling expense provision.

Fund management and non-insurance business sensitivities as at 31 December 2018

31 December 2018 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%
Total	**(25)**	**20**	**30**	**(20)**	**35**

31 December 2018 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%
Total	**(20)**	**15**	**30**	**(20)**	**30**

Sensitivities as at 31 December 2017

31 December 2017 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%
Total	(30)	30	80	(10)	20

31 December 2017 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%
Total	(25)	25	80	(10)	15

Limitations of sensitivity analysis

The above tables demonstrate the effect of a change in a key assumption while other assumptions remain unchanged. In reality, there is a correlation between the assumptions and other factors. It should also be noted that these sensitivities are non-linear, and larger or smaller impacts should not be interpolated or extrapolated from these results.

The sensitivity analyses do not take into consideration that the Group's assets and liabilities are actively managed. Additionally, the financial position of the Group may vary at the time that any actual market movement occurs. For example, the Group's financial risk management strategy aims to manage the exposure to market fluctuations.

As investment markets move past various trigger levels, management actions could include selling investments, changing investment portfolio allocation, adjusting bonuses credited to policyholders, and taking other protective action.

A number of the business units use passive assumptions to calculate their long-term business liabilities. Consequently, a change in the underlying assumptions may not have any impact on the liabilities, whereas assets held at market value in the statement of financial position will be affected. In these circumstances, the different measurement bases for liabilities and assets may lead to volatility in shareholder equity. Similarly, for general insurance liabilities, the interest rate sensitivities only affect profit and equity where explicit assumptions are made regarding interest (discount) rates or future inflation.

Other limitations in the above sensitivity analyses include the use of hypothetical market movements to demonstrate potential risk that only represent the Group's view of possible near-term market changes that cannot be predicted with any certainty, and the assumption that all interest rates move in an identical fashion.

60 – Derivative financial instruments and hedging

This note gives details of the various financial instruments the Group uses to mitigate risk.

The Group uses a variety of derivative financial instruments, including both exchange traded and over-the-counter instruments, in line with the Group's overall risk management strategy. The objectives include managing exposure to market, foreign currency and/or interest rate risk on existing assets or liabilities, as well as planned or anticipated investment purchases.

In the narrative and tables below, figures are given for both the notional amounts and fair values of these instruments. The notional amounts reflect the aggregate of individual derivative positions on a gross basis and so give an indication of the overall scale of the derivative transaction. They do not reflect current market values of the open positions. The fair values represent the gross carrying values at the year end for each class of derivative contract held (or issued) by the Group.

The fair values do not provide an indication of credit risk, as many over-the-counter transactions are contracted and documented under ISDA (International Swaps and Derivatives Association, Inc.) master agreements or their equivalent. Such agreements are designed to provide a legally enforceable set-off in the event of default, which reduces credit exposure. In addition, the Group has collateral agreements in place between the individual Group entities and relevant counterparties. Refer to note 61 for further information on collateral and net credit risk of derivative instruments.

(a) Instruments qualifying for hedge accounting

The Group has formally assessed and documented the hedge effectiveness in accordance with IAS 39, *Financial Instruments: Recognition and Measurement*.

Net investment hedges

To reduce its exposure to foreign currency risk, the Group has designated a portion of its euro denominated debt as hedge instruments to hedge a net investment in its European subsidiaries. No material disposals are expected prior to the maturity of the euro denominated debt and the hedge effectiveness is prospectively expected to remain between 80% and 125%. The carrying value of the debt at 31 December 2018 was £2,468 million *(2017: £2,885 million)* and its fair value at that date was £2,515 million *(2017: £3,202 million)*.

Foreign exchange losses of £27 million *(2017: loss of £98 million)* on translation of the debt to sterling at the statement of financial position date in respect of the effective portion have been recognised in the hedging instruments reserve in shareholders' equity. A gain of £4 million (*2017: loss of £13 million*) has been recognised in the income statement due to the termination of a net investment hedge.

60 – Derivative financial instruments and hedging continued

(b) Derivatives not qualifying for hedge accounting

Certain derivatives either do not qualify for hedge accounting under IAS 39 or the option to designate them as hedge instruments has not been taken. These are referred to below as non-hedge derivatives.

(i) The Group's non-hedge derivatives at 31 December 2018 and 2017 were as follows:

	2018			2017		
	Contract/ notional amount £m	**Fair value asset £m**	**Fair value liability £m**	Contract/ notional amount £m	Fair value asset £m	Fair value liability £m
Foreign exchange contracts						
OTC						
Forwards	**17,529**	**73**	**(117)**	10,281	87	(34)
Interest rate and currency swaps	**7,908**	**29**	**(708)**	7,336	176	(568)
Options	**174**	**9**	**—**	—	—	—
Total	**25,611**	**111**	**(825)**	17,617	263	(602)
Interest rate contracts						
OTC						
Forwards	**283**	**11**	**—**	280	4	(2)
Swaps	**50,316**	**3,651**	**(2,120)**	52,464	4,370	(2,539)
Options	**203**	**1**	**(20)**	178	15	(11)
Swaptions	**358**	**126**	**(5)**	1,220	143	(7)
Exchange traded						
Futures	**5,297**	**53**	**(34)**	4,577	11	(17)
Total	**56,457**	**3,842**	**(2,179)**	58,719	4,543	(2,576)
Equity/Index contracts						
OTC						
Options	**132**	**58**	**(1)**	593	29	(2)
Exchange traded						
Futures	**10,888**	**185**	**(197)**	16,279	254	(249)
Options	**3,156**	**441**	**(13)**	2,560	175	(5)
Total	**14,176**	**684**	**(211)**	19,432	458	(256)
Credit contracts	**10,756**	**12**	**(227)**	9,920	15	(261)
Other	**14,327**	**345**	**(2,129)**	15,395	228	(2,071)
Total at 31 December	**121,327**	**4,994**	**(5,571)**	121,083	5,507	(5,766)

Fair value assets of £4,994 million *(2017: £5,507 million)* are recognised as 'Derivative financial instruments' in note 27(a), while fair value liabilities of £5,571 million *(2017: £5,766 million)* are recognised as 'Derivative liabilities' in note 53.

The Group's derivative risk management policies are outlined in note 59.

(ii) The contractual undiscounted cash flows in relation to non-hedge derivative liabilities have the following maturities:

	2018 £m	2017 £m
Within 1 year	**1,224**	1,071
Between 1 and 2 years	**512**	597
Between 2 and 3 years	**445**	503
Between 3 and 4 years	**384**	404
Between 4 and 5 years	**301**	328
After 5 years	**3,359**	3,461
	6,225	6,364

(c) Collateral

Certain derivative contracts, primarily interest rate and currency swaps, involve the receipt or pledging of cash and non-cash collateral. The amounts of cash collateral receivable or repayable are included in notes 28 and 53 respectively. Collateral received and pledged by the Group is detailed in note 61.

61 – Financial assets and liabilities subject to offsetting, enforceable master netting agreements and similar arrangements

(a) Offsetting arrangements

Financial assets and liabilities are offset in the statement of financial position when the Group has a legally enforceable right to offset and has the intention to settle the asset and liability on a net basis, or to realise the asset and settle the liability simultaneously.

Aviva mitigates credit risk in derivative contracts by entering into collateral agreements, where practical, and into ISDA master netting agreements for each of the legal entities to facilitate its right to offset credit risk exposure. The credit support agreement will normally dictate the threshold over which collateral needs to be pledged by Aviva or its counterparty.

Derivative transactions requiring Aviva or its counterparty to post collateral are typically the result of over-the-counter derivative trades, comprised mostly of interest rate swaps, currency swaps and credit default swaps. These transactions are conducted under terms that are usual and customary to standard long-term borrowing, derivative, securities lending and securities borrowing activities. The derivative assets and liabilities in the table below are made up of the contracts described in detail in note 60.

Aviva participates in a number of stock lending and repurchase arrangements. In some of these arrangements cash is exchanged by Aviva for securities and a related receivable is recognised within 'Loans to banks' in note 24. These arrangements are reflected in the tables below. In instances where the collateral is recognised on the statement of financial position, the obligation for its return is included within 'Payables and other financial liabilities' in note 53.

In other arrangements, securities are exchanged for other securities. The collateral received must be in a readily realisable form such as listed securities and is held in segregated accounts. Transfer of title always occurs for the collateral received. In many instances, however, no market risk or economic benefit is exchanged and these transactions are not recognised on the statement of financial position in accordance with our accounting policies, and accordingly not included in the tables below.

				Amounts subject to enforceable netting arrangements			
		Offset under IAS 32		Amounts under a master netting agreement but not offset under IAS 32			
2018	Gross amounts £m	Amounts offset £m	Net amounts reported in the statement of financial position £m	Financial instruments £m	Cash collateral £m	Securities collateral received/ pledged £m	Net amount £m
Financial assets							
Derivative financial assets	3,978	—	3,978	(2,831)	(657)	(186)	304
Loans to banks and repurchase arrangements	1,923	—	1,923	—	(300)	(1,614)	9
Total financial assets	5,901	—	5,901	(2,831)	(957)	(1,800)	313
Financial liabilities							
Derivative financial liabilities	(4,701)	—	(4,701)	2,896	7	1,288	(510)
Other financial liabilities	(3,314)	—	(3,314)	—	—	3,314	—
Total financial liabilities	(8,015)	—	(8,015)	2,896	7	4,602	(510)

61 – Financial assets and liabilities subject to offsetting, enforceable master netting arrangements and similar agreements continued

				Amounts subject to enforceable netting arrangements			
			Offset under IAS 32		Amounts under a master netting agreement but not offset under IAS 32		
2017	Gross amounts £m	Amounts offset £m	Net amounts reported in the statement of financial position £m	Financial instruments £m	Cash collateral £m	Securities collateral received/ pledged £m	Net amount £m
Financial assets							
Derivative financial assets	4,605	—	4,605	(3,162)	(830)	(291)	322
Loans to banks and repurchase arrangements	2,524	—	2,524	—	—	(2,502)	22
Total financial assets	7,129	—	7,129	(3,162)	(830)	(2,793)	344
Financial liabilities							
Derivative financial liabilities	(4,790)	—	(4,790)	3,233	17	1,120	(420)
Other financial liabilities	(2,961)	—	(2,961)	—	—	2,961	—
Total financial liabilities	(7,751)	—	(7,751)	3,233	17	4,081	(420)

Derivative assets are recognised as 'Derivative financial instruments' in note 27(a), while fair value liabilities are recognised as 'Derivative liabilities' in note 53. £1,016 million *(2017: £902 million)* of derivative assets and £870 million *(2017: £976 million)* of derivative liabilities are not subject to master netting agreements and are therefore excluded from the table above.

Amounts receivable related to securities lending and reverse-repurchase arrangements totalling £1,923 million *(2017: £2,524 million)* are recognised within 'Loans to banks' in note 24.

Other financial liabilities presented above represent liabilities related to repurchase arrangements recognised within 'Obligations for repayment of cash collateral received' in note 53.

(b) Collateral

In the tables above, the amounts of assets or liabilities presented in the consolidated statement of financial position are offset first by financial instruments that have the right of offset under master netting or similar arrangements with any remaining amount reduced by the amount of cash and securities collateral. The actual amount of collateral may be greater than amounts presented in the tables above in the case of over collateralisation.

The total amount of collateral received which the Group is permitted to sell or repledge in the absence of default, excluding collateral related to balances recognised within 'Loans to banks' disclosed in note 24, was £19,504 million *(2017: £22,978 million)*, all of which other than £4,058 million *(2017: £4,780 million)* is related to securities lending arrangements. Collateral of £1,914 million *(2017: £2,697 million)* has been received related to balances recognised within 'Loans to banks' in note 24. The value of collateral that was actually sold or repledged in the absence of default was £nil *(2017: £nil)*.

The level of collateral held is monitored regularly, with further collateral obtained where this is considered necessary to manage the Group's risk exposure.

62 – Related party transactions

This note gives details of the transactions between Group companies and related parties which comprise our joint ventures, associates and staff pension schemes.

The Group undertakes transactions with related parties in the normal course of business. Loans to related parties are made on normal arm's-length commercial terms.

Services provided to, and by related parties

	2018				2017			
	Income earned in the year £m	**Expenses incurred in the year £m**	**Payable at year end £m**	**Receivable at year end £m**	Income earned in the year £m	Expenses incurred in the year £m	Payable at year end £m	Receivable at year end £m
Associates	**1**	**—**	**—**	**2**	4	(4)	—	—
Joint ventures	**49**	**—**	**(1)**	**2**	49	—	—	2
Employee pension schemes	**10**	**—**	**—**	**7**	12	—	—	14
	60	**—**	**(1)**	**11**	65	(4)	—	16

Transactions with joint ventures in the UK relate to the property management undertakings, the most material of which are listed in note 19(a)(iii). The Group has equity interests in these joint ventures, together with the provision of administration services and financial management to many of them. Our fund management companies also charge fees to these joint ventures for administration services and for arranging external finance.

Key management personnel of the Company may from time to time purchase insurance, savings, asset management or annuity products marketed by group companies on equivalent terms to those available to all employees of the Group. In 2018, other transactions with key management personnel were not deemed to be significant either by size or in the context of their individual financial positions.

Our UK fund management companies manage most of the assets held by the Group's main UK staff pension scheme, for which they charge fees based on the level of funds under management. The main UK scheme holds investments in Group-managed funds and insurance policies with other group companies, as explained in note 51(b)(ii). As at 31 December 2018, the Friends Provident Pension Scheme ('FPPS'), acquired in 2015 as part of the acquisition of the Friends Life business, held an insurance policy of £620 million *(2017: £630 million)* issued by a group company, which eliminates on consolidation.

The related parties' receivables are not secured and no guarantees were received in respect thereof. The receivables will be settled in accordance with normal credit terms.

Key management compensation

The total compensation to those employees classified as key management, being those having authority and responsibility for planning, directing and controlling the activities of the Group, including the executive and non-executive directors is as follows:

	2018 £m	2017 £m
Salary and other short-term benefits	**7.9**	12.5
Other long-term benefits	**8.6**	5.4
Post-employment benefits	**1.5**	1.5
Equity compensation plans	**10.5**	16.4
Termination benefits	**—**	0.4
Total	**28.5**	36.2

Information concerning individual directors' emoluments, interests and transactions is given in the Directors' Remuneration Report.

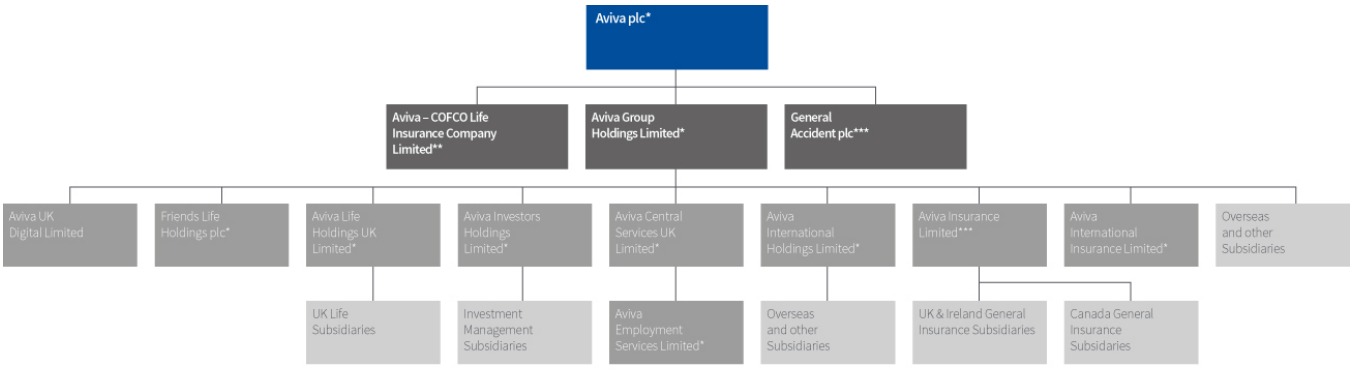
63 – Organisational structure

The following chart shows, in simplified form, the organisational structure of the Group as at 31 December 2018. Aviva plc is the holding company of the Group.

Parent company
Aviva plc

Subsidiaries
The principal subsidiaries of the Company at 31 December 2018 are listed below by country of incorporation.

A complete list of the Group's related undertakings comprising of subsidiaries, joint ventures, associates and other significant holdings is contained within note 64.



* Incorporated in England and Wales
** Incorporated in People's Republic of China.
*** Incorporated in Scotland

United Kingdom
Aviva Central Services UK Limited
Aviva Employment Services Limited
Aviva Equity Release UK Limited
Aviva Health UK Limited
Aviva Insurance Limited
Aviva International Insurance Limited
Aviva Investors Global Services Limited
Aviva Investors Pensions Limited
Aviva Investors UK Fund Services Limited
Aviva Life & Pensions UK Limited
Aviva Life Services UK Limited
Aviva Pension Trustees UK Limited
Aviva UK Digital Limited
Aviva Wrap UK Limited
Gresham Insurance Company Limited
The Ocean Marine Insurance Company Limited
Aviva Management Services UK Limited
Aviva Administration Limited
Friends Provident International Limited[1]

Barbados
Victoria Reinsurance Company Ltd

Bermuda
Aviva Re Limited

Canada
Aviva Canada Inc. and its principal subsidiaries:
- Aviva Insurance Company of Canada
- Aviva General Insurance Company
- Elite Insurance Company
- Pilot Insurance Company
- Scottish & York Insurance Co. Limited
- S&Y Insurance Company
- Traders General Insurance Company

France
Aviva France SA (99.99%) and its principal subsidiaries:
- Aviva Assurances SA (99.9%)
- Aviva Investors France SA (99.9%)
- Aviva Vie SA (99.9%)
- Aviva Epargne Retraite (99.9%)
- Aviva Retraite Professionnelle SA (99.9%)
- Union Financière de France Banque (Banking) (75%)

Ireland
Friends First Life Assurance Company DAC (Friends First)

1 See note 4(c) for further details in respect of operations classified as held for sale

63 – Organisational structure continued

Italy
Aviva Italia Holding S.p.A and its principal subsidiaries:
- Aviva S.p.A (51%)
- Aviva Italia S.p.A
- Aviva Life S.p.A
- Aviva Vita S.p.A (80%)

Lithuania
Uždaroji akcinė gyvybės draudimo ir pensijų bendrovė 'Aviva Lietuva' (90%)

Poland
Aviva Powszechne Towarzystwo Emerytalne Aviva Santander S.A. (81%)
Aviva Towarzystwo Ubezpieczen na Zycie S.A. (90%)
Aviva Towarzystwo Ubezpieczen Ogolnych S.A. (90%)
Santander Aviva Towarzystwo Ubezpieczeń S.A. (51%)
Santander Aviva Towarzystwo Ubezpieczeń na Życie S.A. (51%)

Singapore
Aviva Ltd

Vietnam
Aviva Vietnam Life Insurance Company Limited

Branches
The Group also operates through branches, the most significant of which is based in Ireland.

Associates and joint ventures
The Group has ongoing interests in the following operations that are classified as joint ventures or associates. Further details of those operations that were most significant in 2018 are set out in notes 19 and 20 to the financial statements.

United Kingdom
The Group has interests in several property limited partnerships. Further details are provided in notes 19, 20 and 26 to the financial statements.

China
Aviva-COFCO Life Insurance Company Ltd (50%)

Hong Kong
Aviva Life Insurance Company Limited (40%)

India
Aviva Life Insurance Company India Limited (49%)

Indonesia
PT Astra Aviva Life (50%)

Turkey
AvivaSA Emeklilik ve Hayat A.S (40%)

64 – Related Undertakings

The Companies Act 2006 requires disclosure of certain information about the Group's related undertakings which is set out in this note. Related undertakings comprise subsidiaries, joint ventures, associates and other significant holdings. Significant holdings are where the Group either has a shareholding greater than or equal to 20% of the nominal value of any share class, or a book value greater than 20% of the Group's assets.

The definition of a subsidiary undertaking in accordance with the Companies Act 2006 is different from the definition under IFRS. As a result, the related undertakings included within the list below may not be the same as the undertakings consolidated in the Group IFRS financial statements. See accounting policies (D) Consolidation principles for further detail on principles of consolidation and definition of joint ventures.

The Group's related undertakings along with the country of incorporation, the registered address, the classes of shares held and the effective percentage of equity owned at 31 December 2018 are disclosed below.

The direct related undertakings of the Company as at 31 December 2018 are listed below:

Name of undertaking	Country of incorporation	Registered address	Share class[1]	% held
Aviva-COFCO Life Insurance Company Ltd[2]	China	12/F,Block A,Landgent Centre, 20 East Third Ring Middle Road, Beijing, 100022	Ordinary shares	50
General Accident plc	United Kingdom	Pitheavlis, Perth, Perthshire, PH2 0NH	Ordinary shares	100
Aviva Group Holdings Limited	United Kingdom	St Helen's, 1 Undershaft, London, EC3P 3DQ	Ordinary shares	100

The indirect related undertakings of the Company as at 31 December 2018 are listed below:

Company name	Share Class[1]	% held
Barbados		
c/o USA Risk Group (Barbados) Ltd., 6th Floor, CGI Tower, Warrens, St. Michael, BB22026		
Victoria Reinsurance Company Ltd.	Common Shares	100
Belgium		
Avenue Louise 326, Boîte 30, 1050 Ixelles		
Parnasse Square Invest	Ordinary Shares	99
Bermuda		
Canon's Court, 22 Victoria Street, Hamilton, HM 12		
Aviva Re Limited	Ordinary Shares	100
Trinity Hall, 43 Cedar Avenue, Hamilton HM 12		
Lend Lease JEM Partners Fund Limited	Ordinary Shares	23
Canada		
10 Aviva Way, Suite 100, Markham On L6G 0G1		
9543864 Canada Inc.	Common Shares	100
Aviva Canada Inc.	Voting Interest	100
Aviva General Insurance Company	Common Shares	100
Aviva Insurance Company of Canada	Common Shares	100
Aviva Warranty Services Inc.	Common Shares	100
Elite Insurance Company	Common Shares	100
Insurance Agent Service Inc.	Common Shares	100
National Home Warranty Group Inc.	Common Shares	100
OIS Ontario Insurance Service Limited	Common Shares	100
Pilot Insurance Company	Common Shares	100
S&Y Insurance Company	Common Shares	100
Scottish & York Insurance Co. Limited	Common Shares	100
Traders General Insurance Company	Common Shares	100
Wayfarer Insurance Brokers Limited	Common Shares	100
100 King Street West, Suite 4900, Toronto On M5X 2A2		
Aviva Investors Canada Inc.	Common Shares	100
100, 10325 Bonaventure Drive S.E., Calgary T2J 7E4		
A-Win Insurance Ltd.	Ordinary Shares	100
328 Mill Street, Unit 11, Beaverton L0K 1A0		
Bay-Mill Specialty Insurance Adjusters Inc.	Common Shares	100
480 University Avenue, Suite 800, Toronto On M5G 1V2		
LMS Prolink Limited[2]	Common A Shares	34
555 Chabanel Ouest, Bureau 900, Montreal QC H2N 2H8		
Aviva Agency Services Inc.	Common A Shares	100
600 Cochrane Drive, Suite 205, Markham On L3R 5K3		
Westmount Guarantee Services Inc.	Common A Shares	33
Cayman Islands		
115 East 57th Street, Suite 1019,New York NY 10022		
Belmont Global Trend Fund Ltd	Mutual Fund	14
China		
Units 1805-1807, 18th Floor, Block H Office Building, Phoenix Land Plaza, No. A5 Yard, Shuguangxili, Chaoyang District, Beijing		
Aviva-Cofco Yi Li Asset Management Co Ltd[2]	Ordinary Shares	21
Czech Republic		
5/482, Ve Svahu, Prague 4, 14700		
AIEREF Renewable Energy s.r.o.	Ordinary Shares	99
France		
3 Boulevard Saint Martin		
Aviva Impact Investing France	Ordinary Shares	100
128 Boulevard Raspail, 75006, Paris		
UFF Oblicontext 2021-A (UFFo21A)	FCP	98
UFF Oblicontext 2023 A (UFFo23A)	FCP	98
UFF Obligations 3-5 A	FCP	88
13 Rue du Moulin Bailly, 92270, Bois Colombes		
11 Rue De L'Echelle	Ordinary Shares	100
Agents 3A	Ordinary Shares	50
Aviva Assurances, Société Anonyme d'Assurances Incendie, Accidents et Risques Divers	Ordinary Shares	100
13, Avenue Lebrun, 92188, Antony Cedex		
Pierrevenus	Ordinary Shares	74
14 Rue Roquépine, 75008, Paris		
AFER – SFER	Ordinary Shares	50
Aviva Convertibles	Ordinary Shares	86
Aviva Europe	Ordinary Shares	96
Aviva Developpement	Ordinary Shares	99
Aviva Diversifie	Ordinary Shares	95
Aviva Investors France	Ordinary Shares	99
Aviva Oblig International	Ordinary Shares	72
Aviva Oblirea	Ordinary Shares	85
Aviva Patrimoine	Ordinary Shares	92
Aviva Rendement Europe	Ordinary Shares	90
Aviva Valeurs Francaises	Ordinary Shares	83
Aviva Valeurs Immobilieres	Ordinary Shares	41
153, Boulevard Haussmann, 75008, Paris		
Selectus	FCP	96
17 Rue du Cirque, 75008, Paris		
Financiere Du Carrousel	Ordinary Shares	74
Infinitis	Ordinary Shares	74
20 Place Vendôme, 75001, Paris		
AXA Lbo Fund IV Feeder	Private Equity Fund	35
AXA UK Infrastructure Investment SAS	Ordinary Shares	100
Croissance Pme A C.	FCP	97
24 Rue de la Pépinière, 75008 Paris		
Aviva Investors Euro Crédit Bonds 1-3 HDR	FCP	39
Afer Actions Amerique Fcp	FCP	100
Afer Actions Euro A	FCP	100
Afer Actions Monde	FCP	100
Afer Convertibles C.	FCP	100
Afer Diversifie Durable	FCP	100
Afer Marches Emergents Fcp	FCP	100
Afer Multi Foncier	FCP	100
Afer Obl Md Ent C.	FCP	100

Company name	Share Class[1]	% held
Afer Patrimoine	FCP	100
Afer-Flore	FCP	98
Afer-Sfer	SICAV	100
Aviva Actions Croissance	FCP	100
Aviva Actions Euro	FCP	98
Aviva Actions Europe ISR	FCP	100
Aviva Actions France	FCP	79
Aviva Amerique	FCP	97
Aviva Asie	FCP	100
Aviva Convertibles	SICAV	98
Aviva Conviction Opportunites	FCP	100
Aviva Conviction Patrimoine	FCP	100
Aviva Developpement	SICAV	99
Aviva Diversifié	SICAV	94
Aviva Eur Corp Senior Debts	FCT	100
Aviva Europe	SICAV	96
Aviva Flexible (AVIFLEX)	FPS	100
Aviva Flexible Emergents A FCP	FCP	100
Aviva France Opportunites	FCP	83
Aviva Grdes Marq A C.	FCP	99
Aviva Interoblig	FCP	100
Aviva Investors Actions Euro	FCP	83
Aviva Investors Alpha Taux A	FCP	100
Aviva Investors Alpha Yield	FCP	92
Aviva Investors Britannia (D)	SICAV	98
Aviva Investors Conviction	FCP	100
Aviva Investors Euro Aggregate	FCP	76
Aviva Investors Euro Com R E D	FCP	100
Aviva Investors Euro Crédit Bonds 1-3	FCP	77
Aviva Investors Japan	FCP	95
Aviva Investors Portefeuille	FCP	100
Aviva Investors Reference Div	FCP	100
Aviva Investors Repo (avirepo)	FCP	100
Aviva Investors Selection	FCP	100
Aviva Investors Valeurs	FCP	100
Aviva Investors Valeurs Europe	FCP	74
Aviva Investors Yield Curve Abs Rt R	FCP	100
Aviva Monetaire Isr (A)	FCP	98
Aviva Multigestion	FCP	100
Aviva Oblig International	SICAV	90
Aviva Oblirea	SICAV	97
Aviva Patrimoine	SICAV	98
Aviva Performance	FCP	100
Aviva Rebond	FCP	88
Aviva Rendement Europe	SICAV	95
Aviva Selection Opportunites	FCP	99
Aviva Selection Patrimoine	FCP	100
Aviva Signatures Europe	FCP	100
Aviva Structure Index 1 C.	FCP	100
Aviva Structure Index 2	FCP	100
Aviva Structure Index 4 C.	FIPS	100
Aviva Structure Index3	FPS	100
Aviva Small & Mid Caps Euro ISR	FCP	100
Aviva Valeurs Francaises	SICAV	98
Aviva Valeurs Immobilieres	SICAV	79
Aviva Valorisation Opportunite	FCP	99
Aviva Valorisation Patrimoine	FCP	100
FPE Aviva Eur Corp Senior Db2	Mutual Fund	31
FPE Aviva Small & Midcap ASAM	FCP	100
UFF Cap Defensif	FCP	97
UFF Eu-Val 0-100 A C.	FCP	98
UFF Obligations 5-7 A	FCP	99
UFF Rendement Diversifie A	FCP	100
24-26 Rue De La Pépinière, 75008, Paris		
100 Courcelles	Ordinary Shares	100
AFER Immo	Ordinary Shares	100
AFER Immo 2	Ordinary Shares	100
Aviva Commerce Europe	Ordinary Shares	65
Aviva Immo Selection	Ordinary Shares	99
Aviva Investors Real Estate France S.A.	Ordinary Shares	100
Aviva Investors Real Estate France SGP	Ordinary Shares	100
Aviva Patrimoine Immobilier	Ordinary Shares	93
Logiprime Europe	Ordinary A Shares	98
Primotel Europe	Ordinary Shares	99
SCI La Coupole Des Halles	Ordinary Shares	98
SCI Pergola	Ordinary Shares	100
Société Civile Immobilière Thomas Edison	Ordinary Shares	50
Société Civile Immobilière Pleyel R2	Ordinary Shares	50
Sapphire Ile de France SCI	Ordinary Euro 1 Each Shares	100
Afer Avenir Senior	SICAV	100
Aviva Investors Commercial Real Estate Debt Fun	FCP	68
Aviva Investors Inflation Euro Hd	FCP	50

Company name	Share Class[1]	% held
Aviva Investors Monétaire	FCP	55
Aviva Investors Valorisation	FCP	100
Aviva Japan	FCP	100
Aviva Messine 5	FCP	100
Aviva Performance Divers.Fcp	FCP	100
Aviva Valeurs Responsable A	FCP	100
32, Avenue d'Iéna, 75116 Paris		
Aviva Capital Planete (Avicapa)	FCP	100
CGP Entrepreneurs	Ordinary Shares	74
Myria Asset Management	Ordinary Shares	74
UFF Selection Alpha-A (Ufselaa)	FCP	98
UFF Actions France-Aeur (UFFacfa)	FCP	99
UFF Allocation Optimum	FCP	99
UFF Cap Diversifie (UCAPDIV)	FCP	51
UFF Capital Planete A (Aviufcp)	FCP	98
UFF Croissance Pme A (Ucapcro)	FCP	100
UFF Emergence-A (UFFemga)	FCP	99
UFF Europe Opportunites-Aeur (UFFgeua)	FCP	99
UFF Euro Valeur A	FCP	100
UFF Global Allocation A	FCP	100
UFF Global Foncieres-A (Ufgf70A)	FCP	98
UFF Global Multi-Strategie-A (Ufglmsa)	FCP	99
UFF Global Obligations-A (Ufgf30A)	FCP	97
UFF Global Reactif-A (Ufgf10A)	FCP	95
UFF Liberty-A (UFFliba)	FCP	100
UFF Selection Premium A (Uavfran)	FCP	98
Ufifrance Gestion	Ordinary Shares	74
Ufifrance Patrimoine	Ordinary Shares	74
UFF Privilège A	FCP	29
Union Financière de France Banque	Ordinary Shares	74
36 Rue De Naples 75008 Paris		
Cybele Am – Bellatrix-C (THIPATC)	SICAV	78
Cybele Am Betelgeuse (BETGUSV)	SICAV	92
Ufifrance Immobilier	Ordinary Shares	20
37 Avenue des Champs Elysées, 75008, Paris		
Cybele Europe Israel Croissance (FRAISCR)	SICAV	85
Société Française de Gestion et d'Investissement	Ordinary B Shares	67
Sirius	SICAV	98
41 Rue Capitaine Guynemer, 92400, Courbevoie		
Logipierre 1	Ordinary Shares	44
47 Rue du Faubourg Saint-Honoré, 75008, Paris		
Aviva Selection (Edmasio)	FCP	100
CGU Equilibre	FCP	81
L'Antenne-U (Edmlanu)	FCP	97
UFF Global Convertibles A	FCP	99
53 Avenue d'Iéna		
UFF Valeurs Pme-A (Fintrma)	FCP	98
62 Rue du Faubourg Saint-Honoré, 75008, Paris		
Diapason 1	FCP	84
7 Rue Auber, 75009, Paris		
Vip Conseils	Ordinary Shares	34
70 Avenue De L'Europe, 92270 Bois-Colombes		
Aviva Epargne Retraite	Ordinary Shares	100
Aviva France Ventures	Ordinary Shares	100
Aviva Investissements	Ordinary Shares	100
Aviva Retraite Professionnelle	Ordinary Shares	100
Aviva Vie, Société Anonyme d'Assurances Vie et de Capitalisation	Ordinary Shares	100
Epargne Actuelle	Ordinary Shares	100
Newco 3	Ordinary Shares	100
Newco 5	Ordinary Shares	100
Société Civile Immobilière Carpe Diem	Ordinary Shares	50
Societe Civile Immobiliere Charles Hermite	Ordinary Shares	56
Societe Civile Immobiliere Montaigne	Ordinary Shares	92
Zelmis	Ordinary Shares	100
80 Avenue De L'Europe, 92270 Bois-Colombes		
Aviva France	Ordinary Shares	100
Aviva Solutions	Ordinary Shares	100
Croissance Pierre II	Ordinary Shares	100
Groupement D'Interet Economique du Groupe Aviva France	Ordinary Shares	100
Locamat SAS	Ordinary Shares	100
Newco	Ordinary Shares	100
SCI Pesaro	Ordinary Shares	79
Selectinvie – Societe Civile Immobiliere	Ordinary Shares	100
Selectipierre – Société Civile	Ordinary Shares	94
Societe Concessionaire des Immeubles de la Pepiniere	Ordinary Shares	100
Victoire Immo 1- Société Civile	Ordinary Shares	100
Voltaire S.A.S	Ordinary Shares	100
90 Boulevard Pasteur, 75015, Paris		
Aviva Actions S2 C.	FCP	100

Company name	Share Class[1]	% held
Aviva Couv Actions C.	FCP	100
91-93 Boulevard Pasteur, 75015, Paris		
SCI Campus Medicis St Denis	Ordinary Shares	30
SCI Campus Rimbaud St Denis	Ordinary Shares	30
Tour Majunga – La Défense 9, 6 place de la Pyramide		
AXA Premiere Categorie	SICAV	85
9 Rue Newton, 75116 Paris		
Pretons Ensemble	FPS	50
14 Rue Bergère, 75009 Paris		
Afer Actions PME	FCP	100
Aviva Perspective 2021-2025	FCP	100
Aviva Perspective 2026-2030	FCP	100
Aviva Perspective 2031-2035	FCP	100
Aviva Perspective 2036-2040	FCP	100
24 Rue de la Pépinière, 75008 Paris		
Aviva Valeurs Responsables	FCP	100
3 Rue Alexandre Fleming France 92260		
Kroknet S. a. r. l.	Ordinary Shares	90
Germany		
c/o Wswp Weinert GmbH, Theatinerstr. 31, 80333, Munich		
FPB Holdings GmbH	Series A Shares, Series B Shares	100
Eschenheimer Anlage 1, 60316, Frankfurt		
Reschop Carré Hattingen GmbH	Ordinary Shares	95
Reschop Carré Marketing GmbH	Ordinary Shares	100
Max-Planck-Strasse, 3,85609 Aschheim-Dornach		
ASF German Retail GmbH & Co. KG	Ordinary Shares	98
German Retail Investment Properties Sarl	Ordinary Shares	98
German Retail I GmbH	Ordinary Shares	98
German Retail II GmbH	Ordinary Shares	98
German Retail IV GmbH	Ordinary Shares	98
German Retail IX GmbH	Ordinary Shares	98
German Retail V GmbH	Ordinary Shares	98
German Retail VII GmbH	Ordinary Shares	98
German Retail VIII GmbH	Ordinary Shares	98
Speditionstraße 23, 40221 Düsseldorf		
Projektgesellschaft Hafenspitze mbH	Ordinary Shares	94
Guernsey		
Dorey Court Admiral Park, St Peter Port, Guernsey, GY1 2HT		
First Meridian Cautious Balanced Fund GBP	OEIC	29
First Meridian Cautious Balanced Fund USD	OEIC	20
The Fincrest Global Equity Fund	OEIC	23
PO Box 255, Trafalgar Court, Les Banques, St. Peter Port, GY1 3QL		
AXA Property Trust Ltd	OEIC	28
F&C Commercial Property Trust Limited	OEIC	47
St Martin's House, Le Bordage, St Peter Port		
Paragon Insurance Company Guernsey Limited	Ordinary Shares	47
80 George Street,		
F&C Commercial Property Trust Ltd	Closed Ended Investment Company	20
Hong Kong		
21st Floor, Chater House, 8 Connaught Road Central		
JPMorgan Indonesia Fund	Unit Trust	25
30/F, One Kowloon, 1 Wang Yuen Street, Kowloon Bay, Hong Kong		
Aviva Life Insurance Company Limited	Ordinary Shares	40
India		
2nd Floor, Prakash Deep Building 7, Tolstoy Marg, New Delhi, Delhi, 110001		
CGU Project Services Private Limited	Rs.10 Shares	100
Aviva Life Insurance Company India Limited[2]	Ordinary Shares	49
A-47 (L.G.F), Hauz Khas, New Delhi, Delhi		
Sesame Group India Private Limited	Ordinary Shares	100
Pune Office Addresses 103/P3, Pentagon, Magarpatta City, Hadapsar, Pune – 411013		
A.G.S. Customer Services (India) Private Limited	Ordinary Shares	100
Indonesia		
Pondok Indah Office Tower 3, 1st Floor, Jl. Sultan Iskandar Muda Kav. V-TA, Pondok Indah, Jakarta Selatan, Jakarta, 12310		
PT Astra Aviva Life[2]	Ordinary Shares	50
Ireland		
25/28 North Wall Quay, Dublin		
CGWM Select Affinity Fund	OEIC	23
CGWM Select Global Affinity Fund	OEIC	60
CGWM Select Global Diversity Fund	OEIC	39
CGWM Select Global Opportunity Fund	OEIC	51
CGWM Select Opportunity Fund	OEIC	42
Anna Livia Properties Limited	Ordinary Shares	100
Aviva Investors Euro Liquidity Fund	ICVC	81
Aviva Investors Sterling Government Liquidity Fund	ICVC	98
Aviva Investors Sterling Liquidity Fund	ICVC	78
Aviva Investors Sterling Liquidity Plus Fund	ICVC	78
Central Quey, Riverside IV4, Sir John Rogerson's Quey, Dublin 2		
BMO Multi-Strategy Global Equity Fund	OEICS	93
Georges Court, 54-62 Townsend Street, Dublin 2		
FPPE Fund Public Limited Company	Shares Of No Par Value Shares, 1 Subscriber Euro €1 Shares	100
FPPE – Private Equity	Private Equity	100
Guild House, Guild Street, IFRS, Dublin 1		
Aviva Irl Merrion Exempt Trust – Managed Fund	Unit Trust	37
One Park Place, Hatch Street, Dublin 2		
Area Life International Assurance dac	A Shares, B Shares	100
Aviva Direct Ireland Limited	Ordinary Shares	100
Aviva Driving School Ireland Limited	Ordinary Shares	100
Aviva Group Ireland Limited	Ordinary Shares	100
Aviva Group Services Ireland Limited	Ordinary Shares	92
Aviva Insurance Ireland Designated Activity Company	Ordinary Shares	100
Aviva Life Services Ireland Limited	Ordinary Shares	92
Aviva Trustee Company Ireland Designated Activity Company	Ordinary Shares	92
Aviva Undershaft Four Limited	Ordinary Shares	100
Peak Re Designated Activity Company	Ordinary Shares	100
Charlotte House, Charlemont St		
Mercer Diversified Retirement Fund	OEIC	22
3rd Floor, 2 Harbourmaster Place, IFSC		
KBI Institutional Fund ICAV – KBI Institutional Eurozone Equity Fund	OEIC	43
Behan House 10 Mount Street Lower Dublin 2 Ireland		
CALM Eurozone Equity Sub Fund	OEIC	91
AG10 Currency Fund	OEIC	93
78 Sir John Rogersons Quay Dublin 2 Ireland		
State Street IUT Balanced Fund S30	Unit Trust	30
SSgA GRU Euro Index Equity Fund	Unit Trust	47
One Coleman Street, London EC2R 5AA, United Kingdom		
Legal & General ICAV – L&G World Equity Index Fund	OEIC	39
Legal & General ICAV – L&G Multi-Index EUR V Fund	OEIC	95
Legal & General ICAV – L&G Multi-Index EUR IV Fund	OEIC	100
Legal & General ICAV – L&G Multi-Index EUR III Fund	OEIC	100
Friends First House Cherrywood Science & Technology Park Loughlinstown Co. Dublin Ireland		
Ashtown Management Company Limited	Ordinary Shares	50
Atrium Nominees Limited	Ordinary Shares	100
Friends First Life Assurance Company DAC (Friends First)	Ordinary Shares	100
Friends First Life Assurance Company Designated Activity Company	Ordinary Shares-A Ordinary Shares-B	100
Friends First Managed Pensions Funds Designated Activity Company	Ordinary Shares	100
Friends First US Property Company Limited	Ordinary Shares	100
Isle of Man		
Royal Court, Castletown, IM9 1RA		
Friends Provident International Limited	Ordinary B Shares, Ordinary Shares	100
Friends Provident International Services Limited	Ordinary Shares	100
Italy		
Piazzetta Guastalla 1, 20122, Milan		
Banca Network Investimenti SPA	Ordinary Shares	25
Via Scarsellini 14, 20161, Milan		
Aviva Italia Holding S.p.A	Ordinary Shares	100
Aviva Italia S.p.A	Ordinary Shares	100
Aviva Italia Servizi Scarl	Ordinary Shares	36
Aviva Life SPA	Ordinary Shares	100
Aviva SPA	Ordinary Shares	51

Company name	Share Class[1]	% held
Aviva Vita S.p.A	Ordinary Shares	80
Petunia Spa	Ordinary A Shares	51
Milano, Piazza Lina Bo Bardi n. 3		
Aviva Immobiliare	Real Estate Fund	100
Jersey		
19-21 Broad Street, St Helier, JE1 3PB		
11-12 Hanover Square UT[2]	Unit Trust	50
130 Fenchurch Street UT[2]	Unit Trust	50
30 Warwick Street UT[2]	Unit Trust	50
30-31 Golden Square UT[2]	Unit Trust	50
Aviva Investors Jersey Unit Trusts Management Limited	Ordinary Shares	100
Barratt House UT[2]	Unit Trust	50
Chancery House London UT[2]	Unit Trust	50
Irongate House UT[2]	Unit Trust	50
New Broad Street House UT[2]	Unit Trust	50
Pegasus House and Nuffield House UT[2]	Unit Trust	50
W Nine UT[2]	Unit Trust	50
3rd Floor Walker House, 28-34 Hill Street, St Helier, JE4 8PN		
1 Fitzroy Place Jersey Unit Trust[2]	Unit Trust	50
2 Fitzroy Place Jersey Unit Trust[2]	Unit Trust	50
Le Masurier House, La Rue Le Masurier, St Helier, JE2 4YE		
Yatra – (Saffron)	Ordinary Shares	27
Lime Grove House , Green Street, St Helier, JE1 2ST		
20 Gracechurch Unit Trust	Unit Trust	100
COW Real Estate Investment Unit Trust	Unit Trust	100
Designer Retail Outlet Centres (Mansfield) Unit Trust	Unit Trust	97
Designer Retail Outlet Centres (York) Unit Trust	Unit Trust	97
Designer Retail Outlet Centres Unit Trust	Unit Trust	97
Quantum Property Unit Trust[2]	Unit Trust	50
Serviced Offices UK Unit Trust[2]	Unit Trust	50
Southgate Unit Trust	Unit Trust	50
3rd Floor, One The Esplanade, Jersey, JE2 3QA		
Crieff Road Limited	Ordinary Shares	100
FF UK Select Limited	Ordinary Shares	100
Lithuania		
Lvovo g. 25, Vilnius, LT-09320		
Uždaroji akcinė gyvybės draudimo ir pensijų bendrovė "Aviva Lietuva" (Joint Stock Limited Life Insurance and Pension Company Aviva Lietuva)	Ordinary Shares	90
Luxembourg		
10 Rue du Fort Bourbon, L-1249		
VH German Mandate	Ordinary Shares	100
11 Rue du Fort Bourbon, L-1249		
Centaurus Sarl	Ordinary Shares	100
14 Rue du Fort Bourbon, L-1249		
Aviva Investors European Renewable Energy S.A.	Ordinary Shares	100
15 Rue du Fort Bourbon, L-1249		
Aviva Investors European Secondary Infrastructure Credit SV S.A	Ordinary Shares	67
16 Avenue de la Gare, 1610		
Aviva Investors Luxembourg Services S.à r.l.	Ordinary Shares	100
Aviva Investors Polish Retail S.à r.l.	Ordinary Shares	100
16 Rue Jean-Pierre Brasseur, L-1258		
VAM Funds (Lux) – International Real Estate Equity Fund	SICAV	33
VAM Managed Funds (Lux) – Close Brothers Growth Fund	SICAV	20
19 Rue du Fort Bourbon, L-1249		
Lend Lease Retail Partners	Ordinary Shares	26
1c Rue Gabriel Lippmann		
Patriarch Classic B&W Global Freestyle	FCP	31
2 Boulevard de la Foire, L-1528		
Pramerica Pan-European Real Estate Fund	Ordinary Shares	76
2 Rue de Bitbourg, L-1273		
Henderson Horizon – European Growth Fund	SICAV	32
2 Rue du Fort Bourbon, L-1249		
AFRP S.à r.l.	Ordinary Shares	100
AIEREF Holding 1 S.a.r.l	Equity Shares	44
AIEREF Holding 2 S.a.r.l	Equity Shares	100
Aviva Investors Alternative Income Solutions General Partner S.à r.l.	Ordinary Shares	100
Aviva Investors Alternative Income Solutions Limited Partnership	Limited Partnership	55
Aviva Investors Asian Equity Income Fund	SICAV	99
Aviva Investors CELLs Danone Sarl	SICAV	100
Aviva Investors Investment Solutions Emerging Markets Debt Fund	SICAV	100
Aviva Investors Cells (GP) S.à r.l.	Ordinary Shares	100

Company name	Share Class[1]	% held
Aviva Investors CELLS Holding Sarl	Ordinary Shares	100
Aviva Investors CELLS SCSp	Limited Partnership	100
Aviva Investors CELLS Stern Sarl	Ordinary Shares	100
Aviva Infrastructure Debt Europe I S.A	SICAV	100
Aviva Investors EBC S.à r.l.	Ordinary Shares	100
Aviva Investors Emerging Markets Bond Fund	SICAV	89
Aviva Investors Emerging Markets Corporate Bond Fund	SICAV	66
Aviva Investors Emerging Markets Equity Income Fund	SICAV	98
Aviva Investors Emerging Markets Equity Small Cap Fund	SICAV	89
Aviva Investors Emerging Markets Local Currency Bond Fund	SICAV	91
Aviva Investors European Corporate Bond Fund	SICAV	65
Aviva Investors European Equity Fund	SICAV	62
Aviva Investors European Equity Income Fund	SICAV	100
Aviva Investors European Infrastructure Debt Str	FIAR	22
Aviva Investors European Real Estate Securities Fund	SICAV	67
Aviva Investors Global Aggregate Bond Fund	SICAV	95
Aviva Investors Global Investment Grade Corporate Bond Fund	SICAV	97
Aviva Investors Global Convertibles Absolute Return Fund	SICAV	81
Aviva Investors Global Convertibles Fund	SICAV	39
Aviva Investors Global Emerging Markets Index Fund	SICAV	100
Aviva Investors Global Equity Endurance Fund	SICAV	100
Aviva Investors Global High Yield Bond Fund	SICAV	69
Aviva Investors Luxembourg	Nominal Par Value Shares	100
Aviva Investors Multi-Strategy Fixed Income Fund	SICAV	70
Aviva Investors Short Duration Global High Yield Bond Fund	SICAV	45
Aviva Investors UK Equity Focus Fund	SICAV	91
Aviva Investors US Equity Income Fund	SICAV	70
Centaurus CER (Aviva Investors) Sarl	Ordinary Shares	100
Hexagone S.à r.l.	Ordinary Shares	100
Sapphire Ile de France 1 S.à.r.l.	Ordinary Shares	100
Sapphire Ile de France 2 S.à r.l.	Ordinary Shares	100
Victor Hugo 1 S.à r.l.	Ordinary Each Eur 25 Shares	100
3 Rue des Labours, L-1912		
Haspa Trendkonzept	FCP	40
42 Rue de la Vallée, L-2661		
World Investment Opportunities Funds – China Performance Fund	SICAV	36
47 Avenue John F Kennedy		
Goodman European Business Park Fund (Lux) S.àr.l.	Ordinary Shares	100
49 Avenue J.F. Kennedy, L-1855		
AXA World Funds II – North American Equities	SICAV	20
BMO Global Equity Market Neutral V10 Fund	SICAV	52
BMO Global Total Return Bond Fund	SICAV	66
6 Rue du Fort Bourbon, L-1249		
German Retail Associate Property Fund FCP-SIF	FCP	98
German Retail III GmbH	Ordinary Shares	98
Sachsenfonds GmbH	Ordinary Shares	98
9 Rue du Fort Bourbon, L-1249		
EPI NU Sarl	Ordinary Shares	100
Boulevard Konrad Adenauer		
Deutsche European Property Fund	Ordinary Shares	20
Xtrackers II Eurozone Government Bond 15-30 UCITS ETF	SICAV	36
c/o CACEIS BANK Lux, 5, Allée Scheffer, L-2520		
PI EMU EQUITY-XEURND (PIEMUXE)	OEIC	22
Tikehau Italy Retail Fund Ii Scsp-Area12	FCP	31
28-32, Place de la Gare, L-1616 Luxembourg		
Ver Capital Credit Partners IV SICAV – SIF	SICAV	22
Ver Capital Credit VI – Sub Fund A	SICAV	43
Ver Capital Credit VI – Sub Fund B	SICAV	43
Jupiter Asset Management Ltd., 70 Victoria Street, The Zig Zag Building		
Jupiter Global Fund – Jupiter Global Financials	SICAV	21
Jupiter Global Fund – Jupiter New Europe	SICAV	55
2c, rue Albert Borschette, L-1246, Luxembourg Grand Duchy of Luxembourg		
AQR Systematic Total Return Fund II	SICAV	41
47 Avenue John F. Kennedy Luxembourg L – 1855		
Centaurus CER (Aviva Investors) Sarl	Ordinary Shares	100

Company name	Share Class[1]	% held
Malta		
184 St. Lucia Street, Valletta, VLT 1189		
Herakles	SICAV	60
Mauritius		
4th Floor, Raffles Tower, 19 Cybercity, Ebene		
Reliance Emergent India Fund	OEIC	88
Les Cascades, Edith Cavell Street, Port Louis		
Actis China Investment Company Limited	Us$ A Shares	50
Norway		
Tollbugate 27,0157 Oslo		
Aviva Investors CELLs Norway Holding AS	Cells Fund	100
Aviva Investors CELLs Norway AS	Cells Fund	100
Kongsgard Alle 20 AS	Cells Fund	100
Poland		
Al. Jana Pawła II 25, 00-854 , Warszawa		
Focus Park Piotrków Trybunalski sp.z o.o	Ordinary Shares	100
Focus Mall Zielona Gora Sp. Z o.o.	Ordinary Shares	100
Lodz BC Sp. z o.o	Ordinary Shares	100
Wroclaw BC sp. z.o.o	Ordinary Shares	100
Inflancka 4b, 00-189 Warszawa		
Aviva Investors FIO Aktywnej Alokacji	UCITS	24
Aviva Investors Fio Depozyt Plus	UCITS	38
Aviva Investors Fio Nowoczesnych Technologii	UCITS	72
Aviva Investors Fio Nowych Spolek	UCITS	86
Aviva Investors Fio Obligacji	UCITS	78
Aviva Investors Fio Polskich Akcji	UCITS	56
Aviva Investors FIO Subfundusz Aviva Investors Obligacji Dynamiczny	UCITS	22
Aviva Investors Sfio Akcyjny	Non UCITS	100
Aviva Investors Sfio Aviva Lokacyjny	Non UCITS	71
Aviva Investors Sfio Dluzny	Non UCITS	100
Aviva Investors Sfio Pap Nieskarbowych	Non UCITS	99
Aviva Investors Sfio Pieniezny	Non UCITS	100
Aviva Investors Sfio Spolek Dywidend	Non UCITS	100
Aviva Sfio Subfundusz Aviva Oszczędnościowy	Non UCITS	70
Aviva Investors Fio Malych Spolek	UCITS	69
Ul. Burakowska 5/7, 01-066 , Warszawa		
Berkley Investments S.A.	Ordinary A Shares	90
Porowneo.Pl Sp. Z O.O	Ordinary Shares	90
Ul. Prosta 69, 00-838 Warsaw, 00-838, Warsaw		
AdRate Sp. z o.o.	Ordinary Shares	90
Expander Advisors Sp. z o.o.	Ordinary Shares	90
Life Plus Sp. z o.o.	Ordinary Shares	90
Ul.Inflancka 4B, 00-189, Warsaw		
Aviva Investors Poland Towarzystwo Funduszy Inwestycyjnych S.A.	Ordinary D shares	95
Aviva Powszechne Towarzystwo Emerytalne Aviva Santander S.A.	Ordianry A Shares	81
Aviva Services Spółka z ograniczoną odpowiedzialnością	Ordinary 1,000 Pln Shares	100
Aviva Spółka z ograniczoną odpowiedzialnością	Ordinary Shares	90
Aviva Towarzystwo Ubezpieczen Na Zycie S.A.	Parent Interest	90
Aviva Towarzystwo Ubezpieczen Ogolnych S.A.	Ordinary Shares	90
Santander Aviva Towarzystwo Ubezpieczeń na Życie Spółka Akcyjna	Series A Ordinary	51
Santander Towarzystwo Ubezpieczeń Spółka Akcyjna	Series B Ordinary Ordinary Shares	51
Saudi Arabia		
Riyad Capital, 6775 Takhassusi Street – Olaya, Riyadh 12331 – 3712		
Al Hadi Sharia Compliant Fund	Mutual Fund	83
Al Mokdam Sharia Compliant Fund	Mutual Fund	77
Al Shamekh Fund	Mutual Fund	70
Al Shuja'a Sharia Compliant Fund	Mutual Fund	77
Singapore		
12 Marina View, #18-02 Asia Square Tower 2, 018961		
Nikko AM Shenton Asia Pacific Fund	Unit Trust	65
Nikko AM Shenton Income Fund	Unit Trust	65
Nikko AM Shenton Global Green Bond Fund	Unit Trust	53
4 Shenton Way, #01-01 SGX Centre 2, Singapore, 068807		
Aviva Ltd	Ordinary Shares	100
Navigator Investment Services Limited	Ordinary Shares	100
6 Shenton Way, #09-08, OUE Downtown, 068809		
Professional Advisory Holdings Ltd.	Ordinary A Shares	92
Professional Investment Advisory Services Pte Ltd	Ordinary A Shares	92
6 Temasek Boulevard, #29-00, Suntec Tower 4, 038986		
Aviva Asia Digital Pte. Ltd.	Ordinary Shares	100
Aviva Asia Pte Ltd	Ordinary Shares	100
Aviva Financial Advisers Pte. Ltd	Ordinary Shares	100
Aviva Global Services (Management Services) Private Ltd.	Ordinary Shares	100
Spain		
Avda Andalucia, 10-12, Malaga		
Ahorro Andaluz, S.A	Ordinary Shares	46
Avda de Bruselas – Numero 13, Edificio, America, Piso 1, Puerta d,Alcobendas 28-Madrid		
Eólica Almatret S.L.	Ordinary Shares	45
Nanclares de Oca, numero 1-B Spain 28022		
San Ramon Hoteles	Ordinary Shares	100
Todo Real Est Investments	Ordinary Shares	100
Switzerland		
Stockerstrasse, 38 8002 , Zurich		
Aviva Investors Schweiz GmbH	Interest Shares	100
Turkey		
Saray Mah., Adnan Büyüjdeniz Cad. No:12 34768 Umraniye, Istanbul		
AvivaSA Emeklilik ve Hayat A.S[2]	Ordinary Shares	40
United Kingdom		
1 Dorset Street, Southampton, Hampshire, SO15 2DP		
Building a Future (Newham Schools) Limited	Ordinary Shares	100
Mill NU Properties Limited	Ordinary A Shares	100
NU Developments (Brighton) Limited	Ordinary Shares	100
NU Local Care Centres (Bradford) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.1) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.2) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.3) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.4) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.5) Limited	Ordinary Shares	100
NU Local Care Centres (Chichester No.6) Limited	Ordinary Shares	100
NU Local Care Centres (Farnham) Limited	Ordinary Shares	100
Centrium 1, Griffiths Way St Albans, United Kingdom, AL1 2RD		
Opal (UK) Holdings Limited	Ordinary Shares	29
Opal Information Systems Limited	Ordinary Shares	29
Outsourced Professional Administration Limited	Ordinary Shares	29
Synergy Financial Products Limited	Ordinary Shares	29
29 Queen Anne's Gate, London SW1H 9BU		
CF Bentley Global Growth	OEIC	29
30 Finsbury Square, London, EC2P 2YU		
Defined Returns Limited	Ordinary Shares	57
Invesco Emerging Markets Equity Fund	Unit Trust	25
Invesco Global Health Care Fund	Unit Trust	35
Invesco Funds Series – Invesco UK Equity Fund	Unit Trust	27
NDF Administration Limited	Ordinary Shares, Non Voting B Shares	67
United Kingdom Temperance and General Provident Institution	Company Limited by Guarantee	100
42 Dingwall Road, Croydon, Surrey, CR0 2NE		
Ballard Investment Company Limited	Ordinary Shares	25
Health & Case Management Limited	Ordinary Shares, Preference Shares	25
43-45 Portman Square, London, W1H 6LY		
Quantum Property Partnership (General Partner) Limited[2]	Ordinary Shares	50
Quantum Property Partnership (Nominee) Limited[2]	Ordinary Shares	50
4th Floor, New London House, 6 London Street, London, EC3R 7LP		
Polaris U.K. Limited	Ordinary Shares	39
5 Lister Hill, Horsforth, Leeds, LS18 5AZ		
Aspire Financial Management Limited	Ordinary Shares	47
Living in Retirement Limited	Ordinary Shares	47
Sinfonia Asset Management Limited	Ordinary Shares	47
Tenet Business Solutions Limited	Ordinary Shares	47
Tenet Client Services Limited	Ordinary Shares	47
Tenet Financial Services Limited	A Ordinary Redeemable Ordinary Shares	37
Tenet Group Limited	Ordinary B Shares	47
Tenet Limited	Ordinary Shares	47
Tenet Platform Services Limited	Ordinary A Shares	47
TenetConnect Limited	Ordinary Shares	47
TenetConnect Services Limited	Ordinary Shares	47
TenetFinancial Solutions Limited	Ordinary Shares	47
TenetLime Limited	Ordinary Shares	47
TenetSelect Limited	Ordinary Shares	47
5 Old Broad Street, London EC2N 1A		
Architas Multi-Manager Diversified Protector 70	OEIC	48

Company name	Share Class[1]	% held
Architas Multi-Manager Diversified Protector 80	OEIC	35
50 Stratton Street, London, W1J 8LL		
Lazard Multicap UK Income Fund	OEIC	49
7 Lochside View, Edinburgh, EH12 9DH		
Origo Services Limited	Ordinary Shares	22
7 Newgate Street, EC1A 7NX		
AXA Ethical Distribution Fund	OEIC	32
AXA Rosenberg American	OEIC	83
AXA Rosenberg Asia Pacific Ex Japan	OEIC	93
AXA Rosenberg Global	OEIC	86
AXA Rosenberg Japan	OEIC	93
8 Surrey Street, Norwich, Norfolk, NR1 3NG		
Aviva Central Services UK Limited	Ordinary Shares	100
Aviva Consumer Products UK Limited	Ordinary Shares	100
Aviva Health UK Limited	Ordinary Shares	100
Aviva Insurance UK Limited	Ordinary Shares	100
Aviva UKGI Investments Limited	Ordinary Shares	100
Gresham Insurance Company Limited	Ordinary Shares	100
Healthcare Purchasing Alliance Limited[2]	Ordinary A Shares	50
London and Edinburgh Insurance Company Limited	Ordinary Shares	100
RAC Pension Trustees Limited	Ordinary Shares	100
Solus (London) Limited	Ordinary Shares	100
Synergy Sunrise (Broadlands) Limited	Ordinary Shares	100
Argyll House, All Saints Passage, London, SW18 1EP		
Freetricity Southeast Limited	Ordinary Shares	100
c/o Anesco Limited, The Green Easter Park, Benyon Road , Reading, RG7 2PQ		
Homesun 2 Limited	Ordinary Shares	100
Homesun 3 Limited	Ordinary Shares	100
Homesun 4 Limited	Ordinary Shares	100
Homesun 5 Limited	Ordinary Shares	100
Homesun Limited	Ordinary Shares	100
c/o James Fletcher, Mainstay, Whittington Hall, Whittington Road, Worcester, WR5 2ZX		
Aviva Investors GR SPV 1 Limited	Ordinary Shares	100
Aviva Investors GR SPV 2 Limited	Ordinary Shares	100
Aviva Investors GR SPV 3 Limited	Ordinary Shares	100
Aviva Investors GR SPV 4 Limited	Ordinary Shares	100
Aviva Investors GR SPV 5 Limited	Ordinary Shares	100
Aviva Investors GR SPV 6 Limited	Ordinary Shares	100
Aviva Investors GR SPV 7 Limited	Ordinary Shares	100
Aviva Investors GR SPV 8 Limited	Ordinary Shares	100
Aviva Investors GR SPV 9 Limited	Ordinary Shares	100
Aviva Investors GR SPV 10 Limited	Ordinary Shares	100
Aviva Investors GR SPV 11 Limited	Ordinary Shares	100
Aviva Investors GR SPV 12 Limited	Ordinary Shares	100
Aviva Investors GR SPV 13 Limited	Ordinary Shares	100
Aviva Investors GR SPV 14 Limited	Ordinary Shares	100
Aviva Investors GR SPV 15 Limited	Ordinary Shares	100
Aviva Investors GR SPV 16 Limited	Ordinary Shares	100
Aviva Investors GR SPV 17 Limited	Ordinary Shares	100
East Farmhouse, Cams Hall Estate, Fareham, PO16 8UT		
IQUO Limited	Ordinary A Shares	67
Exchange House, Primrose Street, EC2A 2HS		
BMO European Growth & Income Fund	SICAV	79
BMO MM Navigator Balanced Fund	OEIC	20
F&C European Capital Partners	Private Equity	30
Nations House, 3rd Floor, 103 Wigmore Street, London, W1U 1WH		
Cannock Designer Outlet (GP Holdings) Limited	Ordinary Shares	100
Cannock Designer Outlet (GP) Limited	Ordinary Shares	100
Cannock Designer Outlet (Nominee 1) Limited	Ordinary Shares	100
Cannock Designer Outlet (Nominee 2) Limited	Ordinary Shares	100
Pitheavlis, Perth, Perthshire, PH2 0NH		
Aviva (Peak No.1) UK Limited	Ordinary Shares	100
Aviva Insurance Limited	Ordinary Shares	100
Aviva Investors (FP) Limited	Ordinary Shares	100
Aviva Investors (GP) Scotland Limited	Ordinary Shares	100
Pixham End, Dorking, Surrey, RH4 1QA		
Aviva Administration Limited	Ordinary Shares	100
Aviva Investment Solutions UK Limited	Ordinary Shares	100
Aviva Management Services UK Limited	Ordinary Shares	100
Bankhall Support Services Limited	Ordinary Shares	100
DBS Financial Management Limited	Ordinary Shares	100
DBS Management Limited	Ordinary Shares	100
Friends AEL Trustees Limited	Ordinary Shares	100
Friends AELLAS Limited	Ordinary Shares	100
Friends AELRIS Limited	£1 Stock Shares	100
Friends Life and Pensions Limited	Ordinary Shares	100
Friends Life Assurance Society Limited	Ordinary Shares	100

Company name	Share Class[1]	% held
Friends Life Company Limited	Ordinary Shares	100
Friends Life Distribution Limited	Ordinary Shares	100
Friends Life FPG Limited	Ordinary Shares	100
Friends Life FPL Limited	Ordinary Shares	100
Friends Life FPLMA Limited	Ordinary Shares	100
Friends Life Holdings plc	Ordinary Shares	100
Friends Life Limited	Ordinary Shares	100
Friends Life WL Limited	Ordinary Shares	100
Friends Provident Distribution Holdings Limited	Ordinary Shares	100
Friends Provident Investment Holdings Limited	Ordinary A Shares	100
Friends Provident Life Assurance Limited	Ordinary Shares	100
Friends Provident Managed Pension Funds Limited	Ordinary Shares	100
Friends SL Nominees Limited	Ordinary Shares	100
Friends SLUA Limited	Ordinary Shares	100
Gateway Specialist Advice Services Limited	Ordinary Shares	100
Hengrove Park Bristol (Phase I) Management Company Limited	Ordinary Shares	100
London and Manchester Group Limited	Ordinary Shares	100
Premier Mortgage Service Limited	Ordinary Shares	100
SB Loan Administration Limited	Ordinary Shares	100
Sesame Bankhall Group Limited	Ordinary Shares	100
Sesame Bankhall Valuation Services Limited	Ordinary A Shares	75
Sesame General Insurance Services Limited	Ordinary Shares	100
Sesame Limited	Ordinary Shares	100
Sesame Regulatory Services Limited	Ordinary Shares	100
Sesame Services Limited	Ordinary A Shares	100
Suntrust Limited	Ordinary Shares	100
Undershaft FAL Limited	Ordinary Shares	100
Undershaft FPLLA Limited	Ordinary Shares	100
Undershaft SLPM Limited	Ordinary Shares	100
Wealth Limited	Ordinary Shares	100
St Helen's, 1 Undershaft, London, EC3P 3DQ		
1 Fitzroy Place Limited Partnership[2]	Limited Partnership	50
10-11 GNS Limited	Ordinary Shares	100
11-12 Hanover Square LP[2]	Limited Partnership	50
11-12 Hanover Square Nominee 1 Limited[2]	Ordinary Shares	50
11-12 Hanover Square Nominee 2 Limited[2]	Ordinary Shares	50
130 Fenchurch Street LP[2]	Limited Partnership	50
130 Fenchurch Street Nominee 1 Limited[2]	Ordinary Shares	50
130 Fenchurch Street Nominee 2 Limited[2]	Ordinary Shares	50
1-5 Lowndes Square Management Company Limited	Ordinary Shares	100
2 Fitzroy Place Limited Partnership[2]	Limited Partnership	50
20 Gracechurch (General Partner) Limited	General Partner	100
20 Gracechurch Limited Partnership	Limited Partnership	100
20 Lowndes Square Management Company Limited	A Shares, B Shares	100
2-10 Mortimer Street (GP No 1) Limited[2]	Ordinary Shares	50
2-10 Mortimer Street GP Limited[2]	Ordinary Shares	50
2-10 Mortimer Street Limited Partnership[2]	Limited Partnership	50
30 Warwick Street LP[2]	Limited Partnership	50
30 Warwick Street Nominee 1 Limited[2]	Ordinary Shares	50
30 Warwick Street Nominee 2 Limited[2]	Ordinary Shares	50
30-31 Golden Square LP[2]	Limited Partnership	50
30-31 Golden Square Nominee 1 Limited[2]	Ordinary Shares	50
30-31 Golden Square Nominee 2 Limited[2]	Ordinary Shares	50
41-42 Lowndes Square Management Company Limited	Ordinary Shares	100
43 Lowndes Square Management Company Limited	Ordinary Shares	100
44-49 Lowndes Square Management Company Limited	Ordinary Shares	100
6-10 Lowndes Square Management Company Limited	Ordinary Shares	100
AI Special PFI SPV Limited	Ordinary Shares	100
Ascot Real Estate Investments LP[2]	Limited Partnership	50
Ascot Real Estate Investments GP LLP[2]	Limited Partnership	50
Atlas Park Management Company Limited	Limited By Guarantee	100
Aviva Brands Limited	Ordinary Shares	100
Aviva Commercial Finance Limited	Ordinary Shares	100
Aviva Company Secretarial Services Limited	Ordinary Shares	100
Aviva Credit Services UK Limited	Ordinary Shares	100
Aviva Employment Services Limited	Ordinary Shares	100
Aviva Europe SE	Ordinary Shares	92
Aviva Insurance Services UK Limited	Ordinary Shares	100
Aviva International Holdings Limited	Ordinary Shares	100
Aviva International Insurance Limited	Ordinary Shares	100
Aviva Investors 30 70 GLobal Eq Ccy Hedged Ind Fund	ACS	100
Aviva Investors 40 60 Global Equity Index Fund	ACS	100
Aviva Investors 50 50 Global Equity Index Fund	ACS	100
Aviva Investors 60 40 Global Equity Index Fund	ACS	100

Company name	Share Class[1]	% held
Aviva Investors Asia Pacific ex Japan Fund	ACS	100
Aviva Investors Asia Pacific Property Fund	OEIC	80
Aviva Investors Balanced Life Fund	ACS	100
Aviva Investors Balanced Pension Fund	ACS	100
Aviva Investors Cash Fund	OEIC	56
Aviva Investors Cautious Pension Fund	ACS	100
Aviva Investors Commercial Assets Nominee Limited	Ordinary Shares	100
Aviva Investors Commercial Assets GP Limited	Ordinary Shares	100
Aviva Investors Continental Euro Equity Index Fund	ACS	100
Aviva Investors Continental European Eq Alpha Fund	ACS	100
Aviva Investors Corporate Bond Fund	OEIC	93
Aviva Investors Dev Asia Pacific Ex Japan Eq Ind Fund	ACS	100
Aviva Investors Dev Euro Ex UK Equity Index Fund	ACS	100
Aviva Investors Dev World Ex UK Equity Index Fund	ACS	100
Aviva Investors Developd Overseas Gov Bd Ex UK Ind Fund	ACS	100
Aviva Investors Distribution Life Fund	ACS	100
Aviva Investors EBC GP Limited	Ordinary Shares	100
Aviva Investors EBC Limited Partnership	Limited Partnership	100
Aviva Investors Employment Services Limited	Ordinary Shares	100
Aviva Investors Europe Equity ex UK Fund	ACS	100
Aviva Investors European Property Fund	OEIC	73
Aviva Investors Global Equity Alpha Fund	ACS	100
Aviva Investors Global Equity Fund	ACS	100
Aviva Investors Global Equity Income Fund	OEIC	81
Aviva Investors Global Services Limited	Ordinary Shares	100
Aviva Investors Ground Rent GP Limited	Ordinary Shares	100
Aviva Investors Ground Rent Holdco Limited	Ordinary Shares	100
Aviva Investors Holdings Limited	Ordinary Shares	100
Aviva Investors Idx-Lkd Gilts Ovr 5 Yrs Idx Fund	ACS	100
Aviva Investors Index Linked Gilt Fund	ACS	100
Aviva Investors Infrastructure GP Limited	Ordinary Shares	100
Aviva Investors Infrastructure Income Midco 6.1 Limited	Ordinary Shares	59
Aviva Investors Infrastructure Income No.6B Limited	Ordinary Shares	59
Aviva Investors International Index Tracking Fund	OEIC	45
Aviva Investors Japan Equity Alpha Fund	ACS	100
Aviva Investors Japan Equity Fund	ACS	100
Aviva Investors Japan Equity MoM 1 Fund	OEIC	73
Aviva Investors Japanese Equity Index Fund	ACS	100
Aviva Investors London Limited	Ordinary Shares	100
Aviva Investors Managed High Income Fund	OEIC	63
Aviva Investors Money Market VNAV Fund	ACS	100
Aviva Investors Multi-Asset 40 85 Shares Index Fund	ACS	100
Aviva Investors Multi-Asset III Fund	OEIC	50
Aviva Investors Multi-Asset IV Fund	OEIC	41
Aviva Investors Multi-Manager 20-60% Shares Fund	OEIC	74
Aviva Investors Multi-Manager 40-85% Shares Fund	OEIC	70
Aviva Investors Multi-Manager Flexible Fund	OEIC	81
Aviva Investors Multi-Strategy Target Income Fund	OEIC	82
Aviva Investors Multi-Strategy Target Return Fund	OEIC	47
Aviva Investors Non-Gilt Bond All Stocks Index Fund	ACS	100
Aviva Investors Non-Gilt Bond Over 15 Yrs Index Fund	ACS	100
Aviva Investors Non-Gilt Bond Up To 5 Years Index Fund	ACS	100
Aviva Investors North American Equity Fund	ACS	100
Aviva Investors North American Equity Index Fund	ACS	100
Aviva Investors Pacific Ex-Japan Equity Index Fund	ACS	100
Aviva Investors Pensions Limited	Ordinary Shares	100
Aviva Investors Polish Retail GP Limited	Ordinary Shares	100
Aviva Investors Polish Retail Limited Partnership	Limited Partnership	100
Aviva Investors Pre-Annuity Fixed Interest Fund	ACS	100
Aviva Investors Private Equity Programme 2008 Partnership	Limited Partnership	40
Aviva Investors Property Fund Management Limited	Ordinary Shares	100
Aviva Investors Real Estate Finance Limited	Ordinary Shares	100
Aviva Investors Real Estate Limited	Ordinary Shares	100
Aviva Investors Realm Energy Centres GP Limited	Ordinary Shares	100
Aviva Investors REaLM Energy Centres No.1 LP	Limited Partnership	100
Aviva Investors Realm Infrastructure No.1 Limited	Ordinary Shares	100

Company name	Share Class[1]	% held
Aviva Investors Realm Infrastructure No.2 Limited	Ordinary Shares	100
Aviva Investors Realm Infrastructure No.3 Limited	Ordinary Shares	100
Aviva Investors Realm Infrastructure No.4A Limited	Ordinary Shares	100
Aviva Investors Realm Infrastructure No.4B Limited	Ordinary Shares	100
Aviva Investors Social Housing GP Limited	Ordinary Shares	100
Aviva Investors Social Housing Limited	Company Limited by Guarantee	100
Aviva Investors Sterling Corporate Bond Fund	ACS	100
Aviva Investors Sterling Gilt Fund	ACS	100
Aviva Investors Stewardship Fixed Interest Fund	ACS	100
Aviva Investors Stewardship International Equity Fund	ACS	100
Aviva Investors Stewardship UK Equity Fund	ACS	100
Aviva Investors Stewardship UK Equity Income Fund	ACS	100
Aviva Investors Strategic Bond Fund	OEIC	41
Aviva Investors Strategic Global Equity Fund	ACS	100
Aviva Investors UK Commercial Real Estate Senior Debt LP	Limited Partnership	21
Aviva Investors UK CRESD GP Limited	Ordinary Shares	100
Aviva Investors UK Eq Ex Aviva Inv Trusts Index Fund	ACS	100
Aviva Investors UK Equity Alpha Fund	ACS	100
Aviva Investors UK Equity Income Fund	ACS	100
Aviva Investors UK Equity Income Fund	OEIC	51
Aviva Investors UK Equity Index Fund	ACS	100
Aviva Investors UK Equity MoM 1 Fund	OEIC	87
Aviva Investors UK Fund Services Limited	Ordinary Shares	100
Aviva Investors UK Funds Limited	Ordinary Shares	100
Aviva Investors UK Gilts All Stocks Index Fund	ACS	100
Aviva Investors UK Gilts Over 15 Years Index Fund	ACS	100
Aviva Investors UK Gilts Upto 5 Years Index Fund	ACS	100
Aviva Investors UK Index Tracking Fund	OEIC	68
Aviva Investors UK Nominees Limited	Ordinary Shares	100
Aviva Investors UK Opportunities Fund	OEIC	95
Aviva Investors US Equity Index Fund	ACS	100
Aviva Investors US Large Cap Equity Fund	ACS	100
Aviva Overseas Holdings Limited	Ordinary Shares	100
Aviva Public Private Finance Limited	Ordinary Shares	100
Aviva Special PFI GP Limited	Ordinary Shares	100
Aviva Special PFI LP	Limited Partnership	95
Aviva Staff Pension Trustee Limited	Ordinary Shares	100
Aviva UK Digital Limited	Ordinary Shares	100
Aviva UKLAP De-risking Limited	Ordinary Shares	100
Axcess 10 Management Company Limited	Limited By Guarantee	100
Barratt House LP[2]	Limited Partnership	50
Barratt House Nominee 1 Limited[2]	Ordinary Shares	50
Barratt House Nominee 2 Limited[2]	Ordinary Shares	50
Barwell Business Park Nominee Limited	Ordinary Shares	100
BIOMASS UK NO. 3 Limited	Ordinary A Shares Deferred Shares	100
Biomass UK NO.1 LLP	Limited Liability Partnership	100
Biomass UK No.2 Limited	'A Shares B Shares C Shares Deferred Shares'	100
Boston Biomass Limited	Ordinary Shares	100
Boston Wood Recovery Limited	Ordinary Shares	100
Capital Residential Fund	Unit Trust	88
Capital Residential Fund Nominee No.1 Limited	Ordinary Shares	100
Capital Residential Fund Nominee No.2 Limited	Ordinary Shares	100
Cardiff Bay Gp Limited	Ordinary Shares	100
Cardiff Bay Limited Partnership	Limited Partnership	100
CGU International Holdings BV	Ordinary Shares	100
Chancery House London LP[2]	Limited Partnership	50
Chancery House London Nominee 1 Limited[2]	Ordinary Shares	50
Chancery House London Nominee 2 Limited[2]	Ordinary Shares	50
Chesterford Park[2]	Limited Partnership	50
Chesterford Park (General Partner) Limited[2]	Ordinary Shares	100
Chesterford Park (Nominee) Limited[2]	Ordinary Shares	100
Chichester Health (Holdings) Limited	Ordinary Shares	100
Commercial Union Corporate Member Limited	Ordinary Shares	100
Commercial Union Life Assurance Company Limited	Ordinary Shares	100
Commercial Union Trustees Limited	Ordinary Shares	100
Cornerford Limited	Ordinary Shares	100
COW Real Estate Investment General Partner Limited	Ordinary Shares	100
COW Real Estate Investment Limited Partnership	Limited Partnership	100
COW Real Estate Investment Nominee Limited	Ordinary Shares	100
EES Operations 1 Limited	Ordinary Shares	100

Company name	Share Class[1]	% held
Fitzroy Place GP 2 Limited[2]	Ordinary Shares	50
Fitzroy Place Management Co Limited[2]	Ordinary Shares	50
Fitzroy Place Residential Limited[2]	Ordinary Shares	50
Free Solar (Stage 2) Limited	Ordinary Shares	100
Free Solar Holdco Limited	Ordinary Shares	100
Friends Life Funds Limited	Ordinary Shares	100
General Accident Executor and Trustee Company Limited	Ordinary Shares	100
Gobafoss General Partner Limited	Ordinary Shares	100
Gobafoss Partnership Nominee No 1 Ltd	Ordinary Shares	100
Hemel Hempstead Estate Management Limited	Ordinary Shares	100
Hillswood Management Limited	Ordinary Shares	24
Hooton Bio Power Limited	Ordinary Shares	56
Houlton Commercial Management Company Limited	Limited by Guarantee	50
Igloo Regeneration (Butcher Street) Limited[2]	Ordinary Shares	50
Igloo Regeneration (General Partner) Limited[2]	Ordinary Shares	50
Igloo Regeneration (Nominee) Limited[2]	Ordinary Shares	50
Igloo Regeneration Developments (General Partner) Limited[2]	Ordinary Shares	50
Igloo Regeneration Developments (Nominees) Limited[2]	Ordinary Shares	50
Igloo Regeneration Developments LP[2]	Limited Partnership	50
Igloo Regeneration Partnership[2]	Limited Partnership	40
Igloo Regeneration Property Unit Trust[2]	Unit Trust	50
IPE BV	Ordinary Shares	100
Irongate House LP[2]	Limited Partnership	50
Irongate House Nominee 1 Limited[2]	Ordinary Shares	50
Irongate House Nominee 2 Limited[2]	Ordinary Shares	50
Lime Property Fund (General Partner) Limited	Ordinary Shares	100
Lime Property Fund (Nominee) Limited	Ordinary Shares	100
Lombard (London) 1 Limited	Ordinary Shares	100
Lombard (London) 2 Limited	Ordinary Shares	100
LUC Holdings Limited	Ordinary Shares	20
Matthew Parker Street (Nominee No 1) Limited	Ordinary Shares	100
Matthew Parker Street (Nominee No 2) Limited	Ordinary Shares	100
Medium Scale Wind No.1 Limited	Ordinary Shares	100
Mortimer Street Associated Co 1 Limited[2]	Ordinary Shares	50
Mortimer Street Associated Co 2 Limited[2]	Ordinary Shares	50
Mortimer Street Nominee 1 Limited[2]	Ordinary Shares	50
Mortimer Street Nominee 2 Limited[2]	Ordinary Shares	50
Mortimer Street Nominee 3 Limited[2]	Ordinary Shares	50
New Broad Street House LP[2]	Limited Partnership	50
New Broad Street House Nominee 1 Limited[2]	Ordinary Shares	50
New Broad Street House Nominee 2 Limited[2]	Ordinary Shares	50
Norwich Union (Shareholder GP) Limited	Ordinary Shares	100
Norwich Union Public Private Partnership Fund	Limited Partnership	100
NU 3PS Limited	Ordinary Shares	100
NU Library For Brighton Limited	Ordinary Shares	100
NU Offices for Redcar Limited	Ordinary Shares	100
NU Schools for Redbridge Limited	Ordinary Shares	100
NU Technology and Learning Centres (Hackney) Limited	Ordinary Shares	100
NUPPP (Care Technology and Learning Centres) Limited	Ordinary Shares	100
NUPPP (GP) Limited	Ordinary Shares	100
NUPPP Nominees Limited	Ordinary Shares	100
Opus Park Management Limited	Limited By Guarantee	100
Opus Park Management Limited	Limited Partnership	100
ORN Capital Services Limited	Ordinary Shares	100
Paddington Central III GP Ltd	Ordinary Shares	100
Paddington Central III Limited Partnership	Limited Partnership	100
Pegasus House and Nuffield House LP[2]	Limited Partnership	50
Pegasus House and Nuffield House Nominee 1 Limited[2]	Ordinary Shares	50
Pegasus House and Nuffield House Nominee 2 Limited[2]	Ordinary Shares	50
Porth Teigr Management Company Limited[2]	Ordinary Shares	50
Property Management Company (Croydon) Ltd	Ordinary Shares	100
Quantum Property Partnership[2]	Limited Partnership	50
Quarryvale One Limited	Ordinary Shares	100
Quarryvale Three Limited	Ordinary Shares	100
Renewable Clean Energy Limited	Ordinary Shares	100
Rugby Radio Station (General Partner) Limited[2]	Ordinary B Shares	50
Rugby Radio Station (Nominee) Limited[2]	Ordinary Shares	50
Rugby Radio Station Limited Partnership[2]	Limited Partnership	50
SE11 PEP Limited	Ordinary Shares	100
Serviced Offices UK (Services) Limited[2]	Ordinary Shares	50
Serviced Offices UK GP Limited[2]	Ordinary Shares	50
Serviced Offices UK Limited Partnership[2]	Limited Partnership	50
Serviced Offices UK Nominee Limited[2]	Ordinary Shares	50
Solar Clean Energy Limited	Ordinary Shares	100
Southgate General Partner Limited	Ordinary A Shares	50
Southgate Limited Partnership	Limited Partnership	50
Southgate LP (Nominee 1) Limited	Ordinary Shares	50
Southgate LP (Nominee 2) Limited	Ordinary Shares	50
Stonebridge Cross Management Company Limited	Limited by Guarantee	100
Stonebridge Cross Management Limited	Limited By Guarantee	100
SUE Developments Limited Partnership[2]	Limited Partnership	50
SUE GP LLP[2]	Ordinary Shares	50
SUE GP Nominee Limited[2]	Ordinary Shares	50
Sunrise Renewables (Barry) Limited	Ordinary Shares	100
Swan Valley Management Limited	Ordinary Shares	100
The Designer Retail Outlet Centres (General Partner) Limited	Ordinary A Shares	50
The Designer Retail Outlet Centres (Mansfield) General Partner Limited	Ordinary Shares	100
The Designer Retail Outlet Centres (Mansfield) LP	Limited Partnership	97
The Designer Retail Outlet Centres (York) General Partner Limited	Ordinary Shares	100
The Designer Retail Outlet Centres (York) LP	Limited Partnership	97
The Gobafoss Partnership	Limited Partnership	100
The Ocean Marine Insurance Company Limited	Ordinary Shares	100
The Square Brighton Limited	Ordinary Shares	100
Tyne Assets (No 2) Limited	Ordinary Shares	100
Tyne Assets Limited	Ordinary Shares	100
Undershaft Limited	Ordinary Shares	100
W Nine LP[2]	Limited Partnership	50
W Nine Nominee 1 Limited[2]	Ordinary Shares	50
W Nine Nominee 2 Limited[2]	Ordinary Shares	50
The Welsh Insurance Corporation Limited	Ordinary Shares	100
The Yorkshire Insurance Company Limited	Ordinary Shares	100
Aviva Investors UK Equity Dividend Fund	Collective Investment Scheme	100
Chichester Health plc	Ordinary Shares	100
Aviva Investors Energy Centres No.1 GP Limited	Ordinary Shares	100
Swan Court Waterman's Business Park, Kingsbury Crescent, Staines, Surrey, TW18 3BA		
Healthcode Limited	Ordinary C Shares, Ordinary E Shares	20
The Green, Easter Park, Benyon Road, Reading, Berkshire, RG7 2PQ		
Anesco Mid Devon Limited	Ordinary Shares	100
Anesco South West Limited	Ordinary Shares	100
Free Solar (Stage 1) Limited	Ordinary Shares	100
New Energy Residential Solar Limited	Ordinary Shares	100
Norton Energy SLS Limited	Ordinary Shares	100
TGHC Limited	Ordinary Shares	100
Wellington Row, York, YO90 1WR		
Aviva (Peak No.2) UK Limited	Ordinary Shares	100
Aviva Annuity UK Limited	Ordinary Shares	100
Aviva Client Nominees UK Limited	Ordinary Shares	100
Aviva Equity Release UK Limited	Ordinary Shares	100
Aviva ERFA 15 UK Limited	Ordinary Shares	100
Aviva Life & Pensions UK Limited	Ordinary Shares	100
Aviva Life Holdings UK Limited	Ordinary Shares	100
Aviva Life Investments International (Recovery) Limited	Ordinary Shares	100
Aviva Life Services UK Limited	Ordinary Shares	100
Aviva Pension Trustees UK Limited	Ordinary Shares	100
Aviva Trustees UK Limited	Ordinary Shares	100
Aviva Wrap UK Limited	Ordinary Shares	100
CGNU Life Assurance Limited	Ordinary Shares	100
Friends Provident Pension Scheme Trustees Limited	Ordinary Shares	100
The Lancashire and Yorkshire Reversionary Interest Company Limited	Ordinary Shares	100
The Norwich Union Life Insurance Company Limited	Ordinary Shares	100
Synergy Sunrise (Sentinel House) Limited	Ordinary Shares	100
Undershaft (NULLA) Limited	Ordinary Shares	100
Whittington Hall, Whittington Road, Worcester, Worecestershire, WR5 2ZX		
Aviva Investors GR SPV16 Limited	Ordinary Shares	100
61 Conduit Street London W1S 2GB		
AKO Global UCITS-BF (AKOGUBF)	Mutual Fund	73
12 Throgmorton Avenue		
BlackRock US Dynamic Fund	Unit Trust	21
BlackRock Market Advantage Fund	Unit Trust	52
Artemis Fund Managers Limited, 57-59 St James's Street, London SW1A 1LD		
Artemis UK Special Situations Fund	Unit Trust	22
Liontrust Fund Partners LLP, 2 Savoy Court London WC2R 0EZ		
Liontrust Sustainable Future Corporate Bond Fund	OEIC	40
Liontrust Sustainable Future UK Growth Fund	OEIC	49

Company name	Share Class[1]	% held
Liontrust Sustainable Future European Growth Fund	OEIC	52
Liontrust Sustainable Future Global Growth Fund	OEIC	54
Liontrust Sustainable Future Absolute Growth Fund	OEIC	64
Liontrust UK Ethical Fund	OEIC	72
Liontrust Sustainable Future Managed Fund	OEIC	76
1 London Wall Place, London, UK		
Schroder QEP US Core Fund	Unit Trust	40
BlackRock Pensions, 33 King William Street		
Undrly Aquila Cnt CcyH Glb Eq108010 2L	OEIC	65
c/o Harper MacLeod Llp The Cadoro, 45 Gordon Street United Kingdom G1 3PE		
Brockloch Rig Windfarm Limited	Ordinary Shares	49
Crystal Rig III Limited	Ordinary Shares	49
Old Bourchiers Hall New Road Aldham, Essex United Kingdom C06 3QU		
County Broadband Holdings Limited	A Ordinary Shares Shares B Ordinary Shares	59
2nd Floor, 64-65 Vincent Square United Kingdom SW1P 2NU		
Fred. Olsen CBH Limited	Ordinary Shares	49
Midlands House 4 Rock Road Keynsham, England United Kingdom BS31 1BL		
Truespeed Communications LTD	B Ordinary Shares C Ordinary Shares Ordinary Shares Ordinary Shares D1	26

Company name	Share Class[1]	% held
	Redeemable E1	
Tec Marina Terra Nova Way Penarth, Wales United Kingdom CF64 1SA		
Wealthify Group Limited	A Ordinary Shares B Ordinary Shares	60
Wealthify Limited	Ordinary Shares	60
Pitheavlis, PERTH, Perthshire, PH2 0NH, United Kingdom		
Aviva Investors (FP) LP	Limited Partnership	100
United States		
1209 Orange Street, City of Wilmington DE 19801,		
Aviva Investors Americas LLC	Sole Member	100
2222 Grand Avenue, Des Moines IA 50312		
Aviva Investors North America Holdings, Inc	Common Stock Of No Par Value Shares	100
2711 Centreville Road, Suite 400, Wilmington, New Castle, DE, 19808		
UKP Holdings Inc.	Common Stock Shares	100
AI-RECAP GP I, LLC	Limited Partnership	100
National Corporate Research Limited, 850 New Burton Road, Suite 201, Dover, Delaware Kent County 19904		
Exeter Properties Inc.	Common Stock Wpv Shares	95
Winslade Investments Inc.	Common Stock Wpv Shares	100
Vietnam		
10th Floor, Handi Resco Building, No. 521 Kim Ma, Ba Dinh, Hanoi		
Aviva Vietnam Life Insurance Company Limited	Non-Listed Shares	90

1 Investment Company with Variable Capital ('ICVC')
Fond Common de Placement ('FCP')
Open Ended Investment Fund ('OEIC')
Société d 'Investment à Capital Variable ('SICAV')
Undertaking for Collective Investment in Transferrable Securities ('UCITS')
Irish Collective Asset Management Vehicle ('ICAV')
Authorised Contractual Scheme ('ACS')
Organisme de Placement Collectif Immobilier ('OPCI')
Sociétés Civiles de Placement Immobilier ('SCPI')

2 Please see accounting policies (D) Consolidation principles, for further details on Joint Ventures and the factors on which joint management is based.

65 – Subsequent events

For details of subsequent events relating to:

- Acquisitions – refer to note 3

Financial statements of the Company

Income statement

For the year ended 31 December 2018

	Note	2018 £m	2017 £m
Income			
Net investment income	B	**2,874**	1,856
		2,874	1,856
Expenses			
Operating expenses	C	**(246)**	(217)
Other expenses[1]		**(8)**	—
Finance costs	D	**(519)**	(527)
		(773)	(744)
Profit for the year before tax		**2,101**	1,112
Tax credit	E	**96**	113
Profit for the year after tax		**2,197**	1,225

1 Other expenses include a charge of £8 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35).

Statement of comprehensive income

For the year ended 31 December 2018

	Note	2018 £m	2017 restated[1] £m
Profit for the year		**2,197**	1,225
Items that will not be reclassified to income statement			
Remeasurements of pension schemes	I	**2**	(2)
Forfeited dividend income	I	**4**	—
Other comprehensive income/(loss), net of tax		**6**	(2)
Total comprehensive income for the year		**2,203**	1,223

1 The Company has made a change in accounting policy whereby investments in subsidiaries and joint ventures held as available for sale investments under IAS 39 have been reclassified to being held at cost under IAS 27. As a result, comparatives have been restated. See note A for further details.

Where applicable, the accounting policies of the Company are the same as those of the Group on pages 102 to 115. The notes identified alphabetically on pages 246 to 252 are an integral part of these separate financial statements. Where the same items appear in the Group financial statements, reference is made to the notes (identified numerically) on pages 123 to 241.

Statement of changes in equity

For the year ended 31 December 2018

	Note	Ordinary share capital £m	Preference share capital £m	Share premium £m	Capital redemption Reserve £m	Merger reserve £m	Equity compensation reserve £m	Retained earnings £m	Direct capital instrument and fixed rate tier 1 notes £m	Total equity £m
Balance at 1 January (restated)[1]		**1,003**	**200**	**1,207**	**14**	**6,438**	**111**	**3,555**	**724**	**13,252**
Profit for the year		—	—	—	—	—	—	**2,197**	—	**2,197**
Other comprehensive income		—	—	—	—	—	—	**6**	—	**6**
Total comprehensive income for the year		—	—	—	—	—	—	**2,203**	—	**2,203**
Dividends and appropriations	16	—	—	—	—	—	—	**(1,189)**	—	**(1,189)**
Reserves credit for equity compensation plans	33	—	—	—	—	—	**64**	—	—	**64**
Shares issued under equity compensation plans	32	**2**	—	**7**	—	—	**(55)**	**49**	—	**3**
Shares purchased in buy-back	32	**(30)**	—	—	**30**	—	—	**(600)**	—	**(600)**
Redemption of fixed rate tier 1 notes	36,I	—	—	—	—	—	—	—	—	—
Aggregate tax effect	E	—	—	—	—	—	—	**8**	—	**8**
Balance at 31 December		**975**	**200**	**1,214**	**44**	**6,438**	**120**	**4,026**	**724**	**13,741**

For the year ended 31 December 2017 (restated)[1]

	Note	Ordinary share capital £m	Preference share capital £m	Share premium £m	Capital redemption Reserve £m	Merger reserve £m	Equity compensation reserve £m	Retained earnings £m	Direct capital instrument and fixed rate tier 1 notes £m	Total equity £m
Balance at 1 January		1,015	200	1,197	—	6,438	78	3,747	1,116	13,791
Profit for the year		—	—	—	—	—	—	1,225	—	1,225
Other comprehensive loss		—	—	—	—	—	—	(2)	—	(2)
Total comprehensive income for the year		—	—	—	—	—	—	1,223	—	1,223
Dividends and appropriations	16	—	—	—	—	—	—	(1,081)	—	(1,081)
Reserves credit for equity compensation plans	33	—	—	—	—	—	77	—	—	77
Shares issued under equity compensation plans	32	2	—	10	—	—	(44)	42	—	10
Shares purchased in buy-back	32	(14)	—	—	14	—	—	(300)	—	(300)
Redemption of fixed rate tier 1 notes	36,I	—	—	—	—	—	—	(92)	(392)	(484)
Aggregate tax effect	E	—	—	—	—	—	—	16	—	16
Balance at 31 December		1,003	200	1,207	14	6,438	111	3,555	724	13,252

1 The Company has made a change in accounting policy whereby investments in subsidiaries and joint ventures held as available for sale investments under IAS 39 have been reclassified to being held at cost under IAS 27. As a result, comparatives have been restated. See note A for further details.

Where applicable, the accounting policies of the Company are the same as those of the Group on pages 102 to 115. The notes identified alphabetically on pages 246 to 252 are an integral part of these separate financial statements. Where the same items appear in the Group financial statements, reference is made to the notes (identified numerically) on pages 123 to 241.

Statement of financial position

As at 31 December 2018

	Note	2018 £m	2017 restated[1] £m	1 January 2017 restated[1] £m
Assets				
Non-current assets				
Investments in subsidiaries	F	**31,788**	31,788	31,788
Investment in joint venture	F	**123**	123	123
Receivables and other financial assets	G	**5,401**	3,680	5,941
Deferred tax assets	H	**9**	9	156
Current tax assets	H	**89**	255	135
		37,410	35,855	38,143
Current assets				
Receivables and other financial assets	G	**414**	2,028	321
Prepayments and accrued income		**10**	9	11
Cash and cash equivalents		**15**	87	82
Total assets		**37,849**	37,979	38,557
Equity				
Ordinary share capital	32	**975**	1,003	1,015
Preference share capital	35	**200**	200	200
Called up capital		**1,175**	1,203	1,215
Share premium	32(b)	**1,214**	1,207	1,197
Capital redemption reserve	32(b)	**44**	14	—
Merger reserve	I	**6,438**	6,438	6,438
Equity compensation reserve	I	**120**	111	78
Retained earnings	I	**4,026**	3,555	3,747
Direct capital instrument and tier 1 notes	36,M	**724**	724	1,116
Total equity		**13,741**	13,252	13,791
Liabilities				
Non-current liabilities				
Borrowings	K	**6,699**	6,450	6,638
Payables and other financial liabilities	L	**12,815**	9,900	13,098
Tax liabilities	H	**—**	—	4
Pension deficits and other provisions	J	**45**	48	42
		19,559	16,398	19,782
Current liabilities				
Borrowings	K	**251**	978	642
Payables and other financial liabilities	L	**4,206**	7,192	4,198
Pension deficits and other provisions	J	**—**	5	5
Other liabilities		**92**	154	139
Total liabilities		**24,108**	24,727	24,766
Total equity and liabilities		**37,849**	37,979	38,557

1 The Company has made a change in accounting policy whereby investments in subsidiaries and joint ventures held as available for sale investments under IAS 39 have been reclassified to being held at cost under IAS 27. As a result, comparatives have been restated. See note A for further details.

Approved by the Board on 6 March 2019

Thomas D. Stoddard
Chief Financial Officer

Where applicable, the accounting policies of the Company are the same as those of the Group on pages 102 to 115. The notes identified alphabetically on pages 246 to 252 are an integral part of these separate financial statements. Where the same items appear in the Group financial statements, reference is made to the notes (identified numerically) on pages 123 to 241.

Statement of cash flows

For the year ended 31 December 2018

All the Company's operating cash requirements are met by subsidiary companies and settled through intercompany loan accounts. As the direct method of presentation has been adopted for these activities, no further disclosure is required. In respect of financing and investing activities, the following items pass through the Company's own bank accounts.

	2018 £m	2017 £m
Cash flows from financing activities		
Shares purchased in buy-back	**(600)**	(300)
Treasury shares purchased for employee trusts	**(4)**	—
Funding provided from subsidiaries	**2,564**	2,365
Repayment of loans owed to subsidiaries	**—**	(156)
New borrowings drawn down, net of expenses	**3,023**	1,265
Repayment of borrowings	**(3,536)**	(1,753)
Net repayment of borrowings[1]	**(513)**	(488)
Preference dividends paid	**(17)**	(17)
Ordinary dividends paid	**(1,128)**	(983)
Forfeited dividend income	**4**	—
Coupon payments on direct capital instrument and tier 1 notes	**(44)**	(81)
Interest paid on borrowings	**(335)**	(346)
Proceeds from issue of ordinary shares	**8**	10
Other[2]	**(13)**	—
Net cash (used in)/generated from financing activities	**(78)**	4
Net (decrease)/increase in cash and cash equivalents	**(78)**	4
Cash and cash equivalents at 1 January	**87**	82
Exchange gains on cash and cash equivalents	**6**	1
Cash and cash equivalents at 31 December	**15**	87

1 On 28 September 2017, notification was given that the Group would redeem the $650 million fixed rate tier 1 notes. At that date, the instrument was reclassified as a financial liability of £484 million, representing its fair value on translation into Sterling at that date. On 3 November 2017 the instrument was redeemed in full at a cost of £488 million. This included £4 million exchange losses subsequent to the reclassification which are included within other operating costs within the income statement.

2 Includes £10 million relating to goodwill payments to preference shareholders, which was announced on 30 April 2018, and associated administration costs (see note 35) and a £3 million donation of forfeited dividend income to a charitable foundation.

Where applicable, the accounting policies of the Company are the same as those of the Group on pages 102 to 115. The notes identified alphabetically on pages 246 to 252 are an integral part of these separate financial statements. Where the same items appear in the Group financial statements, reference is made to the notes (identified numerically) on pages 123 to 241.

Notes to the financial statements of the Company

A – Changes in accounting policies

The Company has made a change in accounting policy whereby investments in subsidiaries and joint ventures held as available for sale investments under IAS 39 have been reclassified to being held at cost under IAS 27. As per Group accounting policy D, investments in subsidiaries, associates and joint ventures are recognised at cost less impairment. Investments are reviewed annually to test whether any indicators of impairment exist. Where there is objective evidence that such an asset is impaired, the investment is impaired to its recoverable value and any unrealised loss is recorded in the income statement. The revised policy provides more relevant and reliable information as reserves are better aligned with distributable profits and cost is a factual measure which is complete, neutral and requires less judgement.

The impact of the changes on the affected line items in the financial statements is set out below.

(i) Impact of changes on income statement

There is no impact on the Company's income statement.

(ii) Impact of changes on statement of comprehensive income

	31 December 2017		
	As reported £m	Effect of changes £m	Restated £m
Profit for the year	1,225	—	1,225
Other comprehensive income	705	(707)	(2)
Effect analysed as:			
Fair value gains on investments in subsidiaries and joint ventures	707	(707)	—
Remeasurements of pension schemes	(2)	—	(2)
Total comprehensive income for the year	1,930	(707)	1,223

(iii) Impact of changes on statement of financial position

	31 December 2017			1 January 2017		
	As reported £m	Effect of changes £m	Restated £m	As reported £m	Effect of changes £m	Restated £m
Total assets	47,807	(9,828)	37,979	47,678	(9,121)	38,557
Effect analysed as:						
Investment in subsidiaries	41,192	(9,404)	31,788	40,521	(8,733)	31,788
Investment in joint venture	547	(424)	123	511	(388)	123
Total equity and liabilities	47,807	(9,828)	37,979	47,678	(9,121)	38,557
Total equity	23,080	(9,828)	13,252	22,912	(9,121)	13,791
Effect analysed as:						
Investment valuation reserve	9,828	(9,828)	—	9,121	(9,121)	—
Total Liabilities	24,727	—	24,727	24,766	—	24,766

B – Net investment income

	Note	**2018 £m**	2017 £m
Dividends received from subsidiaries	P(iii)	**2,780**	1,740
Interest receivable from group company loans held at amortised cost	P(i)	**92**	116
Other income		**2**	—
Total		**2,874**	1,856

C – Operating expenses

(i) Operating expenses

Operating expenses comprise:

	2018 £m	2017 £m
Staff costs and other employee related expenditure (see (ii) below)	**19**	107
Other operating costs	**227**	105
Net foreign exchange losses	**—**	5
Total	**246**	217

(ii) Staff costs

Total staff costs were:

	2018 £m	2017 £m
Wages and salaries	**—**	54
Social security costs	**—**	7
Defined contribution schemes	**—**	8
Equity compensation plans (see (iii) below)	**19**	30
Termination benefits	**—**	8
Total	**19**	107

C – Operating expenses continued

(ii) Staff costs continued

The Company is no longer charged staff costs directly by the UK employing entity. Staff costs in 2018 are included within other operating costs as part of the overall recharges from the service company within the Group.

(iii) Equity compensation plans

All transactions in the Group's equity compensation plans, which involve options and awards for ordinary shares of the Company, are included in other operating costs. Full disclosure of these plans is given in the Group consolidated financial statements, note 33. The cost of such options and awards is borne by all participating businesses and, where relevant, the Company bears an appropriate charge. As the majority of the charge to the Company relates to directors' options and awards, for which full disclosure is made in the directors' remuneration report, no further disclosure is given here.

D – Finance costs

	Note	2018 £m	2017 £m
Interest payable on borrowings		**325**	352
Interest payable to group companies	P(ii)	**194**	175
Total		**519**	527

E – Tax

(i) Tax credited to the income statement

The total tax credit comprises:

	2018 £m	2017 £m
Current tax		
For this year	**(94)**	(253)
Prior year adjustments	**(2)**	(3)
Total current tax	**(96)**	(256)
Deferred tax		
Origination and reversal of temporary differences	**—**	143
Total deferred tax	**—**	143
Total tax credited to income statement	**(96)**	(113)

Unrecognised tax losses and temporary differences of previous years were used to reduce the deferred tax expense by £nil *(2017: £nil)*.

(ii) Tax credited to other comprehensive income

There was no tax credited or charged to other comprehensive income in either 2018 or 2017.

(iii) Tax credited to equity

Tax credited directly to equity in the year, in respect of coupon payments on the direct capital instrument and fixed rate tier 1 notes, amounted to £8 million *(2017: £16 million)*.

(iv) Tax reconciliation

The tax on the Company's profit before tax differs from the theoretical amount that would arise using the tax rate of the home country of the Company as follows:

	2018 £m	2017 £m
Profit before tax	**2,101**	1,112
Tax calculated at standard UK corporation tax rate of 19.00% *(2017: 19.25%)*	**399**	214
Reconciling items		
Adjustment to tax charge in respect of prior years	**(2)**	(3)
Non-assessable dividend income	**(528)**	(335)
Disallowable expenses	**7**	8
Different local basis of tax on overseas profits	**—**	(4)
Change in future local statutory tax rates	**—**	(19)
Losses surrendered intra-group for nil value	**28**	26
Total tax credited to income statement	**(96)**	(113)

Finance Act 2016, which received Royal Assent on 15 September 2016, will reduce the rate of corporation tax to 17% from 1 April 2020. The reduction in rate from 19% to 17% has been used in the calculation of the Company's deferred tax assets and liabilities at 31 December 2018.

F – Investments in subsidiaries and joint venture

(i) Subsidiaries

Movements in the Company's investments in its subsidiaries are as follows:

	2018 £m	2017 restated £m
At 1 January	**31,788**	31,788
At 31 December	**31,788**	31,788

At 31 December 2018, the Company has two wholly owned subsidiaries, both incorporated in the UK. These are General Accident plc and Aviva Group Holdings Limited. Aviva Group Holdings Limited is an intermediate holding company, while General Accident plc has preference shares listed on the London Stock Exchange. The principal subsidiaries of the Aviva Group at 31 December 2018 are set out in note 63 to the Group consolidated financial statements.

(ii) Joint venture

At 31 December 2018, the Company's investment in the joint venture, Aviva-COFCO Life Insurance Co. Limited has a cost of £123 million *(2017: £123 million)*.

G – Receivables and other financial assets

	Note	2018 £m	2017 £m
Loans due from subsidiaries held at amortised cost	P(i)	**5,401**	5,410
Amount due from subsidiaries held at amortised cost	P(iii)	**414**	298
Total		**5,815**	5,708
Expected to be recovered in less than one year		**414**	2,028
Expected to be recovered in more than one year		**5,401**	3,680
		5,815	5,708

Fair value of these assets approximate to their carrying amounts.

H – Tax assets and liabilities

(i) Current tax

Current tax assets recoverable in more than one year are £89 million (*2017: £255 million*).

(ii) Deferred tax

(a) The balance at 31 December comprises:

	2018 £m	2017 £m
Deferred tax assets	**9**	9
Net deferred tax assets	**9**	9

(b) The net deferred tax asset arises on the following items:

	2018 £m	2017 £m
Pensions and other post retirement obligations	**9**	9
Net deferred tax assets	**9**	9

I – Reserves

	Merger reserve £m	Equity compensation reserve[1] £m	Retained earnings £m
Balance at 1 January 2017 (restated)[2]	6,438	78	3,747
Arising in the year:			
Profit for the year	—	—	1,225
Remeasurements of pension schemes	—	—	(2)
Dividends and appropriations	—	—	(1,081)
Reserves credit for equity compensation plans	—	77	—
Issue of share capital under equity compensation scheme	—	(44)	42
Shares purchased in buy-back	—	—	(300)
Redemption of fixed rate tier 1 notes[3]	—	—	(92)
Aggregate tax effect	—	—	16
Balance at 31 December 2017 (restated)[2]	**6,438**	**111**	**3,555**
Arising in the year:			
Profit for the year	**—**	**—**	**2,197**
Remeasurements	**—**	**—**	**2**
Forfeited dividend income[4]	**—**	**—**	**4**
Dividends and appropriations	**—**	**—**	**(1,189)**
Reserves credit for equity compensation plans	**—**	**64**	**—**
Issue of share capital under equity compensation scheme	**—**	**(55)**	**49**
Shares purchased in buy-back	**—**	**—**	**(600)**
Aggregate tax effect	**—**	**—**	**8**
Balance at 31 December 2018	**6,438**	**120**	**4,026**

1 See notes 33(d) and 38 for further details of balances included in Equity compensation reserve.
2 The Company has made a change in accounting policy whereby investments in subsidiaries and joint ventures held as available for sale investments under IAS 39 have been reclassified to being held at cost under IAS 27. As a result, comparatives have been restated. See note A for further details.
3 On 28 September 2017, notification was given that the Group would redeem the 8.25% US $650 million fixed rate tier 1 notes. At that date, the instrument was reclassified as a financial liability of £484 million, representing its fair value on translation into Sterling at that date. The resulting foreign exchange loss of £92 million has been charged to retained earnings.
4 The Company has commenced a shareholder forfeiture programme, where the shares of shareholders who Aviva has lost contact with over the last 12 years will be forfeited and sold on. Any associated unclaimed dividends will be reclaimed by the Company. After covering administration costs, the majority of the money will be put into a charitable foundation.

The tax effect of £8 million *(2017: £16 million)* is recognised in respect of coupon payments of £44 million *(2017: £81 million)* on the direct capital instrument and tier 1 notes.

J – Pension deficits and other provisions

(i) Carrying amounts

	2018 £m	2017 £m
Total IAS 19 obligations to staff pension schemes	**45**	48
Other provisions	**—**	5
Total provisions	**45**	53

Other provisions primarily include amounts set aside for costs of compensation, litigation and staff entitlements.

(ii) Movements on other provisions

	2018 £m	2017 £m
At 1 January	**5**	—
Additional provisions	**10**	5
Unused amounts reversed	**(2)**	—
Charge to income statement	**8**	5
Utilised during the year	**(13)**	—
At 31 December	**—**	5

K – Borrowings

The Company's borrowings comprise:

	2018 £m	2017 £m
Subordinated debt	**5,586**	6,009
Senior notes	**1,113**	751
Commercial paper	**251**	668
Total	**6,950**	7,428

All the above borrowings are stated at amortised cost.

K – Borrowings continued

Maturity analysis of contractual undiscounted cash flows:

	2018			2017		
	Principal £m	**Interest £m**	**Total £m**	Principal £m	Interest £m	Total £m
Within 1 year	**251**	**315**	**566**	978	333	1,311
1 – 5 years	**708**	**1,231**	**1,939**	266	1,311	1,577
5 – 10 years	**673**	**1,490**	**2,163**	444	1,591	2,035
10 – 15 years	**—**	**1,441**	**1,441**	—	1,589	1,589
Over 15 years	**5,365**	**2,923**	**8,288**	5,791	3,282	9,073
Total contractual undiscounted cash flows	**6,997**	**7,400**	**14,397**	7,479	8,106	15,585

Where subordinated debt is undated, the interest payments have not been included beyond 15 years. Annual interest payments in future years for these borrowings are £49 million *(2017: £49 million)*.

The fair value of the subordinated debt at 31 December 2018 was £5,831 million *(2017: £7,046 million)*, calculated with reference to quoted prices. The fair value of the senior debt at 31 December 2018 was £1,113 million *(2017: £756 million)*, calculated with reference to quoted prices. The fair value of the commercial paper is considered to be the same as its carrying value.

Further details of these borrowings and undrawn committed facilities can be found in the Group consolidated financial statements, note 52, with details of the fair value hierarchy in relation to these borrowings in note 23.

L – Payables and other financial liabilities

	Note	**2018 £m**	2017 £m
Loans due to subsidiaries	P(ii)	**12,815**	13,008
Amount due to subsidiaries	P(iii)	**4,206**	4,084
Total		**17,021**	17,092
Expected to be recovered in less than one year		**4,206**	7,192
Expected to be recovered in more than one year		**12,815**	9,900
		17,021	17,092

M – Direct capital instrument and tier 1 notes

Details of the direct capital instrument and tier 1 notes are given in the Group consolidated financial statements, note 36. The 6.875% £210 million STICS are reflected in the Company financial statements at a value of £224 million *(2017: £224 million)* following the transfer at fair value from Friends Life Holdings plc on 1 October 2015.

N – Contingent liabilities

Details of the Company's contingent liabilities are given in the Group consolidated financial statements, note 55.

O – Risk management

Risk management in the context of the Group is considered in the Group consolidated financial statements, note 59.
The business of the Company is managing its investments in subsidiaries and joint venture operations. Its risks are considered to be the same as those in the operations themselves, and full details of the major risks and the Group's approach to managing these are given in the Group consolidated financial statements, note 59. Such investments are held by the Company at cost in accordance with accounting policy D.

Financial assets, other than investments in subsidiaries and joint ventures, largely consist of amounts due from subsidiaries. As at the balance sheet date, these receivable amounts were neither past due nor impaired. The credit quality of receivables and other financial assets is monitored by the Company, and provisions are made for expected credit losses. There are no material expected credit losses over the lifetime of the financial assets.

Financial liabilities owed by the Company as at the balance sheet date are largely in respect of borrowings (details of which are provided in note K and the Group consolidated financial statements, note 52) and loans owed to subsidiaries. Loans owed to subsidiaries were within agreed credit terms as at the balance sheet date.

Interest rate risk

Loans to and from subsidiaries are at either fixed or floating rates of interest, with the latter being exposed to fluctuations in these rates. The choice of rates is designed to match the characteristics of financial investments (which are also exposed to interest rate fluctuations) held in both the Company and the relevant subsidiary, to mitigate as far as possible each company's net exposure.

All of the Company's long-term external borrowings are at fixed rates of interest and are therefore not exposed to changes in these rates. However, for short term commercial paper, the Company is affected by changes in these rates to the extent the redemption of these borrowings is funded by the issuance of new commercial paper or other borrowings. Further details of the Company's borrowings are provided in note K and the Group consolidated financial statements, note 52.

O – Risk management continued

Interest rate risk continued

The effect of a 100 basis point increase/decrease in interest rates on floating rate loans due to and from subsidiaries and on refinancing short term commercial paper as it matures would be a decrease/increase in profit before tax of £104 million *(2017: decrease/increase of £114 million)*. The net asset value of the Company's financial resources is not materially affected by fluctuations in interest rates.

Currency risk

The Company's direct subsidiaries are exposed to foreign currency risk arising from fluctuations in exchange rates during the course of providing insurance and asset management services around the world. The exposure of the subsidiaries to currency risk is considered from a Group perspective in the Group consolidated financial statements, note 59(c)(v).

The Company faces exposure to foreign currency risk through some of its borrowings which are denominated in Euros. However, most of these borrowings have been on-lent to a subsidiary which holds investments in Euros, generating the net investment hedge described in the Group consolidated financial statements, note 60(a).

Liquidity risk

Liquidity risk is the risk of not being able to make payments as they become due because there are insufficient assets in cash form. The Company's main sources of liquidity are liquid assets held within the Company and its subsidiary Aviva Group Holdings Limited, and dividends received from the Group's insurance and asset management businesses. Sources of liquidity in normal markets also include a variety of short and long-term instruments including commercial papers and medium and long-term debt. In addition to the existing liquid resources and expected inflows, the Company maintains significant undrawn committed borrowing facilities from a range of leading international banks to further mitigate this risk.

Maturity analysis of external borrowings and amounts due to and by subsidiaries are provided in notes G and K respectively.

P – Related party transactions

The Company had the following related party transactions.

Loans to and from subsidiaries are made on normal arm's-length commercial terms. The maturity analysis of the related party loans is as follows:

(i) Loans owed by subsidiaries

Maturity analysis	2018 £m	2017 £m
Within 1 year	—	1,730
1 – 5 years	**3,485**	754
Over 5 years	**1,916**	2,926
Total	**5,401**	5,410

The interest received on these loans is £92 million *(2017: £116 million)*. See note B.

On 1 January 2013, Aviva International Holdings Limited, an indirect subsidiary, transferred the following loan liabilities with the Company to Aviva Group Holdings Limited, its direct subsidiary:

- An unsecured loan of €250 million, entered into on 7 May 2003 accruing interest at fixed rate of 5.5% with settlement to be paid at maturity in May 2033. As at the statement of financial position date, the total amount drawn down on the facility was £224 million *(2017: £222 million)*.

On 23 December 2014, the Company provided an unsecured revolving credit facility of £2,000 million to Aviva Group Holdings Limited, its subsidiary, with an initial maturity date of 3 September 2018 which was subsequently extended to 31 December 2023. The facility accrues interest at 75 basis points above 6 month LIBOR. As at the statement of financial position date, the total amount drawn down on the facility was £1,752 million *(2017: £1,286 million)*.

On 27 June 2016, the Company provided an unsecured loan of C$446 million to Aviva Group Holdings Limited, its subsidiary, with a maturity date of 27 June 2046. The loan accrues interest at 348 basis points above 6 month CDOR. As at the statement of financial position date, the total amount drawn was £256 million *(2017: £263 million)*.

On 30 September 2016, the Company provided the following loans to Aviva Group Holdings Limited, its subsidiary:

- An unsecured loan of €850 million with a maturity date of 30 September 2021. The loan accrues interest at 115 basis points above 12 month EURIBOR with settlement to be paid at maturity. As at the statement of financial position date, the total amount drawn was £700 million *(2017: £754 million)*.
- An unsecured loan of €650 million with a maturity date of 5 July 2023. The loan accrues interest at a fixed rate of 1.54% with settlement to be paid at maturity. As at the statement of financial position date, the total amount drawn down on the facility was £584 million *(2017: £577 million)*.
- An unsecured loan of €700 million with a maturity date of 3 July 2024. The loan accrues interest at a fixed rate of 1.64% with settlement to be paid at maturity. As at the statement of financial position date, the total amount drawn down on the facility was £628 million *(2017: £621 million)*.
- An unsecured loan of €900 million with a maturity date of 4 December 2025. The loan accrues interest at a fixed rate of 1.74% with settlement to be paid at maturity. As at the statement of financial position date, the total amount drawn down on the facility was £808 million *(2017: £799 million)*.

P – Related party transactions continued

(i) Loans owed by subsidiaries continued

On 21 November 2016, the Company provided an unsecured loan of €500 million to Aviva Group Holdings Limited, its subsidiary, with a maturity date of 27 October 2023. The loan accrues interest at a fixed rate of 1.75% with settlement to be paid at maturity. As at the statement of financial position date, the total amount drawn was £449 million *(2017: £444 million)*.

(ii) Loans owed to subsidiaries

	2018			2017		
Maturity analysis of contractual undiscounted cash flows:	**Principal £m**	**Interest £m**	**Total £m**	Principal £m	Interest £m	Total £m
Within 1 year	**—**	**131**	**131**	3,108	122	3,230
1 – 5 years	**12,815**	**514**	**13,329**	9,900	390	10,290
Over 5 years	**—**	**—**	**—**	—	—	—
Total	**12,815**	**645**	**13,460**	13,008	512	13,520

The interest paid on these loans is £194 million *(2017: £175* million*)*. See note D.

On 3 September 2013 Aviva Group Holdings Limited, its subsidiary, provided an unsecured rolling credit facility of €250 million to the Company, accruing interest at 75 basis points above 6 month LIBOR and with an initial maturity date of 3 September 2018, which was subsequently extended to 31 December 2023. The total amount drawn down on the facility at 31 December 2018 was £nil *(2017: £nil)*.

On 14 December 2017, the Company renewed its facility with GA plc, its subsidiary, of £9,990 million and the Board approved the extension of the maturity of the loan by five years from 31 December 2017 to 31 December 2022. The other terms of the loan will remain unchanged, including the rate of interest payable by the Company to GA plc (65 basis points above 3 month LIBOR and in the event that the LIBOR rate is less than zero, the rate shall be deemed to be zero). As at 31 December 2018, the loan balance outstanding was £9,770 million *(2017: £9,900 million)*. This loan is secured against the ordinary share capital of Aviva Group Holdings Limited. The loan agreement also includes a penalty interest charge of 1% above the interest rate if any amounts payable under the loan agreement remain outstanding.

(iii) Other transactions

Services provided to related parties

	2018		2017[1]	
	Income earned in year £m	**Receivable at year end £m**	Income earned in year £m	Receivable at year end £m
Subsidiaries	**2,780**	**414**	1,740	298

1 Following a review of the Company's related party classifications, comparative amounts in respect of services provided to related parties have been amended from those previously reported. The balances exclude loans owed by subsidiaries.

Income earned relates to dividends. The Company incurred expenses in the year of £0.5 million *(2017: £0.2 million)* representing audit fees paid by the Company on behalf of subsidiaries. The Company did not recharge subsidiaries for these expenses.

The related parties' receivables are not secured and no guarantees were received in respect thereof. The receivables will be settled in accordance with normal credit terms.

Services provided by related parties

	2018		2017[1]	
	Expense incurred in year £m	**Payable at year end £m**	Expense incurred in year £m	Payable at year end £m
Subsidiaries	**224**	**4,206**	182	4,084

1 Following a review of the Company's related party classifications, comparative amounts in respect of services provided by related parties have been amended from those previously reported. The balances exclude loans owed to subsidiaries.

Expenses incurred relates to operating expenses. All the Company's operating cash requirements are met by subsidiary companies and settled through intercompany loans.

The related parties' payables are not secured and no guarantees were given in respect thereof. The payables will be settled in accordance with normal credit terms. Details of guarantees, indemnities and warranties given by the Company on behalf of related parties are given in note 55(f).

Key management

The directors and key management of the Company are considered to be the same as for the Group. Information on both the Company and Group key management compensation can be found in note 62.

Q – Subsequent events

There are no subsequent events to report.