News Release

8 March 2018

AVIVA PLC 2017 PRELIMINARY RESULTS ANNOUNCEMENT

Mark Wilson, Group Chief Executive Officer, said:

> In 2017, Aviva delivered growth in profits, in dividends, in capital and in cash. Aviva grew operating earnings per share by 7% and our full year dividend by 18%, the fourth consecutive year of double-digit dividend growth.
>
> Our largest market, the UK, has gone from strength to strength, growing sales, market share and profit. For Aviva, the UK is a dependable and growing business.
>
> Aviva has broad-based growth, with six of our eight major markets delivering double-digit profit improvement. We now have a collection of strong and growing businesses.
>
> This year, we expect to deploy £2 billion of excess cash, including £900 million in debt reduction, in excess of £500 million of capital returns to shareholders and about £600 million for bolt-on acquisitions.
>
> We continue to invest in our businesses and in particular on priorities such as digital to make our products and services easier for our customers.
>
> Aviva is now a simpler, stronger group and we are growing. Our strategy is paying dividends.

Profit	• Operating EPS[1,2] up 7% to 54.8 pence *(2016: 51.1 pence)* • Operating profit[3] up 2% to £3,068 million *(2016: £3,010 million)* • Operating profit from eight major markets excluding divestments up 6% to £3,508 million *(2016: £3,300 million)* • IFRS profit after tax £1,646 million *(2016: £859 million)*
Dividend	• 2017 total dividend per share up 18% to 27.4 pence *(2016: 23.3 pence)* • Dividend payout ratio 50%, 2017 target delivered
Capital	• Solvency II capital surplus £12.2 billion *(2016: £11.3 billion)* • Solvency II cover ratio[1,4] 198% *(2016: 189%)* • Operating capital generation[1] £2.6 billion *(2016: £3.5 billion)* • IFRS net asset value per share[1] 423 pence per share *(2016: 414 pence)*
Cash	• Cash remittances[1] up 33% to £2,398 million *(2016: £1,805 million)* • Group centre liquidity £2.0 billion *(2016: £1.8 billion)*
Growth	• General insurance net written premiums up 11% to £9,141 million *(2016: £8,211 million)* • Value of new business[1] up 25% to £1,243 million *(2016: £992 million)* • Aviva Investors fund management revenue up 14% to £577 million *(2016: £506 million)* • Total group assets under management[1] (AUM) up 9% to £490 billion *(2016: £450 billion)*
Combined ratio	• General insurance combined operating ratio[1] 96.6% *(2016: 94.2%[5])*

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3 Group adjusted operating profit is a non-GAAP Alternative Performance Measure (APM) which is not bound by the requirements of IFRS.
4 The estimated Solvency II position represents the shareholder view. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds of £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus of £1.5 billion *(2016: £1.1 billion)*. These exclusions have no impact on Solvency II surplus. The estimated Solvency II position includes the pro forma impacts of the disposals of Friends Provident International Limited (£0.1 billion increase to surplus) and the Italian Avipop Assicurazioni S.p.A (£0.1 billion increase to surplus). The 31 December 2016 Solvency II position included pro forma adjustments for the impact of the announced disposal of Antarius and the future impact of changes to UK tax rules announced by the Chancellor of the Exchequer's Autumn statement, which was removed following clarification in the 13 July 2017 Finance Bill. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional provisions (TMTP) to reflect interest rates at 31 December 2016 £0.4 billion decrease to surplus.
5 2016 excludes the impact of the change in the Ogden discount rate of £475 million, which was recognised as an exceptional adjusting item. 2016 also excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).

Foreword

All references to Operating profit[1,7] represent 'Group adjusted operating profit' as an Alternative Performance Measure (APM) which is not bound by IFRS. Further explanation can be found in the 'Other information' section of the Analyst Pack. All currency movements are calculated on unrounded numbers so minor rounding differences may exist.

Operating profit

	2017 £m	2016 £m	Sterling % change
Life business	**2,882**	2,642	9%
General insurance and health[2]	**700**	833	(16)%
Fund management	**164**	138	19%
Other[3]	**(678)**	(603)	(12)%
Total[2]	**3,068**	3,010	2%
Operating earnings per share[2,4,7]	**54.8p**	51.1p	7%

Cash remittances[5,7] and Operating Capital Generation (OCG): Solvency II basis[5,7]

	2017		2016	
	Cash Remittances £m	**OCG £bn**	Cash Remittances £m	OCG £bn
United Kingdom[5,6]	**1,800**	**2.8**	1,187	2.8
Canada	**55**	**(0.1)**	130	0.3
Europe[5,6]	**485**	**0.9**	449	1.0
Asia & Aviva Investors	**58**	**0.1**	39	—
Other[8]	**—**	**(1.1)**	—	(0.6)
Total	**2,398**	**2.6**	1,805	3.5

Expenses

	2017 £m	2016 £m	Sterling % change
Operating expenses[7]	**3,778**	3,408	11%
Integration & restructuring costs	**141**	212	(33)%
Expense Base	**3,919**	3,620	8%
Operating expense ratio[7]	**52.7%**	50.5%	2.2pp

Value of new business: Adjusted SII basis[7]

	2017 £m	2016 £m	Sterling % change[6]	Constant currency % change[6]
United Kingdom	**527**	429	23%	23%
Europe	**533**	429	24%	17%
Asia & Aviva Investors	**183**	134	37%	33%
Total	**1,243**	992	25%	21%

General insurance combined operating ratio[7,9]

	2017	2016	Change
United Kingdom[6]	**93.9%**	106.3%	(12.4)pp
Canada	**102.2%**	93.0%	9.2pp
Europe[6]	**93.3%**	95.1%	(1.8)pp
Combined operating ratio	**96.6%**	100.1%	(3.5)pp

IFRS profit after tax

	2017 £m	2016 £m	Sterling % change
IFRS profit after tax	**1,646**	859	92%
Basic earnings per share	**35.0p**	15.3p	129%

Dividend

	2017	2016	Sterling % change
Final dividend per share	19.00p	15.88p	20%
Total dividend per share	27.40p	23.30p	18%

Capital position

	2017	2016	Sterling % change
Estimated Shareholder Solvency II cover ratio[7,10,]	**198%**	189%	9.0pp
Estimated Solvency II surplus[7,10]	**£12.2bn**	£11.3bn	8%
Net asset value per share[7]	**423p**	414p	2%

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3 Other includes other operations, corporate centre costs and group debt and other interest costs, including coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax).
4 Net of tax, non-controlling interests, preference dividends, coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax). The calculation of earnings per share uses a weighted average of 4,041 million *(2016: 4,051 million)* ordinary shares in issue, after deducting treasury shares.
5 Cash remitted to Group and Solvency II operating capital generation are managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, cash remittances from Ireland were not aligned to the new management structure within Europe, but they were reported within United Kingdom.
6 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
7 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. Further details of this measure are included in the 'Other information' section of the Analyst Pack.
8 Other includes other Group activities and Group diversification benefit
9 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change.
10 The estimated Solvency II position represents the shareholder view. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds of £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus of £1.5 billion *(2016: £1.1 billion)*. These exclusions have no impact on Solvency II surplus. The estimated Solvency II position includes the pro forma impacts of the disposals of Friends Provident International Limited (£0.1 billion increase to surplus) and the Italian Avipop Assicurazioni S.p.A (£0.1 billion increase to surplus). The 31 December 2016 Solvency II position included pro forma adjustments for the impact of the announced disposal of Antarius and the future impact of changes to UK tax rules announced by the Chancellor of the Exchequer's Autumn statement, which was removed following clarification in the 13 July 2017 Finance Bill. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional provisions (TMTP) to reflect interest rates at 31 December 2016 £0.4 billion decrease to surplus.

Overview

In 2017, Aviva delivered growth: in profits, in dividends, in capital and in cash.

Our headline results show broad-based growth. Operating earnings per share (EPS)[2,3] gained 7% to 54.8 pence *(2016[5]: 51.1 pence)*, operating capital generation[2] remained strong at £2.6 billion (*2016: £3.5 billion*), Solvency II capital surplus[2,4] rose to £12.2 billion (*2016: £11.3 billion*) and business unit cash remittances[2] increased 33% to £2.4 billion *(2016: £1.8 billion)*.

Operating profit[1] increased 2% to £3,068 million *(2016: £3,010 million)*. Excluding the impact of divestments, our eight major markets delivered a 6% increase in operating profit, with double-digit growth contributed by the UK, Aviva Investors, France, Poland, Ireland and Singapore. Operating profits also benefitted from a net positive impact from assumption changes in the UK. However, Canada reported a disappointing result reflecting adverse changes in prior year reserve development and higher current year claims inflation. We have implemented a detailed recovery plan in Canada, raising premium rates and taking actions on underwriting, claims, distribution and expense management.

In light of our results, we have increased our total dividend 18% to 27.4 pence *(2016: 23.3 pence)*. This marks the fourth consecutive year of double-digit growth in the total dividend and we have reached our target of paying out 50% of operating EPS.

Having successfully executed our plan to strengthen the balance sheet and focus Aviva on those businesses with the strongest fundamentals, we have increased our growth ambitions. Our 2017 results provide evidence that we are capable of delivering consistent growth in operating EPS and dividends.

Capital allocation

A key element of Aviva's strategy is allocating capital towards businesses and segments with the strongest returns and growth prospects. We made further progress on this strategic objective in 2017, announcing divestments that will result in our withdrawal from Spain, Taiwan and Friends Provident International.

We have significantly simplified and focussed our geographic footprint over recent years, halving the number of markets in which we have operations. This process is now complete and we are no longer actively seeking to reduce our geographic footprint. As a result, Aviva's core business is now comprised of eight major markets and six strategic investments.

Our major markets are the UK, France, Canada, Poland, Ireland, Italy, Singapore and Aviva Investors. These markets have structural drivers of demand underpinned by economic growth, demographics and regulation. Within these markets, Aviva has competitive strength in distribution, brand, capability and scale efficiency that allows us to deliver consistent growth and attractive returns. The major markets are currently responsible for virtually all of Aviva's operating profit and cash remittances.

Our strategic investments are businesses where we are targeting long-term growth by working with leading local partners in populous countries with strong growth characteristics. Our strategic investment markets are China, Hong Kong, India, Turkey, Vietnam and Indonesia. While in aggregate these businesses make a modest contribution to Aviva's financial performance today, they are sources of long-term upside for operating profit, cash flow and value.

Aviva's capital strength provides us with significant flexibility in terms of future capital allocation. Our Solvency II capital surplus[2,4] of £12.2 billion equates to a Solvency II cover ratio of 198%, well above our 150% to 180% working range. As a result, we have signalled plans to deploy £3 billion of excess cash in 2018 and 2019.

Our priorities for deployment remain unchanged. Our objective is to use surplus cash to deliver sustainable benefits to our shareholders. For 2018, we have outlined our intent to repay approximately £900 million of expensive hybrid debt, saving more than £60 million in annual pre-tax interest expense. We have allocated approximately £600 million for bolt-on M&A, which includes the €130 million already committed to the Friends First acquisition in Ireland. And we have indicated that in excess of £500 million will be used for capital returns, which may include liability management, share buy-back or special dividends.

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Meeting our customers' needs

Aviva has made significant, tangible progress in delivering our True Customer Composite strategy in 2017.

In the UK, Aviva is unique as the only large-scale composite insurer with top three positions across multiple product lines. In 2017, we moved to a unified management structure for our life, general and health insurance businesses under the leadership of Andy Briggs. This change has helped us to increase the collaboration between different product teams and improve our focus on the customer. The strength of our franchises is evident, with large mandate wins driving higher new business volumes across our major product segments. We saw continued success in our partnership channels, expanding our leading position in the bank market and delivering a significant uplift in net flows into our advisor platform. Meanwhile, we made further strong progress in our direct to consumer business, growing net written premiums by 14% and we increased the number of customers in the UK who have more than one product with Aviva by approximately 300,000.

Our strength in distribution and manufacturing is also helping to strengthen our composite position in markets outside the UK. In France, our new leadership team intends to align our high quality distribution franchises under a single Aviva brand to deepen customer relationships. In Ireland, we have maintained positive momentum in both sales volume and operating profit in 2017 and the acquisition of Friends First will move our market share to mid-teens across both life and general insurance. Italy has expanded IFA distribution and developed innovative hybrid products, which helped to underpin a doubling of value of new business and strong net fund flows. Singapore is drawing on our digital and distribution expertise to develop the Aviva Financial Advisors network, which has grown to more than 670 advisors.

Digital

Aviva seeks to play a leading role in the digital revolution of insurance and our intellectual property (IP) has had a significant impact on our business in the past 12 months. Our UK digital and direct business passed the £1 billion premium mark in 2017, delivering growth of 14%. Our digital IP also played a pivotal role in helping us to secure long-term relationships with HSBC in the UK and Tencent in Hong Kong.

In 2017, we established Aviva Quantum, our artificial intelligence and global data science group, which now has 550 data scientists. This group has developed our Ask it Never IP, which allows us to reduce the number of questions we ask customers during the underwriting process, significantly improving their quote and buy experience. We are using this IP to develop a new generation of insurance products, called Aviva Plus. This proposition takes the subscription model and applies it to insurance and is expected to be progressively rolled out to our existing UK customers.

In the next few years, we will continue to invest heavily to grow revenue and fully digitise our business. Through this, we are targeting improvements in efficiency and customer experience that we expect to lead to higher sales, better retention, expanding margins and in turn growing profit over the medium to long term.

Outlook

The streamlining of our geographic perimeter is complete and the strength of our franchises is beginning to shine through. As a result, we have upgraded and brought forward our growth ambitions, and are now targeting greater than 5% growth in operating EPS[2,3] from 2018. Together with our targets of £8 billion of cumulative remittances in 2016-2018 inclusive and increase in dividend payout ratio to 55-60% by 2020, we remain confident that we can continue to deliver cash flow plus growth for our shareholders.

Mark Wilson
Group Chief Executive Officer

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Overview

In 2017, Aviva delivered growth in operating profit[1], generated increased cash flow, further strengthened our Solvency II cover ratio[2,4] and used excess cash and capital to repay debt and repurchase shares.

Operating profit increased 2% to £3,068 million *(2016: £3,010 million)* while operating earnings per share (EPS)[2,3,5] advanced 7% to 54.8 pence *(2016: 51.1 pence)*. The Board of Directors has proposed a final dividend of 19.0 pence per share. This takes the full year dividend per share to 27.4 pence, an increase of 18% and meeting our 2017 dividend payout ratio target of 50% of operating EPS.

IFRS profit after tax attributable to shareholders was £1,646 million and basic earnings per share 35.0 pence *(2016: £859 million and 15.3 pence respectively)*. The year-on-year movement in these measures reflects the one-off exceptional charge of £475 million incurred in 2016 as a result of the change in the Ogden discount rate, a reduction in integration and restructuring expenses and gains on divestitures, offset by a re-measurement loss of £118 million arising from our recent announcement to dispose of Friends Provident International, which has been measured at fair value.

In 2017, Aviva repaid debt of US$650 million and returned capital to shareholders via a £300 million share repurchase program. With our Solvency II cover ratio remaining above our working range, we have plans to reduce hybrid debt by a further £900 million in 2018 and will consider other opportunities to deploy surplus capital to strengthen our businesses and enhance long-term shareholder returns.

During 2017, Aviva announced divestments of joint ventures in France, Spain, Taiwan, and Italy as well as the sale of Friends Provident International. Aviva invested in Vietnam, where we acquired 100% ownership of our joint venture with VietinBank, and we announced the acquisition of Friends First in Ireland, strengthening our position in the Irish life insurance market. In Hong Kong, regulatory approval was recently granted for our joint venture with Tencent and Hillhouse.

In 2017, our major markets demonstrated their competitive strength by growing assets, improving net flows and increasing premium volumes. Our priority is to accelerate the performance of our businesses and translate this into attractive and dependable growth in operating profit and dividends.

Operating performance: Major markets

Aviva currently derives virtually all of its operating profit and cash flow from eight major markets: UK, Ireland, France, Poland, Italy, Canada, Singapore and Aviva Investors. This is where Aviva believes it is currently best positioned to compete on the basis of our scale, brand and leading distribution.

The operating profit from these major markets (excluding divestitures) totalled £3,508 million *(2016: £3,300 million)*, an increase of 6%. Growth was supported by higher operating profit from our businesses in the UK, Aviva Investors, France, Ireland, Poland and Singapore. These more than offset the reduction in operating profit from Canada.

United Kingdom

Aviva is unique as the only large-scale composite insurer in the UK market with a top three share across multiple product lines. In UK Insurance operating profit increased 13% to £2,201 million *(2016: £1,946 million)* due to attractive growth across most of our core product lines together with favourable development of reserves.

In long-term savings, operating profit rose 30% to £185 million *(2016: £142 million)* reflecting higher assets under management (AUM)[2], stable in-force profit margin and strict management of acquisition costs, despite increases in new business sales. Net fund flows almost doubled to £5.6 billion *(2016: £2.9 billion)* due to mandate wins in workplace pensions together with a sharp increase in net flows into the advisor platform, where AUM increased by 56% to £20 billion.

Operating profit from annuities and equity release grew 11% to £725 million *(2016: £656 million)* due to higher new business volumes and continued progress on optimising assets backing the in-force portfolio. New business volumes increased 58% to £4.3 billion *(2016: £2.7 billion)*, mainly as a result of bulk purchase annuities, where sales more than tripled in 2017 to £2,045 million *(2016: £620 million)*.

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United Kingdom (continued)

Life protection saw a reduction in operating profit[1] to £227 million *(2016: £242 million)*. While increased volumes and margins supported growth in new business contribution from both the consumer and group protection portfolios, the result from the existing business declined due to unfavourable claims experience in group protection.

General insurance made continued progress in 2017, increasing net written premiums by 4% while further refining product and channel mix. Operating profit grew 4% to £408 million *(2016: £392 million)* due to improved underwriting. Excluding the impact of the change in Ogden discount rate in the prior year, the combined operating ratio[2,6] was stable at 93.9%, helping to generate underwriting result[2] of £246 million *(2016: £232 million)*. The long term investment return was consistent with the prior year at £163 million *(2016: £162 million)*. In 2017, we announced the extension and expansion of our relationship with HSBC in the UK, which is expected to provide additional impetus for growth in in 2018.

Our legacy business of mature savings products maintained operating profit at £331 million *(2016: £332 million)*. AUM[2] in the legacy portfolio remained stable, with positive investment markets offsetting net fund outflows as policies matured. We continue to expect operating profit from the legacy business to decline gradually over the medium term.

In addition to the above core product lines, we have made changes to assumptions and methodology in 2017. The net effect of these changes increased to £290 million *(2016: £151 million)*. This included changes in relation to longevity reserves, partially offset by increased provisions in other areas including expenses.

Aviva's UK business has unrivalled strength and depth and provides a blueprint for our digital composite strategy. Looking forward, our priorities are to grow operating profit while generating significant levels of free cash-flow that can be invested or returned to deliver additional long-term benefits for shareholders.

The UK offers structural growth drivers including the shift in assets and savings flows from defined benefit (DB) pensions into defined contribution (DC), rising auto-enrolment pension contribution rates and the trend for corporates to seek insured solutions to manage (and outsource) their DB pension schemes. By leveraging the strength of our relationships with customers and partners, we are focussed on extending our track record of growth via higher net flows, increases in premium volumes and continued discipline in managing expenses.

Aviva Investors

Aviva Investors is targeting double digit growth by transforming its position and becoming a leading asset manager of both third party and Aviva assets. It is achieving this by focussing on three key areas:

- Providing solutions – where the AIMS range of funds seeks to achieve investors' desired outcomes with reduced volatility.
- Real Assets expertise – where our capability and expertise in real estate and infrastructure origination supports both the growing need of Aviva's annuity portfolio and the requirements of external investors, including defined benefit pension schemes.
- Improving investment performance – where we can capitalise on our strong fund performance track record, the strength of the Aviva brand and the acquisition of additional asset management talent to increase our presence in traditional asset classes.

In 2017, Aviva Investors achieved another year of strong growth, with fund management operating profit rising 21% to £168 million *(2016: £139 million)*. Revenue grew 14% to £577 million *(2016: £506 million)* due to higher average AUM, an increase in revenue margin associated with the expansion of the third party business and greater levels of infrastructure asset origination. Operating expenses[2] rose slower than revenues at 11%, leading to an improvement in the operating margin to 29% *(2016: 27%)*.

AUM rose to £353 billion *(2016: £345 billion)*. Net inflows of £1.6 billion *(2016: £1.0 billion)* benefitted from higher inflows into internal core propositions while market and foreign exchange movements added £5.9 billion to AUM.

Looking forward, the priority for Aviva Investors is to continue the targeted shift toward external funds and Aviva core propositions, along with increased origination activity in infrastructure and real estate financing. This should further increase revenue margins and operating profits and more than offset the net outflow in legacy Aviva life products that are no longer actively marketed.

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Ireland

In Ireland, Aviva is a composite insurer with a leading market position in general insurance and a top four position in life insurance. Our strategy in Ireland is to leverage the strong capabilities of the Aviva group, bringing together leading digital propositions and a large-scale composite business model to capitalise on Aviva's strong brand recognition.

In 2017, Aviva Ireland delivered operating profit[1] of £86 million *(2016: £80 million)* an increase of 18% after adjusting out the contribution from the health insurance business divested in 2016. In general insurance, net written premiums increased 8% to £436 million *(2016: £378 million)* and the combined operating ratio[2,6] improved by one percentage point to 91.4%. This underpinned growth in general insurance operating profit to £53 million *(2016: £48 million)*. In life insurance, operating profit was £33 million *(2016: £32 million)* with a modest increase in sales volumes offset by higher investment management charges.

Looking forward, the priority in Ireland is to maintain underwriting discipline and continue to develop our composite, multi-product franchise with brokers, partners and customers. We recently announced the acquisition of Friends First for €130 million (subject to regulatory approval), increasing the scale of our life insurance business.

France

In France, Aviva has strong distribution and a composite footprint, with increased brand recognition providing an opportunity to expand our presence with customers.

France operating profit was flat in local currency terms at £529 million *(2016: £499 million)*. However, this reflected a partial year contribution from Antarius, which was sold to Societe Generale in April 2017. Excluding Antarius, operating profit increased 13% in local currency terms to £507 million *(2016: £421 million)*.

In life insurance, operating profit excluding Antarius increased 8% in local currency to £403 million *(2016: £351 million)*. Fee revenues benefitted from higher average AUM[2] and our results were further supported by the continued evolution of business mix towards protection and unit-linked products.

In general insurance, operating profit gained 37% to £104 million *(2016: £70 million)*. Net written premiums increased 3% to £1,053 million *(2016: £957 million)* due to growth in direct personal lines, while lower weather related claims helped the combined operating ratio[6] improve to 94.5% *(2016: 97.0%)*.

In France, we intend to consolidate our distribution into four key channels under a single Aviva brand. This targets improved alignment and efficiency within the distribution network, strengthening Aviva's ability to develop relationships with customers in the French market across our composite product offering.

Canada

Aviva is a scale player in the Canadian general insurance market, with a circa 10% market share. We have a leading position in the broker channel and, following our recent acquisition of RBC General Insurance (RBCGI), have expanded our presence into the direct and bank channels. Canada has provided attractive returns on capital in most years and our current positioning provides a long-term opportunity to be a leader in the general insurance market while seeking to develop elements of a composite footprint for the benefit of customers.

In 2017, Canada had a very challenging year, with operating profit falling to £46 million *(2016: £269 million)*. Net written premiums grew 15% to £3,028 million *(2016: £2,453 million)* due to a full 12 month contribution from RBCGI (acquired in July 2016) and long term investment return rose to £115 million *(2016: £105 million)*. However, the underwriting result deteriorated from a profit of £168 million in 2016 to a loss of £64 million in 2017.

The increase in the combined operating ratio[6] to 102.2% *(2016: 93.0%)* was attributable to adverse prior year reserve development across auto and property insurance portfolios together with weaker accident year profitability in the auto insurance market, where bodily injury claims inflation rose sharply. In 2016, prior year reserve releases added £130 million to operating profit, while in 2017, reserves were strengthened by £37 million. The underwriting result in Canada also suffered from heightened levels of large losses in the commercial insurance portfolio, while weather and natural catastrophe claims remained at elevated levels.

Looking forward, the priority in Canada is to restore operating profit to historical levels. We have undertaken a number of remedial actions, including increasing premium rates across a number of product classes. Our medium term objective is to return our combined operating ratio to a 94-96% target range. However, the impact of these actions may take time to be reflected in our results, and our combined operating ratio is likely to remain above our target range in 2018 and 2019.

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2 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. Further details of this measure are included in the 'Other information' section of the Analyst Pack.
6 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change.

Poland

Aviva is one of the leading composite insurers in Poland, with a number two position in life insurance underpinned by strong multi-channel distribution.

Aviva Poland increased operating profit[1] by 12% in local currency to £177 million *(2016: £140 million)*. In life insurance, operating profit rose 8% to £156 million *(2016: £132 million)* while general insurance operating profit was £21 million *(2016: £8 million)*.

Growth was supported by higher average AUM[2] in life insurance helped by improved productivity in our direct sales force and higher retention. In general insurance, increased volumes in direct retail and commercial lines together with lower motor claims frequency helped to support growth. Operating profit from both the life insurance and general insurance businesses also benefitted from consolidating the joint venture with Bank Zachodni WBK SA for the first time in 2017.

The emphasis in Poland is maintaining positive momentum in the life insurance business and continuing to build scale across the composite.

Italy

Aviva has a composite position in the Italian market supported by joint ventures and distribution relationships with leading banks and a growing franchise among independent financial advisors. We have an opportunity to deploy our digital expertise in Italy to further strengthen our propositions for customers and distribution partners.

Aviva Italy has generated strong growth in life new business volumes and delivered £2.3 billion of net fund inflows reflecting the success of their hybrid product and expansion of the distribution footprint. However, this also gave rise to short-term strain in profitability against what was a record result in 2016. As a result operating profit from Aviva's Italian business was stable in 2017 at £213 million *(2016: £212 million)*, despite a 7% benefit from foreign exchange translation. In life insurance, operating profit of £168 million *(2016: £170 million)* represented an 8% decline in local currency terms. General insurance operating profit was stable at £45 million *(2016: £42 million)*, reflecting an increase in net written premiums to £412 million *(2016: £395 million)* and a slight deterioration in combined operating ratio[2,6] to 94.2% *(2016: 92.5%)*.

Aviva Italy is a leader in the market in terms of product design and this is translating into attractive new business volumes and net inflows. We remain focussed on strengthening our strategic positioning in Italy by expanding distribution and increasing emphasis on our composite business model.

Singapore

We are a major player in the Singapore life and health insurance market and our strategy is to encourage the evolution of distribution in the market towards financial advisors. We believe this will benefit customers, providing greater convenience, increased choice and superior value for money. Aviva Financial Advisors now has more than 670 financial advisors, to whom we provide technology, compliance and administrative support. Our ambition is the further expand this channel, where Aviva is a leading provider of long-term savings and protection products.

In 2017, Singapore delivered operating profit of £110 million *(2016: £100 million)*, an increase of 5% in local currency terms. Life insurance operating profit of £118 million *(2016: £112 million)* was stable in local currency terms. Aviva's financial advisor network began to build momentum in new business production, increasing value of new business[2] by 24% to £123 million. In general insurance and health, operating losses narrowed to £8 million *(2016: £12 million)*.

Strategic investments

In addition to its major markets, Aviva has strategic investments which are managed to produce long-term growth in operating profit and value. These strategic investments are in China, Hong Kong, Turkey, India, Vietnam and Indonesia. Within this, we are currently delivering attractive and growing profits in our joint ventures in China and Turkey, however these are offset by losses from less mature businesses in Indonesia and Vietnam, coupled with our acceleration of investment into Digital.

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2 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. Further details of this measure are included in the 'Other information' section of the Analyst Pack.
6 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change.

Capital & cash

At 31 December 2017, Aviva's Solvency II capital surplus[2,4] was £12.2 billion *(2016: £11.3 billion)*, equivalent to a cover ratio[2,4] of 198% *(2016: 189%)*. We increased our Solvency II cover ratio by 9 percentage points, whilst also paying off approximately £500 million of subordinated debt and completing a £300 million share repurchase programme during 2017. Operating capital generation[2] of £2.6 billion *(2016: £3.5 billion)* remained well above underlying levels due to benefits associated with merging legal entities in the UK and other actions as we continue to adapt to the Solvency II regime. Underlying capital generation remained stable at £1.7 billion *(2016: £1.7 billion)*, despite higher premium volumes in general insurance, increased new business sales in life insurance, lower profitability from our Canadian business and the impact of divestitures. Cash remittances[2] from our business units were £2,398 million *(2016: £1,805 million)*. The increase in remittances was mainly attributable to the UK, which contributed £1,800 million *(2016: £1,187 million)*. Remittances from the UK general insurance business increased and special remittances from the life business arising from the Friends Life integration doubled to £500 million. Remittances from Europe of £485 million *(2016: £449 million)* and Aviva Investors of £58 million *(2016: £39 million)* both grew in conjunction with operating profit progression while Canada's weaker results led to a decline in remittances to £55 million *(2016: £130 million)*.

At our Capital Markets Day event in Poland in November 2017, we upgraded our target for total cash remittances to Group centre over the three year period from 2016 to 2018 inclusive to £8 billion (previously £7 billion). With cumulative remittances inclusive of announced divestiture proceeds at £5.4 billion, we remain on track to deliver this target.

Aviva's Group centre cash resources are £2.0 billion *(February 2017: £1.8 billion)*. Our intention is to maintain this in a range of £1.0 billion to £1.5 billion over time. In view of our surplus capital and liquidity position and expected level of Group centre cash receipts over the coming year, we anticipate having £3 billion available for deployment in 2018 and 2019.

Our priorities for deployment of surplus cash and capital remain unchanged. We prioritise profitable organic growth in our existing businesses. After allowing for this, we will look to reduce debt balances, consider bolt-on acquisitions and provide additional capital returns.

In 2018, we have signalled our intention to reduce hybrid debt by £900 million. We are targeting more than £500 million in additional capital returns, incorporating liability management and returns to shareholders. In this regard, we have the ability to cancel preference shares at par value[7] through a reduction of capital, subject to shareholder vote and court approval. The preference shares carry high coupons that are not tax-deductible and they will not count as regulatory capital from 2026. As we evaluate the alternatives, one of the things we are considering is how to balance the interests of ordinary and preferred shareholders. We have committed €130 million to acquire Friends First in Ireland and have further appetite for bolt-on acquisitions in our major markets. Any unused M&A budget will be diverted to further reduce debt balances or fund additional returns.

Outlook

Having strengthened our balance sheet and streamlined our business, Aviva is now at a turning point in terms of our capacity for growth. Our eight major markets are Aviva's strongest businesses, with leading distribution, brand strength, scale efficiency and underwriting expertise driving attractive growth potential. We continue to invest in our businesses to build on Aviva's competitive advantage. We are strengthening our capabilities in data science and digital innovation to deliver leading propositions for customers. This is already providing tangible results in terms of engagement with customers and distribution partners. We have increased our investment in talent to support growth across the group, with notable examples being Aviva Investors, bulk-purchase annuity origination and Global Corporate and Specialty insurance. We also continue to develop our strategic partnerships in emerging markets.

This investment requires us to prioritise and reallocate resources. We are initiating a zero-based budgeting programme and are seeking improvements in efficiency by reorganising functional processes through global shared services. We have also chosen to exit markets or product segments, with proceeds from these divestitures, together with special remittances from UK Insurance, providing capacity for investment.

2 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. Further details of this measure are included in the 'Other information' section of the Analyst Pack.

4 The estimated Solvency II position represents the shareholder view. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds of £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus of £1.5 billion *(2016: £1.1 billion)*. These exclusions have no impact on Solvency II surplus. The estimated Solvency II position includes the pro forma impacts of the disposals of Friends Provident International Limited (£0.1 billion increase to surplus) and the Italian Avipop Assicurazioni S.p.A (£0.1 billion increase to surplus). The 31 December 2016 Solvency II position included pro forma adjustments for the impact of the announced disposal of Antarius and the future impact of changes to UK tax rules announced by the Chancellor of the Exchequer's Autumn statement, which was removed following clarification in the 13 July 2017 Finance Bill. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional provisions (TMTP) to reflect interest rates at 31 December 2016 £0.4 billion decrease to surplus.

7 Par value includes accrued interest, arrears and in the case of the General Accident plc preference shares, issue premium.

Outlook (continued)

We have outlined an ambition to maintain higher growth in operating EPS[2,3]. Aviva is now a more focussed business, with operations in countries that have attractive economic prospects and segments where there are sustainable and growing demand dynamics. Turning specifically to the drivers of our results and other large or notable items, we highlight the following factors for our 2018 results:

- Organic growth – we are targeting greater than 5% growth in operating profit[1] from our major markets;
- Canada – we expect a partial recovery in operating profit to provide an approximately 1-2% incremental benefit for Group operating profit in 2018;
- Capital management – the debt retirement and share repurchase undertaken in 2017 are expected to support operating EPS growth by approximately 2% in 2018. Additional actions in 2018, including additional planned debt retirement, are expected to provide a further 1% to 1.5% benefit to operating EPS in 2018.
- Divestitures – the expected completion of disposals in Spain, Italy and Friends Provident International are expected to reduce operating EPS by approximately 4% in 2018, depending upon the timing of completion;
- Tax rate – our operating tax rate, which was 21% in 2017, may be higher in 2018, depending on business mix of actual profitability. This may reduce operating EPS growth by approximately 1-2%.

With positive and negative items largely offsetting, we expect fundamental business performance in our major markets to drive our 2018 results. We are targeting greater than 5% growth in operating EPS subject to the impacts from foreign exchange, weather and other items.

Thomas D. Stoddard
Chief Financial Officer

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2 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. Further details of this measure are included in the 'Other information' section of the Analyst Pack.
3 This measure is derived from the Group adjusted operating profit APM. Further details of this measure are included in the 'Other information' section of the Analyst Pack.

Notes to editors

All comparators are for the full year 2016 position unless otherwise stated.

Income and expenses of foreign entities are translated at average exchange rates while their assets and liabilities are translated at the closing rates on 31 December 2017. The average rates employed in this announcement are 1 euro = £0.88 *(2016: 1 euro = £0. 82)* and CAD$1 = £0.60 *(2016: CAD$1 = £0.56)*.

Growth rates in the press release have been provided in sterling terms unless stated otherwise. The following supplement presents this information on both a sterling and constant currency basis.

Cautionary statements:

This should be read in conjunction with the documents distributed by Aviva plc (the "Company" or "Aviva") through the Regulatory News Service (RNS). This announcement contains, and we may make other verbal or written "forward-looking statements" with respect to certain of Aviva's plans and current goals and expectations relating to future financial condition, performance, results, strategic initiatives and objectives. Statements containing the words "believes", "intends", "expects", "projects", "plans", "will," "seeks", "aims", "may", "could", "outlook", "likely", "target", "goal", "guidance", "trends", "future", "estimates", "potential" and "anticipates", and words of similar meaning, are forward-looking. By their nature, all forward-looking statements involve risk and uncertainty. Accordingly, there are or will be important factors that could cause actual results to differ materially from those indicated in these statements. Aviva believes factors that could cause actual results to differ materially from those indicated in forward-looking statements in the announcement include, but are not limited to: the impact of ongoing difficult conditions in the global financial markets and the economy generally; the impact of simplifying our operating structure and activities; the impact of various local and international political, regulatory and economic conditions; market developments and government actions (including those arising from the referendum on UK membership of the European Union); the effect of credit spread volatility on the net unrealised value of the investment portfolio; the effect of losses due to defaults by counterparties, including potential sovereign debt defaults or restructurings, on the value of our investments; changes in interest rates that may cause policyholders to surrender their contracts, reduce the value of our portfolio and impact our asset and liability matching; the impact of changes in short or long-term inflation; the impact of changes in equity or property prices on our investment portfolio; fluctuations in currency exchange rates; the effect of market fluctuations on the value of options and guarantees embedded in some of our life insurance products and the value of the assets backing their reserves; the amount of allowances and impairments taken on our investments; the effect of adverse capital and credit market conditions on our ability to meet liquidity needs and our access to capital; changes in, or restrictions on, our ability to initiate capital management initiatives; changes in or inaccuracy of assumptions in pricing and reserving for insurance business (particularly with regard to mortality and morbidity trends, lapse rates and policy renewal rates), longevity and endowments; a cyclical downturn of the insurance industry; the impact of natural and man-made catastrophic events on our business activities and results of operations; our reliance on information and technology and third-party service providers for our operations and systems; the inability of reinsurers to meet obligations or unavailability of reinsurance coverage; increased competition in the UK and in other countries where we have significant operations; regulatory approval of extension of use of the Group's internal model for calculation of regulatory capital under the European Union's Solvency II rules; the impact of actual experience differing from estimates used in valuing and amortising deferred acquisition costs ("DAC") and acquired value of in-force business ("AVIF"); the impact of recognising an impairment of our goodwill or intangibles with indefinite lives; changes in valuation methodologies, estimates and assumptions used in the valuation of investment securities; the effect of legal proceedings and regulatory investigations; the impact of operational risks, including inadequate or failed internal and external processes, systems and human error or from external events (including cyber attack); risks associated with arrangements with third parties, including joint ventures; our reliance on third-party distribution channels to deliver our products; funding risks associated with our participation in defined benefit staff pension schemes; the failure to attract or retain the necessary key personnel; the effect of systems errors or regulatory changes on the calculation of unit prices or deduction of charges for our unit-linked products that may require retrospective compensation to our customers; the effect of fluctuations in share price as a result of general market conditions or otherwise; the effect of simplifying our operating structure and activities; the effect of a decline in any of our ratings by rating agencies on our standing among customers, broker-dealers, agents, wholesalers and other distributors of our products and services; changes to our brand and reputation; changes in government regulations or tax laws in jurisdictions where we conduct business, including decreased demand for annuities in the UK due to changes in UK law; the inability to protect our intellectual property; the effect of undisclosed liabilities, integration issues and other risks associated with our acquisitions; and the timing/regulatory approval impact, integration risk and other uncertainties, such as non-realisation of expected benefits or diversion of management attention and other resources, relating to announced acquisitions and pending disposals and relating to future acquisitions, combinations or disposals within relevant industries; the policies, decisions and actions of government or regulatory authorities in the UK, the EU, the US or elsewhere, including the implementation of key legislation and regulation. For a more detailed description of these risks, uncertainties and other factors, please see 'Other information – Shareholder Information – Risks relating to our business' in Aviva's most recent Annual Report. Aviva undertakes no obligation to update the forward looking statements in this announcement or any other forward-looking statements we may make. Forward-looking statements in this presentation are current only as of the date on which such statements are made.

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Contents

Key financial metrics

Foreword

All references to Operating profit[1,7] represent 'Group adjusted operating profit' as an alternative performance measure which is not bound by IFRS. Further explanation can be found in the Analyst Pack Glossary. All currency movements are calculated on unrounded numbers so minor rounding differences may exist.

Operating profit

	2017 £m	2016 £m	Sterling % change
Life business	**2,882**	2,642	9%
General insurance and health[2]	**700**	833	(16)%
Fund management	**164**	138	19%
Other[3]	**(678)**	(603)	(12)%
Total[2]	**3,068**	3,010	2%
Operating earnings per share[2,4,7]	**54.8p**	51.1p	7%

Cash remittances[5,7] and Operating Capital Generation (OCG): Solvency II basis[5,7]

	2017		2016	
	Cash Remittances £m	OCG £bn	Cash Remittances £m	OCG £bn
United Kingdom[5,6]	**1,800**	**2.8**	1,187	2.8
Canada	**55**	**(0.1)**	130	0.3
Europe[5,6]	**485**	**0.9**	449	1.0
Asia & Aviva Investors	**58**	**0.1**	39	—
Other[8]	**—**	**(1.1)**	—	(0.6)
Total	**2,398**	**2.6**	1,805	3.5

Expenses

	2017 £m	2016 £m	Sterling % change
Operating expenses[7]	**3,778**	3,408	11%
Integration & restructuring costs	**141**	212	(33)%
Expense Base	**3,919**	3,620	8%
Operating expense ratio[7]	**52.7%**	50.5%	2.2pp

Value of new business: Adjusted SII basis[7]

	2017 £m	2016 £m	Sterling % change[6]	Constant currency % change[6]
United Kingdom	**527**	429	23%	23%
Europe	**533**	429	24%	17%
Asia & Aviva Investors	**183**	134	37%	33%
Total	**1,243**	992	25%	21%

General insurance combined operating ratio[7,9]

	2017	2016	Change
United Kingdom[6]	**93.9%**	106.3%	(12.4)pp
Canada	**102.2%**	93.0%	9.2pp
Europe[6]	**93.3%**	95.1%	(1.8)pp
Combined operating ratio	**96.6%**	100.1%	(3.5)pp

IFRS profit after tax

	2017 £m	2016 £m	Sterling % change
IFRS profit after tax	**1,646**	859	92%
Basic earnings per share	**35.0p**	15.3p	129%

Dividend

	2017	2016	Sterling % change
Final dividend per share	**19.00p**	15.88p	20%
Total dividend per share	**27.40p**	23.30p	18%

Capital position

	2017	2016	Sterling % change
Estimated Shareholder Solvency II cover ratio[7,10,11,12]	**198%**	189%	9.0pp
Estimated Solvency II surplus[7,10,11,12]	**£12.2bn**	£11.3bn	8%
Net asset value per share[7]	**423p**	414p	2%

1 Group adjusted operating profit is a non-GAAP Alternative Performance Measure (APM) which is not bound by the requirements of IFRS.
2 2016 excludes the impact of the change in the Ogden discount rate of £475 million, which has been recognised as an exceptional adjusting item. 2016 also excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).
3 Other includes other operations, corporate centre costs and group debt and other interest costs, including coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax).
4 Net of tax, non-controlling interests, preference dividends, coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax). The calculation of earnings per share uses a weighted average of 4,041 million *(2016: 4,051 million)* ordinary shares in issue, after deducting treasury shares.
5 Cash remitted to Group and Solvency II operating capital generation are managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, cash remittances from Ireland were not aligned to the new management structure within Europe, but they were reported within United Kingdom.
6 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
7 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.
8 Other includes other Group activities and Group diversification benefit
9 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change.
10 The estimated Solvency II position represents the shareholder view. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds of £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus of £1.5 billion *(2016: £1.1 billion)*. These exclusions have no impact on Solvency II surplus.
11 The estimated Solvency II position includes the pro forma impacts of the disposals of Friends Provident International Limited (£0.1 billion increase to surplus) and the Italian Avipop Assicurazioni S.p.A (£0.1 billion increase to surplus).
12 The 31 December 2016 Solvency II position included pro forma adjustments for the impact of the announced disposal of Antarius and the future impact of changes to UK tax rules announced by the Chancellor of the Exchequer's Autumn statement, which was removed following clarification in the 13 July 2017 Finance Bill. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional provisions (TMTP) to reflect interest rates at 31 December 2016 £0.4 billion decrease to surplus.

Operating profit

2017 overview

The Group has increased operating profit, grown cash remittances and strengthened its Solvency II capital position. Operating earnings per share rose 3.7p to 54.8p *(2016: 51.1p)*.

This year has seen a significant amount of disposal activity as we complete our Not Everywhere strategy. In France we completed on the sale of Antarius to Sogecap, a subsidiary of Societe Generale in April 2017. In Spain we completed the sales of Unicorp Vida, Caja España Vida and Aviva Vida y Pensiones to Santalucía in September. In Italy, Banco Popolare served notice to terminate our distribution agreement and as a result on 25 August 2017 we announced that Aviva Italia Holdings has exercised an option to sell its JV Avipop Assicurazioni and its wholly owned subsidiary Aviva Vita to Banco BPM. In July, we announced the sale of Friends Provident International Limited (FPI) to RL360 Holding Company Limited followed by the announcement in October of the sale of our 49% shareholding in First Aviva Life (Aviva Taiwan) to our JV partner, First Financial Holding Co. Ltd. (FFH).

In terms of acquisitions, in April 2017 we acquired VietinBank's entire 50% shareholding in our life insurance joint venture VietinBank Aviva Life Insurance Limited (Aviva Vietnam) which is now a wholly owned subsidiary. On 14 November 2017, we announced that we had reached an agreement to acquire the Irish insurer Friends First Life Assurance Company dac (Friends First).

1 – Operating profit

Group operating profit

For the year ended 31 December 2017

	2017 £m	2016 £m
Operating profit before tax attributable to shareholders' profits		
Life business		
United Kingdom[1]	**1,758**	1,523
Europe[1]	**873**	876
Asia	**235**	241
Other	**16**	2
Total life business (note 7.i)	**2,882**	2,642
General insurance and health		
United Kingdom	**443**	423
Canada	**46**	269
Europe[1]	**223**	168
Asia	**(8)**	(13)
Other	**(4)**	(14)
Total general insurance and health[2] (note 7.ii)	**700**	833
Fund management		
Aviva Investors	**168**	139
Asia	**(4)**	(1)
Total fund management	**164**	138
Other		
Other operations (note A1)	**(169)**	(94)
Market operating profit[2]	**3,577**	3,519
Corporate centre (note A2)	**(184)**	(184)
Group debt costs and other interest (note A3)	**(325)**	(325)
Operating profit before tax attributable to shareholders' profits[2]	**3,068**	3,010
Tax attributable to shareholders' profit	**(639)**	(706)
Non-controlling interests	**(134)**	(147)
Preference dividends and other[3]	**(82)**	(85)
Operating profit attributable to ordinary shareholders[2]	**2,213**	2,072
Operating earnings per share[2,4]	**54.8p**	51.1p

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 2016 excludes the impact of the change in the Ogden discount rate of £475 million, which has been recognised as an exceptional adjusting item. 2016 also excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).
3 Other includes coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax).
4 Net of tax, non-controlling interests, preference dividends, coupon payments in respect of the direct capital instrument (DCI) and tier 1 notes (net of tax). The calculation of earnings per share uses a weighted average of 4,047 million (*2016: 4,051 million*) ordinary shares in issue, after deducting treasury shares.

Operating profit continued

1 – Operating profit continued

Operating profit was £3,068 million *(2016: £3,010 million)* representing an increase of 2%.

The life business operating profit increased to £2,882 million *(2016: £2,642 million)* mainly driven by the UK where we benefitted from growth in long-term savings, further optimisation of the annuity asset mix and an net increase of £290 million *(2016: £151 million)* primarily from our annual assumption review including longevity and modelling. In Europe, operating profit is flat reflecting underlying growth offset by the sale of Antarius and our Spanish operations during the year. Asia's contribution is broadly flat as it continues to invest for the future.

The general insurance and health business operating result decreased to £700 million *(2016: £833 million).* Overall the level of prior year reserve releases remain positive in 2017, however in Canada we have experienced increased claims severity and as a result we are strengthening reserves this year for this business. The UK and Europe results improved year on year and reported higher underwriting profits.

Fund management operating profit improved to £164 million *(2016: £138 million)* driven by revenue growth of 14% reflecting the full year benefit of the transfer of Friends Life assets and continued growth in the AIMS range of funds.

Other operations relate to non-insurance activities of the Group which incurred a loss of £169 million *(2016: £94 million).* This includes the savings platform business in the UK and reflects an increased investment in the development of the digital business, partly offset by income relating to insurance recoveries of £32 million *(2016: £19 million).*

Cash

2.i – Cash remitted to Group

The flow of sustainable cash remittances from the Group's businesses is a key financial priority. We use a wholly-owned, UK domiciled reinsurer subsidiary for internal capital and cash management purposes. Some of the remittances otherwise attributable to the operating businesses arise from this internal reinsurance vehicle. The table below reflects actual remittances received by the Group.

Cash remittances for 2017 were £2,398 million *(2016: £1,805 million)* and include cash paid by our operating businesses to the Group, comprising dividends and interest on internal loans.

	2017 £m	2016 £m
United Kingdom[1,2]	**1,800**	1,187
Canada	**55**	130
Europe[2]	**485**	449
Asia, Aviva Investors & Other	**58**	39
Total[3]	**2,398**	1,805

1 2017 cash remittances include £337 million received from UK General Insurance in February 2018 in respect of 2017 activity. 2016 cash remitted included £100 million from UK Life and £83 million from UK General Insurance paid in February 2017 and £159 million received from France paid in January 2017, in respect of 2016 activity.
2 Cash remitted to Group is managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, cash remittances from Ireland were not aligned to the new management structure within Europe, but they were reported within United Kingdom.
3 Cash remittances are eliminated on consolidation and are hence not directly reconcilable to the Group's IFRS statement of cash flows.

The increase in cash remittances to the Group was primarily driven by the UK businesses which includes an additional £500 million of Friends Life integration remittance, taking instalments to date to £750 million of the target of £1 billion. General insurance cash remitted in the UK increased to £434 million *(2016: £91 million)* as dividend payments in 2016 were lower due to funding the internal reinsurance arrangement.

Cash remittances from Canada decreased due to a lower operating profit. In Europe, an increase in cash remittances from France was partly offset by a reduction in cash remittances from Spain following the completion of the sale of the 50% shareholding in our life insurance and pension joint ventures. Cash remittances from Aviva Investors increased by 49% due to growth in the profitability of the business.

2.ii – Excess centre cash flow

Excess centre cash flow represents cash remitted by business units to the Group Centre less central operating expenses and debt financing costs. It represents cash and liquid assets held in the group holding companies, including Aviva plc. It is an important measure of the cash that is available to pay dividends, reduce debt, pay exceptional charges or invest back into our business units. It does not include cash movements such as disposal proceeds or capital injections.

	2017 £m	2016 £m
Dividends received	**2,213**	1,635
Internal interest received	**185**	170
Cash remitted to Group	**2,398**	1,805
External interest paid	**(549)**	(540)
Internal interest paid	**(66)**	(85)
Central spend	**(183)**	(227)
Other operating cash flows[1]	**56**	(24)
Excess centre cash flow[2,3]	**1,656**	929

1 Other operating cash flows include central investment income and group tax relief payments and other financial cash flows previously reported under central spend.
2 This table represents cash movements only and therefore will not reconcile to accounting based disclosures throughout the Preliminary announcement.
3 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

The increase of £727 million in excess centre cash flow is primarily driven by higher cash remittances to the Group Centre as discussed above, coupled with lower central spend and increased other operating cash inflows. Central spend cashflow partly decreased as employees paid more into Aviva's share save scheme as it came in line with new limits set by HMRC. Increased other operating cash inflows of £56 million *(2016: £24 million cash outflows)* were mainly driven by tax relief receipts from UK businesses and investment income offset by hedging costs and adverse margin movements.

Group Centre liquidity consists of cash and liquid assets. Group Centre liquidity at 28 February 2018 was £2.0 billion *(28 February 2017: £1.8 billion)*.

2.iii – Operating capital generation: Solvency II basis

The active management of the generation and utilisation of capital is a primary Group focus, balancing new business investment and shareholder distribution to deliver on our 'cash flow plus growth' initiative.

Our principal source of Group centre liquidity is cash remittances in the form of dividends and debt interest receipts from our businesses. Solvency II operating capital generation (OCG) measures the amount of Solvency II capital the Group generates from operating activities. Capital generated enhances Solvency II surplus which can be used to fund business unit remittances and, in turn, the Group dividend as well as for investment in initiatives that provide potential future growth.

Solvency II OCG was £2.6 billion during 2017 *(2016: £3.5 billion)*, incorporating £2.4 billion *(2016: £3.6 billion)* from our life business and £0.2 billion *(2016: £(0.1) billion)* from our general insurance, health, fund management and other businesses.

2017 £bn	Life business SII Operating Capital Generation: Impact of New Business[1]	Earnings from Existing Business	Other[2]	Life SII operating Capital Generation	Non-Life SII Operating Capital Generation: GI, Health, FM & Other SII Operating Capital Generation	Total SII Operating Capital Generation
United Kingdom & Ireland Life[3]	(0.1)	0.9	1.6	**2.4**	**—**	**2.4**
United Kingdom & Ireland General Insurance and Health[3]					**0.4**	**0.4**
Canada					**(0.1)**	**(0.1)**
Europe[3]	—	0.6	0.1	**0.7**	**0.2**	**0.9**
Asia & Aviva Investors	—	0.1	—	**0.1**	**—**	**0.1**
Group centre costs & Other[2]	—	—	(0.8)	**(0.8)**	**(0.3)**	**(1.1)**
Total Group Solvency II operating capital generation[4]	**(0.1)**	**1.6**	**0.9**	**2.4**	**0.2**	**2.6**

1 Impact of new business (Life) as set out in note 4 Solvency II Surplus impact of new business
2 Other includes the effect of non-recurring capital actions, non-economic assumption changes and Group diversification benefit.
3 Solvency II operating capital generation is managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, Solvency II operating capital generation from Ireland was not aligned to the new management structure within Europe, but it was reported within United Kingdom.
4 As reported in the movement in Group Solvency II surplus disclosure in note 8iv.

2016 £bn	Life business SII Operating Capital Generation: Impact of New Business[1]	Earnings from Existing Business	Other[2]	Life SII operating Capital Generation	Non-Life SII Operating Capital Generation: GI, Health, FM & Other SII Operating Capital Generation	Total SII Operating Capital Generation
United Kingdom & Ireland Life[3]	(0.1)	1.4	1.2	2.5	—	2.5
United Kingdom & Ireland General Insurance and Health[3]					0.3	0.3
Canada					0.3	0.3
Europe[3]	(0.1)	0.6	0.4	0.9	0.1	1.0
Asia & Aviva Investors	—	—	—	—	—	—
Group centre costs & Other[2]	—	—	0.2	0.2	(0.8)	(0.6)
Total Group Solvency II operating capital generation[4,5]	(0.2)	2.0	1.8	3.6	(0.1)	3.5

1 Impact of new business (Life) as set out in note 4 Solvency II Surplus impact of new business
2 Other includes the effect of non-recurring capital actions, non-economic assumption changes and Group diversification benefit.
3 Solvency II operating capital generation is managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, Solvency II operating capital generation from Ireland was not aligned to the new management structure within Europe, but it was reported within United Kingdom.
4 As reported in the movement in Group Solvency II surplus disclosure in note 8iv.
5 Solvency II operating capital generation excludes the impact of the change in the Ogden discount rate of c.£0.2 billion, which has been recognised as an exceptional adjusting item.

Solvency II OCG is the Solvency II surplus movement in the period due to operating items including the impact of new business, expected investment returns on existing business, operating variances, non-economic assumption changes and non-recurring capital actions. It excludes economic variances, economic assumption changes and integration and restructuring costs which are included in non-operating capital generation. The expected investment returns are consistent with the returns used under IFRS (as set out in notes A4 and A5 in the financial supplement), except in UK Life where a risk-free curve plus an allowance for expected real-world returns (less an adjustment for credit risk, where required) is applied. Total Group OCG is a component of the movement in Group Solvency II surplus over the period as set out in note 8.iv and is not reconcilable to IFRS.

For the life business, the impact of new business is the change in Solvency II surplus resulting from new business written in the period. Life business earnings from existing business is the Solvency II surplus movement in the period due to operating items excluding the impacts of New Business and Other OCG. Other OCG for life business includes the effect of non-recurring capital actions, non-economic assumption changes and Group diversification benefit.

The life business OCG reduced by £1.2 billion in 2017 from £3.6 billion to £2.4 billion. Earnings from existing business reduced by £0.4 billion from £2.0 billion to £1.6 billion. This was mainly due to the UK & Ireland, which in 2016 benefitted from changes relating to the Friends Life portfolio, including hedging activity.

Other OCG for life business decreased by £0.9 billion in 2017 from £1.8 billion to £0.9 billion. In 2017, UK & Ireland includes the benefit of non-economic assumption changes, including longevity, and the Friends Life Part VII transfer. In 2017, Europe includes the benefit arising from a model change in France to vary the volatility adjustment in the solo SCR calculation, which is partially offset by non-economic assumption changes. However, this model change in France has not been recognised at Group resulting in an offsetting adjustment in Group centre costs and Other.

The general insurance, health, fund management and other business OCG increased by £0.3 billion in the period reflecting higher surplus generation in UK&I GI and Europe, together with a greater benefit from Group diversification. This was partially offset by lower surplus generation in Canada primarily as a result of the lower underwriting result.

2.iv – Solvency II future surplus emergence

Emergence of future profits and release of Solvency II capital requirements – life business	2017 £bn	2016 £bn
Year 1	**1.5**	1.4
Year 2	**1.4**	1.3
Year 3	**1.2**	1.2
Year 4	**1.1**	1.1
Year 5	**1.0**	1.0
Year 6	**1.0**	0.9
Year 7	**0.9**	0.8
Year 8	**0.8**	0.8
Year 9	**0.8**	0.7
Year 10	**0.7**	0.7
Year 11-15	**3.4**	2.7
Year 16-20	**3.6**	3.3
Year 20+	**9.6**	8.8
Total net of non-controlling interests	**27.0**	24.7

The table above shows the expected future emergence of Solvency II surplus from the existing long-term in-force life business. For business subject to short contract boundaries under Solvency II, allowance has been made for the impact of renewal premiums as and when they are expected to occur. The cash flows have been split for the first ten years followed by five year tranches depending on the date when the surplus is expected to emerge.

The projected surplus, which is primarily expected to arise from the release of risk margin (net of transitional measures) and solvency capital requirement as the business runs off over time, is expected to emerge through OCG in future years. The cash flows are real-world cash flows, i.e. they are based on best estimate non-economic assumptions used in the Solvency II valuation and real-world investment returns rather than risk-free. The expected investment returns are consistent with the returns used in IFRS (as set out in note A4 in the financial supplement), except in the UK where a risk-free curve plus an allowance for expected real-world returns (less an adjustment for credit risk where required) is applied.

Solvency II future surplus emergence is a projection of the movement in Group Solvency II surplus from existing long-term in-force life business as set out in note 8.iv and is not reconcilable to IFRS. The projection is a static analysis as at a point in time and hence it does not include the potential impact of active management of the business (for example, active management of market, demographic and expense risk through investment, hedging, risk transfer and operational risk and expense management), which may affect the actual amount of OCG earned from existing business in future periods.

The total cash flows have increased by £2.3 billion over 2017, largely reflecting an increase in real-world returns in the UK following a change to the assets allocated to the calculation, model changes resulting in an increased solvency capital requirement in France and favourable foreign exchange rate movements in Europe.

Expenses

3 – Expenses

	2017 £m	2016 £m
United Kingdom[1]	**1,493**	1,408
Canada	**478**	396
Europe[1]	**820**	765
Asia	**207**	177
Aviva Investors	**409**	367
Other Group activities	**371**	295
Operating cost base	**3,778**	3,408
Integration & restructuring costs[2]	**141**	212
Expense base	**3,919**	3,620
Operating expense ratio[3]	**52.7%**	50.5%

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 As reported within other expenses of £3,537 million *(2016: £3,853 million)* in the consolidated income statement.
3 Group operating expenses expressed as a percentage of operating profit before operating expenses and group debt costs.

The table below shows the lines of the IFRS consolidated income statement in which operating expenses have been included:

	2017 £m	2016 £m
Claims handling costs[1]	**330**	290
Non-commission acquisition costs[2]	**892**	846
Other expenses[3]	**2,556**	2,272
Operating cost base	**3,778**	3,408

1 Operating expenses as reported within net claims and benefits paid of £24,113 million (*2016: £23,782 million*) in the consolidated income statement.
2 Operating expenses as reported within fee and commission expense of £4,329 million (*2016: £3,885 million*) in the consolidated income statement.
3 Operating expenses as reported within other expenses of £3,537 million *(2016: £3,853 million)* in the consolidated income statement.

Operating expenses were £3,778 million *(2016: £3,408 million)*. The increase in operating expenses included £98 million of adverse foreign exchange movements, a full year of RBC operating costs, and the effect of targeted investment into IT, digital and growth initiatives including strengthening our Aviva Investors and UK capabilities. This was partially offset by savings arising from the disposals referred to in note B4.

Integration and restructuring costs have decreased by 34% in constant currency terms, to £141 million *(2016: £212 million)* as a result of lower integration spend on the Friends Life acquisition and completion of the Solvency II project in 2016. This was partially offset by integration spend relating to the RBC acquisition and restructuring costs in the UK and Europe.

The operating expense ratio of 52.7% is up by 2.2pp, impacted by the reduction in Canada operating profit and our investment in the growth of our businesses.

Value of new business

4 – Value of new business (VNB) on an adjusted Solvency II basis

Following the introduction of Solvency II, the new prudential regulatory framework that came into force on 1 January 2016, the Group has calculated VNB on an adjusted Solvency II basis.

Adjusted Solvency II VNB reflects Solvency II assumptions and allowance for risk and is defined as the increase in Solvency II Own Funds resulting from business written in the period, adjusted to:

- Include business which is not included in the Solvency II Best Estimate Liability (BEL) valuation (e.g. UK and Asia Healthcare business, Retail fund management business and the UK Equity release business);
- Remove the impact of contract boundaries; and
- Include look through profits in service companies (where not included in Solvency II).

A reconciliation between adjusted Solvency II VNB and the Solvency II Own Funds impact of new business is provided below. The trend analysis of adjusted Solvency II VNB and adjusted Solvency II present value of new business premiums (PVNBP) is included in the financial supplement, section E: VNB & sales analysis.

2017	UK[1] £m	Europe[1] £m	Asia & Other £m	Group £m
Adjusted Solvency II VNB (gross of tax and non-controlling interests)[2]	**527**	**533**	**183**	**1,243**
Allowance for Solvency II contract boundary rules	54	(64)	4	(6)
Differences due to change in business in scope	(167)	(45)	(34)	(246)
Tax & Other[3]	(105)	(184)	(25)	(314)
Solvency II Own Funds impact of new business (net of tax and non-controlling interests)	**309**	**240**	**128**	**677**

2016	UK £m	Europe[1] £m	Asia & Other £m	Group £m
Adjusted Solvency II VNB (gross of tax and non-controlling interests)[2,4]	429	429	134	992
Allowance for Solvency II contract boundary rules	51	(55)	(9)	(13)
Differences due to change in business in scope	(131)	(41)	(51)	(223)
Tax & Other[3]	(74)	(150)	(13)	(237)
Solvency II Own Funds impact of new business (net of tax and non-controlling interests)	275	183	61	519

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 The principal methodologies and assumptions underlying the calculation of adjusted Solvency II VNB are set out in section E1 and E14 respectively.
3 Other includes the impact of look through profits in service companies (where not included in Solvency II) and the reduction in value when moving to a net of non-controlling interests basis.
4 UK Life VNB includes £(12) million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund during the second half of 2016.

The Group's VNB increased by 25% to £1,243 million (*2016: £992 million*). This was driven by growth of new business in the UK, Europe and Asia.

The UK benefitted from strong growth in volumes across all segments partially offset but a change in product and asset mix. Following a clarification to the Solvency II rules made by the Prudential Regulation Authority (PRA) in 2017, new business written since the introduction of Solvency II has been reflected in the calculation of UK Life's transitional measures. This increased the adjusted Solvency II VNB (and Solvency II Own Funds impact of new business and Solvency II Surplus from life new business within OCG) by £96 million gross of tax and non-controlling interests as at 2017.

The increase in Europe was mainly driven by a change in business mix towards more profitable unit-linked and protection business in France and Italy and favourable foreign exchange movements, partly offset by lower volumes of with-profits business in France and the sale of Antarius. Asia benefitted from higher volumes of business in Singapore and China driven by sales growth in agency and broker channels and favourable foreign exchange movements.

The life new business written during the year has increased the Solvency II Capital Requirement by £0.8 billion (*2016: £0.7 billion*), split £0.4 billion (*2016: £0.4 billion*) for United Kingdom, £0.3 billion (*2016: £0.3 billion*) for Europe and £0.1 billion (*2016: £nil*) for Asia & Other business. This has resulted in a reduction in Solvency II Surplus from life new business of £0.1 billion (*2016: £0.2 billion*), split £0.1 billion (*2016: £0.1 billion)* for United Kingdom, £nil (*2016: £0.1 billion)* for Europe and £nil (*2016: £nil)* for Asia & Other business.

Solvency II Surplus impact of new business is set out in section 2.iii Life business Solvency II Operating Capital Generation impact of new business.

Combined operating ratio

5 – General insurance combined operating ratio (COR)[1]

	Net earned premiums		Claims ratio[3]		Commission and expense ratio[4]		Combined operating ratio[5]	
	2017 £m	2016 £m	2017 %	2016 %	2017 %	2016 %	2017 %	2016 %
United Kingdom[2,6]	**4,015**	3,821	**61.0**	73.8	**32.9**	32.5	**93.9**	106.3
Canada	**2,944**	2,420	**72.2**	63.5	**30.0**	29.5	**102.2**	93.0
Europe[6]	**2,001**	1,747	**63.1**	66.0	**30.2**	29.1	**93.3**	95.1
Asia[7]	**16**	12	**85.9**	72.0	**37.3**	37.9	**123.2**	109.9
Total[2]	**8,976**	8,000	**65.3**	69.2	**31.3**	30.9	**96.6**	100.1

1 COR is now reported on an earned basis. Comparatives have been realigned to reflect this change.
2 2016 excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL). 2016 includes the impact of the change in the Ogden discount rate which had an impact of 5.9pp.
3 Claims ratio: incurred claims expressed as a percentage of net earned premiums.
4 Commission and expense ratio: earned commissions and expenses expressed as a percentage of net earned premiums.
5 Combined operating ratio: aggregate of claims ratio and commission and expense ratio.
6 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
7 Includes Aviva Re net earned premiums.

Group COR for the period was 96.6% *(2016: 100.1%)*.Excluding the one-off impact of the Ogden discount rate change (5.9pp) in 2016, COR has deteriorated by 2.4pp.

The claims ratio (excluding the impact of the Ogden discount rate change) increased by 2.0pp, mainly driven by Canada, where the significantly favourable prior year reserve releases seen in previous years, arising from better than anticipated results following the 2010 Ontario reforms, were not repeated. 2017 was also impacted by an increase in claims severity and frequency on all lines in Canada.

The commission and expense ratio has increased by 0.4pp due to changes in business mix following new partnerships in the UK and the consolidation of the Polish joint venture in Europe.

We continue to apply our reserving policy consistently and to focus on understanding the cost of claims to ensure that reserves are maintained at an appropriate level. Prior year reserve movements will vary year to year but our business is predominantly short tail in nature and the loss development experience is generally stable. In 2017, prior year reserve releases in our general insurance business of £27 million *(2016: £241 million)* had a favourable impact of 0.3pp *(2016: 2.9pp)* on our Group result. The impact of Ogden on our 2017 results is not material.

Normalised accident year combined operating ratio (COR)

The normalised accident year claims ratio and normalised accident year combined operating ratio represent the claims ratio and combined operating ratio adjusted to exclude the impact of the change in the Ogden discount rate, prior year claims development[4] and weather variations versus expectations[5], gross of the impact of profit sharing arrangements.

Group normalised accident year COR improved by 0.2pp driven by a decrease in the claims ratio in the UK and Europe as a result of our focus on disciplined pricing and underwriting, as well as claims and indemnity management, offset by higher claims frequency and severity on all lines in Canada.

	UK[1,2]		Canada		Europe[2]		Total	
	2017 %	2016 %	2017 %	2016 %	2017 %	2016 %	2017 %	2016 %
Normalised accident year claims ratio[3]	**64.0**	65.7	**70.7**	68.2	**63.9**	68.6	**66.5**	67.1
Impact of change in Ogden discount rate	**—**	12.4	**—**	—	**—**	—	**—**	5.9
Prior year reserve release[4]	**(1.0)**	(2.2)	**1.3**	(5.4)	**(0.9)**	(2.3)	**(0.3)**	(2.9)
Weather over/(under) long-term average[5]	**(2.0)**	(2.1)	**0.2**	0.7	**0.1**	(0.3)	**(0.9)**	(0.9)
Claims ratio	**61.0**	73.8	**72.2**	63.5	**63.1**	66.0	**65.3**	69.2
Commission and expense ratio[6]	**32.9**	32.5	**30.0**	29.5	**30.2**	29.1	**31.3**	30.9
Normalised accident year combined operating ratio[3]	**96.9**	98.2	**100.7**	97.7	**94.1**	97.7	**97.8**	98.0
Combined operating ratio	**93.9**	106.3	**102.2**	93.0	**93.3**	95.1	**96.6**	100.1

1 2016 excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).
2 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
3 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.
4 Prior year reserve release represents the changes in the ultimate cost of the claims incurred in prior years, gross of the impact of profit sharing arrangements.
5 Weather over/(under) long-term average represents the difference between the reported net incurred cost of general insurance claims that have occurred as a result of weather events and the equivalent long-term average expected net costs, gross of the impact of profit sharing arrangements.
6 Commission and expense ratio includes the impact of profit sharing arrangements.

The definition of COR has been changed to an earned basis. It was previously calculated on a hybrid basis: the claims ratio was on an earned basis with the incurred claims expressed as a percentage of net earned premiums; while the commission and expense ratio was on a written basis with written commissions and written expenses expressed as a percentage of net written premiums. This did not consider the impact of deferred commissions and expenses, which are included in the underwriting result. The new method is calculated as claims incurred, earned commission and earned expenses as a percentage of net earned premiums which aligns better to our underwriting result. Comparatives have been realigned for 2016 on an earned basis.

Business unit performance

6.i – United Kingdom

	2017 £m	2016 £m	Sterling % change
Operating profit[1,2]			
Life	**1,758**	1,523	15%
General Insurance[3]	**408**	392	4%
Health[4]	**35**	31	13%
	2,201	1,946	13%
Cash remitted to Group[3,4]			
Life	**1,366**	1,096	25%
General Insurance and Health	**434**	91	377%
	1,800	1,187	52%
Expenses			
Operating expenses	**1,493**	1,408	6%
Integration and restructuring costs	**76**	134	(43)%
	1,569	1,542	2%
Value of new business: Adjusted SII basis	**527**	429	23%
Combined operating ratio	**93.9%**	106.3%	(12.4)pp
Combined operating ratio excluding impact of change in Ogden discount rate[1,3]		93.9%	
General insurance net written premiums[2]	**4,078**	3,930	4%

1 2016 excludes the impact of the change in the Ogden discount rate of £475 million, which was recognised as an exceptional adjusting item.
2 2016 excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).
3 2017 includes £335 million of cash received from the Group's internal reinsurance vehicle. 2017 general insurance cash remittances include amounts of £337 million received from UK General Insurance in February 2018 in respect of 2017 activity.
4 Cash remitted to Group is managed at legal entity level. As Ireland constitutes a branch of the United Kingdom business, cash remittances from Ireland were not aligned to the new management structure within Europe, but they were reported within United Kingdom.

Overview

UK Insurance (UKI) was created in 2017 by bringing our UK life, health and general insurance businesses together under a common leadership team to unlock the potential of our unique position as a large scale composite. The business delivered an increase of 13% in operating profit to £2,201 million *(2016: £1,946 million)*, demonstrating the value of our market leading franchise.

The Friends Life Part VII transfer was completed on 1 October 2017, delivering further capital benefits. Cash remittances of £1,800 million included special cash remittances of £500 million which arose from the Friends Life integration, taking the total paid to date to £750 million. We expect further payments in 2018 towards the £1 billion target.

Operating and financial performance

Operating profit

Operating Profit	2017 New Business[1]	2017 Existing Business	2017 Total £m	2016 New Business[1]	2016 Existing Business	2016 Total £m	Sterling % change
Long-term savings[2]	**(74)**	**259**	**185**	(77)	219	142	30%
Annuities & equity release	**335**	**390**	**725**	305	351	656	11%
Protection	**130**	**97**	**227**	118	124	242	(6)%
Legacy[3]	**—**	**331**	**331**	—	332	332	—
Other[4]	**—**	**290**	**290**	—	151	151	92%
Life	**391**	**1,367**	**1,758**	346	1,177	1,523	15%
Underwriting result			**246**			232	6%
Longer-term investment return			**163**			162	1%
Other[6]			**(1)**			(2)	50%
General Insurance[5]			**408**			392	4%
Health			**35**			31	13%
Total Operating Profit			**2,201**			1,946	13%

1 New business represents the income earned on new business written during the period reflecting premiums less initial reserves and initial expenses (including commission) less deferred costs along with any changes to existing contracts, which were not anticipated at the outset of the contract that generate additional shareholder risk.
2 Includes pensions and the savings Platforms.
3 Legacy represents products no longer actively marketed, including With-Profits and Bonds.
4 Other Life represents changes in assumptions and modelling, non-recurring items, and non-product specific items.
5 2016 excludes the impact of the change in the Ogden discount rate of £475 million, which has been recognised as an exceptional adjusting item.
6 Other General Insurance includes unwind of discount and pension scheme net finance costs.

UK Life operating profit increased by 15% to £1,758 million *(2016: £1,523 million)* driven by a 13% improvement in new business profits, continued growth of the long-term savings franchise, further optimisation of the annuity asset mix and an increase in the benefit arising from our annual assumptions review, including longevity.

UK General insurance operating profit increased by 4% to £408 million *(2016: £392 million)* due to an improvement in the underwriting result, reflecting broad-based organic premium growth of 4% and a continued focus on improving our core underwriting competencies.

UK Health operating profit increased 13% to £35 million *(2016: £31 million)*.

Business unit performance continued

6.i – United Kingdom continued

Long-term savings

Long-term savings operating profit increased 30% to £185 million *(2016: £142 million)*. The increase compared to 2016 is driven by assets under management (AUM)[1] increasing to £118 billion *(2016: £105 billion)* due to positive net flows and favourable market movements, whilst maintaining a stable in-force profit margin and strict management of acquisition costs despite increases in new business sales. Net fund flows[1] increased to £5.6 billion *(2016: £2.9 billion)* due to mandate wins in workplace pensions together with a sharp increase in net flows into the advisor platform, where AUM increased by 56% to £20 billion.

Annuities and Equity Release

Annuities and equity release operating profit increased 11% to £725 million *(2016: £656 million)*. PVNBP increased by 58% to £4,287 million *(2016: £2,711 million)* with an increase in bulk annuities to £2,045 million *(2016: £620 million)*. The profit impact of this was partly offset by a reduction in new business margins due to a change in product mix, with a shift towards bulks along with a change in asset mix. In addition, we have continued to optimise our asset mix by increasing the proportion of illiquid assets backing the in-force portfolio resulting in a £86 million benefit for existing business *(2016: £50 million)*.

Protection

Protection operating profit decreased 6% to £227 million *(2016: £242 million)* with an increase in new business due to growth in individual protection sales, offset by a fall in existing business profits due to unfavourable claims experience in group protection.

Legacy

Legacy operating profit of £331 million was flat year on year *(2016: £332 million)*. AUM in the legacy portfolio remained stable, with positive investment markets partially offsetting net fund outflows as policies matured. We continue to expect operating profit from the legacy business to decline by approximately 10% per annum over the medium term.

Other

Other of £290 million mainly relates to assumption changes. We recognised 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 and updates to the rate of historic and future mortality improvements, including the adoption of CMI 2016, of £340 million. These were partly offset by the impact of strengthening maintenance expense reserves by £89 million from harmonising the UK expense basis following the Friends Life Part VII transfer in 2017, recognition of future project cost reserves of £125 million and a £75 million product governance provision along with various other reserve and modelling impacts totaling £131 million. Other of £151 million in 2016 mainly related to longevity assumption change benefits partially offset by capital optimisation activity and other movements.

General insurance

The underwriting result increased by 6% to £246 million *(2016: £232 million)*, our best underwriting result since 2006, with improvement in the underlying underwriting performance and broad based organic premium growth of 4%, partly offset overall by lower prior year reserve releases, with weather costs broadly flat.

Longer-term investment return (LTIR) increased by £1 million to £163 million *(2016: £162 million)*, with the reduction in the internal loan return (net neutral to Group), offset by improved investment levels. Excluding the internal loan impact, the UK general insurance operating profit was up by 7%.

Cash

Cash remitted to Group was £1,800 million *(2016: £1,187 million)* including an additional £500 million *(2016: £250 million)* of Friends Life integration remittance taking instalments to date to £750 million of the target of £1 billion.

Excluding the integration remittances, UK Life remittances increased by 2% to £866 million *(2016: £846 million)*.

UK general insurance cash remitted increased to £434 million *(2016: £91 million)*, due to cash being used to fund an increase in the internal reinsurance arrangement in 2016.

Expenses

Operating expenses increased by 6% to £1,493 million *(2016: £1,408 million),* as we invested in growth and simplification initiatives in the second half of 2017, and incurred the cost of increased general insurance levies. Excluding these initiatives and levie, UKI Operating expenses were broadly flat, reflecting tight control of the direct expense base as we absorb growth.

Integration and restructuring expenses reduced by 43% to £76 million *(2016: £134 million)* due to lower integration spend on the Friends Life acquisition.

1 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

Business unit performance continued

6.i – United Kingdom continued

Value of new business: Adjusted SII Basis (VNB)

	2017 £m	2016 £m	Sterling % change
UK Life			
Long term savings	**153**	108	42%
Annuities and equity release	**157**	141	11%
Protection	**183**	151	21%
Health and Other	**34**	29	17%
Total	**527**	429	23%

VNB increased by 23% to £527 million *(2016: £429 million)* with growth across all segments.

Long-term savings VNB increased to £153 million *(2016: £108 million)*, driven by continued growth from the savings platform, and new workplace pension schemes.

Annuities and equity release VNB increased to £157 million *(2016: £141 million)*. Annuities were impacted by a change in product and asset mix, offset by a £96 million benefit to VNB following a clarification of the Solvency II rules.

Protection VNB increased to £183 million *(2016: £151 million)*, benefitting from growth in both individual and group protection new business volumes as we see the continued benefit of our digital platform and composite model.

Health and other VNB increased by 17% to £34 million *(2016: £29 million)*, due to increased volumes in our health business.

Net written premiums and combined operating ratio (COR)

	Net written premiums			Combined operating ratio[2]		
United Kingdom General insurance[1]	**2017 £m**	2016 £m	Sterling % change	**2017 %**	2016 %	Change
Personal Motor	**1,142**	1,076	6%			
Personal Non-Motor	**1,359**	1,332	2%			
UK Personal Lines	**2,501**	2,408	4%	**92.0%**	92.5%	(0.5)pp
Commercial Motor	**514**	538	(4)%			
Commercial Non-Motor	**1,063**	984	8%			
UK Commercial Lines	**1,577**	1,522	4%	**96.7%**	96.1%	0.6pp
UK General Insurance excluding impact of change in Ogden discount rate	**4,078**	3,930	4%	**93.9%**	93.9%	—
Impact of change in Ogden discount rate					12.4%	
Total	**4,078**	3,930	4%	**93.9%**	106.3%	(12.4)pp

1 2016 excludes the one-off impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL).
2 The Combined operating ratio is now reported on an earned basis. Comparative have been realigned to reflect this change. See note 5 for details.

General insurance net written premiums

UK general insurance net written premiums increased by 4%, reflecting growth in our chosen channels and products including Digital Motor and Commercial Non-Motor. A new partnership with HSBC UK was launched in 2017, with growth expected in 2018 and 2019.

UK Personal Motor increased by 6%, particularly in Digital which grew by 17% from both volume and rate increases. Our pricing increases were broadly in line with the market in response to increased claims inflation, including the Ogden rate change, and an insurance premium tax (IPT) increase. UK Personal Non-Motor grew by 2%.

UK Commercial lines was up by 4%, reflecting continued growth in Commercial Non-Motor, partly offset by remediation in underperforming segments of Commercial Motor. This segment includes an 8% growth in Global Corporate Specialty (GCS).

General insurance combined operating ratio (COR)

UK general insurance COR of 93.9% was stable year on year (excluding the one-off 2016 impact of the change in the Ogden discount rate), reflecting further improvement in the underlying underwriting performance and premium growth, offset by lower levels of prior year reserve releases, with weather experience broadly flat. The commission and expense ratio was slightly higher as a result of the change in business mix, including the impact from new partnerships.

UK Personal Lines COR improved by 0.5 percentage points to 92.0%, as a result of growth in Digital and a combination of rate hardening and higher levels of switching which has allowed us to improve our risk mix.

UK Commercial Lines COR was 0.6 percentage points higher at 96.7%, reflecting an improvement in underlying performance offset by lower levels of prior year reserve releases.

Business unit performance continued

6.ii – International

(a) Canada

	2017 £m	2016 £m	Sterling % change	Constant currency % change
General Insurance operating profit	**46**	269	(83)%	(84)%
Cash remitted to Group	**55**	130	(58)%	(56)%
Expenses				
Operating expenses	**478**	396	21%	13%
Integration and restructuring costs	**15**	18	(17)%	(22)%
	493	414	19%	11%
Combined operating ratio[1]	**102.2%**	93.0%	9.2pp	9.2pp
Net written premiums	**3,028**	2,453	23%	15%

1 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change. See note 5 for details.

2017 overview

During 2017 we experienced a number of challenges in the Canadian market which have impacted on performance. These challenges include unfavourable changes in claims patterns affecting prior year reserve development across the industry and a second successive year of weather claims being adverse to the long-term average. However, we have grown net written premium by 15% with the results including a full twelve months of RBC General Insurance that we acquired in June 2016. The integration of RBC General Insurance progressed well, with the completion of a major new system implementation in 2017.

All percentage movements below are quoted in constant currency unless otherwise stated.

Operating and financial performance

Operating profit

	2017 £m	2016 £m	Sterling % change	Constant currency % change
Underwriting result	**(64)**	168	(138)%	(135)%
Longer-term investment return	**115**	105	10%	3%
Other[1]	**(5)**	(4)	(25)%	(24)%
Total	**46**	269	(83)%	(84)%

1 Includes unwind of discount and pension scheme net finance costs

In 2017, operating profit decreased by 84%. The lower underwriting result was mainly driven by unfavourable prior year development, which deteriorated from £130 million favourable to £37 million unfavourable. Personal motor saw the biggest movement in prior year development as the reserve releases arising from better than anticipated results following the 2010 Ontario reform were not repeated. A number of new claim applications from prior accident years were also received in 2017. Within our commercial lines business, large losses were higher and we experienced a deterioration in our healthcare and commercial auto performance.

It was also an active year for weather events with weather exceeding the long-term average following numerous storms and the wildfires in British Columbia.

The longer-term investment result increased due to the contribution from the RBC General Insurance acquisition.

Cash

Cash remittances during the period decreased to £55 million *(2016: £130 million)* due to lower operating profit.

Expenses

Operating expenses increased to £478 million *(2016: £396 million)* mainly due to including a full twelve months of RBC General Insurance. Integration and restructuring costs relating to the RBC General Insurance acquisition were down 22%.

Net written premiums

	Net written premiums				Combined operating ratio[1]		
	2017 £m	2016 £m	Sterling % change	Constant currency %	2017 %	2016 %	Change
Personal Lines	**2,171**	1,680	29%	21%	**102.5%**	93.4%	9.1pp
Commercial Lines	**857**	773	11%	3%	**101.2%**	92.2%	9.0pp
Total	**3,028**	2,453	23%	15%	**102.2%**	93.0%	9.2pp

1 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change. See note 5 for details.

Net written premiums

Net written premiums were £3,028 million *(2016: £2,453 million)*, up by 15%, primarily due to including a full twelve months of RBC General Insurance in 2017. Excluding RBC General Insurance, net written premiums increased by 5% with strong growth in both personal and commercial lines.

Combined operating ratio

The combined operating ratio (COR) was 102.2% *(2016: 93.0%)*. Excluding prior year development and adverse weather experience, the COR was 3.0pp higher due to increased claims frequency and severity. The commission and expense ratio was slightly higher, as a result of the shift in business mix following the RBC acquisition and an increase in insurance premium tax, partially offset by lower general and administrative expenses.

6.ii – International continued

(b) Europe[1]

	2017 £m	2016[2] £m	Sterling % change	Constant currency % change
Operating profit				
Life	**873**	876	—	(7)%
General insurance & health	**223**	168	33%	23%
	1,096	1,044	5%	(2)%
Cash remitted to Group[2]	**485**	449	8%	1%
Expenses				
Operating expenses	**820**	765	7%	—
Integration and restructuring costs	**36**	9	300%	263%
	856	774	11%	3%
Value of new business: Adjusted SII basis	**533**	429	24%	17%
Combined operating ratio[3,4]	**93.3%**	95.1%	(1.8)pp	(1.8)pp
Net written premiums[3]	**2,018**	1,816	11%	4%

1 Our European business includes life and general insurance business written in France, Poland and Italy, life business in Ireland, Spain and Turkey and health business in France.
2 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated. This realignment was not implemented for cash remitted to Group, as this metric is managed at legal entity level and Ireland constitutes a branch of the United Kingdom business.
3 General insurance business only.
4 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change. See note 5 for details.

2017 overview

In line with our strategy of allocating capital where we can deliver higher returns, our European businesses announced three disposals in the period. In France, we completed the sale of Antarius in April 2017, to Sogecap, a subsidiary of Société Générale. In Spain, we completed the sale of our 50% shareholding in our life insurance and pension joint ventures Unicorp Vida and Caja España Vida, as well as our retail life insurance business Aviva Vida y Pensiones to Santalucía. In Italy, we announced the termination of our distribution agreement with Banco Popolare. In 2017, we also announced our agreement to acquire Friends First Life Assurance Company in Ireland.

Total operating profit is down by 2% in constant currency compared to 2016; however, our continuing businesses have delivered an increase in operating profit, demonstrating the strength of our focussed approach.

All percentage movements below are quoted in constant currency unless otherwise stated.

Operating and financial performance

Operating profit

	Life				General insurance & health			
	2017 £m	2016 £m	Sterling % change	Constant currency %	2017 £m	2016 £m	Sterling % change	Constant currency % change
France (excluding Antarius)	**403**	351	15%	8%	**104**	70	49%	37%
Poland[1]	**156**	132	18%	8%	**21**	8	163%	146%
Italy	**168**	170	(1)%	(8)%	**45**	42	7%	(1)%
Ireland	**33**	32	3%	(3)%	**53**	48	10%	3%
Other Europe (excluding Unicorp, Caja España and Aviva Vida)[2]	**40**	34	18%	16%	**—**	—	—	—
Total (excluding Antarius and Unicorp, Caja España and Aviva Vida)	**800**	719	11%	4%	**223**	168	33%	23%
Antarius[3]	**22**	78	(72)%	(74)%	**—**	—	—	—
Unicorp, Caja España and Aviva Vida[4]	**51**	79	(35)%	(40)%	**—**	—	—	—
Total[5]	**873**	876	—	(7)%	**223**	168	33%	23%

1 Poland operating profit benefits from an additional £15 million due to consolidating our joint ventures with the Bank Zachodni WBK SA for the first time in 2017.
2 Includes Spain and Turkey
3 In April 2017, Aviva sold its 50% shareholding in Antarius. The Antarius figures shown represent a full year for 2016 and up to completion of the disposal in 2017.
4 In September 2017, Aviva sold its 50% shareholdings in life insurance and pension joint ventures Unicorp Vida and Caja España Vida, as well as its retail life insurance business Aviva Vida y Pensiones. The related figures shown represent a full year for 2016 and up to completion of the disposal in 2017.
5 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

Life operating profit was down by 7% to £873 million *(2016: £876 million)* which reflects the impact of disposals during the year. Excluding disposals life operating profit was up by 4%. In France, operating profit excluding Antarius was £403 million *(2016: £351 million)*, an increase of 8% due to growth in protection and unit-linked products, and higher unit-linked fee income mainly due to favourable equity market movements. In Poland, operating profit of £156 million *(2016: £132 million)* increased by 8% as a result of favourable equity market movements on pension assets, an increase in fee income and the benefit of consolidating the joint venture with Bank Zachodni WBK SA for the first time in 2017. In Italy, operating profit of £168 million *(2016: £170 million)* was down 8%, due to the strain of writing high new business volumes of capital-light unit-linked hybrid products. Life operating profit in Ireland of £33 million (*2016: £32 million)* was down 3%, supported by favourable assumption changes in line with prior year but offset by a slight decrease in profitability due to a change in business mix.

Business unit performance continued

6.ii – International continued

General insurance operating profit increased by 23% to £223 million *(2016: £168 million)*. This was mainly driven by France operating profit increasing to £104 million *(2016: £70 million)*, with lower large loss experience and growth in the direct business. In Poland, operating profit increased to £21 million *(2016: £8 million)* mainly due to increased rate and lower claims frequency on the motor book and the impact of consolidating the joint venture. Operating profit in Ireland of £53 million *(2016: £48 million)* was up by 3%. Excluding the disposal of Ireland Health, which was disposed in 2016, Ireland operating profit was up by 23%, driven primarily by growth in our direct business, robust fraud management and strong rate increases.

Cash

Cash remitted to the Group was £485 million *(2016: £449 million)* a 1% increase due mainly to an increased dividend in France, partly offset by a reduction in cash remitted in Spain, following the disposals.

Expenses

Operating expenses of £820 million *(2016: £765 million)* were flat. This includes a decrease due to the disposal of Ireland Health in 2016, offset by the consolidation of the Polish joint ventures and investment in growth in our continuing businesses.

Integration and restructuring costs of £36 million *(2016: £9 million)* were up, driven by restructuring spend incurred mainly in France.

Value of new business: Adjusted SII basis (VNB)

	2017 £m	2016 £m	Sterling % change	Constant currency % change
France (excluding Antarius)	**216**	189	14%	7%
Poland	**57**	54	5%	(4)%
Italy	**179**	83	116%	102%
Ireland	**11**	12	(3)%	(9)%
Other Europe (excluding Unicorp, Caja España and Aviva Vida)[1]	**30**	26	12%	23%
Total (excluding Antarius, Unicorp, Caja España and Aviva Vida)	**493**	364	35%	27%
Antarius[2]	**12**	36	(67)%	(69)%
Unicorp, Caja España and Aviva Vida[3]	**28**	29	(5)%	(11)%
Total[4]	**533**	429	24%	17%

1 Includes Spain and Turkey.
2 In April 2017, Aviva sold its 50% shareholding in Antarius. The Antarius figures shown represent a full year for 2016 and up to completion of the disposal in 2017.
3 In September 2017, Aviva sold its 50% shareholdings in life insurance and pension joint ventures Unicorp Vida and Caja España Vida, as well as its retail life insurance business Aviva Vida y Pensiones. The related figures shown represent a full year for 2016 and up to completion of the disposal in 2017.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

VNB increased by 17%, and by 27% excluding disposed businesses, with a strong performance in Italy as a result of higher unit-linked and hybrid product volumes and an improved margin on with-profits products. VNB in France increased due to higher unit-linked and protection volumes, partly offset by lower volumes of with-profits products. Poland saw a 4% decrease, reflecting a market-wide reduction in unit-linked volumes. In Ireland, VNB was down 9% as a result of a very competitive annuity market reducing new business profitability.

Net written premium (NWP) and combined operating ratio (COR)

	Net written premiums[1]				**Combined operating ratio[1,2]**		
	2017 £m	2016 £m	Sterling % change	Constant currency %	**2017 %**	2016 %	Change
France	**1,053**	957	10%	3%	**94.5%**	97.0%	(2.5)pp
Poland[3]	**117**	86	36%	25%	**86.7%**	97.8%	(11.1)pp
Italy	**412**	395	4%	(3)%	**94.2%**	92.5%	1.7pp
Ireland	**436**	378	15%	8%	**91.4%**	92.4%	(1.0)pp
Total[4]	**2,018**	1,816	11%	4%	**93.3%**	95.1%	(1.8)pp

1 General insurance business only
2 The combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change. See note 5 for details.
3 Poland net written premium and combined operating ratio excludes the joint venture in 2016 but has been consolidated for the first time in 2017.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

Net written premiums

General insurance net written premiums of £2,018 million increased by 4% with growth in all our markets except Italy. In France and Ireland, general insurance NWP grew, primarily reflecting rating actions and strong growth in our direct business. In Poland, NWP increased by 25% to £117 million *(2016: £86 million)* with benefits from the consolidation of the joint venture partly offset by a reduction in motor volumes as part of underwriting actions taken. In Italy net written premiums decreased by 3% to £412 million *(2016: £395 million)* due to underwriting actions taken on segments of the motor book.

Combined operating ratio

The European COR has improved by 1.8pp primarily due to France's COR reducing by 2.5pp to 94.5% due to lower large losses and improved claims experience. Our claims ratio has decreased by 2.9pp to 63.1 % *(2016: 66.0%)* with an improvement across all markets except Italy. Most notably in Poland the claims ratio has improved due to underwriting action taken on motor business and the consolidation of the joint venture. The commission and expense ratio has increased due to a change in business mix, following the joint venture consolidation in Poland.

Business unit performance continued

6.iii – Asia

	2017 £m	2016 £m	Sterling % change	Constant currency % change
Operating profit				
Life	**235**	241	(2)%	(4)%
General insurance & health	**(8)**	(13)	38%	42%
	227	228	—	(2)%
Expenses				
Operating expenses	**207**	177	17%	13%
Integration and restructuring costs	**—**	17	—	—
	207	194	7%	4%
Value of new business: Adjusted SII basis	**162**	106	53%	47%
Combined operating ratio[1,2]	**123.2%**	109.9%	13.3pp	13.3pp
Net written premiums[1]	**13**	11	18%	9%

1 General insurance business only.
2 The Combined operating ratio is now reported on an earned basis. Comparatives have been realigned to reflect this change. See note 5 for details.

2017 overview

Investment in Asia's distribution channels and digital and analytic capabilities continued throughout 2017. Singapore grew its core distribution platform, Aviva Financial Advisers, while China expanded its agency and broker channels. In January, we announced a new joint venture with Hillhouse Capital and Tencent Holdings Limited which focuses on digital insurance in Hong Kong.

We continue to reallocate capital to focus and strengthen our footprint in Asia. In July, we announced the disposal of Friends Provident International Limited (FPI) followed by the sale of our 49% stake in our joint venture in Taiwan in October. Meanwhile, we acquired the remaining 50% shareholding from VietinBank in April and we launched Aviva Vietnam in August.

All percentage movements below are quoted in constant currency unless otherwise stated.

Operating and financial performance

Operating profit

	2017 £m	2016 £m	Sterling % change	Constant currency % change
Life operating profit				
Singapore	**118**	112	5%	—
Other Asia (excluding FPI)	**(2)**	(11)	82%	91%
Total (excluding FPI)	**116**	101	15%	10%
FPI[1]	**119**	140	(15)%	(15)%
Total	**235**	241	(2)%	(4)%
General insurance & health operating profit	**(8)**	(13)	38%	42%
Total operating profit	**227**	228	—	(2)%

1 In July 2017, Aviva announced the sale of Friends Provident International Limited ('FPI'). The subsidiary has been classified as held for sale from July 2017, when management were committed to a plan to sell the business.

Operating profit from our life and general insurance and health businesses remained broadly flat at £227 million *(2016: £228 million)*. Excluding FPI, life operating profit increased by 10% to £116 million *(2016: £101 million)* driven by higher profit generated from existing business in China, coupled with new business growth in Singapore from its financial advisory channel which was partially offset by our continued investments in digital and analytics capabilities.

The general insurance and health business reported a £8 million loss *(2016: £13 million loss)* as a result of higher claims experience from our health business in Singapore partly offset by an input tax refund from the local authority.

Cash

No dividends were remitted to Group during the year (*2016: £nil*) as we continue to reallocate capital to support growth in the region.

Expenses

Operating expenses were up by 13% to £207 million *(2016: £177 million)* reflecting the additional half year of expenses from Vietnam, higher distribution costs to support volume growth in Singapore and investment in digital and analytics capabilities.

Value of new business: Adjusted SII basis (VNB)

	2017 £m	2016 £m	Sterling % change[1]	Constant currency % change
Singapore	**123**	95	29%	24%
Other Asia	**45**	7	543%	463%
Total (excluding FPI)	**168**	102	65%	57%
FPI[1]	**(6)**	4	(250)%	(248)%
Total	**162**	106	53%	47%

1 In July 2017, Aviva announced the sale of Friends Provident International Limited ('FPI'). The subsidiary has been classified as held for sale from July 2017, when management were committed to a plan to sell the business.

VNB increased by 47% to £162 million *(2016: £106 million)* reflecting higher volumes from Singapore's financial advisory channel. In China, VNB increased to £45 million *(2016: £19 million)* driven by sales growth in agency and broker channels and higher interest rates.

General insurance combined operating ratio (COR)

Net written premiums were £13 million *(2016: £11 million)*. The combined operating ratio deteriorated by 13.3pp to 123.2% *(2016: 109.9%)* due to unfavourable claims experience and the continued softening of market premium rates for motor insurance in Singapore.

Business unit performance continued

6.iv – Aviva Investors

	2017 £m	2016 £m	Sterling % change
Revenue: Fee income	**577**	506	14%
Expenses			
Operating expenses	**409**	367	11%
Integration and restructuring costs	**3**	19	(84)%
	412	386	7%
Operating profit			
Fund management	**168**	139	21%
Other operations	**32**	19	68%
	200	158	27%
Cash remitted to Group	**58**	39	49%

2017 overview

We have made progress in externalising the business and developing higher value outcome-oriented propositions for our clients. We currently invest more than £353 billion of assets under management (AUM) providing the size and scale to successfully seek out opportunities across multi-asset, fixed income, equity, real estate and alternative investments to deliver specific investor outcomes.

Operating and financial performance

Revenue

Revenue has increased by 14% to £577 million due to the full year impact of on-boarding £14 billion of Friends Life assets in 2016, a 40% growth in the Aviva Investors Multi-Strategy (AIMS) AUM to £12.6 billion *(2016: £9.0 billion)* and a 24% increase in the origination of infrastructure assets to £4.1 billion *(2016: £3.3 billion)*. The share of revenue from external clients increased to 34% *(2016: 32%)*.

Expenses

Operating expenses increased to £409 million *(2016: £367 million)*. Cost increases have been controlled and reflect the investment required to support the growth of the business. Integration and restructuring costs were £3 million *(2016: £19 million)*.

Operating profit

Fund management operating profit increased by 21% to £168 million *(2016: £139 million)* driven by growth in revenue, with operating expenses increasing at a slower rate. This led to a 2pp improvement in the operating profit margin, calculated as fund management operating profit expressed as a percentage of revenue, to 29% *(2016: 27%)*.

Operating profit from other operations of £32 million related to insurance recoveries *(2016: £19 million, of which £16 million was from the Group's internal reinsurer)*.

Cash

Cash remitted to Group increased by 49% to £58 million *(2016: £39 million)* due to growth in the profitability of the business.

Net flows and assets under management

AUM represents all assets managed by Aviva Investors. These comprise Aviva (internal) assets which are included within the Group's statement of financial position and those belonging to external clients outside the Aviva Group which are therefore not included in the Group's statement of financial position. These assets under management exclude those funds that are managed by third parties.

Internal legacy are assets managed by Aviva Investors on behalf of internal Aviva Clients relating to products that are no longer actively marketed.

	Internal Legacy £m	Internal Core £m	External £m	Total £m
Aviva Investors				
Assets under management[1] at 1 January 2017	97,290	190,667	56,561	344,518
Total Inflows	3,879	27,774	11,537	43,190
Total Outflows	(10,101)	(21,097)	(10,356)	(41,554)
Net Flows	**(6,222)**	**6,677**	**1,181**	**1,636**
Net Flows into Liquidity Funds	(732)	403	2,214	1,885
Retention of external mandate[2]	—	(13,414)	13,414	—
Disposals[3]	—	—	(714)	(714)
Market and foreign exchange movements	603	3,209	2,090	5,902
Assets under management at 31 December 2017	**90,939**	**187,542**	**74,746**	**353,227**

1 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.
2 Retention of assets under management following sale of Antarius, resulting in a switch from Internal to External.
3 Disposal of Real Estate fund in February 2017.

Assets under management increased to £353.2 billion *(2016: £344.5 billion)* due to a combination of net fund inflows of £1.6 billion, favourable foreign exchange rate movements of £3.3 billion, favourable liquidity movements of £1.9 billion and the effect of market movements of £2.6 billion offset by the disposal of the Real Estate fund of £0.7 billion. As at 31 December 2017, £12.6 billion *(2016: £9.0 billion)* of funds under management were invested within our flagship AIMS fund range.

Profit drivers

7.i – Life business profit drivers

Life business operating profit before shareholder tax increased by 9% to £2,882 million *(2016: £2,642 million)*, up 6% on a constant currency basis.

Overall, total income increased by 2% to £4,714 million *(2016: £4,645 million)* and total expenses increased by 8% to £2,260 million *(2016: £2,096 million)*. This increase in net income was partly offset by a higher benefit from DAC and other items, driven by changes in actuarial assumptions in the UK, to give a total increase in life operating profit of £240 million for the year. The increase also reflects a positive foreign exchange impact of £64 million largely driven by the strengthening of the euro against sterling.

	United Kingdom[1]		Europe[1]		Asia[9]		Total	
	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m
New business income[2,10]	**868**	777	**335**	291	**252**	184	**1,455**	1,252
Underwriting margin[3,10]	**280**	310	**215**	239	**85**	76	**580**	625
Investment return[4]	**1,281**	1,316	**1,171**	1,170	**227**	282	**2,679**	2,768
Total Income	**2,429**	2,403	**1,721**	1,700	**564**	542	**4,714**	4,645
Acquisition expenses[5]	**(431)**	(383)	**(326)**	(287)	**(191)**	(158)	**(948)**	(828)
Administration expenses[6]	**(655)**	(616)	**(558)**	(556)	**(99)**	(96)	**(1,312)**	(1,268)
Total Expenses	**(1,086)**	(999)	**(884)**	(843)	**(290)**	(254)	**(2,260)**	(2,096)
DAC and other[7]	**415**	119	**36**	19	**(39)**	(47)	**412**	91
	1,758	1,523	**873**	876	**235**	241	**2,866**	2,640
Other business[8]							**16**	**2**
Total life business operating profit							**2,882**	**2,642**

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 Represents the income earned on new business written during the period reflecting premiums less initial reserves.
3 Underwriting margin represents the release of reserves held to cover claims, surrenders and expenses less the cost of actual claims and surrenders in the period.
4 Represents the expected income on existing business (other than the underwriting margin). Life investment return comprises unit-linked margin, shareholders' return on participating business, spread margin and the expected return on shareholder assets.
5 Initial expenses and commission incurred in writing new business less deferred costs.
6 Expenses and renewal commissions incurred in managing existing business.
7 DAC and other mainly include the Deferred Acquisition Cost asset that is amortised in the period and included in operating profit for existing business, assumption changes and other one-off items.
8 Other business includes the total result for Aviva Investors Pooled Pensions and Aviva Life Reinsurance.
9 Following a change in the 2017 methodology applied by FPI, the deferred actuarial funding which forms part of the deferred expense for the Investment return business was included in the Unit-linked margin and not DAC and other. Comparatives have been restated for Investment return and DAC and other. The change resulted in an increase in the Investment return and a decrease in DAC and other for Asia by £123 million. Overall this change has nil effect in the Total life operating profit for Asia and the Group.
10 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

Income: New business income and underwriting margin

	United Kingdom[1]		Europe[1]		Asia		Total	
	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m
New business income (£m)	**868**	777	**335**	291	**252**	184	**1,455**	1,252
APE (£m)[2,3]	**2,893**	2,373	**1,327**	1,319	**358**	270	**4,578**	3,962
As margin on APE (%)	**30%**	33%	**25%**	22%	**70%**	68%	**32%**	32%
Acquisition expenses (£m)	**(431)**	(383)	**(326)**	(287)	**(191)**	(158)	**(948)**	(828)
Net contribution	**437**	394	**9**	4	**61**	26	**507**	424
Underwriting margin (£m)	**280**	310	**215**	239	**85**	76	**580**	625
Analysed by:								
Expenses	**63**	62	**65**	70	**65**	47	**193**	179
Mortality and longevity	**217**	247	**157**	152	**21**	27	**395**	426
Persistency	**—**	1	**(7)**	17	**(1)**	2	**(8)**	20

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 Used as a measure of life sales. It is calculated as the sum of new regular premiums plus 10% of new single premiums written in the period. APE excludes UK Retail Fund Management and Health business in UK & Ireland and Asia.
3 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

(a) New business income

New business income increased to £1,455 million *(2016: £1,252 million)*, mainly driven by the UK, Asia and favourable foreign exchange movements of £25 million.

The net contribution from new business is the new business income less associated acquisition expenses (see (g) below). This increased to a profit of £507 million *(2016: profit of £424 million)*.

In the UK, the net contribution from new business increased to £437 million *(2016: £394 million)* mainly driven by growth in the sales of individual protection business and annuities.

In Europe, the net contribution increased to £9 million *(2016: £4 million)* due to growth and margin improvements in Italy, consolidation of the joint venture with Bank Zachodni WBK SA for the first time in Poland offset by a reduced net contribution from France due to the disposal of the Antarius. New business margin on APE in Europe increased slightly to 25% *(2016: 22%)*.

In Asia, the net contribution increased by 113% in constant currency terms to a profit of £61 million *(2016: profit of £26 million)* mainly as a result of higher sales in Singapore for with-profits business and higher sales volumes in China. New business margin on APE in Asia increased slightly to 70% *(2016: 68%)* due to higher acquisition expenses reflecting a change in product mix.

(b) Underwriting margin

The underwriting margin decreased to £580 million *(2016: £625 million)*. This was driven by the UK , as the margin decreased to £280 million *(2016: £310 million)* mainly due to a reduction in mortality margins. In Europe, the underwriting margin decreased by 15% on a constant currency basis to a profit of £215 million *(2016: £239 million)* mainly due to lower persistency margins in Italy and Ireland.

In Asia, the underwriting margin increased by 7% in constant currency terms to £85 million *(2016: £76 million)* mainly due to adverse mortality margins in Singapore offset by favourable expense margins on non-participating annuities in China.

Profit drivers continued

7.i – Life business profit drivers continued

Income: Investment return

	United Kingdom[1]		Europe[1]		Asia[7]		Total	
	2017 £m	2016 £m	**2017 £m**	2016 £m	**2017 £m**	2016 £m	**2017 £m**	2016 £m
Unit-linked margin[2,8] (£m)	**847**	798	**585**	546	**202**	235	**1,634**	1,579
As annual management charge on average reserves (bps)	**73**	75	**138**	148	**213**	276	**97**	104
Average reserves (£bn)[6]	**116.8**	106.7	**42.3**	36.8	**9.5**	8.5	**168.6**	152.0
Participating business[3] (£m)	**164**	192	**487**	527	**(4)**	15	**647**	734
As bonus on average reserves (bps)	**34**	38	**73**	79	**(10)**	43	**55**	61
Average reserves (£bn)[6]	**48.1**	50.3	**66.4**	66.3	**3.9**	3.5	**118.4**	120.1
Spread margin[4,8] (£m)	**271**	267	**6**	13	**12**	9	**289**	289
As spread margin on average reserves (bps)	**42**	43	**13**	29	**80**	75	**41**	43
Average reserves (£bn)[6]	**64.2**	62.0	**4.5**	4.5	**1.5**	1.2	**70.2**	67.7
Expected return on shareholder assets[5] (£m)	**(1)**	59	**93**	84	**17**	23	**109**	166
Total (£m)	**1,281**	1,316	**1,171**	1,170	**227**	282	**2,679**	2,768

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 Unit-linked margin represents the annual management charges on unit-linked business based on expected investment return.
3 The shareholders' share of the return on with-profit and other participating business.
4 Spread margin represents the return made on annuity and other non-linked business, based on the expected investment return less amounts credited to policyholders.
5 The expected investment return based on opening economic assumptions applied to expected surplus assets over the reporting period that are not backing policyholder liabilities.
6 An average of the insurance or investment contract liabilities over the reporting period, including managed pension business which is not consolidated within the statement of financial position.
7 Following a change in the 2017 methodology applied by FPI, the deferred actuarial funding which forms part of the deferred expense for the unit-linked business was included in the unit-linked margin and not DAC and other. Comparatives have been restated for Unit-linked margin and DAC and other. The change resulted in an increase in the unit-linked margin and a decrease in DAC and other for Asia by £123 million. Overall this change has nil effect in the Total life operating profit for Asia and the Group.
8 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

(c) Unit-linked margin

Unit-linked average reserves have increased to £169 million *(2016: £152 million)*, with the movement largely driven by favourable market performance in the UK. The unit-linked margin increased to £1,634 million *(2016: £1,579 million)*. The margin as a proportion of average unit-linked reserves decreased at 97 bps *(2016: 104 bps)*.

The unit-linked margin in UK has increased mainly due to favourable market movements and growth in the sales of group pensions. The margin on average reserves has decreased to 73 bps *(2016: 75 bps)* due to the expected run-off in the higher margin back book and lower margins on group pensions. The unit-linked margin in Europe increased to £585 million (*2016: £546 million),* mainly driven by the benefit of consolidating the Polish joint venture for the first time offset by lower margin in Italy due to change in product mix. The decrease in unit-linked margin in Asia to £202 million *(2016: £235 million)* is mainly due to lower sales volumes in FPI.

(d) Participating business

Participating average reserves have decreased to £118 million (*2016*: £120 million). Income from participating business decreased to £647 million *(2016: £734 million).* In the UK, income has decreased mainly due to lower bonus return reflecting timing of maturities. In Europe, income has decreased to £487 million *(2016: £527 million)* due to lower income in France following the disposal of Antarius. The majority of participating business income is earned in France, where there is a fixed management charge of around 50 bps on the Association Française d'Epargne et de Retraite 'AFER' business, which is the largest single component of this business.

(e) Spread margin

Spread business income, which mainly relates to UK in-force immediate annuity and equity release business, remained stable at £289 million (*2016: £289 million*). The spread margin decreased to 41 bps *(2016:43 bps)* mainly due to lower interest rates in the UK. In Europe, spread income decreased to £6 million *(2016: £13 million)*, due to the sale of the Spain life business in September 2017. In Asia, spread business income increased to £12 million *(2016: £9 million)* due to higher volumes on non-participating business in China.

(f) Expected return on shareholder assets

Expected returns, representing investment income on surplus funds, decreased to £109 million *(2016: £166 million)*. This is mainly due to the impact of the capital optimisation (hedging) activity in Friends Life and the fall in interest rates in the UK, both reducing the expected return on shareholder assets in UK Life.

7.i – Life business profit drivers continued

Expenses

	United Kingdom[1]		Europe[1]		Asia		Total	
	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m
Acquisition expenses (£m)	**(431)**	(383)	**(326)**	(287)	**(191)**	(158)	**(948)**	(828)
APE (£m)[2]	**2,893**	2,373	**1,327**	1,319	**358**	270	**4,578**	3,962
As acquisition expense ratio on APE (%)	**15%**	16%	**25%**	22%	**53%**	59%	**21%**	21%
Administration expenses (£m)	**(655)**	(616)	**(558)**	(556)	**(99)**	(96)	**(1,312)**	(1,268)
As existing business expense ratio on average reserves (bps)	**29**	28	**49**	52	**66**	73	**37**	37
Average reserves (£bn)[3]	**229.1**	218.9	**113.2**	107.6	**14.9**	13.2	**357.2**	339.7

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 APE excludes UK Retail Fund Management and Health business in UK & Ireland and Asia.
3 An average of the insurance or investment contract liabilities over the reporting period, including managed pension business which is not consolidated within the statement of financial position.

(g) Acquisition expenses

Acquisition expenses increased to £948 million *(2016: £828 million)* primarily reflecting higher sales volumes in all segments. In the UK expenses increased to £431 million *(2016: £383 million)* driven by higher protection sales. In Europe acquisition expenses have increased by 8% on a constant currency basis, mainly driven by higher sales in Italy offset by the sale of Antarius in France.

In Asia acquisition expenses increased to £191 million *(2016: £158 million)* due to higher new business sales in China. The overall group-wide ratio of acquisition expenses to APE remained stable at 21% *(2016: 21%)*.

(h) Administration expenses

Administration expenses increased to £1,312 million *(2016: £1,268 million)*. The expense ratio remained stable at 37 bps (*2016: 37 bps*) on average reserves of £357 billion *(2016: £340 billion).* The increase in the UK is driven by increased investment in growth offset by continued cost control. Administration expenses in Europe have increased to £558 million (*2016: £556 million*) due to adverse exchange rate movements of £37 million, the consolidation of the joint venture in Poland, higher renewal commissions in Italy, driven by business mix, offset by the disposal of Antarius in France. Asia administration expenses increased slightly in constant currency terms by 1%.

The overall increase in life business acquisition and administration expenses was £164 million, with increased costs due to higher sales volumes in Italy, increased investment in growth and higher protection sales in the UK offset by lower expenses in France.

(i) DAC and other

DAC and other items increased to £412 million *(2016: £91 million)* mainly driven by assumption and modelling changes in the UK which benefitted from changes in longevity partially offset by strengthening of our expense assumptions and other reserve and modelling movements (refer 6.i - United Kingdom).

Profit drivers continued

7.ii – General insurance and health

2017	UK Personal £m	UK Commercial £m	**Total UK[1] £m**	Canada Personal £m	Canada Commercial £m	**Total Canada £m**	**Europe[1] £m**	**Asia & Other[2] £m**	**Total £m**
General insurance									
Gross written premiums	2,567	1,788	**4,355**	2,209	929	**3,138**	**2,104**	**13**	**9,610**
Net written premiums	2,501	1,577	**4,078**	2,171	857	**3,028**	**2,018**	**17**	**9,141**
Net earned premiums	2,461	1,554	**4,015**	2,103	841	**2,944**	**2,001**	**16**	**8,976**
Net claims incurred	(1,457)	(992)	**(2,449)**	(1,583)	(543)	**(2,126)**	**(1,262)**	**(19)**	**(5,856)**
Of which claims handling costs			***(149)***			***(119)***	***(59)***	**—**	***(327)***
Earned commission	(647)	(324)	**(971)**	(372)	(178)	**(550)**	**(390)**	**(1)**	**(1,912)**
Earned expenses[3]	(161)	(188)	**(349)**	(201)	(132)	**(333)**	**(213)**	**(6)**	**(901)**
Underwriting result	196	50	**246**	(53)	(12)	**(65)**	**136**	**(10)**	**307**
Longer-term investment return[4]			**163**			**115**	**79**	**3**	**360**
Other[5]			**(1)**			**(4)**	**—**	**—**	**(5)**
Operating profit			**408**			**46**	**215**	**(7)**	**662**
Health insurance									
Underwriting result			**32**			**—**	**7**	**(5)**	**34**
Longer-term investment return			**3**			**—**	**1**	**—**	**4**
Operating profit			**35**			**—**	**8**	**(5)**	**38**
Total operating profit			**443**			**46**	**223**	**(12)**	**700**
General insurance combined operating ratio									
Claims ratio	59.2%	63.8%	**61.0%**	75.3%	64.5%	**72.2%**	**63.1%**		**65.3%**
Commission ratio	26.3%	20.8%	**24.2%**	17.7%	21.1%	**18.7%**	**19.5%**		**21.3%**
Expense ratio	6.5%	12.1%	**8.7%**	9.5%	15.6%	**11.3%**	**10.7%**		**10.0%**
Combined operating ratio[6]	92.0%	96.7%	**93.9%**	102.5%	101.2%	**102.2%**	**93.3%**		**96.6%**
Assets supporting general insurance and health business									
Debt securities			**3,020**			**4,273**	**2,592**	**169**	**10,054**
Equity securities			**492**			**247**	**33**	**—**	**772**
Investment property			**323**			**—**	**176**	**—**	**499**
Cash and cash equivalents			**546**			**140**	**399**	**30**	**1,115**
Other[7]			**1,763**			**252**	**481**	**2**	**2,498**
Assets at 31 December 2017			**6,144**			**4,912**	**3,681**	**201**	**14,938**
Debt securities			**3,718**			**4,349**	**2,535**	**197**	**10,799**
Equity securities			**7**			**235**	**25**	**—**	**267**
Investment property			**208**			**—**	**133**	**—**	**341**
Cash and cash equivalents			**757**			**115**	**267**	**23**	**1,162**
Other[7]			**1,464**			**256**	**309**	**3**	**2,032**
Assets at 31 December 2016			**6,154**			**4,955**	**3,269**	**223**	**14,601**
Average assets			**6,149**			**4,934**	**3,475**	**212**	**14,770**
LTIR as % of average assets			**2.7%**			**2.3%**	**2.3%**	**1.4%**	**2.5%**

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparatives balances have been restated.
2 Asia & Other includes Aviva Re.
3 Earned expenses include claims handling costs and earned expenses included in general insurance COR above, plus operating expenses of other non-insurance operations.
4 LTIR includes UK £52 million (*2016: £62 million*) and Ireland £6 million (*2016: £7 million*) relating to the internal loan. This is lower than 2016 primarily as a result of the reduction in the balance of this loan during 2017.
5 Includes unwind of discount rate and pension scheme net finance costs.
6 COR is calculated as incurred claims, earned commission and earned expenses, expressed as a percentage of net earned premiums. COR is calculated using unrounded numbers so minor rounding differences may exist.
7 Includes loans and other financial investments.

7.ii – General insurance and health continued

2016	UK Personal £m	UK Commercial £m	Total UK[1] £m	Canada Personal £m	Canada Commercial £m	Total Canada £m	Europe[1] £m	Asia & Other[3] £m	Total £m
General insurance									
Gross written premiums	2,476	1,743	4,219	1,711	831	2,542	1,891	12	8,664
Net written premiums[2]	2,408	1,522	3,930	1,680	773	2,453	1,816	12	8,211
Net earned premiums[2]	2,295	1,526	3,821	1,645	775	2,420	1,747	12	8,000
Net claims incurred[2]	(1,602)	(1,220)	(2,822)	(1,104)	(433)	(1,537)	(1,153)	(24)	(5,536)
Of which claims handling costs			*(137)*			*(93)*	*(54)*	—	*(284)*
Earned commission	(570)	(310)	(880)	(283)	(160)	(443)	(321)	—	(1,644)
Earned expenses[4]	(180)	(182)	(362)	(150)	(122)	(272)	(182)	(6)	(822)
Impact of change in Ogden discount rate excluded from underwriting result	230	245	475	—	—	—	—	—	475
Underwriting result[2]	173	59	232	108	60	168	91	(18)	473
Longer-term investment return[5]			162			105	69	3	339
Other[6]			(2)			(4)	—	—	(6)
Operating profit[2]			392			269	160	(15)	806
Health insurance									
Underwriting result			28			—	7	(12)	23
Longer-term investment return			3			—	1	—	4
Operating profit			31			—	8	(12)	27
Total operating profit[2]			423			269	168	(27)	833
General insurance combined operating ratio[2]									
Claims ratio[2]	69.8%	79.9%	73.8%	67.1%	55.9%	63.5%	66.0%		69.2%
Commission ratio	24.8%	20.3%	23.0%	17.2%	20.6%	18.3%	18.7%		20.6%
Expense ratio	7.8%	11.9%	9.5%	9.1%	15.7%	11.2%	10.4%		10.3%
Combined operating ratio[7]	102.4%	112.1%	106.3%	93.4%	92.2%	93.0%	95.1%		100.1%
Combined operating ratio, excluding the impact of change in Ogden discount rate[7]	92.5%	96.1%	93.9%	93.4%	92.2%	93.0%	95.1%		94.1%
Assets supporting general insurance and health business									
Debt securities			3,718			4,349	2,535	197	10,799
Equity securities			7			235	25	—	267
Investment property			208			—	133	—	341
Cash and cash equivalents			757			115	267	23	1,162
Other[8]			1,464			256	309	3	2,032
Assets at 31 December 2016			6,154			4,955	3,269	223	14,601
Debt securities			3,993			2,999	2,407	209	9,608
Equity securities			8			188	21	—	217
Investment property			198			—	137	—	335
Cash and cash equivalents			639			107	197	26	969
Other[8]			2,559			135	313	1	3,008
Assets at 31 December 2015			7,397			3,429	3,075	236	14,137
Average assets			6,776			4,192	3,172	229	14,369
LTIR as % of average assets			2.4%			2.5%	2.2%	1.3%	2.4%

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparatives balances have been restated.
2 Excludes the impact from an outward quota share reinsurance agreement written in 2015 and completed in 2016 in Aviva Insurance Limited (AIL). See note A10 for further details.
3 Asia & Other includes Aviva Re.
4 Earned expenses include claims handling costs and earned expenses included in general insurance COR above, plus operating expenses of other non-insurance operations.
5 LTIR includes UK £62 million (*2015: £100 million*) and Ireland £7 million *(2015: £15 million)* relating to the internal loan. This is lower than 2015 primarily as a result of the reduction in the balance of this loan during 2016.
6 Includes unwind of discount rate and pension scheme net finance costs.
7 COR is calculated as incurred claims, earned commission and earned expenses, expressed as a percentage of net earned premiums. COR is calculated using unrounded numbers so minor rounding differences may exist.
8 Includes loans and other financial investments.

Profit drivers continued

7.iii – Fund flows

Net flows is one of the measures of growth used by management and is a component of the movement in Life and platform business managed assets (excluding UK with-profits) during the period. It is the difference between the inflows (being IFRS net written premiums plus deposits received under investment contracts) and outflows (being IFRS net paid claims plus redemptions and surrenders under investment contracts). It excludes market and other movements.

	Managed assets at 1 January 2017 £m	Premiums and deposits, net of reinsurance £m	Claims and redemptions, net of reinsurance £m	Net flows[1,2] £m	Market and other movements £m	Managed assets at 31 December 2017[3] £m
Life and platform business						
UK – non-profit:						
– platform	12,963	7,701	(1,482)	6,219	1,056	**20,238**
– pensions and other long-term savings	91,589	7,225	(7,837)	(612)	6,993	**97,970**
– long-term savings	104,552	14,926	(9,319)	5,607	8,049	**118,208**
– annuities and equity release	57,316	2,777	(2,671)	106	3,375	**60,797**
– other	25,851	1,355	(2,717)	(1,362)	238	**24,727**
United Kingdom(excluding UK with-profits)	187,719	19,058	(14,707)	4,351	11,662	**203,732**
Europe[4]	119,831	11,000	(8,169)	2,831	(8,594)	**114,068**
Asia	13,456	737	(419)	318	752	**14,526**
Other	1,599	31	(483)	(452)	143	**1,290**
	322,605	30,826	(23,778)	7,048	3,963	**333,616**
UK – with-profits and other	61,796					**58,200**
Total life and platform business	384,401					**391,816**

1 Life business net flows in the table above are net of reinsurance.
2 For the period to 31 December 2017, net flows of £7.0 billion includes net flows of £3.4 billion that are included in the IFRS income statement within net written premiums and net paid claims.
3 Life and platform business managed assets at the balance sheet date includes financial investments, loans, investment property, externally reinsured non-participating investment contracts and cash and cash equivalents included on the IFRS statement of financial position, plus assets administered by the Group that are not included on the IFRS statement of financial position. At 31 December 2017, life and platform business managed assets of £392 billion (*FY16: £384 billion*) includes £374 billion (*2016: £373 billion*) that is on the IFRS statement of financial position.
4. Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
5. Includes platform and pensions business and externally reinsured non-participating investment contracts

United Kingdom & Ireland (excluding UK with-profits)

UK long-term savings managed assets have increased to £118 billion *(2016: £105 billion)* during the period. Within this, net inflows were £5.6 billion mainly reflecting continued growth from our platform businesses of £6.2 billion with administered assets increasing by 56% in the period to £20.2 billion *(2016: £13.0 billion)*.

UK annuities and equity release inflows were £0.1 billion, including increased bulk purchase annuity volumes in 2017. Other non-profit outflows were £1.4 billion driven by net outflows in Bonds & Savings as the book continues to run off as expected. Market and other movements include favourable market movements driven by narrowing spreads and growth in equities.

Europe

Net inflows of £2.8 billion were mainly driven by sales of hybrid products in Italy. Market and other movements in Europe reflect the disposal of £11.4 billion of investment assets following the sale of Antarius in France and the disposal of the majority of our business in Spain (£4.9 billion). These disposals were partly offset by favourable foreign exchange movements of £4.5 billion and investment market movements of £3.2 billion.

Asia and other

Net inflows in Asia were £0.3 billion arising mainly in Singapore. Other business net outflows of £0.5 billion primarily relate to Aviva Investors' Pooled Pensions business.

Capital & assets summary

8.i – Summary of assets

The Group asset portfolio is invested to generate competitive investment returns for both policyholders and shareholders while remaining within the Group's appetite for market, credit and liquidity risk.

The Group has a low appetite for interest rate risk and currency risk which means that the asset portfolios are well matched by duration and currency to the liabilities they cover. The Group also runs a low level of liquidity risk which results in a high proportion of income generating assets and a preference for more liquid assets where there is the potential need to realise those assets before maturity.

The Group seeks to diversify its asset portfolio in order to reduce risk and provide more attractive risk-adjusted returns. In order to achieve this there is a comprehensive risk limit framework in place. There is an allowance for diversification in our capital model and we continue to broaden the investment portfolio in individual businesses.

Asset allocation decisions are taken at legal entity level and in many cases by fund within a legal entity in order to reflect the nature of the liabilities, customer expectations, the local accounting and regulatory treatment, and any local constraints. These asset allocation decisions are made in accordance with a group-wide framework that takes into account consensus investment views across the Group, prioritised Group objectives and metrics and Group risk limits and constraints. This framework is overseen by the Group Asset Liability Committee (ALCO) and facilitates a consistent approach to asset allocation across the business units in line with Group risk appetite and shareholder objectives.

The asset allocation as at 31 December 2017 across the Group, split according to the type of liability the assets are covering, is shown in the table below. Further information on these assets is given in the Analysis of Assets Section.

	Shareholder business assets			Participating fund assets				
Carrying value in the statement of financial position	General Insurance & health & other[1] £m	Annuity and non-profit £m	Policyholder (unit-linked assets) £m	UK style with profits £m	Continental European-style Participating funds £m	Total assets analysed £m	Less assets of operation classified as held for sale £m	Carrying value in the statement of financial position £m
Debt securities								
Government bonds	**6,374**	**16,044**	**14,888**	**16,998**	**28,698**	**83,002**	**(541)**	**82,461**
Corporate bonds	**4,064**	**20,369**	**13,750**	**16,567**	**26,369**	**81,119**	**(586)**	**80,533**
Other	**343**	**1,992**	**2,349**	**1,041**	**6,102**	**11,827**	**(13)**	**11,814**
	10,781	**38,405**	**30,987**	**34,606**	**61,169**	**175,948**	**(1,140)**	**174,808**
Loans								
Mortgage loans	**—**	**20,189**	**—**	**91**	**—**	**20,280**	**—**	**20,280**
Other loans	**187**	**4,139**	**8**	**2,516**	**733**	**7,583**	**(6)**	**7,577**
	187	**24,328**	**8**	**2,607**	**733**	**27,863**	**(6)**	**27,857**
Equity securities	**800**	**195**	**74,110**	**13,064**	**1,994**	**90,163**	**(195)**	**89,968**
Investment property	**406**	**169**	**6,256**	**2,357**	**1,609**	**10,797**	**—**	**10,797**
Other investments	**1,407**	**2,479**	**42,368**	**2,179**	**4,844**	**53,277**	**(6,971)**	**46,306**
Total as at 31 December 2017	**13,581**	**65,576**	**153,729**	**54,813**	**70,349**	**358,048**	**(8,312)**	**349,736**
Total as at 31 December 2016	14,152	65,628	132,901	56,672	76,863	346,216	(10,829)	335,387

1 Of the £13.6 billion of assets 6% relates to other shareholder business assets.

There is an internal loan between Aviva Insurance Limited (AIL) and Aviva Group Holdings Limited (AGH) that has a net value of zero at a consolidated level.

General insurance and health

All the investment risk is borne by shareholders and the portfolio held to cover these liabilities contains a high proportion of fixed and variable income securities, of which 82% are rated A or above. The assets are relatively short duration reflecting the short average duration of the liabilities. Liquidity, interest rate and currency risks are maintained at a low level within risk appetite.

Annuity and other non-profit

All the investment risk is borne by shareholders. The annuity liabilities have a long duration but are also illiquid as customers cannot surrender their policies. The assets are chosen to provide stable income and cash flow. Currency and interest rate exposures are closely matched to the liabilities in line with risk appetite. We are able to invest part of the portfolio in less liquid assets in order to improve risk-adjusted returns given the illiquid nature of the liabilities. The asset portfolio is principally comprised of long maturity bonds and loans including a material book of commercial mortgage loans. The other non-profit business assets are a smaller proportion of this portfolio and are generally shorter in duration and have a high proportion invested in fixed income.

£13.9 billion of Shareholder loan assets are backing annuity liabilities in our UK Life business and comprise of commercial mortgage loans (£7.1 billion), Healthcare, Infrastructure and PFI mortgage loans (£3.4 billion) and Primary Healthcare, Infrastructure and PFI other loans (£3.4 billion). The Group carries a valuation allowance within the liabilities against the risk of default of commercial mortgages, including Healthcare and PFI mortgages, of £0.4 billion which equates to 40 bps at 31 December 2017 *(2016: 50 bps)*.

Policyholder assets

These assets are invested in line with the fund choices made by our unit-linked policyholders and the investment risk is borne by the policyholder. This results in a high allocation to growth assets such as equity and property. Aviva's shareholder exposure to these assets arises from the fact that the income we receive is a proportion of the assets under management.

8.i – Summary of assets continued

UK style with-profits (WP)

UK style with-profits funds hold relatively long-term contracts with policyholders participating in pooled investment performance subject to some minimum guarantees. Smoothed returns are used to declare bonuses to policyholders which increase the level of the guarantees through time. The part of the portfolio to which policyholder bonuses are linked is invested in line with their expectations and includes growth assets as well as fixed income. The remainder of the portfolio is invested to protect the funds from market movements and mitigate the resultant shareholder risk. This leads us to an overall investment portfolio that holds a higher proportion of growth assets than our other business lines although there are still material allocations to fixed income assets.

Continental European style participating funds

Continental European style participating funds hold relatively long-term contracts with policyholders participating in pooled investment performance subject to some minimum guarantees. Smoothed returns are used to declare bonuses to policyholders. A certain portion of the guarantees are subject to annual discretion declared at the start of the year. Other guarantees are subject to revision downwards at contractual dates. The investment portfolio holds a higher proportion of fixed income assets than the UK style equivalent. Fixed income assets also give rise to less volatility on the local statutory balance sheet than growth assets.

8.ii – Net asset value

At the end of 2017, IFRS net asset value per share was 423 pence (*2016: 414 pence*). The increase was driven by operating profit and profit on the disposal and remeasurement of subsidiaries, joint ventures and associates, partially offset by dividend payments to shareholders, amortisation and impairment of intangibles and acquired value of in-force business and adverse economic variances.

Total investment variances and economic assumption changes were £318 million adverse. This included £352 million adverse variances in the non-life business, primarily reflecting unfavourable short-term fluctuations due to foreign exchange losses and adverse market movements on Group centre holdings, including the centre hedging programme.

In the life businesses, investment variances and economic assumption changes were £34 million positive. The variance in 2017 is driven by positive variances in the UK, mainly due to economic modelling developments implemented in 2017, partially offset by negative variances in France which are primarily due to an increase in life annuity pension reserves (see A4 for further details).

On 25 May 2017 Aviva announced a share buy-back of ordinary shares for an aggregate purchase price of up to £300 million, which was carried out in full during the period from 25 May 2017 to 19 September 2017. The number of shares in issue has reduced by 58 million as at 31 December 2017 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 49 million.

IFRS	2017 £m	pence per share[2]	2016 £m	pence per share[2]
Equity attributable to shareholders of Aviva plc at 1 January[1]	**16,803**	**414p**	15,802	390p
Operating profit	**3,068**	**76p**	3,010	73p
Investment return variances and economic assumption changes on life and non-life business	**(318)**	**(8)p**	(381)	(9)p
Profit/(loss) on the disposal and remeasurements of subsidiaries, joint ventures and associates	**135**	**3p**	(11)	—
Goodwill impairment and amortisation of intangibles	**(246)**	**(6)p**	(175)	(4)p
Amortisation and impairment of acquired value of in-force business	**(495)**	**(12)p**	(540)	(13)p
Integration and restructuring costs	**(141)**	**(3)p**	(212)	(5)p
Other[3]	**—**	**—**	(498)	(13)p
Tax on operating profit and on other activities	**(357)**	**(9)p**	(334)	(8)p
Non-controlling interests	**(149)**	**(4)p**	(156)	(4)p
Profit after tax attributable to shareholders of Aviva plc	**1,497**	**37p**	703	17p
AFS securities fair value & other reserve movements	**7**	**—**	4	—
Ordinary dividends	**(983)**	**(25)p**	(871)	(22)p
Direct capital instrument and tier 1 notes interest and preference share dividend	**(82)**	**(2)p**	(85)	(2)p
Foreign exchange rate movements	**33**	**1p**	945	23p
Remeasurements of pension schemes	**(2)**	**—**	242	6p
Shares purchased in buy-back	**(300)**	**(7)p**	—	—
Other net equity movements[4]	**(4)**	**5p**	63	2p
Equity attributable to shareholders of Aviva plc at 31 December[1]	**16,969**	**423p**	16,803	414p

1 Excluding preference shares of £200 million *(2016: £200 million)*.
2 Number of shares as at 31 December 2017: 4,013 million (*2016: 4,062 million*).
3 Other items in 2016 include an exceptional charge of £475 million with a post tax impact of £380 million, relating to the impact of the change in the Ogden discount rate from 2.5% set in 2001 to minus 0.75% announced by the Lord Chancellor on 27 February 2017. Other items also include a loss upon the completion of an outwards reinsurance contract by the UK General Insurance business, which provides significant protection against claims volatility from mesothelioma, industrial deafness and other long tail risks. The £23 million loss comprises £107 million in premiums ceded, less £78 million in reinsurance recoverables recognised and £6 million claims handling provisions released.
4 Other net equity movements per share include the effect of the reduction of the number of shares in issue by 57,724,500 in respect of shares acquired and cancelled under the share buy-back programme.

8.iii – Return on equity[1]

The return on equity calculation is based on operating return after tax attributable to ordinary shareholders expressed as a percentage of weighted average ordinary shareholders' equity.

During 2017, return on equity has increased to 13.2% *(2016: 12.5%)*, mainly driven by the increase in operating profit net of taxation.

	2017 %	2016 %
United Kingdom[2]	**13.9%**	11.8%
Canada	**2.4%**	15.7%
Europe[2]	**13.4%**	13.5%
Asia	**12.9%**	14.0%
Fund management	**25.7%**	24.4%
Corporate and Other Business	**n/a**	n/a
Return on total capital employed[3]	**9.8%**	9.7%
Subordinated debt	**4.3%**	4.5%
Senior debt	**0.2%**	0.1%
Return on total equity[3]	**12.6%**	12.1%
Less: Non-controlling interest	**10.1%**	11.5%
Direct capital instrument and tier 1 notes	**6.3%**	6.1%
Preference capital	**8.5%**	8.5%
Return on equity shareholders' funds	**13.2%**	12.5%

1 Please refer to note C1 for further analysis of return on equity.
2 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
3 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

8.iv – Solvency II

The estimated pro forma shareholder cover ratio on a Solvency II basis is 198% at 31 December 2017. The Solvency II position disclosed is based on a 'shareholder view'. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds (£3.3 billion at 31 December 2017) and staff pension schemes in surplus (£1.5 billion at 31 December 2017). 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 SCR not recognised in the Group position. The shareholder view is therefore considered by management to be more representative of the shareholders' risk-exposure and the Group's ability to cover the SCR with eligible own funds.

The Solvency II risk margin is highly sensitive to movements in interest rates, which can be offset by a reset of the transitional measure on technical provisions ('TMTP'). The 31 December 2016 Solvency II position disclosed includes a notional reset of the TMTP to reflect interest rates at 31 December 2016. This presentation is in line with the Group's approach to manage its capital position assuming a dynamic TMTP in respect of the impact of interest rate movements on the risk margin, as this avoids step changes to the Solvency II position that arise only when the formal TMTP reset points are triggered. The estimated 31 December 2017 Solvency II position includes an estimated reset of the TMTP in line with the regulatory requirement to reset the TMTP every two years. This TMTP has also been amortised on a straightline basis over 16 years from 1 January 2016 in line with the Solvency II rules.

The 31 December 2017 Solvency II position disclosed includes two pro forma adjustments, to reflect known or highly likely events materially affecting the Group's solvency position post 31 December 2017. The adjustments consist of the disposals of Friends Provident International Limited and the Italian joint venture Avipop Assicurazioni S.p.A. These adjustments have been made in order to show a more representative view of the Group's solvency position.

The 31 December 2016 Solvency II Own Funds position includes the pro forma impacts of £0.1 billion in relation to the disposal of Aviva's 50% shareholding in Antarius to Sogecap, which completed on 5 April 2017, and a then anticipated future change to UK tax rules restricting the tax relief that could be claimed in respect of tax losses announced in the Chancellor of the Exchequer's Autumn statement of 23 November 2016, which has been removed in 2017 following a clarification in the 13 July 2017 Finance Bill.

Summary of Solvency II position

	2017 £bn	2016 £bn
Own Funds[1,2,3]	**24.7**	24.0
Solvency Capital Requirement[1,2,3,4]	**(12.5)**	(12.7)
Estimated Solvency II Surplus at 31 December[2,3]	**12.2**	11.3
Estimated Shareholder Cover Ratio[1,2,3]	**198%**	189%

1 The estimated Solvency II position represents the shareholder view. This excludes the contribution to Group Solvency Capital Requirement (SCR) and Group Own Funds of fully ring fenced with-profits funds £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus £1.5 billion *(2016: £1.1 billion)* – these exclusions have no impact on Solvency II surplus.
2 The estimated Solvency II position includes the pro forma impacts of the disposals of Friends Provident International Limited (£0.1 billion increase to surplus) and the Italian joint venture Avipop Assicurazioni S.p.A (£0.1 billion increase to surplus).
3 The 31 December 2016 Solvency II position includes the pro forma impacts of the disposal of Aviva's 50% shareholding in Antarius to Sogecap, which completed on 5 April 2017 (£0.2 billion increase to surplus) and an anticipated future change to UK tax rules restricting the tax relief that can be claimed in respect of tax losses (£0.4 billion decrease to surplus). However, under the amended tax rules published on 13 July 2017, this restriction will not be material, and as a result no corresponding pro forma impact is included in the estimated 31 December 2017 Solvency II position. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional measure on technical provisions ('TMTP') to reflect interest rates (£0.4 billion decrease to surplus).
4 The Solvency Capital Requirement above represents the Solvency Capital Requirement after the impact of diversification benefit.

Movement in Group Solvency II Surplus

	2017 £bn	2016 £bn
Group Solvency II Surplus at 1 January	**11.3**	9.7
Operating Capital Generation	**2.6**	3.5
Non-operating Capital Generation	**(0.3)**	(1.8)
Dividends	**(1.1)**	(1.0)
Share buy-back	**(0.3)**	—
Foreign exchange variances	**0.1**	0.6
Hybrid debt issuance/repayment	**(0.5)**	0.4
Acquired/divested business	**0.4**	(0.1)
Estimated Solvency II Surplus at 31 December	**12.2**	11.3

The estimated Solvency II surplus at 31 December 2017 is £12.2 billion, with a shareholder cover ratio of 198%. This is an increase of £0.9 billion compared to the 31 December 2016 surplus. In 2017 the beneficial impacts of operating capital generation, disposals and foreign exchange variances have been partially offset by hybrid debt repayment, share buy-back and the impact of the Aviva plc dividend. The 2017 operating capital generation includes the beneficial impact of the transfer of the Friends Life business into the main UK life insurance fund. The beneficial impact from divested businesses in 2017 includes the disposal of the Spanish joint ventures Unicorp Vida and Caja Espana Vida and its retail life insurance business Aviva Vida y Pensiones. Also included are pro-forma impacts of the disposals of Friends Provident International Limited and the Italian joint venture Avivpop Assicurazioni S.p.A.

8.iv – Solvency II continued

Summary of diversified Solvency Capital Requirement

	2017 £bn	2016 £bn
Credit risk[1]	**3.4**	3.3
Equity risk[2]	**1.6**	1.3
Interest rate risk[3]	**0.4**	0.4
Other market risk[4]	**1.4**	1.6
Life insurance risk[5]	**2.8**	3.3
General insurance risk[6]	**0.7**	0.6
Operational risk	**1.1**	1.1
Other risk[7]	**1.1**	1.1
Total	**12.5**	12.7

1 Capital held in respect of credit risk recognises the Group's shareholder exposure to changes in the market value of assets and defaults. A range of specific stresses are applied reflecting the difference in assumed risk relative to investment grade and duration.
2 Capital held in respect of equity risk recognises the Group's shareholder exposure to changes in the market value of assets.
3 Capital held in respect of interest rate risk recognises the Group's shareholder exposure to changes in the value of net assets as a result of movements in interest rates.
4 Capital held in respect of other market risk recognises the Group's shareholder exposure to changes in the market value of commercial mortgages and property, but also captures risk in association with inflation and foreign exchange
5 Capital held in respect of life insurance risk recognises the Group's shareholder exposure to life insurance specific risks, such as longevity and lapse.
6 Capital held in respect of general insurance risk recognises the Group's shareholder exposure to general insurance specific risks, such as claims volatility and catastrophe.
7 Capital held in respect of other risk recognises the Group's shareholder exposure to specific risks unique to particular business units and other items.

Equity risk increased over 2017 due to a combination of exposure changes and market movements. Other market risk decreased due to a model change to currency risk. Life insurance risk decreased as a result of longevity assumption changes in the UK and the impact of disposals.

Sensitivity analysis of Solvency II surplus

The following table shows the sensitivity of the Group's Solvency II surplus to:

Economic assumptions:

- 25 basis point increase and decrease, 50 basis point decrease and 100 basis point increase in the risk-free rate, including all consequential changes (including assumed investment returns for all asset classes, market values of fixed interest assets, risk discount rates);
- 50 basis point increase and decrease and 100 basis point increase in credit spreads for corporate bonds with credit rating A at 10 year duration, with the other ratings and durations stressed by the same proportion relative to the stressed capital requirement;
- an immediate full letter downgrade on 20% of the annuity portfolio bonds (e.g. from AAA to AA, from AA to A);
- 10% increase and decrease and 25% decrease in market values of equity assets.

Non-Economic assumptions:

- 10% increase in maintenance and investment expenses (a 10% sensitivity on a base expense assumption of £10 p.a. would represent an expense assumption of £11 p.a.);
- 10% increase in lapse rates (a 10% sensitivity on a base assumption of 5% p.a. would represent a lapse rate of 5.5% p.a.);
- 5% increase in both mortality and morbidity rates for life assurance;
- 5% decrease in mortality rates for annuity business;
- 5% increase in gross loss ratios for general insurance and health business.

8.iv – Solvency II continued

The sensitivity allows for any consequential impact on the assets and liability valuations. All other assumptions remain unchanged for each sensitivity, except where these are directly affected by the revised economic conditions or where a management action that is allowed for in the Solvency Capital Requirement calculation is applicable for that sensitivity. For example, future bonus rates are automatically adjusted to reflect sensitivity changes to future investment returns.

Transitional Measures on Technical Provisions is assumed to be recalculated in all sensitivities where its impact would be material.

The table below shows the absolute change in cover ratio under each sensitivity, e.g. a 4% positive impact would result in a cover ratio of 202%.

Sensitivities		Impact on cover ratio %
Changes in Economic assumptions	25 bps increase in interest rate	**4%**
	100 bps increase in interest rate	**15%**
	25 bps decrease in interest rate	**(6%)**
	50 bps decrease in interest rate	**(12%)**
	50 bps increase in corporate bond spread	**1%**
	100 bps increase in corporate bond spread	**(2%)**
	50 bps decrease in corporate bond spread	**(1%)**
	Credit downgrade on annuity portfolio	**(4%)**
	10% increase in market value of equity	**2%**
	10% decrease in market value of equity	**(2%)**
	25% decrease in market value of equity	**(6%)**
Changes in Non-Economic assumptions	10% increase in maintenance and investment expenses	**(6%)**
	10% increase in lapse rates	**(1%)**
	5% increase in mortality/morbidity rates – Life assurance	**(1%)**
	5% decrease in mortality rates – annuity business	**(11%)**
	5% increase in gross loss ratios	**(3%)**

Limitations of sensitivity analysis

The table above demonstrates 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 analysis does not take into consideration that the Group's assets and liabilities are actively managed. Additionally, the Solvency II 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 allocations, adjusting bonuses credited to policyholders, and taking other protective action.

Other limitations in the above sensitivity analysis 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.

Reconciliation of IFRS total equity to Solvency II Own Funds

The reconciliation from total Group equity on an IFRS basis to Solvency II Own Funds is presented below. The valuation differences reflect moving from IFRS valuations to a Solvency II shareholder view of Own Funds.

	2017 £bn	2016 £bn
Total Group equity on an IFRS basis	**19.1**	19.6
Elimination of goodwill and other intangible assets[1]	**(9.8)**	(10.0)
Liability valuation differences (net of transitional deductions)[2]	**22.0**	22.1
Inclusion of risk margin (net of transitional deductions)	**(3.3)**	(4.4)
Net deferred tax[3]	**(1.3)**	(1.6)
Revaluation of subordinated liabilities	**(0.7)**	(0.9)
Estimated Solvency II Net Assets (gross of non-controlling interests)[4]	**26.0**	24.8
Difference between Solvency II Net Assets and Own Funds[5]	**(1.3)**	(0.8)
Estimated Solvency II Own Funds[6,7]	**24.7**	24.0

1 Includes £1.9 billion (*2016: £2.0 billion*) of goodwill and £7.9 billion (*2016: £8.0 billion*) of other intangible assets comprising acquired value of in-force business of £3.3 billion (*2016: £3.9 billion*), deferred acquisition costs (net of deferred income) of £2.9 billion (*2016: £2.5 billion*) and other intangibles of £1.7 billion (*2016: £1.6 billion*).
2 Includes the adjustments required to reflect market consistent principles under Solvency II whereby non-insurance assets and liabilities are measured using market value and liabilities arising from insurance contracts are valued on a best estimate basis using market-implied assumptions.
3 Net deferred tax includes the tax effect of all other reconciling items in the table above which are shown gross of tax.
4 The 31 December 2016 Solvency II position includes the pro forma impacts of the disposal of Aviva's 50% shareholding in Antarius to Sogecap, which completed on 5 April 2017 (£0.1 billion) and an anticipated future change to UK tax rules restricting the tax relief that can be claimed in respect of tax losses (£0.1 billion). However, under the amended tax rules published on 13 July 2017, this restriction will not be material, and as a result no corresponding pro forma impact is included in the estimated 31 December 2017 Solvency II position. The 31 December 2016 Solvency II position also includes an adverse impact of a notional reset of the transitional measure on technical provisions ('TMTP') to reflect interest rates at 31 December 2016 of £0.4 billion. The net pro forma impact on Own Funds arising from disposals of Friends Provident International Limited and the Italian joint venture Avipop Assicurazioni S.p.A in 2017 is £nil.
5 Regulatory adjustments to bridge from Solvency II Net Assets to Own Funds include recognition of subordinated debt capital and non-controlling interests.
6 The estimated Solvency II position represents the shareholder view. It excludes the contribution to Group SCR and Group Own Funds of fully ring-fenced with-profits funds £3.3 billion *(2016: £2.9 billion)* and staff pension schemes in surplus £1.5 billion (*2016: £1.1 billion*) – these exclusions have no impact on Solvency II surplus.
7 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

Financial supplement

In this section

Reconciliation of Group adjusted operating profit to profit for the year

For the year ended 31 December 2017

	2017 £m	2016 £m
Group adjusted operating profit before tax attributable to shareholders' profits		
Life business		
United Kingdom[1]	**1,758**	1,523
Europe[1]	**873**	876
Asia	**235**	241
Other	**16**	2
Total life business	**2,882**	2,642
General insurance and health		
United Kingdom general insurance[1]	**408**	392
United Kingdom health	**35**	31
Canada	**46**	269
Europe[1]	**223**	168
Asia	**(8)**	(13)
Other	**(4)**	(14)
Total general insurance and health	**700**	833
Fund management		
Aviva Investors	**168**	139
Asia	**(4)**	(1)
Total fund management	**164**	138
Other		
Other operations (note A1)	**(169)**	(94)
Market operating profit	**3,577**	3,519
Corporate centre (note A2)	**(184)**	(184)
Group debt costs and other interest (note A3)	**(325)**	(325)
Group adjusted operating profit before tax attributable to shareholders' profits	**3,068**	3,010
Integration and restructuring costs	**(141)**	(212)
Group adjusted operating profit before tax attributable to shareholders' profits after integration and restructuring costs	**2,927**	2,798
Adjusted for the following:		
Investment return variances and economic assumption changes on long-term business (note A4)	**34**	379
Short-term fluctuation in return on investments backing non-long-term business (note A5)	**(345)**	(518)
Economic assumption changes on general insurance and health business (note A6)	**(7)**	(242)
Impairment of goodwill, joint ventures and associates and other amounts expensed (note A7)	**(49)**	—
Amortisation and impairment of intangibles	**(197)**	(175)
Amortisation and impairment of acquired value of in-force business (note A8)	**(495)**	(540)
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates (note A9)	**135**	(11)
Other (note A10)	**—**	(498)
Adjusting items before tax	**(924)**	(1,605)
Profit before tax attributable to shareholders' profits	**2,003**	1,193
Tax on Group adjusted operating profit	**(639)**	(706)
Tax on other activities	**282**	372
	(357)	(334)
Profit for the year	**1,646**	859

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparatives have been restated.

Other Group operating profit items
A1 – Other operations

	2017 £m	2016 £m
United Kingdom[1]	**(26)**	3
Europe[1]	**(37)**	(26)
Asia	**(32)**	(26)
Other Group operations[2]	**(74)**	(45)
Total	**(169)**	(94)

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 Other Group operations include Group and head office costs, expenditure on UK digital business and non-insurance operating profit relating to Aviva Re.

Other operations relate to non-insurance activities and include costs associated with our Group and regional head offices, pension scheme expenses, as well as non-insurance income. Total costs in relation to non-insurance activities were £169 million *(2016: £94 million)*.

'Other Group operations' includes increased investment in the development of the UK digital business, partly offset by income relating to insurance recoveries of £32 million *(2016: £19 million)*.

A2 – Corporate centre

	2017 £m	2016 £m
Project spend	**(29)**	(30)
Central spend and share award costs	**(155)**	(154)
Total	**(184)**	(184)

A3 – Group debt costs and other interest

	2017 £m	2016 £m
External debt		
Subordinated debt	**(391)**	(387)
Other	**(2)**	(1)
Total external debt	**(393)**	(388)
Internal lending arrangements	**(7)**	(23)
Net finance income on main UK pension scheme	**75**	86
Total	**(325)**	(325)

Incomes & expenses continued

Non-operating profit items

A4 – Life Business: Investment variances and economic assumption changes

(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 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 the life Group adjusted operating profit are as follows:

Life business	2017 £m	2016 £m
Investment variances and economic assumption changes	**34**	379

Investment variances and economic assumption changes were £34 million positive (2016: £379 million positive). The variance in 2017 is driven by positive variances in the UK, which are partially offset by negative variances in France.

Positive variances in the UK are mainly due to economic modelling developments implemented in 2017. These include a one-off development to align the approach to calculating the valuation interest rate 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. Positive variances also reflect fewer than expected defaults and downgrades on corporate bonds, better than expected experience on equity release mortgages (in terms of losses related to no negative equity guarantees) and a reduction in the default allowances for commercial mortgages.

The negative variance in France is 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. This economic assumption change reflects the current environment of prolonged low interest rates. A further negative variance stems from losses realised in 2017 on derivative-based funds.

During 2017 the Group has kept its long-term assumptions for future property prices and rental income under review to allow for the possible future adverse impact of the decision for the UK to leave the European Union. The aim has been to maintain the same allowance in these assumptions in 2017 as was included in 2016, as the impact of the Brexit process on the UK economy remains uncertain.

In 2016, investment variances and economic assumption changes were £379 million positive. Positive variances in the UK reflected lower interest rates and narrowing credit spreads, which increased asset values more than liabilities. In the first half of 2016 the Group revised its expectation of future property prices and rental income in light of the UK referendum vote for the UK to leave the European Union. The adverse impact of this adjustment on the Group's equity release and commercial mortgage portfolios was broadly offset in the second half of the year as expectations for future property price and rental growth increased. In addition, in the UK the investment variance reflected a refined approach of assuming best estimate expected credit defaults on corporate bonds, with a resulting increase in Group adjusted operating profit in the period. The positive variance in the UK was partially offset by negative variances in France and Italy. The negative variance in France reflected losses on equity hedges managed on an economic basis rather than an IFRS basis and falling interest rates, while the negative variance in Italy reflected widening credit spreads.

(c) Assumptions

The expected rate of investment return is determined using consistent assumptions at the start of the period 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 equities and properties are:

	Equities		Properties	
	2017 %	2016 %	2017 %	2016 %
United Kingdom	**4.8%**	5.5%	**3.3%**	4.0%
Eurozone	**4.2%**	4.5%	**2.7%**	3.0%

The expected return on equities and properties has been calculated by reference to the 10 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	2017 %	2016 %
Equity risk premium	**3.5%**	3.5%
Property risk premium	**2.0%**	2.0%

The 10 year mid-price swap rates as at the start of the period are set out in the table below:

Territories	2017 %	2016 %
United Kingdom	**1.3%**	2.0%
Eurozone	**0.7%**	1.0%

Incomes & expenses continued

A4 – Life Business: Investment variances and economic assumption changes continued

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 available for sale, the expected investment return comprises the expected interest or dividend payments and amortisation of the premium or discount at purchase.

A5 – Non-life General insurance and health business: Short-term fluctuation in return on investments

	2017 £m	2016 £m
Analysis of investment income:		
– Net investment income	**331**	383
– Foreign exchange gains/losses and other charges	**(24)**	(35)
	307	348
Analysed between:		
– Longer-term investment return, reported within operating profit	**364**	343
– Short-term fluctuations in investment return, reported outside operating profit	**(57)**	5
	307	348
Short-term fluctuations:		
– General insurance and health	**(57)**	5
– Other operations[1]	**(288)**	(523)
Total short-term fluctuations	**(345)**	(518)

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

The longer-term investment return is calculated separately for each principal non-life business unit. In respect of equities and properties, the return is calculated by multiplying the opening market value of the investments, adjusted for sales and purchases during the year, by the longer-term rate of investment return. The longer-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 longer-term return for other investments is the actual income receivable for the year. Actual income and longer-term investment return both contain the amortisation of the discounts/premium arising on the acquisition of fixed income securities.

Market value movements which give rise to variances between actual and longer-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 adverse short-term fluctuations during 2017 are mainly due to foreign exchange losses and adverse market movements on Group centre holdings, including the centre hedging programme.

Total assets supporting the general insurance and health business, which contribute towards the longer-term return, are:

	2017 £m	2016 £m
Debt securities	**10,054**	10,799
Equity securities	**772**	267
Properties	**499**	341
Cash and cash equivalents	**1,115**	1,162
Other[1]	**2,498**	2,032
Assets supporting general insurance and health business	**14,938**	14,601
Assets supporting other non-long term-business[2]	**685**	724
Total assets supporting non-long term-business	**15,623**	15,325

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

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

	Longer-term rates of return on equities		Longer-term rates of return on property	
	2017 %	2016 %	2017 %	2016 %
United Kingdom	**4.8%**	5.5%	**3.3%**	4.0%
Eurozone	**4.2%**	4.5%	**2.7%**	3.0%
Canada	**5.5%**	5.4%	**4.0%**	3.9%

The longer-term rates of return on equities and properties have been calculated by reference to the 10 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 are shown in note A4(c).

A6 – General insurance and health business: Economic assumption changes

In the general insurance and health business, an adverse impact of £7 million *(2016: £242 million adverse)* mainly arises as a result of a slight decrease in the estimated future inflation rate used to value periodic payment orders offset by a slight decrease in the interest rates used to discount claim reserves for periodic payment orders and latent claims. During 2016 market interest rates used to discount periodic payment orders and latent claims reduced and the estimated future inflation rate used to value periodic payment orders was increased to be consistent with market expectations. This was, in part, offset by a change in estimate for the interest rate used to discount periodic payment orders to allow for the illiquid nature of these liabilities.

A7 – Impairment of goodwill, joint ventures, associates and other amounts expensed

Impairment of goodwill, associates and joint ventures expensed in the period comprised of £2 million in respect of an impairment of goodwill at Elite Insurance Company of Canada and £47 million in respect of the full impairment of goodwill in our investment in associate Aviva India (*2016: £nil*).

A8 – Amortisation and impairment of acquired value of in-force business

Amortisation and impairment of acquired value of in-force business ('AVIF') in the year is a charge of £495 million (*2016: £540 million charge*). The charge for the year includes £469 million of amortisation in respect of the Group's subsidiaries and joint-ventures and impairment charges of £26 million in relation to the FPI's reinsured book of business and Aviva India.

A9 – Profit/loss on the disposal and remeasurement of subsidiaries, joint ventures and associates

The total Group profit on disposal and remeasurement of subsidiaries, joint ventures and associates is £135 million (*2016: £11 million loss*). This consists of £23 million of remeasurement gains in respect of the joint venture operations in Poland and Aviva Vietnam; £237 million profit on the disposals of Antarius, France health, three businesses in Spain and other small operations; offset by £125 million of remeasurement losses in relation to FPI and Taiwan. Further details are provided in note B4.

A10 – Other

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. There were no other items during 2017 (*2016: £498 million*).

IFRS financial statements

Consolidated financial statements

Consolidated income statement

For the year ended 31 December 2017

	Note	2017 £m	2016 £m
Income			
Gross written premiums		**27,606**	25,442
Premiums ceded to reinsurers		**(2,229)**	(2,364)
Premiums written net of reinsurance		**25,377**	23,078
Net change in provision for unearned premiums		**(153)**	(210)
Net earned premiums		**25,224**	22,868
Fee and commission income		**2,187**	1,962
Net investment income		**22,066**	30,257
Share of profit after tax of joint ventures and associates		**41**	216
Profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates		**135**	(11)
		49,653	55,292
Expenses			
Claims and benefits paid, net of recoveries from reinsurers		**(24,113)**	(23,782)
Change in insurance liabilities, net of reinsurance	B9 (a) (ii)	**(1,074)**	(6,893)
Change in investment contract provisions		**(13,837)**	(14,039)
Change in unallocated divisible surplus	B13	**294**	(381)
Fee and commission expense		**(4,329)**	(3,885)
Other expenses		**(3,537)**	(3,853)
Finance costs		**(683)**	(626)
		(47,279)	(53,459)
Profit before tax		**2,374**	1,833
Tax attributable to policyholders' returns	B6	**(371)**	(640)
Profit before tax attributable to shareholders' profits		**2,003**	1,193
Tax expense	B6	**(728)**	(974)
Less: tax attributable to policyholders' returns	B6	**371**	640
Tax attributable to shareholders' profits	B6	**(357)**	(334)
Profit for the year		**1,646**	859
Attributable to:			
Equity holders of Aviva plc		**1,497**	703
Non-controlling interests		**149**	156
Profit for the year		**1,646**	859
Earnings per share	B7		
Basic (pence per share)		**35.0p**	15.3p
Diluted (pence per share)		**34.6p**	15.1p

Consolidated statement of comprehensive income

For the year ended 31 December 2017

	Note	2017 £m	2016 £m
Profit for the year		**1,646**	859
Other comprehensive income:			
Items that may be reclassified subsequently to income statement			
Investments classified as available for sale			
Fair value (losses)/gains		**(7)**	12
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		**68**	1,128
Aggregate tax effect – shareholder tax on items that may be reclassified subsequently to income statement		**5**	(34)
Items that will not be reclassified to income statement			
Owner-occupied properties – fair value (losses)/gains		**(1)**	4
Remeasurements of pension schemes	B15	**(5)**	311
Aggregate tax effect – shareholder tax on items that will not be reclassified subsequently to income statement		**5**	(70)
Total other comprehensive income, net of tax		**69**	1,343
Total comprehensive income for the year		**1,715**	2,202
Attributable to:			
Equity holders of Aviva plc		**1,523**	1,901
Non-controlling interests		**192**	301
		1,715	2,202

Consolidated statement of changes in equity

For the year ended 31 December 2017

	Ordinary share capital £m	Preference share capital £m	Capital reserves[1] £m	Treasury shares £m	Currency translation reserve £m	Other reserves £m	Retained earnings £m	DCI and tier 1 notes £m	Total equity excluding non-controlling interest £m	Non-controlling interests £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
Owner-occupied properties fair value gains transferred to retained earnings on disposals	—	—	—	—	—	(2)	2	—	—	—	—
Dividends and appropriations	—	—	—	—	—	—	(1,081)	—	(1,081)	—	(1,081)
Non-controlling interests share of dividends declared in the year	—	—	—	—	—	—	—	—	—	(103)	(103)
Transfer to profit on disposal of subsidiaries, joint ventures and associates	—	—	—	—	(126)	137	1	—	12	—	12
Capital contributions from non-controlling interests	—	—	—	—	—	—	—	—	—	36	36
Changes in non-controlling interests in subsidiaries	—	—	—	—	—	—	—	—	—	(315)	(315)
Treasury shares held by subsidiary companies	—	—	—	1	—	—	—	—	1	—	1
Reserves credit for equity compensation plans	—	—	—	—	—	77	—	—	77	—	77
Shares issued under equity compensation plans	2	—	10	—	—	(44)	42	—	10	—	10
Shares purchased in buy-back	(14)	—	14	—	—	—	(300)	—	(300)	—	(300)
Reclassification of tier 1 notes to financial liabilities[2]	—	—	—	—	—	—	(92)	(392)	(484)	—	(484)
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 arising as a result of the shares purchased in buy-back and a merger reserve of £8,974 million. See note B7 for further details of the shares purchased in buy-back.
2 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. See note B18 for further details.

For the year ended 31 December 2016

	Ordinary share capital £m	Preference share capital £m	Capital reserves[1] £m	Treasury shares £m	Currency translation reserve £m	Other reserves £m	Retained earnings £m	DCI and tier 1 notes £m	Total equity excluding non-controlling interest £m	Non-controlling interests £m	Total equity £m
Balance at 1 January	1,012	200	10,159	(29)	165	(279)	4,774	1,123	17,125	1,145	18,270
Profit for the year	—	—	—	—	—	—	703	—	703	156	859
Other comprehensive income	—	—	—	—	988	(32)	242	—	1,198	145	1,343
Total comprehensive income for the year	—	—	—	—	988	(32)	945	—	1,901	301	2,202
Owner-occupied properties fair value gains transferred to retained earnings on disposals	—	—	—	—	—	(46)	46	—	—	—	—
Dividends and appropriations	—	—	—	—	—	—	(973)	—	(973)	—	(973)
Non-controlling interests share of dividends declared in the year	—	—	—	—	—	—	—	—	—	(135)	(135)
Transfer to profit on disposal of subsidiaries, joint ventures and associates	—	—	—	—	(7)	—	—	—	(7)	—	(7)
Capital contributions from non-controlling interests	—	—	—	—	—	—	—	—	—	9	9
Changes in non-controlling interests in subsidiaries	—	—	—	—	—	—	—	—	—	105	105
Treasury shares held by subsidiary companies	—	—	—	13	—	—	—	—	13	—	13
Reserves credit for equity compensation plans	—	—	—	—	—	38	—	—	38	—	38
Shares issued under equity compensation plans	3	—	12	1	—	(30)	26	—	12	—	12
Aggregate tax effect – shareholder tax	—	—	—	—	—	—	17	—	17	—	17
Balance at 31 December	1,015	200	10,171	(15)	1,146	(349)	4,835	1,123	18,126	1,425	19,551

1 Capital reserves consists of share premium of £1,197 million and a merger reserve of £8,974 million.

Consolidated statement of financial position

As at 31 December 2017

	Note	2017 £m	2016 £m
Assets			
Goodwill		**1,876**	2,045
Acquired value of in-force business and intangible assets	B21	**3,455**	5,468
Interests in, and loans to, joint ventures		**1,221**	1,604
Interests in, and loans to, associates		**421**	481
Property and equipment		**509**	487
Investment property		**10,797**	10,768
Loans		**27,857**	24,784
Financial investments		**311,082**	299,835
Reinsurance assets	B11	**13,492**	26,343
Deferred tax assets		**144**	180
Current tax assets		**94**	119
Receivables		**8,285**	7,794
Deferred acquisition costs, pension surpluses and other assets		**6,374**	5,893
Prepayments and accrued income		**2,860**	2,882
Cash and cash equivalents		**43,347**	38,708
Assets of operations classified as held for sale	B4	**10,871**	13,028
Total assets		**442,685**	440,419
Equity			
Capital			
Ordinary share capital		**1,003**	1,015
Preference share capital		**200**	200
		1,203	1,215
Capital reserves			
Share premium		**1,207**	1,197
Capital redemption reserve		**14**	—
Merger reserve		**8,974**	8,974
		10,195	10,171
Treasury shares		**(14)**	(15)
Currency translation reserve		**1,141**	1,146
Other reserves		**(274)**	(349)
Retained earnings		**4,918**	4,835
Equity attributable to shareholders of Aviva plc		**17,169**	17,003
Direct capital instrument and tier 1 notes	B18	**731**	1,123
Equity excluding non-controlling interests		**17,900**	18,126
Non-controlling interests		**1,235**	1,425
Total equity		**19,135**	19,551
Liabilities			
Gross insurance liabilities	B9	**148,650**	151,183
Gross liabilities for investment contracts	B10	**203,986**	197,095
Unallocated divisible surplus	B13	**9,082**	9,349
Net asset value attributable to unitholders		**18,327**	15,638
Pension deficits and other provisions		**1,429**	1,510
Deferred tax liabilities		**2,377**	2,413
Current tax liabilities		**290**	421
Borrowings	B14	**10,286**	10,295
Payables and other financial liabilities		**16,459**	17,751
Other liabilities		**2,791**	2,719
Liabilities of operations classified as held for sale	B4	**9,873**	12,494
Total liabilities		**423,550**	420,868
Total equity and liabilities		**442,685**	440,419

Consolidated financial statements continued

Consolidated statement of cash flows

For the year ended 31 December 2017

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.

	2017 £m	2016 £m
Cash flows from operating activities[1]		
Cash generated from operating activities	**8,361**	5,394
Tax paid	**(620)**	(647)
Total net cash from operating activities	**7,741**	4,747
Cash flows from investing activities		
Acquisitions of, and additions to, subsidiaries, joint ventures and associates, net of cash acquired	**25**	(432)
Disposals of subsidiaries, joint ventures and associates, net of cash transferred	**(49)**	42
New loans to joint ventures and associates	**—**	(3)
Repayment of loans to joint ventures and associates	**—**	97
Net repayment of loans to joint ventures and associates	**—**	94
Purchases of property and equipment	**(69)**	(67)
Proceeds on sale of property and equipment	**5**	75
Purchases of intangible assets	**(107)**	(119)
Total net cash (used in)/from investing activities	**(195)**	(407)
Cash flows from financing activities		
Proceeds from issue of ordinary shares	**12**	15
Shares purchased in buy-back	**(300)**	—
Treasury shares distributed from employee trusts	**—**	—
New borrowings drawn down, net of expenses	**1,320**	3,526
Repayment of borrowings[2]	**(1,904)**	(2,340)
Net (repayment)/drawdown of borrowings	**(584)**	1,186
Interest paid on borrowings	**(610)**	(595)
Preference dividends paid	**(17)**	(17)
Ordinary dividends paid	**(983)**	(871)
Coupon payments on direct capital instrument and tier 1 notes	**(81)**	(85)
Capital contributions from non-controlling interests of subsidiaries	**36**	9
Dividends paid to non-controlling interests of subsidiaries	**(103)**	(135)
Changes in controlling interest in subsidiaries	**—**	105
Total net cash (used in)/from financing activities	**(2,630)**	(388)
Total net increase in cash and cash equivalents	**4,916**	3,952
Cash and cash equivalents at 1 January	**38,405**	33,170
Effect of exchange rate changes on cash and cash equivalents	**266**	1,283
Cash and cash equivalents at 31 December	**43,587**	38,405

1 Cash flows from operating activities include interest received of £5,302 million *(2016: £5,642 million)* and dividends received of £2,606 million *(2016: £2,536 million)*.
2 Includes redemption of 8.25% US $650 million fixed rate tier 1 notes of £488 million.

Notes to the consolidated financial statements

B1(i) Basis of preparation

(a) The results in this preliminary announcement have been taken from the Group's 2017 Annual report and accounts which will be available on the Company's website on 27 March 2018. The consolidated financial statements 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 basis of preparation and summary of accounting policies applicable to the Group's consolidated financial statements can be found in the Accounting policies section of the 2017 Annual report and accounts. The comparative figures have been restated for the adjustments detailed in note B2. In addition, the Group has adopted new amendments to published standards as described in B1(ii), however these had no effect on reported profit or loss or equity, the statement of financial position or the statement of cash flows.

The preliminary announcement for the year ended 31 December 2017 does not constitute statutory accounts as defined in Section 434 of the Companies Act 2006. The results on an IFRS basis for full year 2017 and 2016 have been audited by PricewaterhouseCoopers LLP (PwC). PwC have reported on the 2017 and 2016 consolidated financial statements. Both reports were unqualified and neither contained a statement under section 498 (2) or (3) of the Companies Act 2006. The Group's 2016 report and accounts have been filed with the Registrar of Companies.

After making enquiries, the Directors have a reasonable expectation that the Group as a whole has adequate resources to continue in operational existence over a period of at least 12 months from the date of approval of the financial statements. For this reason, they continue to adopt the going concern basis in preparing the financial statements.

(b) 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).

(c) 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), that incorporates an expected return on investments supporting 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 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.

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 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 relevant notes.

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.

B1(ii) New standards, interpretations and amendments to published standards that have been adopted by the Group

The Group has adopted the following amendments to standards which became effective for the annual reporting period beginning on 1 January 2017.

(i) Narrow scope amendments to IAS 12 – Recognition of Deferred Tax Assets for Unrealised Losses

The revisions to IAS 12 *Income Taxes* clarify the accounting for deferred tax assets on unrealised losses and state that deferred tax assets should be recognised when an asset is measured at fair value and that fair value is below the asset's tax base. It also provides further clarification on the estimation of probable future taxable profits that may support the recognition of deferred tax assets. The adoption of this amendment does not have an impact on the Group's consolidated financial statements as the clarifications are consistent with our existing interpretation.

(ii) Amendments to IAS 7 – Disclosure Initiative

The amendments to IAS 7 *Statement of Cash Flows*, which form part of the IASB's Disclosure Initiative, require disclosure of the movements in liabilities arising from financing activities with cash and non-cash changes presented separately. The adoption of this amendment does not have an impact on the Group's consolidated financial statements as the Group already voluntarily discloses this information.

(iii) Amendments to IFRS 12: Disclosure of Interests in Other Entities

The amendments to IFRS 12, which form part of the IASB's annual improvements process for the 2014-2016 cycle, clarify existing guidance. The adoption of these amendments does not have an impact on the Group's consolidated financial statements as the clarifications are consistent with our existing interpretation.

Notes to the consolidated financial statements continued

B2 – Prior period adjustments

During 2017, following the launch of UK Insurance which brings together the UK Life, UK General Insurance and UK Health businesses, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. The UK Insurance business continues to be dealt with as two businesses, UK Life and UK General Insurance & Health, under the overall leadership of Andy Briggs, CEO of UK Insurance. The Ireland Life and General Insurance businesses are now part of the European operations under the overall leadership of Maurice Tulloch, CEO of International Insurance. As a result of this change, comparative information in the Reconciliation of Group adjusted operating profit to profit for the year, note B5 Segmental information have been restated. There is no impact on the consolidated income statement, consolidated statement of comprehensive income, consolidated statement of financial position, consolidated statement of changes in equity or consolidated statement of cash flows.

B3 – 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:

	2017	2016
Eurozone		
Average rate (€1 equals)	**£0.88**	£0.82
Period end rate (€1 equals)	**£0.89**	£0.85
Canada		
Average rate ($CAD1 equals)	**£0.60**	£0.56
Period end rate ($CAD1 equals)	**£0.59**	£0.60
Poland		
Average rate (PLN1 equals)	**£0.21**	£0.19
Period end rate (PLN1 equals)	**£0.21**	£0.19

B4 – Subsidiaries

This note provides details of the acquisitions and 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 and subsequent events.

(a) Acquisitions

(i) Poland

As a result of changes agreed by Aviva and Santander to the shareholders' agreement, Aviva now controls the two joint venture companies and consolidates them with an effective date of 1 January 2017. The change from equity accounted joint ventures to consolidated subsidiaries resulted in a fair value remeasurement gain of £16 million on the previous equity interests of £48 million and recognition of a distribution agreement within intangible assets.

(ii) Aviva Vietnam

On 21 April 2017, Aviva plc announced the acquisition of VietinBank's entire 50% shareholding in its life insurance joint venture VietinBank Aviva Life Insurance Company Limited ('Aviva Vietnam') for a consideration of £20 million and signing of a new life insurance distribution agreement. Following completion of the transaction on 22 May 2017, Aviva Vietnam is now a wholly owned subsidiary, with a change in the legal entity name to Aviva Vietnam Life Insurance Company Limited. The change from an equity accounted joint venture to consolidated subsidiary resulted in a fair value remeasurement gain of £7 million on the previous equity interest of £2 million and recognition of £18 million of goodwill and intangible assets.

(iii) Wealthify

On 5 October 2017, Aviva announced an agreement to acquire a majority shareholding in Wealthify Group Limited, the holding company of Wealthify. 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. The transaction completed on 8 February 2018.

(iv) Friends First

On 13 November 2017, Aviva announced that it has reached an agreement to acquire Irish insurer Friends First Life Assurance Company dac ('Friends First') for a cash consideration of €130 million (approximately £116 million). As a result of this acquisition, Aviva will become one of the largest composite insurers in Ireland, with its market share in life insurance increasing to 15%, alongside its existing leading 15% market share in general insurance. The transaction is subject to regulatory approval and is expected to complete in the first quarter of 2018.

B4 – Subsidiaries continued

(b) Disposal and remeasurement of subsidiaries, joint ventures and associates

The profit/(loss) on the disposal and remeasurement of subsidiaries, joint ventures and associates comprises:

	2017 £m	2016 £m
Remeasurements due to change in control status		
Poland (see (a) (i) above)	16	—
Asia – Vietnam (see (a) (ii) above)	7	—
Disposals		
France – Antarius (see (b) (i) below)	180	—
France – health (see (b) (ii) below)	36	—
Spain (see (b) (iii) below)	28	—
Ireland – health	—	(8)
Other small operations	(7)	(3)
Held for sale remeasurements		
Asia – FPI (see (c) (ii) below)	(118)	—
Asia – Taiwan (see (c) (iii) below)	(7)	—
Total profit/(loss) on disposal and remeasurement	135	(11)

This consists of £23 million of remeasurement gains in respect of the joint venture operations in Poland (see note B4 (a)(i) above) and Aviva Vietnam (see note B4 (a)(ii) above); £237 million profit on the disposals of Antarius, France health, three businesses in Spain (see note B4 (b)(i), (ii) and (iii) below for further details respectively) and other small operations; offset by £125 million of remeasurement losses in relation to FPI and Taiwan (see note B4 (c)(ii) and (c)(iii) for further details respectively).

(i) Antarius

On 5 April 2017, Aviva announced that it had completed the sale of its entire 50% shareholding in Antarius to Sogecap, a subsidiary of Société Générale, for a consideration of €500 million (approximately £433 million). Antarius was owned jointly by Aviva and Crédit du Nord, a separate subsidiary of Société Générale. The transaction resulted in a profit on disposal of £180 million, calculated as follows:

	£m
Assets	
Goodwill, AVIF and other intangibles	12
Investment property	49
Loans	78
Financial investments	10,873
Reinsurance assets	408
Other assets	1,499
Cash and cash equivalents	468
Total assets	13,387
Liabilities	
Insurance liabilities	4,720
Liability for investment contracts	7,247
Unallocated divisible surplus	832
Other liabilities	34
Total liabilities	12,833
Net assets	554
Non-controlling interests before disposal	(277)
Group's share of net assets disposed of	277
Cash consideration	433
Less: transaction costs	(2)
Net consideration	431
Currency translation reserve and other reserves recycled to the income statement	26
Profits on disposal	180

(ii) France – health

On 1 November 2017, Aviva France disposed of a broker distributed individual health insurance portfolio to Malakoff Médéric (MM), a leading French mutual health insurer for cash consideration of €41 million (approximately £36 million), after transaction costs. Net assets disposed of were £nil, primarily relating to intangible assets not recognised by the Group under IFRS, resulting in a profit on disposal of approximately £36 million.

Notes to the consolidated financial statements continued

B4 – Subsidiaries continued

(iii) Spain

On 15 September 2017, Aviva announced that it had completed the sale of its 50% shareholding in life insurance and pension partnerships Unicorp Vida and Caja España Vida, as well as its wholly owned retail life business Aviva Vida y Pensiones, to Santalucía for a total consideration of €475 million (approximately £400 million). The transaction resulted in a profit on disposal of £28 million, calculated as follows:

	£m
Assets	
Goodwill, AVIF and other intangibles	**161**
Financial investments	**4,402**
Other assets	**154**
Cash and cash equivalents	**440**
Total assets	**5,157**
Liabilities	
Insurance liabilities	**3,777**
Unallocated divisible surplus	**244**
Net asset value attributable to unitholders	**551**
Other liabilities	**149**
Total liabilities	**4,721**
Net assets	**436**
Non-controlling interests before disposal	**(116)**
Group's share of net assets disposed of	**320**
Cash consideration[1]	**400**
Less: transaction costs	**(10)**
Net consideration	**390**
Currency translation reserve and other reserves recycled to the income statement	**(42)**
Profits on disposal	**28**

1 Cash consideration of £400 million above includes a loss of £22 million related to hedging the currency exposure on expected proceeds of the sale.

(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 2017 are as follows:

	2017 £m	2016 £m
Assets		
Goodwill, AVIF and other intangibles	**1,467**	12
Property and equipment	**5**	—
Investment property	**—**	48
Loans	**6**	75
Financial investments	**8,306**	10,706
Reinsurance assets	**123**	411
Other assets	**225**	1,521
Cash and cash equivalents	**739**	255
Total assets	**10,871**	13,028
Liabilities		
Insurance liabilities	**(914)**	(4,448)
Liability for investment contracts	**(8,663)**	(7,175)
Unallocated divisible surplus	**(19)**	(859)
Other liabilities	**(277)**	(12)
Total liabilities	**(9,873)**	(12,494)
Net assets	**998**	534

Assets and liabilities of operations classified as held for sale as at 31 December 2017 relate to the expected disposal of two businesses in Italy, the international operations of Friends Life ('FPI'), Aviva Taiwan and the remaining life insurance businesses in Spain. See below for further details. Assets and liabilities of operations classified as held for sale during 2016 relate to Antarius (see note B4 (b)(i) for further details) disposed of during 2017.

B4 – Subsidiaries continued

(i) Italy

On 29 September 2017, Aviva announced that it had agreed the sale of its entire shareholding of Avipop Assicurazioni S.p.A and Avipop Vita S.p.A to Banco BPM for a consideration of €265 million (approximately £233 million) payable in cash upon completion. This agreement follows a notification received by Aviva on 29 June 2017 of Banco BPM's intention to not renew its distribution agreement with Aviva and Aviva's subsequent decision, announced on 25 August 2017, to exercise its put option. The transaction is subject to regulatory approval and is expected to complete in 2018. In accordance with IFRS 5, these businesses have been classified as held for sale from June 2017. These businesses are measured at their carrying amount and remain consolidated subsidiaries of Aviva at the balance sheet date.

(ii) FPI

On 19 July 2017, Aviva announced the sale of Friends Provident International Limited ('FPI') to RL360 Holding Company Limited, a subsidiary of International Financial Group Limited, for a total consideration of £340 million. The transaction is subject to regulatory approvals and is expected to complete in the first half of 2018. In accordance with IFRS 5, the subsidiary has been classified as held for sale from July 2017 and has been re-measured at fair value based on the expected sales price less costs to sell, calculated as £334 million, after deducting a £6 million reinsurance recapture fee between FPI and Aviva Re Limited which is embedded in the sale agreement. This resulted in a total loss on re-measurement of £118 million in 2017. The business remains a consolidated subsidiary of Aviva at the balance sheet date.

(iii) Taiwan

On 13 October 2017, Aviva announced that it has agreed to sell its entire 49% shareholding in its joint venture in Taiwan, First Aviva Life ('Aviva Taiwan') to Aviva's joint venture partner, First Financial Holding Co. Ltd. ('FFH'). In accordance with IFRS 5, the joint venture has been classified as held for sale from October 2017 and has been re-measured at fair value based on the expected sales prices less costs to sell resulting in a total loss on re-measurement of £7 million in the second half of 2017 following its classification as held for sale. The business remains a joint venture of Aviva at the balance sheet date and was subsequently disposed of on 19 January 2018 following completion of the transaction.

(iv) Spain

On 23 February 2018, Aviva announced that it has agreed to sell its entire shareholding in life insurance and pensions joint ventures Cajamurcia Vida and Caja Granada Vida to Bankia, for a total consideration of €202 million. The transaction is subject to regulatory and anti-trust approvals and is expected to complete in the second quarter of 2018. Following completion of the transaction, Aviva will retain a shareholding in a small life insurance operation, Pelayo Vida, and a residual support centre in Spain. In accordance with IFRS 5, these businesses have been classified as held for sale from December 2017, when management were committed to a plan to sell the businesses. The businesses are measured at their carrying amount and remain consolidated subsidiaries of Aviva at the balance sheet date.

(d) Subsequent events

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 has been approved by the Hong Kong Insurance Authority and is expected to start operating under its new corporate structure during the first half of 2018. This follows the announcement on 20 January 2017 by which Hillhouse and Tencent have acquired a combined 60% shareholding in Aviva Life Insurance Company Limited ('Aviva Hong Kong').

(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.

B5 – 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

Following the launch of UK Insurance which brings together the UK Life, UK General Insurance and UK Health businesses, the Group's operating segments were changed to align them with the new management structure (see note B2 for further details). The revised segments are set out below. Results for prior years have been restated to facilitate comparison with this new structure.

United Kingdom

United Kingdom comprises two operating segments – Life and General Insurance. The principal activities of our UK Life operations (including Friends Life) 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 the Canadian operation is general insurance. In particular it provides personal and commercial lines insurance products principally distributed through insurance brokers. Canada includes the operations of RBC General Insurance Company following its acquisition on 1 July 2016.

France

The principal activities of our French operations 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. As set out in note B4(b), the results of Antarius are included up to the date of disposal on 5 April 2017.

Poland

Activities in Poland comprise long-term business and general insurance operations, including 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 Italian and Irish operations are long-term business and general insurance. Ireland also includes the results of our Ireland Health business, up to the date of disposal on 1 August 2016. The principal activity of our Spanish operation is the sale of long-term business, accident and health insurance and a selection of savings products. Our 'Other' operations include our life operations in Turkey. As set out in note B4(b), the results of certain entities within our Spanish business are included up to the date of disposal on 15 September 2017 and as set out in note B4(c), certain entities within our Italian business and the remaining entities within our Spanish business are classified as held for sale as at 31 December 2017.

Asia

Our activities in Asia principally comprise our long-term business operations in China, India, Singapore, Hong Kong, Vietnam, Indonesia, Taiwan and the international operations of Friends Life. This segment also includes general insurance and health operations in Singapore and health operations in Indonesia. As set out in note B4(c), Taiwan and the international operations of Friends Life are classified as held for sale as at 31 December 2017.

Aviva Investors

Aviva Investors operates in most of the markets in which the Group operates, in particular the UK, France, North America, Asia Pacific and other international businesses, managing policyholders' and shareholders' invested funds, providing investment management services for institutional pension fund mandates and managing a range of retail investment products, including investment funds, unit trusts, OEICs and ISAs.

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 operations are also included in this segment, as are the elimination entries for certain inter-segment transactions.

B5 – 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 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 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)	—
Investment return variances and economic assumption changes on long-term business	(323)	—	—	249	(7)	12	38	—	(3)	(34)
Short-term fluctuation in return on investments backing non-long-term business	—	56	7	(26)	(3)	27	—	—	284	345
Economic assumption changes on general insurance and health business	—	18	(2)	(9)	—	—	—	—	—	7
Impairment of goodwill, joint ventures and 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 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 group adjusted operating profit includes £1 million profit relating to Aviva Investors Pooled Pensions business.
3 Other Group activities include Group Reinsurance.

B5 – Segmental information continued

(a) (ii) Segmental income statement for the year ended 31 December 2016 – restated[1]

	United Kingdom			Europe						
	Life £m	GI £m	Canada £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	5,264	4,219	2,542	6,624	496	5,377	920	—	—	25,442
Premiums ceded to reinsurers	(1,469)	(394)	(89)	(86)	(9)	(183)	(134)	—	—	(2,364)
Internal reinsurance revenue	—	(2)	—	—	—	(10)	(11)	—	23	—
Premiums written net of reinsurance	3,795	3,823	2,453	6,538	487	5,184	775	—	23	23,078
Net change in provision for unearned premiums	(2)	(109)	(33)	(8)	(16)	(34)	(8)	—	—	(210)
Net earned premiums	3,793	3,714	2,420	6,530	471	5,150	767	—	23	22,868
Fee and commission income	841	117	17	258	60	148	198	326	(3)	1,962
	4,634	3,831	2,437	6,788	531	5,298	965	326	20	24,830
Net investment income	24,661	242	50	2,951	141	816	1,240	83	73	30,257
Inter-segment revenue	—	—	—	—	—	—	—	234	—	234
Share of profit of joint ventures and associates	172	—	1	16	7	3	17	—	—	216
(Loss)/profit on the disposal and remeasurement of subsidiaries, joint ventures and associates	(3)	—	—	—	—	(8)	—	—	—	(11)
Segmental income[2]	29,464	4,073	2,488	9,755	679	6,109	2,222	643	93	55,526
Claims and benefits paid, net of recoveries from reinsurers	(10,996)	(2,409)	(1,521)	(5,397)	(315)	(2,705)	(399)	—	(40)	(23,782)
Change in insurance liabilities, net of reinsurance	(3,362)	(560)	(16)	(1,221)	(79)	(1,312)	(349)	—	6	(6,893)
Change in investment contract provisions	(9,968)	—	—	(1,636)	—	(1,281)	(1,069)	(85)	—	(14,039)
Change in unallocated divisible surplus	(294)	—	—	(276)	2	167	20	—	—	(381)
Fee and commission expense	(815)	(1,204)	(628)	(632)	(77)	(395)	(108)	(35)	9	(3,885)
Other expenses	(1,396)	(162)	(150)	(266)	(64)	(238)	(289)	(393)	(895)	(3,853)
Inter-segment expenses	(204)	(7)	(5)	(1)	(5)	(9)	—	—	(3)	(234)
Finance costs	(191)	(2)	(4)	(1)	—	(7)	(3)	—	(418)	(626)
Segmental expenses	(27,226)	(4,344)	(2,324)	(9,430)	(538)	(5,780)	(2,197)	(513)	(1,341)	(53,693)
Profit/(loss) before tax	2,238	(271)	164	325	141	329	25	130	(1,248)	1,833
Tax attributable to policyholders' returns	(633)	—	—	—	—	(5)	(2)	—	—	(640)
Profit/(loss) before tax attributable to shareholders' profits	1,605	(271)	164	325	141	324	23	130	(1,248)	1,193
Adjusting items:										
Reclassification of corporate costs and unallocated interest	—	(5)	17	46	—	—	—	5	(63)	—
Investment return variances and economic assumption changes on long-term business	(497)	—	—	86	1	21	10	—	—	(379)
Short-term fluctuation in return on investments backing non-long-term business	(135)	(95)	42	(2)	(1)	29	—	—	680	518
Economic assumption changes on general insurance and health business	—	229	—	13	—	—	—	—	—	242
Impairment of goodwill, joint ventures and associates and other amounts expensed	—	—	—	—	—	—	—	—	—	—
Amortisation and impairment of intangibles	71	24	29	2	3	7	9	6	24	175
Amortisation and impairment of AVIF	387	—	—	3	2	2	142	—	4	540
Loss/(profit) on the disposal and remeasurement of subsidiaries, joint ventures and associates	3	—	—	—	—	8	—	—	—	11
Other[5]	—	498	—	—	—	—	—	—	—	498
Group adjusted operating profit before tax attributable to shareholders' profits after integration and restructuring costs	1,434	380	252	473	146	391	184	141	(603)	2,798
Integration and restructuring costs	119	15	18	8	—	1	17	19	15	212
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	1,553	395	270	481	146	392	201	160	(588)	3,010

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
2 Total reported income, excluding inter-segment revenue, includes £33,784 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.
3 Aviva Investors group adjusted operating profit includes £2 million profit relating to the Aviva Investors Pooled Pensions business.
4 Other Group activities include Group Reinsurance.
5 Other items include exceptional charge of £475 million relating to the impact of the change in the Ogden discount rate from 2.5% set in 2001 to minus 0.75% announced by the Lord Chancellor on 27 February 2017. Other items also include a loss upon the completion of an outwards reinsurance contract by the UK General Insurance business, which provides significant protection against claims volatility from mesothelioma, industrial deafness and other long tail risks. The £23 million loss comprises £107 million in premiums ceded less £78 million in reinsurance recoverables recognised and £6 million claims handling provisions.

Notes to the consolidated financial statements continued

B5 – Segmental information continued

(a) (iii) 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	100,178	5,305	3,325	17,162	3,275	10,103	4,056	—	9	143,413
Unearned premiums	228	2,003	1,578	458	119	520	74	—	—	4,980
Other insurance liabilities	5	68	124	51	—	7	—	—	2	257
Liability 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

B5 – Segmental information continued

(a) (iv) Segmental statement of financial position as at 31 December 2016 – restated[1]

	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	88	—	26	293	51	—	—	2,045
Acquired value of in-force business and intangible assets	3,152	160	292	86	12	619	1,062	9	76	5,468
Interests in, and loans to, joint ventures and associates	1,257	—	13	169	48	71	527	—	—	2,085
Property and equipment	78	27	24	240	4	5	12	5	92	487
Investment property	6,304	208	—	2,878	—	201	—	951	226	10,768
Loans	23,693	5	170	757	—	122	37	—	—	24,784
Financial investments	168,273	3,961	4,670	68,427	3,015	29,267	11,460	574	10,188	299,835
Deferred acquisition costs	1,122	478	360	280	45	213	113	3	—	2,614
Other assets	51,489	5,499	1,372	7,716	237	3,585	1,479	961	6,967	79,305
Assets of operations classified as held for sale	—	—	—	13,028	—	—	—	—	—	13,028
Total assets	256,031	11,262	6,989	93,581	3,387	34,376	14,741	2,503	17,549	440,419
Insurance liabilities										
Long-term business and outstanding claims provisions	101,906	5,461	3,248	15,932	2,698	13,166	3,750	—	12	146,173
Unearned premiums	227	1,925	1,527	463	68	492	64	—	—	4,766
Other insurance liabilities	—	66	118	51	—	6	—	—	3	244
Liability for investment contracts	121,508	—	—	49,929	2	15,690	8,395	1,571	—	197,095
Unallocated divisible surplus	2,709	—	—	5,151	60	1,223	206	—	—	9,349
Net asset value attributable to unitholders	76	—	—	2,349	—	509	—	—	12,704	15,638
External borrowings	1,793	—	—	1	—	46	—	—	8,455	10,295
Other liabilities, including inter-segment liabilities	15,239	(472)	1,107	4,694	139	1,288	645	396	1,778	24,814
Liabilities of operations classified as held for sale	—	—	—	12,494	—	—	—	—	—	12,494
Total liabilities	243,458	6,980	6,000	91,064	2,967	32,420	13,060	1,967	22,952	420,868
Total equity										19,551
Total equity and liabilities										440,419

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

(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.

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, OEICs and ISAs. 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.

Notes to the consolidated financial statements continued

B5 – Segmental information continued

(b) (i) Segmental income statement – products and services for the year ended 31 December 2017

	Long-term business £m	General insurance and health[2] £m	Fund management £m	Other £m	Total £m
Gross written premiums[1]	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	1,334	23	369	461	2,187
	16,676	9,905	369	461	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	38,285	10,278	612	722	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	erat	—	—	—	294
Fee and commission expense	(1,140)	(2,615)	(36)	(538)	(4,329)
Other expenses	(1,807)	(572)	(425)	(733)	(3,537)
Inter-segment expenses	(226)	(15)	—	(3)	(244)
Finance costs	(240)	(6)	—	(437)	(683)
Segmental expenses	(35,610)	(9,741)	(461)	(1,711)	(47,523)
Profit/(loss) before tax	2,675	537	151	(989)	2,374
Tax attributable to policyholders' returns	(371)	—	—	—	(371)
Profit/(loss) before tax attributable to shareholders' profits	2,304	537	151	(989)	2,003
Adjusting items	578	163	13	311	1,065
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	2,882	700	164	(678)	3,068

1 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.
2 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.

B5 – Segmental information continued

(b) (ii) Segmental income statement – products and services for the year ended 31 December 2016

	Long-term business £m	General insurance and health[2] £m	Fund management £m	Other £m	Total £m
Gross written premiums[1]	15,748	9,694	—	—	25,442
Premiums ceded to reinsurers	(1,697)	(667)	—	—	(2,364)
Premiums written net of reinsurance	14,051	9,027	—	—	23,078
Net change in provision for unearned premiums	—	(210)	—	—	(210)
Net earned premiums	14,051	8,817	—	—	22,868
Fee and commission income	1,234	26	300	402	1,962
	15,285	8,843	300	402	24,830
Net investment income/(expense)	29,695	383	(2)	181	30,257
Inter-segment revenue	—	—	239	—	239
Share of profit of joint ventures and associates	213	3	—	—	216
(Loss)/profit on the disposal and remeasurement of subsidiaries, joint ventures and associates	(3)	(8)	—	—	(11)
Segmental income	45,190	9,221	537	583	55,531
Claims and benefits paid, net of recoveries from reinsurers	(18,026)	(5,756)	—	—	(23,782)
Change in insurance liabilities, net of reinsurance	(6,249)	(644)	—	—	(6,893)
Change in investment contract provisions	(14,039)	—	—	—	(14,039)
Change in unallocated divisible surplus	(381)	—	—	—	(381)
Fee and commission expense	(1,369)	(2,299)	(33)	(184)	(3,885)
Other expenses	(1,887)	(521)	(396)	(1,049)	(3,853)
Inter-segment expenses	(222)	(12)	—	(5)	(239)
Finance costs	(183)	(5)	—	(438)	(626)
Segmental expenses	(42,356)	(9,237)	(429)	(1,676)	(53,698)
Profit/(loss) before tax	2,834	(16)	108	(1,093)	1,833
Tax attributable to policyholders' returns	(640)	—	—	—	(640)
Profit/(loss) before tax attributable to shareholders' profits	2,194	(16)	108	(1,093)	1,193
Adjusting items	448	849	30	490	1,817
Group adjusted operating profit/(loss) before tax attributable to shareholders' profits	2,642	833	138	(603)	3,010

1 Gross written premiums include inward reinsurance premiums assumed from other companies amounting to £138 million, of which £54 million relates to property and liability insurance and £84 million relates to long-term business.
2 General insurance and health business segment includes gross written premiums of £1,030 million relating to health business. The remaining business relates to property and liability insurance

B5 – Segmental information continued

(b) (iii) Segmental statement of financial position – products and services as at 31 December 2017

	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	49,054	9,075	905	12,656	71,690
Assets of operations classified as held for sale	10,552	319	—	—	10,871
Total assets	**395,812**	**24,781**	**972**	**21,120**	**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	18,740	1,369	376	2,861	23,346
Liabilities of operations classified as held for sale	9,694	179	—	—	9,873
Total liabilities	**377,619**	**18,211**	**376**	**27,344**	**423,550**
Total equity					**19,135**
Total equity and liabilities					**442,685**

(b) (iv) Segmental statement of financial position – products and services as at 31 December 2016

	Long-term business £m	General insurance and health £m	Fund management £m	Other £m	Total £m
Goodwill	889	1,086	3	67	2,045
Acquired value of in-force business and intangible assets	4,845	571	9	43	5,468
Interests in, and loans to, joint ventures and associates	2,030	42	—	13	2,085
Property and equipment	264	109	5	109	487
Investment property	10,202	341	—	225	10,768
Loans	24,607	177	—	—	24,784
Financial investments	277,889	11,699	51	10,196	299,835
Deferred acquisition costs	1,574	1,037	3	—	2,614
Other assets	61,780	8,995	835	7,695	79,305
Assets of operations classified as held for sale	13,028	—	—	—	13,028
Total assets	397,108	24,057	906	18,348	440,419
Gross insurance liabilities	134,695	16,488	—	—	151,183
Gross liabilities for investment contracts	197,095	—	—	—	197,095
Unallocated divisible surplus	9,349	—	—	—	9,349
Net asset value attributable to unitholders	2,934	—	—	12,704	15,638
External borrowings	1,718	—	—	8,577	10,295
Other liabilities, including inter-segment liabilities	19,930	1,215	371	3,298	24,814
Liabilities of operations classified as held for sale	12,494	—	—	—	12,494
Total liabilities	378,215	17,703	371	24,579	420,868
Total equity					19,551
Total equity and liabilities					440,419

B6 – Tax

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

(a) Tax charged to the income statement

(i) The total tax charge comprises:

	2017 £m	2016 £m
Current tax		
For the period	**651**	930
Prior period adjustments	**(46)**	1
Total current tax	**605**	931
Deferred tax		
Origination and reversal of temporary differences	**134**	72
Changes in tax rates or tax laws	**(8)**	(14)
Write down/(back) of deferred tax assets	**(3)**	(15)
Total deferred tax	**123**	43
Total tax charged to income statement	**728**	974

(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, Irish and Singapore life insurance policyholder returns is included in the tax charge. The tax charge attributable to policyholder returns included in the charge above is £371 million *(2016: charge of £640 million)*.

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

	2017 £m	2016 £m
UK tax	**528**	688
Overseas tax	**200**	286
	728	974

(iv) Unrecognised tax losses and temporary differences of previous years were used to reduce the current tax expense and deferred tax expense by £13 million and £nil million *(2016: £10 million and £8 million)*, respectively.

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

	2017 £m	2016 £m
Long-term business technical provisions and other insurance items	**37**	(147)
Deferred acquisition costs	**(2)**	(12)
Unrealised gains/(losses) on investments	**(33)**	144
Pensions and other post-retirement obligations	**19**	21
Unused losses and tax credits	**19**	39
Subsidiaries, associates and joint ventures	**(4)**	4
Intangibles and additional value of in-force long-term business	**(85)**	(99)
Provisions and other temporary differences	**172**	93
Total deferred tax charged /(credited) to income statement	**123**	43

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

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

	2017 £m	2016 £m
Current tax		
In respect of pensions and other post-retirement obligations	**(45)**	(25)
In respect of foreign exchange movements	**4**	31
	(41)	6
Deferred tax		
In respect of pensions and other post-retirement obligations	**42**	94
In respect of fair value (losses)/gains on owner-occupied properties	**(2)**	1
In respect of unrealised (losses)/gains on investments	**(9)**	3
	31	98
Total tax (credited)/ charged to other comprehensive income	**(10)**	104

(ii) The tax charge attributable to policyholders' returns included above is £nil (*2016: £nil*).

B6 – 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 £16 million *(2016: £17 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	2017 £m	Shareholder £m	Policyholder £m	2016 £m
Total profit before tax	**2,003**	**371**	**2,374**	1,193	640	1,833
Tax calculated at standard UK corporation tax rate of 19.25% (*2016: 20.00%*)	**386**	**71**	**457**	239	128	367
Reconciling items						
Different basis of tax – policyholders	**—**	**301**	**301**	—	513	513
Adjustment to tax charge in respect of prior periods	**(44)**	**—**	**(44)**	(34)	—	(34)
Non-assessable income and items not taxed at the full statutory rate	**(47)**	**—**	**(47)**	39	—	39
Non-taxable (profit)/loss on sale of subsidiaries and associates	**(27)**	**—**	**(27)**	1	—	1
Disallowable expenses	**47**	**—**	**47**	49	—	49
Different local basis of tax on overseas profits	**82**	**(1)**	**81**	97	(1)	96
Change in future local statutory tax rates	**(36)**	**—**	**(36)**	(36)	—	(36)
Movement in deferred tax not recognised	**(3)**	**—**	**(3)**	(13)	—	(13)
Tax effect of profit from joint ventures and associates	**(3)**	**—**	**(3)**	(6)	—	(6)
Other	**2**	**—**	**2**	(2)	—	(2)
Total tax charged to income statement	**357**	**371**	**728**	334	640	974

The tax charge/(credit) 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 (No 2) Act 2015 introduced legislation reducing the UK rate of corporation tax from 20% at 1 April 2016 to 19% from 1 April 2017 and to 18% from 1 April 2020. Finance Act 2016 further reduced the corporation tax rate from 1 April 2020 to 17%. In addition, in France, the rate of corporation tax was reduced from 34.43% to 28.92% with effect from 1 January 2020. These reduced rates were used in the calculation of the Group's deferred tax assets and liabilities as at 31 December 2016.

In 2017 further changes were made in France to reduce the corporation tax rate to 32.02% from 1 January 2019 and to 27.37% from 1 January 2021 and 25.83% from 1 January 2022. These reduced rates have been incorporated in the calculation of France's deferred tax assets and liabilities as at 31 December 2017 and results in a reduction in the Group's net deferred tax liabilities of £15 million, comprising of a £8 million credit to the Income Statement and £7 million credit to the Statement of Comprehensive Income.

Notes to the consolidated financial statements continued

B7 – Earnings per share

This note shows how we 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 a better 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:

			2017			2016
	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	**3,068**	**(1,065)**	**2,003**	3,010	(1,817)	1,193
Tax attributable to shareholders' profit	**(639)**	**282**	**(357)**	(706)	372	(334)
Profit for the year	**2,429**	**(783)**	**1,646**	2,304	(1,445)	859
Amount attributable to non-controlling interests	**(134)**	**(15)**	**(149)**	(147)	(9)	(156)
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)	**(65)**	**—**	**(65)**	(68)	—	(68)
Profit attributable to ordinary shareholders	**2,213**	**(798)**	**1,415**	2,072	(1,454)	618

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

			2017			2016
	Before tax £m	**Net of tax, non-controlling interests, preference dividends and DCI[1] £m**	**Per share p**	Before tax £m	Net of tax, non-controlling interests, preference dividends and DCI[1] £m	Per share p
Group adjusted operating profit attributable to ordinary shareholders	**3,068**	**2,213**	**54.8**	3,010	2,072	51.1
Integration and restructuring costs	**(141)**	**(111)**	**(2.8)**	(212)	(170)	(4.2)
Group adjusted operating profit attributable to ordinary shareholders after integration and restructuring costs	**2,927**	**2,102**	**52.0**	2,798	1,902	46.9
Adjusting items:						
Investment return variances and economic assumption changes on long-term business	**34**	**86**	**2.1**	379	313	7.8
Short-term fluctuation in return on investments backing non-long-term business	**(345)**	**(250)**	**(6.3)**	(518)	(398)	(9.8)
Economic assumption changes on general insurance and health business	**(7)**	**(6)**	**(0.1)**	(242)	(193)	(4.8)
Impairment of goodwill, joint ventures and associates and other amounts expensed	**(49)**	**(49)**	**(1.2)**	—	—	—
Amortisation and impairment of intangibles	**(197)**	**(151)**	**(3.7)**	(175)	(137)	(3.4)
Amortisation and impairment of acquired value of in-force business	**(495)**	**(430)**	**(10.6)**	(540)	(455)	(11.2)
Profit/(loss) on disposal and remeasurement of subsidiaries, joint ventures and associates	**135**	**113**	**2.8**	(11)	(16)	(0.4)
Other[2]	**—**	**—**	**—**	(498)	(398)	(9.8)
Profit attributable to ordinary shareholders	**2,003**	**1,415**	**35.0**	1,193	618	15.3

1 DCI includes the direct capital instrument and tier 1 notes.
2 Other items include an exceptional charge of £nil *(2016: £475 million)*, £nil net of tax *(2016: £380 million)*, relating to the impact of the change in the Ogden discount rate from 2.5% set in 2001 to minus 0.75% announced by the Lord Chancellor on 27 February 2017.

(iii) The calculation of basic earnings per share uses a weighted average of 4,041 million (*2016: 4,051 million*) ordinary shares in issue, after deducting treasury shares. The actual number of shares in issue at 31 December 2017 was 4,013 million (*2016: 4,062 million*) and 4,010 million (*2016: 4,058 million*) excluding treasury shares.

(iv) On 25 May 2017 Aviva announced a share buy-back of ordinary shares for an aggregate purchase price of up to £300 million, which was carried out in full during the period from 25 May 2017 to 19 September 2017. The number of shares in issue has reduced by 58 million as at 31 December 2017 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 49 million.

B7 – Earnings per share continued

(b) Diluted earnings per share

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

	2017			2016		
	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	1,415	4,041	35.0	618	4,051	15.3
Dilutive effect of share awards and options	—	48	(0.4)	—	38	(0.2)
Diluted earnings per share	1,415	4,089	34.6	618	4,089	15.1

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

	2017			2016		
	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	2,213	4,041	54.8	2,072	4,051	51.1
Dilutive effect of share awards and options	—	48	(0.7)	—	38	(0.4)
Diluted Group adjusted operating profit per share	2,213	4,089	54.1	2,072	4,089	50.7

B8 – Dividends and appropriations

This note analyses the total dividends and other appropriations we 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.

	2017 £m	2016 £m
Ordinary dividends declared and charged to equity in the year		
Final 2016 – 15.88 pence per share, paid on 17 May 2017	646	—
Final 2015 – 14.05 pence per share, paid on 17 May 2016	—	570
Interim 2017 – 8.40 pence per share, paid on 17 November 2017	337	—
Interim 2016 – 7.42 pence per share, paid on 17 November 2016	—	301
	983	871
Preference dividends declared and charged to equity in the year	17	17
Coupon payments on direct capital instrument and tier 1 notes	81	85
	1,081	973

Subsequent to 31 December 2017, the directors proposed a final dividend for 2017 of 19.00 pence per ordinary share (*2016: 15.88 pence*), amounting to £763 million (*2016: £646 million*) in total. Subject to approval by shareholders at the AGM, the dividend will be paid on 17 May 2018 and will be accounted for as an appropriation of retained earnings in the year ending 31 December 2018.

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 19.25% (*2016: 20.00%*).

B9 – Insurance liabilities

This note analyses the Group insurance contract liabilities by type of product and describes how the Group calculates these liabilities and the assumptions used.

(a) Carrying amount

(i) Insurance liabilities (gross of reinsurance) at 31 December comprised:

	2017			2016		
	Long-term business £m	General insurance and health £m	Total £m	Long-term business £m	General insurance and health £m	Total £m
Long-term business provisions						
Participating	49,928	—	49,928	56,760	—	56,760
Unit-linked non-participating	16,040	—	16,040	16,026	—	16,026
Other non-participating	65,004	—	65,004	64,432	—	64,432
	130,972	—	130,972	137,218	—	137,218
Outstanding claims provisions	1,798	8,964	10,762	1,925	8,749	10,674
Provision for claims incurred but not reported	—	2,837	2,837	—	2,960	2,960
	1,798	11,801	13,599	1,925	11,709	13,634
Provision for unearned premiums	—	4,980	4,980	—	4,766	4,766
Provision arising from liability adequacy tests[1]	—	13	13	—	13	13
Total	132,770	16,794	149,564	139,143	16,488	155,631
Less: Amounts classified as held for sale	(783)	(131)	(914)	(4,448)	—	(4,448)
	131,987	16,663	148,650	134,695	16,488	151,183

1 Provision arising from liability adequacy tests relates to general insurance business only. Liability adequacy test provisions for life operations are included in other line items.

(ii) Change in insurance liabilities 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, to the change in insurance liabilities recognised as an expense in the relevant movement tables in this note. 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 business, 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.

2017	Gross £m	Reinsurance £m	Net £m
Long-term business			
Change in long-term business provisions	624	315	939
Change in provision for outstanding claims	(65)	(11)	(76)
	559	304	863
General insurance and health			
Change in insurance liabilities	73	138	211
Less: Unwind of discount on GI reserves and other	(9)	9	—
	64	147	211
Total change in insurance liabilities (note 6)	623	451	1,074

2016	Gross £m	Reinsurance[1] £m	Net £m
Long-term business			
Change in long-term business provisions	7,164	(993)	6,171
Change in provision for outstanding claims	91	(13)	78
	7,255	(1,006)	6,249
General insurance and health			
Change in insurance liabilities[2]	867	(222)	645
Less: Unwind of discount on GI reserves and other	(11)	10	(1)
	856	(212)	644
Total change in insurance liabilities (note 6)	8,111	(1,218)	6,893

1 Reinsurance assets at 31 December 2016 for General Insurance and health business include the impact of the £78 million reinsurance asset relating to an outwards reinsurance contract completed by the UK General Insurance business.
2 Includes £475 million in the UK General Insurance business relating to the impact of the change in the Ogden discount rate.

B9 – Insurance liabilities continued

(b) Long-term business liabilities

(i) Business description

The Group underwrites long-term business in a number of countries as follows:

- In the UK, in Aviva Life & Pensions UK (UKLAP) mainly in:
  - New With-Profits Sub-Fund (NWPSF) where the with-profits policyholders are entitled to at least 90% of the distributed profits, with the shareholders receiving the balance. Any surplus or deficit emerging in NWPSF that is not distributed as bonus will be transferred from this sub-fund to the Reattributed Inherited Estate External Support Account (RIEESA) (see below).
  - Old With-Profits Sub-Fund (OWPSF), UKLAP With-Profits Sub-Fund (UKLAP WPSF) and Provident Mutual Sub-Fund (PMSF) of UKLAP, where the with-profits policyholders are entitled to at least 90% of the distributed profits, with the shareholders receiving the balance.
  - The FP With-Profits Sub-Fund (FP WPSF), which was formally closed to new business during 2017 and where shareholders are entitled to 10% of the distributed profits, plus 60% of the surplus arising on pre-demutualisation non-profit and unitised business and non-investment sources of surplus on policies held by post-demutualisation policyholders. The Friends Provident demutualisation occurred in 2001.
  - The FLC New With-Profits Sub-Fund (FLC New WPSF), the FLC Old With-Profits Sub-Fund (FLC Old WPSF), the WL With-Profits Sub-Fund (WL WPSF) and FLAS With-Profits Sub-Fund (FLAS WPSF) which are closed to new business and where policyholders are entitled to 90% of the distributed profits aside from certain policies in the FLC New WPSF and the FLC Old WPSF with guaranteed bonus rates, and certain policies in the WL WPSF which are reinsured into the fund where the shareholders do not receive one-ninth of the bonus.
  - FPLAL With-Profits Sub-Fund (FPLAL WPSF) and Secure Growth Fund (SGF), which are closed to new business and where policyholders are entitled to 100% of the distributed profits.
  - The 'Non-profit' fund, where shareholders are entitled to 100% of the distributed profits. Shareholder profits on unitised with-profits business written in UKLAP WPSF and on stakeholder unitised with-profits business written in NWPSF and OWPSF are derived from management fees and policy charges, and emerge in the non-profit funds.
  - RIEESA is a non-profit fund where 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. RIEESA is used to provide capital support to NWPSF, and has been used in the past to write non-participating business.
- 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 provision is 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 provisions 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 and mortality/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 provision.

For UK with-profits life funds falling within the scope of FRS 27, which was grandfathered from UK regulatory requirements under IFRS 4 prior to the adoption of Solvency II, an amount may be recognised for the present value of future profits (PVFP) on non-participating business written in a with-profits fund where the determination of the realistic value of liabilities in that with-profits fund takes account, directly or indirectly, of this value. For NWPSF, OWPSF, UKLAP WPSF and PMSF no adjustment for this value is made to the participating insurance and investment contract liabilities or the unallocated divisible surplus. For FP WPSF, FPLAL WPSF, FLC New WPSF, FLC Old WPSF, FLAS WPSF, WL WPSF and SGF the non-participating liabilities are measured on a realistic basis with implicit recognition of the present value of future profits and hence no additional explicit adjustment is required for this value.

(iii) Methodology and assumptions

The main method of actuarial valuation of liabilities arising under long-term insurance contracts is the gross premium method which involves the discounting of projected premiums and claims.

The gross premium 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 can vary by contract type and reflect current and expected future experience.

B9 – Insurance liabilities continued

(a) UK

With-profits business

The Group's UK with-profit liabilities are evaluated by reference to FRS27, which was grandfathered under IFRS 4, prior to the adoption of Solvency II. Under these rules, provision for guarantees and options within realistic liabilities are measure at fair value, 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 key elements of the realistic liabilities are the with-profits benefit reserve (WPBR) and the present value of the expected cost of any payments in excess of the WPBR (referred to as the cost of future policy-related liabilities). The realistic liability for any contract is equal to the sum of the WPBR and the cost of future policy-related liabilities, which includes the value of any 'planned enhancements' to benefits agreed by the Company.

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. For a small proportion of business, a prospective valuation approach is used, including allowance for anticipated future regular and final bonuses.

The cost of future policy-related liabilities include:

- Maturity Guarantees;
- Guarantees on surrender, including no-MVR (Market Value Reduction) Guarantees and Guarantees linked to inflation;
- Guaranteed Annuity Options;
- GMP (Guaranteed Minimum Pension) underpin on Section 32 transfers; and
- Expected payments under Mortgage Endowment Promise.

The cost of future policy-related liabilities is determined using a market-consistent approach and, in the main, this is based on a stochastic model calibrated to market conditions at the end of the reporting period. 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.

On 1 January 2016 the Solvency I Pillar 1 regulatory regime was replaced with Solvency II, under which realistic liabilities were replaced with Best Estimate Liabilities (BEL). Key differences between the realistic liabilities and the Solvency II BEL are that BEL excludes the shareholder's share of future bonuses, excludes certain planned and approved enhancements to benefits (part of Solvency II surplus funds) and uses a higher yield (EIOPA specified) for future investment returns and discounting. Adjusting the yield used in the calculation of the BEL by removing the volatility and credit risk adjustments, including planned enhancements that are part of Solvency II surplus funds and making other less significant adjustments, results in a valuation in accordance with FRS 27.

For periods subsequent to 31 December 2015, the with-profits business is valued based on an adjusted Solvency II BEL assessment. The principal assumptions underlying the cost of future policy-related liabilities are as follows:

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 2017 of 1.29% *(2016: 1.25%)* 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	2017	2016
Equity returns	**20.9%**	23.9%
Property returns	**16.4%**	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.

Future regular bonuses

Annual bonus assumptions for 2018 have been set consistently with the year-end 2017 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	2017	2016
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	**PCMA00/PCFA00 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 shown for non-profit business below.

B9 – Insurance liabilities continued

Expenses

Maintenance charge assumptions for with-profits business are generally expressed as a fixed 'per policy' charge in line with agreements between Aviva Life Services UK (UKLS) and Aviva Life & Pensions UK (UKLAP). The assumptions increase by future charge inflation 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 UKLAP over the charges specified by the agreements is borne by the non-profits business.

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 gross premium methods which discount projected future cash flows. The cash flows are calculated using the amount of contractual premiums payable, together with explicit assumptions for investment returns, inflation, discount rates, mortality, morbidity, persistency and future expenses. These assumptions vary by contract type and reflect current and expected future experience with an allowance for prudence. For FP WPSF, FPLAL WPSF, FLC New WPSF, FLC Old WPSF, FLAS WPSF, WL WPSF and SGF the non-participating 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. Where appropriate, allowance for persistency is based on actual experience.

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. A further margin for risk is then deducted for all asset classes.

The provisions held in respect of guaranteed annuity options 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.

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. 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 regulatory 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.

Valuation discount rates for business in the non-profit funds are as follows:

Valuation discount rates (Gross of investment expenses)	2017	2016
Assurances		
Life conventional non-profit	**0.8% to 2.5%**	0.5% to 2.6%
Pensions conventional non-profit	**1.0% to 2.4%**	0.8% to 2.1%
Annuities		
Conventional immediate and deferred annuities	**1.0% to 2.8%**	0.6% to 2.8%
Non-unit reserves on Unit Linked business		
Life	**0.8% to 1.2%**	0.7% to 1.3%
Pensions	**0.8% to 1.5%**	0.7% to 1.6%
Income Protection[1]		
Active lives	**1.0% to 2.5%**	1.0 to 2.6%
Claims in payment (level and index linked)	**1.0% to 1.5%**	(0.2)% to 1.6%

1 Income protection business (pre-existing UKLAP) now uses a nominal swaps curve for all sub-classes and has been shown as an equivalent flat rate in the table above. Previously, a real interest rate was used for the index linked claims in payment.

The above valuation discount rates are after reduction for risk, but before allowance for investment expenses. For conventional immediate annuity business the allowance for risk comprises long-term assumptions 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 for business transferred in from Aviva Annuity UK Ltd in 2017 equated to 48 bps, 40 bps, and 102 bps respectively at 31 December 2017 *(2016: 47 bps, 48 bps, and 102 bps respectively)*. The risk allowances made for corporate bonds and mortgages for business transferred in from Friends Life Limited in 2017 equated to 47 bps and 33 bps respectively at 31 December 2017 *(2016: 37 bps and 42 bps respectively)*.

For corporate bonds, the allowance represented approximately 37% and 39% respectively of the average credit spread for the portfolios transferred in from Aviva Annuity UK Limited and from Friends Life Limited *(2016: 31% and 31% respectively)*

The total valuation allowance for business transferred from Aviva Annuity UK Limited in respect of corporate bonds and mortgages, including healthcare mortgages but excluding equity release, was £1.3 billion (*2016: £1.3 billion*) over the remaining term of the portfolio while for Friends Life Limited it was £0.5 billion (*2016: £0.5 billion*). The total valuation allowance for business transferred from Aviva Annuity UK Limited in respect of equity release assets was £1.2 billion (*2016: £1.1 billion*). Total liabilities for the annuity business were £52 billion at 31 December 2017 (*2016: £50 billion*).

B9 – Insurance liabilities continued

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	2017	2016
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	**PCMA00/PCFA00 adjusted plus allowance for future mortality improvement**	PCMA00/PCFA00 adjusted plus allowance for future mortality improvement

For the largest portfolio of pensions annuity business transferred from Aviva Annuity UK Limited, the underlying mortality assumptions for Males are 104.0% of PCMA00 (*2016: 98.0% of PCMA00*) with base year 2000; for Females the underlying mortality assumptions are 94.5% of PCFA00 (*2016: 91.0% of PCFA00*) with base year 2000. A negative provision of £0.1billion is also held to allow for higher mortality at old ages being experienced in our portfolio relative to the above assumptions. For the largest portfolio of pensions annuity business transferred from Friends Life Limited, the underlying mortality assumptions for Males are 103.4% of PCMA00 (*2016: 98.5% of PCMA00*) with base year 2000; for Females the underlying mortality assumptions are 104.4% of PCFA00 (*2016: 98.5% of PCFA00*) with base year 2000.

For all the main portfolios of annuities, improvements are based on 'CMI_2016 (S=7.5) Advanced with adjustments' (*2016: CMI_2015*) with a long-term improvement rate of 1.75% (*2016: 1.75%)* for males and 1.5% (*2016: 1.5%*) for females, both with an addition for prudence of 0.5% (*2016: 0.5%*) to all future annual improvement adjustments. The CMI_2016 tables have been adjusted by adding 0.25% and 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_2016 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). For pension annuity business transferred in from Aviva Annuity UK limited, 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.

(b) 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
	2017	2016	**2017 and 2016**
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 4.5%	TGF05/TGH05

(c) Other countries

In all other countries, local generally accepted interest rates and published standard mortality tables are used for different categories of business as appropriate. The tables are based on relevant experience and show mortality rates, by age, for specific groupings of people.

(iv) Movements

The following movements have occurred in the gross long-term business provisions during the year

	2017 £m	2016 £m
Carrying amount at 1 January	**137,218**	125,348
Provisions in respect of new business	**5,731**	5,224
Expected change in existing business provisions	**(7,747)**	(8,235)
Variance between actual and expected experience	**1,520**	4,752
Impact of non-economic assumption changes	**(1,175)**	(536)
Impact of economic assumption changes	**2,115**	5,930
Other movements recognised as an expense[1]	**180**	29
Change in liability recognised as an expense	**624**	7,164
Effect of portfolio transfers, acquisitions and disposals[2]	**(8,124)**	—
Foreign exchange rate movements	**1,252**	4,761
Other movements	**2**	(55)
Carrying amount at 31 December	**130,972**	137,218

1 Other movements during 2017 primarily relates to a special bonus distribution to with-profits policyholders (UK Life).
2 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.

B9 – Insurance liabilities 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 £1.5 billion impact of variance between actual and expected experience in 2017 is mainly due to higher than expected equity returns in the UK increasing with-profits and unit-linked liabilities.

The impact of non-economic assumption changes of £(1.2) billion in 2017 reduces the carrying value of insurance liabilities and relates mainly to release of reserves for longevity which is partially offset by increase in expense and persistency reserves for the UK business (with the impact on profit partially offset by a corresponding reduction in reinsurance assets).

The £2.1 billion impact of economic assumption changes in 2017 reflects a decrease in valuation interest rates in response to increasing interest rates and narrowing spreads, primarily in respect of immediate annuity and participating insurance contracts in the UK.

For participating business, a movement in liabilities is generally offset by a corresponding adjustment to the unallocated divisible surplus and does not impact on profit. Where assumption changes do impact on profit, these are included in the effect of changes in assumptions and estimates during the year, together with the impact of movements in related non-financial assets.

(c) General insurance and health liabilities

(i) Provisions for outstanding claims

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 reserves 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 loss 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.

The table below shows the split of total general insurance and health outstanding claim provisions and IBNR provisions, gross of reinsurance, by major line of business.

	As at 31 December 2017			As at 31 December 2016		
	Outstanding claim provisions £m	**IBNR provisions £m**	**Total claim provisions £m**	Outstanding claim provisions £m	IBNR provisions £m	Total claim provisions £m
Motor	**5,039**	**1,339**	**6,378**	4,690	1,623	6,313
Property	**1,734**	**114**	**1,848**	1,711	57	1,768
Liability	**1,814**	**1,270**	**3,084**	1,907	1,257	3,164
Creditor	**24**	**11**	**35**	23	20	43
Other	**353**	**103**	**456**	418	3	421
	8,964	**2,837**	**11,801**	8,749	2,960	11,709

(ii) Discounting

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:

	Rate		Mean term of liabilities	
Class	**2017**	2016	**2017**	2016
Reinsured London Market business	**0.7% to 2.6%**	2.0%	**9 years**	9 years
Latent claims	**0.7% to 1.9%**	0.00% to 2.31%	**8 to 17 years**	6 to 15 years
Structured settlements	**0.5% to 3.0%**	0.15% to 2.98%	**7 to 39 years**	13 to 39 years

The gross outstanding claims provision before discounting was £11,346 million (*2016: £12,196 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 relevant 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 6 and 15 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.

B9 – Insurance liabilities continued

(iii) Assumptions

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 technicians apply their experience and knowledge to the circumstances of individual claims. They take into account all available information and correspondence regarding the circumstances of the claim, such as medical reports, investigations and inspections. Claims technicians set case estimates according to documented claims department policies and specialise in setting estimates for certain lines of business or types of claim. 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. The main assumption underlying these techniques is that a company's past claims development experience can be used to project future claims development and hence ultimate claims costs. As such, these methods extrapolate the development of paid and incurred losses, average costs per claim and claim numbers based on the observed development of earlier years and expected loss ratios. Historical claims development is mainly analysed by accident period, although underwriting or notification period is also used where this is considered appropriate.

Claim development is separately analysed for each geographic area, as well as by each line of business. Certain lines of business are also further analysed by claim type or type of coverage. In addition, large claims are usually separately addressed, either by being reserved at the face value of loss adjuster estimates or separately projected in order to reflect their future development.

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, for example, to reflect one-off occurrences, changes in external or market factors such as public attitudes to claiming, economic conditions, levels of claims inflation, judicial decisions and legislation, as well as internal factors such as portfolio mix, policy conditions and claims handling procedures 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:

(a) 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 the different assumptions. An upper and lower scenario can be derived by making reasonably likely changes to these assumptions, resulting in an estimate £35 million *(2016: £25 million)* greater than the best estimate, or £40 million *(2016: £45 million)* lower than the best estimate. These scenarios do not, however, constitute an upper or lower bound on these liabilities.

(b) 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 relevant 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 is shown in section (ii) above and depends on the duration of the claim and the reporting date. At 31 December 2017, it is estimated that a 1% fall in the discount rates used would increase net claim reserves by approximately £110 million (*2016: £220 million*), excluding the offsetting effect on asset values as assets are not hypothecated across classes of business. The impact has fallen during 2017 due to a reduction in bodily injury claims in the UK settled by periodic payment orders (PPOs) or structured settlements as a result of a reduction in the Ogden rate from 2.5% to -0.75% making them less attractive compared to a lump sum settlement.

(c) 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 for non-life claims 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.

Changes to claims development patterns can materially impact the results of actuarial projection techniques. However, allowance for the inherent uncertainty in the assumptions underlying reserving projections is automatically allowed for in the explicit allowance for risk and uncertainty included when setting booked reserves.

Lump sum payments in settlement of bodily injury claims 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 in accordance with the Damages Act 1996 and is applied when calculating the present value of future care costs and loss of earnings for claims settlement purposes.

B9 – Insurance liabilities continued

Due to the uncertainty around the Ogden discount rate, the claim reserves in the UK have been calculated using the current Ogden discount rate of -0.75%, as this is the enacted legislative rate that was announced by the Lord Chancellor last year. However, the discount rate used in the Ogden Tables is currently being reviewed by the Lord Chancellor and draft legislation has been proposed (but not yet enacted) which, at the time it was published, indicated a discount rate in the range of 0% to 1%. By way of illustration, should the Ogden discount rate increase in the future by 1%, then this would be expected to reduce reserves by approximately £250 million with an equivalent impact on profit before tax.

(iv) Movements

The following changes have occurred in the general insurance and health claims provisions during the year:

	2017 £m	2016 £m
Carrying amount at 1 January	**11,709**	9,446
Impact of changes in assumptions	**(7)**	324
Claim losses and expenses incurred in the current year	**6,890**	6,703
Decrease in estimated claim losses and expenses incurred in prior periods	**(172)**	(7)
Incurred claims losses and expenses	**6,711**	7,020
Less:		
Payments made on claims incurred in the current year	**(3,642)**	(3,505)
Payments made on claims incurred in prior periods	**(3,283)**	(2,893)
Recoveries on claim payments	**278**	234
Claims payments made in the period, net of recoveries	**(6,647)**	(6,164)
Unwind of discounting	**9**	11
Changes in claims reserve recognised as an expense	**73**	867
Effect of portfolio transfers, acquisitions and disposals	**3**	430
Foreign exchange rate movements	**16**	966
Carrying amount at 31 December	**11,801**	11,709

The effect of changes in the main assumptions is given in note B12.

(d) Loss development tables

(i) Description of tables

The tables that follow present the development of claim payments and the estimated ultimate cost of claims for the accident years 2008 to 2017. The upper half of the tables shows the cumulative amounts paid during successive years related to each accident year. For example, with respect to the accident year 2008, by the end of 2017 £9,033 million had actually been paid in settlement of claims. In addition, as reflected in the lower section of the table, the original estimated ultimate cost of claims of £9,508 million was re-estimated to be £9,195 million at 31 December 2017.

The original estimates will be increased or decreased, as more information becomes known about the individual claims and overall claim frequency and severity.

The Group aims to maintain reserves in respect of its general insurance and health business that protect against adverse future claims experience and development. The Group establishes reserves in respect of the current accident year (2017), where the development of claims is less mature, that allow for the greater uncertainty attaching to the ultimate cost of current accident year claims. As claims develop and the ultimate cost of claims become more certain, the absence of adverse claims experience will result in a release of reserves from earlier accident years, as shown in the loss development tables and movements table (c)(iv) above. Releases from prior accident year reserves are also due to an improvement in the estimated cost of claims.

Key elements of the release from 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.

Key elements of the release from prior accident year general insurance and health net provisions during 2016 were:
- £208 million strengthening from UK & Ireland due to the impact of the change in the Ogden discount rate in the UK partly offset by other favourable developments on personal motor and commercial liability claims.
- £154 million release from Canada mainly due to continued favourable experience on motor, following the legislative changes in Ontario.
- £90 million release from Europe mainly due to favourable development in France and Italy.

B9 – Insurance liabilities continued

There was also a £78 million reduction in net claim reserves relating to an outwards reinsurance contract completed by the UK General Insurance business.

(ii) Gross figures

Before the effect of reinsurance, the loss development table is:

Accident year	All prior years £m	2008 £m	2009 £m	2010 £m	2011 £m	2012 £m	2013 £m	2014 £m	2015 £m	2016 £m	2017 £m	**Total £m**
Gross cumulative claim payments												
At end of accident year		(4,915)	(3,780)	(3,502)	(3,420)	(3,055)	(3,068)	(3,102)	(2,991)	(3,534)	(3,517)	
One year later		(7,350)	(5,464)	(5,466)	(4,765)	(4,373)	(4,476)	(4,295)	(4,285)	(4,972)		
Two years later		(7,828)	(6,102)	(5,875)	(5,150)	(4,812)	(4,916)	(4,681)	(4,710)			
Three years later		(8,304)	(6,393)	(6,163)	(5,457)	(5,118)	(5,221)	(4,974)				
Four years later		(8,607)	(6,672)	(6,405)	(5,712)	(5,376)	(5,467)					
Five years later		(8,781)	(6,836)	(6,564)	(5,864)	(5,556)						
Six years later		(8,906)	(6,958)	(6,649)	(5,978)							
Seven years later		(8,986)	(7,043)	(6,690)								
Eight years later		(9,012)	(7,078)									
Nine years later		(9,033)										
Estimate of gross ultimate claims												
At end of accident year		9,508	7,364	6,911	6,428	6,201	6,122	5,896	5,851	6,947	6,894	
One year later		9,322	7,297	7,006	6,330	6,028	6,039	5,833	5,930	6,931		
Two years later		9,277	7,281	6,950	6,315	6,002	6,029	5,865	5,912			
Three years later		9,272	7,215	6,914	6,292	5,952	6,067	5,842				
Four years later		9,235	7,204	6,912	6,262	6,002	6,034					
Five years later		9,252	7,239	6,906	6,265	5,979						
Six years later		9,213	7,217	6,926	6,265							
Seven years later		9,207	7,256	6,913								
Eight years later		9,202	7,228									
Nine years later		9,195										
Estimate of gross ultimate claims		9,195	7,228	6,913	6,265	5,979	6,034	5,842	5,912	6,931	6,894	
Cumulative payments		(9,033)	(7,078)	(6,690)	(5,978)	(5,556)	(5,467)	(4,974)	(4,710)	(4,972)	(3,517)	
	2,516	162	150	223	287	423	567	868	1,202	1,959	3,377	**11,734**
Effect of discounting	(397)	(14)	(14)	(25)	(2)	—	(1)	—	—	—	—	**(453)**
Present value	2,119	148	136	198	285	423	566	868	1,202	1,959	3,377	**11,281**
Cumulative effect of foreign exchange movements	—	(4)	—	(1)	3	8	18	48	145	2	—	**219**
Effect of acquisitions	13	1	3	5	19	22	31	55	78	74	—	**301**
Present value recognised in the statement of financial position	**2,132**	**145**	**139**	**202**	**307**	**453**	**615**	**971**	**1,425**	**2,035**	**3,377**	**11,801**

B9 – Insurance liabilities continued

(iii) Net of reinsurance

After the effect of reinsurance, the loss development table is:

Accident year	All prior years £m	2008 £m	2009 £m	2010 £m	2011 £m	2012 £m	2013 £m	2014 £m	2015 £m	2016 £m	2017 £m	**Total £m**
Net cumulative claim payments												
At end of accident year		(4,808)	(3,650)	(3,386)	(3,300)	(2,925)	(2,905)	(2,972)	(2,867)	(3,309)	(3,483)	
One year later		(7,165)	(5,286)	(5,242)	(4,578)	(4,166)	(4,240)	(4,079)	(4,061)	(4,591)		
Two years later		(7,638)	(5,885)	(5,637)	(4,963)	(4,575)	(4,649)	(4,432)	(4,452)			
Three years later		(8,094)	(6,177)	(5,905)	(5,263)	(4,870)	(4,918)	(4,720)				
Four years later		(8,356)	(6,410)	(6,137)	(5,485)	(5,110)	(5,159)					
Five years later		(8,515)	(6,568)	(6,278)	(5,626)	(5,289)						
Six years later		(8,626)	(6,657)	(6,361)	(5,740)							
Seven years later		(8,682)	(6,708)	(6,411)								
Eight years later		(8,714)	(6,744)									
Nine years later		(8,735)										
Estimate of net ultimate claims												
At end of accident year		9,262	7,115	6,650	6,202	5,941	5,838	5,613	5,548	6,489	6,714	
One year later		9,104	7,067	6,751	6,103	5,765	5,745	5,575	5,635	6,458		
Two years later		9,028	7,036	6,685	6,095	5,728	5,752	5,591	5,608			
Three years later		9,007	6,978	6,644	6,077	5,683	5,733	5,559				
Four years later		8,962	6,940	6,634	6,034	5,717	5,689					
Five years later		8,949	6,977	6,614	6,005	5,680						
Six years later		8,926	6,908	6,624	6,003							
Seven years later		8,894	6,897	6,615								
Eight years later		8,898	6,896									
Nine years later		8,886										
Estimate of net ultimate claims		8,886	6,896	6,615	6,003	5,680	5,689	5,559	5,608	6,458	6,714	
Cumulative payments		(8,735)	(6,744)	(6,411)	(5,740)	(5,289)	(5,159)	(4,720)	(4,452)	(4,591)	(3,483)	
	954	151	152	204	263	391	530	839	1,156	1,867	3,231	**9,738**
Effect of discounting	(150)	(10)	(12)	(21)	3	—	5	—	—	—	—	**(185)**
Present value	804	141	140	183	266	391	535	839	1,156	1,867	3,231	**9,553**
Cumulative effect of foreign exchange movements	—	(4)	—	(1)	2	7	18	47	141	3	—	**213**
Effect of acquisitions	17	1	3	5	19	22	31	56	79	73	—	**306**
Present value recognised in the statement of financial position	**821**	**138**	**143**	**187**	**287**	**420**	**584**	**942**	**1,376**	**1,943**	**3,231**	**10,072**

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 2017 were £95 million (*2016: £134 million*). The movement in the year reflects a reduction of £14 million due to favourable claims development, claim payments net of reinsurance recoveries and foreign exchange rate movements.

(e) Provision for unearned premiums

Movements

The following changes have occurred in the provision for unearned premiums (UPR) during the year:

	2017 £m	2016 £m
Carrying amount at 1 January	**4,766**	4,048
Premiums written during the year	**10,523**	9,694
Less: Premiums earned during the year	**(10,365)**	(9,503)
Changes in UPR recognised as an (income)/expense	**158**	191
Gross portfolio transfers and acquisitions[1]	**46**	124
Foreign exchange rate movements	**10**	403
Carrying amount at 31 December	**4,980**	4,766

1 The £46 million in respect of 2017 relates to the full consolidation of the Poland Joint Venture. The £124 million in respect of 2016 relates to the acquisition of Royal Bank of Canada General Insurance Company.

B10 – Liability for investment contracts

This note analyses our investment contract liabilities by type of product and describes how the Group calculates these liabilities and the assumptions used.

(a) Carrying amount

The liability for investment contracts (gross of reinsurance) at 31 December comprised:

	2017 £m	2016 £m
Long-term business		
Participating contracts	**87,654**	89,739
Non-participating contracts at fair value	**124,995**	114,531
Total	**212,649**	204,270
Less: Amounts classified as held for sale	**(8,663)**	(7,175)
	203,986	197,095

(b) Long-term business investment liabilities

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 and Group practice for long-term business liabilities. 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 Phase II of its insurance contracts project. This is addressed in the insurance contract standard (i.e. IFRS 17).

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.

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, £123,916 million in 2017 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.

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.

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. Participating investment contracts are treated consistently with insurance contracts with the change in investment contract provisions primarily consisting of the movement in participating investment contract liabilities (net of reinsurance) over the reporting period.

(c) Movements in the year

The following movements have occurred in the gross provisions for investment contracts in the year:

(i) Participating investment contracts

	2017 £m	2016 £m
Carrying amount at 1 January	**89,739**	78,048
Provisions in respect of new business	**5,193**	4,584
Expected change in existing business provisions	**(4,986)**	(4,893)
Variance between actual and expected experience	**2,072**	3,084
Impact of non-economic assumption changes	**10**	36
Impact of economic assumption changes	**411**	450
Other movements recognised as an expense[1]	**(16)**	(347)
Change in liability recognised as an expense[2]	**2,684**	2,914
Effect of portfolio transfers, acquisitions and disposals[3]	**(7,243)**	—
Foreign exchange rate movements	**2,452**	8,721
Other movements	**22**	56
Carrying amount at 31 December	**87,654**	89,739

1 Other movements during 2017 primarily relates to a special bonus distribution to UK with-profits policyholders.
2 Total interest expense for participating investment contracts recognised in profit or loss is £2,489 million *(2016: £3,111 million)*.
3 The movement during 2017 relates to the disposal of Antarius in France.

B10 – Liability 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 2017 of £2.1 billion is primarily driven by favourable equity returns in the UK.

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.

(ii) Non-participating investment contracts

	2017 £m	2016 £m
Carrying amount at 1 January	**114,531**	103,034
Provisions in respect of new business	**4,484**	3,222
Expected change in existing business provisions	**(4,427)**	(3,481)
Variance between actual and expected experience	**10,115**	11,105
Impact of non-economic assumption changes	**2**	17
Impact of economic assumption changes	**(1)**	2
Other changes in liabilities	**10**	334
Change in liability	**10,183**	11,199
Effect of portfolio transfers, acquisitions and disposals[1]	**(4)**	(757)
Foreign exchange rate movements	**277**	1,065
Other movements	**8**	(10)
Carrying amount at 31 December	**124,995**	114,531

1 The movement during 2017 relates to the disposal of Antarius in France. The movement during 2016 relates to the disposal of a closed book of offshore bonds business.

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 2017 of £10 billion is primarily driven by the impact of positive equity returns in the UK.

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, which combines participating and non-participating investment contracts together with the impact of movements in related non-financial assets.

B11 – Reinsurance assets

This note details the reinsurance recoverables on our insurance and investment contract liabilities.

(a) Carrying amounts

The reinsurance assets at 31 December comprised:

	2017 £m	2016 £m
Long-term business		
Insurance contracts	**5,469**	6,186
Participating investment contracts	**2**	2
Non-participating investment contracts[1]	**6,094**	18,366
	11,565	24,554
Outstanding claims provisions	**64**	65
	11,629	24,619
General insurance and health		
Outstanding claims provisions[2]	**845**	1,090
Provisions for claims incurred but not reported[2]	**884**	795
	1,729	1,885
Provisions for unearned premiums	**257**	250
	1,986	2,135
	13,615	26,754
Less: Amounts classified as held for sale	**(123)**	(411)
Total	**13,492**	26,343

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 2017, £14,353 million of reinsurance assets (UK Life) have been reclassified as collective investments in unit-linked funds following a restructure of a reinsurance treaty.
2 Reinsurance assets at 31 December 2016 for General insurance and health business include the impact of the £78 million reinsurance asset relating to an outwards reinsurance contract completed by the UK General Insurance business and the remaining recoveries expected in respect of the Alberta fires in Canada.

Of the above total, £12,302 million (*2016: £22,919 million*) is expected to be recovered more than one year after the statement of financial position date.

(b) Assumptions

The assumptions, including discount rates, used for reinsurance contracts follow those used for insurance contracts. Reinsurance assets are valued net of an allowance for their recoverability.

(c) Movements

The following movements have occurred in the reinsurance assets during the year:

(i) In respect of long-term business provisions

	2017 £m	2016 £m
Carrying amount at 1 January	**24,554**	18,996
Assets in respect of new business	**1,004**	941
Expected change in existing business assets	**(786)**	300
Variance between actual and expected experience	**2,264**	3,149
Impact of non-economic assumption changes	**(634)**	(182)
Impact of economic assumption changes	**94**	171
Other movements[1]	**(14,529)**	1,003
Change in assets[2]	**(12,587)**	5,382
Effect of portfolio transfers, acquisitions and disposals[3]	**(410)**	8
Foreign exchange rate movements	**8**	168
Carrying amount at 31 December	**11,565**	24,554

1 The movement during 2016 includes the reclassification of UK Life investments in certain life insurance funds from unit trusts and other investment vehicles (financial instruments) to reinsurance assets. The movement during 2017 includes £14,353 million of reinsurance assets (UK Life) being reclassified as collective investments in unit-linked funds following a restructure of a reinsurance treaty.
2 Change in assets does not reconcile with values in note B9(a)(ii) 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 2016 relates to the recognition of a reinsurance asset following disposal of a closed book of offshore bonds business. The movement during 2017 primarily relates to Antarius in France.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of reinsurance assets and mainly relates to business in the UK, 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.

B11 – Reinsurance assets continued

(ii) In respect of general insurance and health outstanding claims provisions and IBNR

	2017 £m	2016 £m
Carrying amount at 1 January	**1,885**	1,595
Impact of changes in assumptions	**(15)**	80
Reinsurers' share of claim losses and expenses		
Incurred in current year	**179**	433
Incurred in prior years[1]	**15**	109
Reinsurers' share of incurred claim losses and expenses	**194**	542
Less:		
Reinsurance recoveries received on claims		
Incurred in current year	**(32)**	(195)
Incurred in prior years	**(293)**	(214)
Reinsurance recoveries received in the year	**(325)**	(409)
Unwind of discounting	**8**	9
Change in reinsurance asset recognised as income (note B9(a)(ii))	**(138)**	222
Effect of portfolio transfers, acquisitions and disposals	**—**	(25)
Foreign exchange rate movements	**(18)**	97
Other movements	**—**	(4)
Carrying amount at 31 December	**1,729**	1,885

1 The change in reinsurance assets for 2016 includes the impact of the £78 million reinsurance asset relating to an outwards reinsurance contract completed by the UK General Insurance business.

(iii) Reinsurers' share of the provision for UPR

	2017 £m	2016 £m
Carrying amount at 1 January	**250**	289
Premiums ceded to reinsurers in the year[1]	**489**	668
Less: Reinsurers' share of premiums earned during the year[1]	**(484)**	(687)
Changes in reinsurance asset recognised as income	**5**	(19)
Reinsurers' share of portfolio transfers and acquisitions	**—**	(38)
Foreign exchange rate movements	**2**	18
Other movements	**—**	—
Carrying amount at 31 December	**257**	250

1 For 2016 includes £107 million of ceded premiums relating to an outwards reinsurance contract completed by the UK General Insurance business.

B12 – Effect of changes in assumptions and estimates during the year

Certain estimates and assumptions used in determining our liabilities for insurance and investment contract business were changed from 2016 to 2017, affecting the profit recognised for the year with an equivalent effect on liabilities. This note analyses the effect of the changes. This note only allows for the impact on liabilities and related assets, such as unallocated divisible surplus, reinsurance, deferred acquisition costs and AVIF, and does not allow for offsetting movements in the value of backing financial assets.

	Effect on profit 2017 £m	Effect on profit 2016 £m
Assumptions		
Long-term insurance business		
Interest rates	**(1,720)**	(4,490)
Expenses	**(128)**	48
Persistency rates	**(79)**	(80)
Mortality and morbidity for assurance contracts	**113**	(11)
Mortality for annuity contracts	**779**	294
Tax and other assumptions	**2**	97
Investment contracts		
Expenses	**—**	—
General insurance and health business		
Change in discount rate assumptions	**(7)**	(242)
Change in expense ratio and other assumptions	**—**	—
Total	**(1,040)**	(4,384)

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 a decrease in the valuation interest rate, in response to narrowing of credit spreads is partially offset by increasing risk-free rates, has increased liabilities. Within the UK there were also two modelling changes which resulted in a reduction in reserves: an alignment of approach in calculating the valuation interest rate across the Life portfolios of £153 million and a refinement to the approach to calculating the valuation interest rate for certain deferred annuity business of £136 million. Outside of the UK, there was a one-off impact in France 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 of £138 million. The overall impact on profit also depends on movements in the value of assets backing the liabilities, which is not included in this disclosure.

The impact of expenses on long-term business has resulted in an increase in reserves, following a review of recent experience. In the UK this includes a strengthening of maintenance expense reserves from harmonising the UK expense basis following the Friends Life Part VII transfer in 2017 of £89 million (2016: £nil); recognition of future project expense reserves of £125 million *(2016: £nil)*; partly offset by a release due to updating the charging structure in place with Aviva Investors following the Friends Life integration of £70million *(2016: £42 million) (and other less significant adverse movements of £13 million in 2016)*. Across Europe and Asia, expense reserves have reduced by £16 million *(2016: £19 million)*.

The impact of persistency rates on long-term business has resulted in an increase in reserves following a review of recent experience in the UK.

The impact of mortality and morbidity for assurance contracts on long-term business has resulted in a reduction in reserves following a review of recent experience, most notably for critical illness in the UK.

The impact of mortality for annuitant contracts on long-term business relates primarily to the UK. In 2017, this has 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.

In 2016 there was a release of annuitant reserves in the UK following a review of recent experience (including the exposure to anti-selection risk) of £130 million, the adoption of CMI 2015 mortality improvement assumptions of £153 million and other less significant movements of £11 million.

In the general insurance and health business, an adverse impact of £7 million *(2016: £242 million adverse)* mainly arises as a result of a slight decrease in the estimated future inflation rate used to value periodic payment orders, offset by a slight decrease in the interest rates used to discount claim reserves for periodic payment orders and latent claims. During 2016 market interest rates used to discount periodic payment orders and latent claims reduced and the estimated future inflation rate used to value periodic payment orders was increased to be consistent with market expectations. This was, in part, offset by a change in estimate for the interest rate used to discount periodic payment orders to allow for the illiquid nature of these liabilities.

B13 – 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 not defined.

This note shows the movements in the UDS during the year.

	2017 £m	2016 £m
Carrying amount at 1 January	**10,208**	8,811
Change in participating fund assets	**406**	4,977
Change in participating fund liabilities	**(710)**	(4,596)
Other movements	**10**	—
Change in liability recognised as an expense	**(294)**	381
Effect of portfolio transfers, acquisition and disposals[1]	**(1,076)**	—
Foreign exchange rate movements	**263**	1,016
Carrying amount at 31 December	**9,101**	10,208
Less: Amounts classified as held for sale	**(19)**	(859)
	9,082	9,349

1 The movement during 2017 relates to the disposal of Antarius (£832 million) and majority of Spanish business (£244 million).

The amount of UDS at 31 December 2017 has decreased to £9.1 billion (20*16: £10.2 billion*) including amounts classified as held for sale, and £9.1 billion (*2016: £9.3 billion*) excluding amounts classified as held for sale. The decrease is mainly due to the sale of both Antarius and the majority of Spanish business and a distribution of assets out of UK Life's UDS in anticipation of a special bonus to policyholders, partly offset by the weakening of sterling against the euro.

The participating assets and liabilities have offsetting impacts across the UK and Europe in 2017. In Europe they have increased mainly driven by an increase in new business and in the UK they have reduced, mainly driven by an increase in bond yields and the distribution of assets. In 2016, the impacts did not offset. The participating assets and liabilities increased across all the markets mainly driven by an increase in new business in Europe and a decrease in bond yields in the UK.

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. There are no material negative UDS balances at the participating fund-level within each life entity in the current and comparative periods, with the exception of one fund in UK Life in the comparative period (*2016: a negative UDS of £16 million*). This negative UDS balance was tested for recoverability and considered to be recoverable by comparing the excess of IFRS participating liabilities 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 and for AVIF on insurance contracts.

B14 – 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:

	2017 £m	2016 £m
Core structural borrowings, at amortised cost	**8,640**	8,577
Operational borrowings, at amortised cost	**466**	608
Operational borrowings, at fair value	**1,180**	1,110
	1,646	1,718
	10,286	10,295

(b) Movements during the year

Movements in borrowings during the year were:

	2017			2016		
	Core Structural £m	**Operational £m**	**Total £m**	Core Structural £m	Operational £m	Total £m
New borrowings drawn down, excluding commercial paper, net of expenses	**—**	**55**	**55**	1,372	148	1,520
Repayment of borrowings, excluding commercial paper[1]	**(488)**	**(151)**	**(639)**	(320)	(56)	(376)
Movement in commercial paper[2]	**—**	**—**	**—**	42	—	42
Net cash inflow/(outflow)	**(488)**	**(96)**	**(584)**	1,094	92	1,186
Foreign exchange rate movements	**104**	**(17)**	**87**	574	33	607
Borrowings reclassified/(loans repaid) for non-cash consideration[1]	**484**	**(13)**	**471**	—	—	—
Fair value movements	**—**	**108**	**108**	—	(220)	(220)
Amortisation of discounts and other non-cash items	**(37)**	**(16)**	**(53)**	(34)	(16)	(50)
Movements in debt held by Group companies[3]	**—**	**(38)**	**(38)**	31	(29)	2
Movements in the year	**63**	**(72)**	**(9)**	1,665	(140)	1,525
Balance at 1 January	**8,577**	**1,718**	**10,295**	6,912	1,858	8,770
Balance at 31 December	**8,640**	**1,646**	**10,286**	8,577	1,718	10,295

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. See note B18 for further details.
2 Gross issuances of commercial paper were £1,265 million in 2017 *(2016: £2,006 million)*, offset by repayments of £1,265 million *(2016: £1,964 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 2016 and 2017 on securitised mortgage loan notes designated as fair value through profit or loss were attributable to changes in market conditions.

B15 – Pension obligations

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 with the main UK scheme being the largest. The assets and liabilities of these defined benefit schemes as at 31 December 2017 are shown below.

	2017				2016			
	UK £m	Ireland £m	Canada £m	Total £m	UK £m	Ireland £m	Canada £m	Total £m
Total fair value of scheme assets	**17,744**	**658**	**276**	**18,678**	18,803	610	281	19,694
Present value of defined benefit obligation	**(14,824)**	**(847)**	**(372)**	**(16,043)**	(16,131)	(848)	(368)	(17,347)
Net IAS 19 surpluses/(deficits) in the schemes	**2,920**	**(189)**	**(96)**	**2,635**	2,672	(238)	(87)	2,347
Surpluses included in other assets	**3,399**	**—**	**—**	**3,399**	3,190	—	—	3,190
Deficits included in provisions	**(479)**	**(189)**	**(96)**	**(764)**	(518)	(238)	(87)	(843)
Net IAS 19 surpluses/(deficits) in the schemes	**2,920**	**(189)**	**(96)**	**2,635**	2,672	(238)	(87)	2,347

Notes to the consolidated financial statements continued

B15 – Pension obligations continued

Movements in the scheme surpluses and deficits

Movements in the pension schemes' surpluses and deficits comprise:

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.

The increase in the net surplus during the period is primarily due to employer contributions paid into the schemes.

2016	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	16,161	(14,324)	1,837
Past service costs - amendments	—	(1)	(1)
Administrative expenses[1]	—	(13)	(13)
Total pension cost charged to net operating expenses	—	(14)	(14)
Net interest credited/(charged) to investment income /(finance costs)[2]	590	(517)	73
Total recognised in income	590	(531)	59
Remeasurements:			
Actual return on these assets	4,044	—	4,044
Less: Interest income on scheme assets	(590)	—	(590)
Return on scheme assets excluding amounts in interest income	3,454	—	3,454
Losses from change in financial assumptions	—	(3,944)	(3,944)
Gains from change in demographic assumptions	—	363	363
Experience gains	—	438	438
Total recognised in other comprehensive income	3,454	(3,143)	311
Employer contributions	190	—	190
Plan participant contributions	6	(6)	—
Benefits paid	(825)	825	—
Administrative expenses paid from scheme assets[1]	(15)	13	(2)
Foreign exchange rate movements	133	(181)	(48)
Net IAS 19 surplus in the schemes at 31 December	19,694	(17,347)	2,347

1 Administrative expenses are expensed as incurred.
2 Net interest income of £102 million has been credited to investment income and net interest expense of £29 million has been charged to finance costs.

B16 – 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

	2017 £m				2016 £m			
	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	**4**	**(4)**	**—**	**—**	4	(3)	—	—
Joint ventures	**49**	**—**	**—**	**2**	46	—	—	2
Employee pension schemes	**12**	**—**	**—**	**14**	16	—	—	5
	65	**(4)**	**—**	**16**	66	(3)	—	7

Transactions with joint ventures in the UK relate to the property management undertakings. 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 2017, 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 at 31 December 2017, the Friends Provident Pension Scheme ('FPPS'), acquired in 2015 as part of the acquisition of the Friends Life business, held an insurance policy of £630 million *(2016: £633 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.

B17 – 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 analyses 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.

B17 – Risk management continued

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.

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 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**

As at 31 December 2016[1]	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	11.8%	33.4%	19.0%	23.9%	6.0%	5.9%	186,708	(7,738)	178,970
Reinsurance assets	—	92.0%	6.3%	0.1%	—	1.6%	26,754	(411)	26,343
Other investments	—	0.2%	0.6%	—	—	99.2%	51,127	(2,304)	48,823
Loans	—	8.0%	—	0.1%	—	91.9%	24,859	(75)	24,784
Total							289,448	(10,528)	278,920

1 Following a review of the Group's investment classifications, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to note 26 for further details of this adjustment and the financial statement impact arising.

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 £2.0 billion (*2016: £2.3 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.

B17 – Risk management continued

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.

To the extent that collateral held is greater than the amount receivable that it is securing, the table above shows only an amount equal to the latter. In the event of default, any over-collateralised security would be returned to the relevant counterparty.

(ii) Financial exposures to peripheral European countries and worldwide banks

Included in our debt securities and other financial assets are exposures to peripheral European countries and worldwide banks. We continued in 2017 to limit our direct shareholder and participating assets exposure to the governments (including local authorities and agencies) and banks of Greece, Portugal, Italy and Spain. We continue to review whether the restrictions on investment in place since late 2009 can be relaxed, given the improved economic situation in these economies.

(iii) 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 includes 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.

(iv) 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.

(v) 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 Group ALCO. With the exception of government bonds the largest aggregated counterparty exposure within shareholder assets (i.e. excluding potential exposures arising from reinsurance of unit-linked funds) is to the Swiss Reinsurance Company Limited (including subsidiaries), representing approximately 2.3% of the total shareholder assets.

(vi) 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 BlackRock Life Ltd (including subsidiaries) as a result of the BlackRock funds offered to UK Life customers via unit-linked contracts. At 31 December 2017, the reinsurance asset recoverable, including debtor balances, from BlackRock Life Ltd was £5,307 million *(2016: £17,087 million)*, a significant reduction in exposure as a result of action taken to restructure the agreements with BlackRock Life Ltd, and will be further significantly reduced during 2018.

(vii) 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.

B17 – Risk management continued

(viii) 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.

(ix) 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.

(x) Impairment of financial assets

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					
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**

		Financial assets that are past due but not impaired					
At 31 December 2016	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	1,092	—	—	—	—	—	1,092
Reinsurance assets	8,388	—	—	—	—	—	8,388
Other investments	1	—	—	—	—	—	1
Loans	3,501	—	—	—	—	—	3,501
Receivables and other financial assets	7,717	61	7	8	1	—	7,794

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: £174.2 billion of debt securities *(2016: £185.6 billion)*, £53.3 billion of other investments *(2016: £51.1 billion)*, £24.4 billion of loans *(2016: £21.3 billion)* and £6.1 billion of reinsurance assets *(2016: £18.4 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.

B17 – Risk management continued

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.

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 2017 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 2017, no material derivative contracts had been entered into to mitigate the effects of changes in property prices.

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.

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 a 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.

Notes to the consolidated financial statements continued

B17 – Risk management continued

The following table summarises the weighted average minimum guaranteed crediting rates and weighted average book value yields on assets as at 31 December 2017 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	0.64%	3.02%	67,689
Italy	0.69%	3.56%	15,237
Other[1]	N/A	N/A	54,656
Total	N/A	N/A	137,582

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 in recent years has reduced the investment component of profit. 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
2015	2.58%	15,268
2016	2.47%	14,369
2017	2.07%	14,770

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.

(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 hedging. As a result the foreign exchange 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.

B17 – Risk management continued

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, foreign exchange gains and losses on foreign currency borrowings (see note 6) 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 2017 and 2016, 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 2017	**16,776**	**444**	**309**	**1,606**	**19,135**
Capital 31 December 2016	15,813	923	627	2,188	19,551

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 2017	**(44)**	**44**	**(31)**	**31**
Net assets at 31 December 2016	(92)	92	(63)	20

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 2017	**(78)**	**95**	**6**	**(7)**
Impact on profit before tax 31 December 2016	(55)	67	(15)	(9)

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.

(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. 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.

B17 – Risk management continued

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.

(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 2017 and 2016 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 assets held for sale.

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**

At 31 December 2016	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	116,400	9,757	31,423	44,791	30,429
Investment contracts – non-linked	73,112	5,358	17,050	27,568	23,136
Linked business	153,901	17,374	27,234	51,454	57,839
General insurance and health	16,488	6,761	6,594	2,448	685
Total contract liabilities	359,901	39,250	82,301	126,261	112,089

(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.

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**

At 31 December 2016[1]	Total £m	On demand or within 1 year £m	1-5 years £m	Over 5 years £m	No fixed term (perpetual) £m
Debt securities	178,970	24,293	49,061	105,448	168
Equity securities	72,042	—	—	—	72,042
Other investments	48,823	45,889	1,112	275	1,547
Loans	24,784	1,352	5,609	17,819	4
Cash and cash equivalents	38,708	38,708	—	—	—
	363,327	110,242	55,782	123,542	73,761

1 Following a review of the Group's investment classifications, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to note 26 for further details of this adjustment and the financial statement impact arising.

B17 – 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 policy holder 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 2017, 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. 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.

B17 – 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.

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.

B17 – Risk management continued

(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%.

Long-term business 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)**

B17 – Risk management continued

Sensitivities as at 31 December 2016

31 December 2016 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	(50)	30	(10)	(130)	65	(30)	(5)	(15)
Insurance non-participating	(190)	20	(775)	(35)	10	(190)	(90)	(920)
Investment participating	(10)	5	(5)	—	—	(5)	—	—
Investment non-participating	10	(15)	—	50	(70)	(65)	—	—
Assets backing life shareholders' funds	(115)	190	10	(85)	85	—	—	—
Total	(355)	230	(780)	(200)	90	(290)	(95)	(935)

31 December 2016 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%	Equity/ property +10%	Equity/ property -10%	Expensed +10%	Assurance mortality +5%	Annuitant mortality -5%
Insurance Participating	(50)	30	(10)	(130)	65	(30)	(5)	(15)
Insurance non-participating	(190)	20	(775)	(35)	10	(190)	(90)	(920)
Investment participating	(10)	5	(5)	—	—	(5)	—	—
Investment non-participating	10	(15)	—	50	(70)	(65)	—	—
Assets backing life shareholders' funds	(155)	230	5	(85)	85	—	—	—
Total	(395)	270	(785)	(200)	90	(290)	(95)	(935)

Changes in sensitivities between 2017 and 2016 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.

General insurance and health business 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)**

Sensitivities as at 31 December 2016

31 December 2016 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	(315)	320	(145)	85	(85)	(115)	(340)
Net of reinsurance	(385)	375	(145)	85	(85)	(115)	(320)

31 December 2016 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	(315)	320	(145)	85	(85)	(25)	(340)
Net of reinsurance	(385)	375	(145)	85	(85)	(25)	(320)

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.

Notes to the consolidated financial statements continued

B17 – Risk management continued

Fund management and non-insurance business 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**

Sensitivities as at 31 December 2016

31 December 2016 Impact on profit before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%[1]	Equity/ property +10%	Equity/ property -10%
Total	—	—	30	(10)	15

1 Revised from £10 million to £30 million to include Aviva International Insurance.

31 December 2016 Impact on shareholders' equity before tax £m	Interest rates +1%	Interest rates -1%	Credit spreads +0.5%[1]	Equity/ property +10%	Equity/ property -10%
Total	—	—	30	(10)	15

1 Revised from £10 million to £30 million to include Aviva International Insurance.

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.

B18 – Direct capital instrument and tier 1 notes

Notional amount	2017 £m	2016 £m
5.9021% £500 million direct capital instrument - Issued November 2004	**500**	500
8.25% $650 million fixed rate tier 1 notes - Issued May 2012	**—**	392
6.875% £210 million STICS - Issued November 2003	**231**	231
Total	**731**	1,123

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 $650 million fixed rate tier 1 notes (the FxdRNs) were issued on 3 May 2012. On 28 September 2017 notification was given that the Group would redeem the FxdRNs at first call date on 3 November 2017. At the notification 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. The FxdRNs were redeemed in full on 3 November 2017 at a cost of £488 million, including an additional £4 million of exchange losses subsequent to the reclassification which are included within other expenses within the income statement.

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 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 2017 the fair value of the DCI and the STICS was £778 million (*2016: £736 million*).

B19 – Cash and cash equivalents

Cash and cash equivalents in the statement of cash flows at 31 December comprised:

	2017 £m	2016 £m
Cash and cash equivalents	**43,347**	38,708
Cash and cash equivalents of operations classified as held for sale	**739**	255
Bank overdrafts	**(499)**	(558)
Net cash and cash equivalents at 31 December	**43,587**	38,405

B20 – 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

Estimation techniques are 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. 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 Company has purchased annuities from licensed Canadian life insurers to provide for fixed and recurring payments to claimants. As a result of these arrangements, the Company is exposed to credit risk to the extent that any of the life insurers fail to fulfill their obligations. The Company's maximum exposure to credit risk for these types of arrangements is approximately CAD$1,213 million as at 31 December 2017 *(2016: CAD$1,181 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 2017, no information has come to the Company'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.

B20 – 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.

The Group's insurance subsidiaries pay contributions to levy schemes in several countries in which we operate. Given the economic environment, there is a heightened risk that the levy contributions will need to be increased to protect policyholders if an insurance company falls into financial difficulties. The directors continue to monitor the situation but are not aware of any need to increase provisions at the statement of financial position date.

B21 – Acquired value of in-force business and intangible assets

Acquired value of in-force business and intangible assets presented in the statement of financial position is comprised of:

	2017 £m	2016 £m
Acquired value of in-force business on insurance contracts[1]	**1,533**	1,750
Acquired value of in-force business on investment contracts[2]	**1,725**	2,097
Intangible assets	**1,628**	1,633
	4,886	5,480
Less: amounts classified as held for sale	**(1,431)**	(12)
Total	**3,455**	5,468

1 On insurance and participating investment contracts.
2 On non-participating investment contracts.

The acquired value of in-force business on insurance and investment contract has reduced primarily due to an amortisation charge of £468 million (*2016: £539 million charge*) and a write-down of AVIF in relation to FPI's reinsured book of insurance contracts (£8 million) and FPI's investment contracts (£110 million). The latter was recorded as a remeasurement loss following FPI's classification as held for sale (see note B4).

The slight decrease in the intangible assets is primarily due to the amortisation charge for the year of £186 million *(2016: £155 million)* offset by additions in the year of £184 million. Additions are largely in respect of capitalised software in relation to the Group's digital initiatives and intangibles from our previously equity accounted joint ventures in Poland that are now fully consolidated (see note B4).

B22 – Subsequent events

For details of subsequent events relating to:

- subsidiaries – refer note B4a (iii)
- joint ventures – refer note B4c (iii)
- joint ventures – refer note B4c (iv)
- joint ventures – refer note B4d

Capital & liquidity

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Capital and liquidity

Capital and liquidity

C1 – Analysis of return on equity

2017	Operating return[1] Before tax £m	After tax £m	Weighted average shareholders' funds including non-controlling interests[2] £m	Return on equity[2] %
United Kingdom	2,201	1,782	12,828	13.9%
Canada	46	34	1,442	2.4%
Europe[3]	1,096	787	5,890	13.4%
Asia	227	212	1,638	12.9%
Fund management	164	127	495	25.7%
Corporate and Other Business[4]	(273)	(196)	5,669	n/a
Return on total capital employed	3,461	2,746	27,962	9.8%
Subordinated debt	(389)	(314)	(7,224)	4.3%
Senior debt	(4)	(3)	(1,398)	0.2%
Return on total equity	3,068	2,429	19,340	12.6%
Less: Non-controlling interests		(134)	(1,325)	10.1%
Direct capital instrument and tier 1 notes		(65)	(1,025)	6.3%
Preference capital		(17)	(200)	8.5%
Return on equity shareholders' funds		2,213	16,790	13.2%

1 The operating return is based upon Group operating profit. Refer to section 1.
2 Return on equity is based on an annualised operating return after tax attributable to ordinary shareholders expressed as a percentage of weighted average ordinary shareholders' equity.
3 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe.
4 The 'Corporate' and 'Other Business' loss before tax of £273 million comprises corporate costs of £184 million, interest on internal lending arrangements of £7 million, other business operating loss (net of investment return) of £157 million, partly offset by finance income on the main UK pension scheme of £75 million.

2016	Operating return[1] Before tax £m	After tax £m	Weighted average shareholders' funds including non-controlling interests[2] £m	Return on equity[2] %
United Kingdom	1,946	1,573	13,289	11.8%
Canada	269	197	1,256	15.7%
Europe[3]	1,044	743	5,520	13.5%
Asia	228	216	1,548	14.0%
Fund management	138	104	426	24.4%
Corporate and Other Business[4]	(227)	(219)	4,850	n/a
Return on total capital employed	3,398	2,614	26,889	9.7%
Subordinated debt	(387)	(309)	(6,907)	4.5%
Senior debt	(1)	(1)	(869)	0.1%
Return on total equity	3,010	2,304	19,113	12.1%
Less: Non-controlling interests		(147)	(1,279)	11.5%
Direct capital instrument and tier 1 notes		(68)	(1,123)	6.1%
Preference capital		(17)	(200)	8.5%
Return on equity shareholders' funds		2,072	16,511	12.5%

1 The operating return is based upon Group operating profit. Refer to section 1.
2 Return on equity is based on an annualised operating return after tax attributable to ordinary shareholders expressed as a percentage of weighted average ordinary shareholders' equity.
3 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.
4 The 'Corporate' and 'Other Business' loss before tax of £227 million comprises corporate costs of £184 million, interest on internal lending arrangements of £23 million, other business operating loss (net of investment return) of £106 million, partly offset by finance income on the main UK pension scheme of £86 million.

Capital and liquidity continued

C2 – Group capital structure – IFRS basis

The table below shows how our capital is deployed by market and how that capital is funded.

	2017 Capital employed £m	2016 Capital employed £m
Life business		
United Kingdom[1]	**11,517**	11,670
France	**2,704**	2,756
Poland	**352**	296
Italy	**954**	947
Other Europe[1]	**422**	759
Europe	**4,432**	4,758
Asia	**1,558**	1,643
	17,507	18,071
General insurance & health		
United Kingdom general insurance[1,2]	**1,721**	1,450
United Kingdom health	**93**	66
Canada	**1,364**	1,471
France	**589**	462
Italy	**319**	282
Other Europe[1]	**343**	315
Europe	**1,251**	1,059
Asia	**10**	16
	4,439	4,062
Fund management	**520**	462
Corporate and Other Business[2,3]	**5,309**	5,533
Total capital employed	**27,775**	28,128
Financed by		
Equity shareholders' funds	**16,969**	16,803
Non-controlling interests	**1,235**	1,425
Direct capital instrument and tier 1 notes	**731**	1,123
Preference shares	**200**	200
Subordinated debt[4]	**7,221**	7,213
Senior debt	**1,419**	1,364
Total capital employed[5]	**27,775**	28,128

1 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Other Europe. As a result, comparative balances have been restated. For the Life business, Other Europe also includes Spain and Turkey and for General insurance & health includes Poland.
2 Capital employed for United Kingdom General Insurance excludes 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 £9 million *(2016: £9 million)*.
5 Goodwill, AVIF and other intangibles are maintained within the capital base. Goodwill includes goodwill in subsidiaries of £1,876 million (*2016: £2,045 million*), goodwill in joint ventures of £17 million (*2016: £20 million*) and goodwill in associates of £nil (*2016: £47 million*). AVIF and other intangibles comprise £3,456 million (*2016: £5,468 million*) of intangibles in subsidiaries, £40 million (*2016: £72 million*) of intangibles in joint ventures and £nil million (*2016: £18 million*) of intangibles in associates, net of deferred tax liabilities of £(721) million (*2016: £(783) million*) and the non-controlling interest share of intangibles of £(222) million *(2016: £(226) million)*.

Total capital employed is financed by a combination of equity shareholders' funds, preference capital, subordinated debt and other borrowings. At the end of 2017 the Group had £27.8 billion *(2016: £28.1 billion)* of total capital employed in our trading operations measured on an IFRS basis. In 2017 the Group redeemed the $650 million fixed rate tier 1 notes in full at the first call date on 3 November and completed a share buy-back of ordinary shares for an aggregate purchase price of £300 million. The number of shares in issue has reduced by 57,724,500 in respect of shares acquired and cancelled under the buy-back programme.

At the end of 2017 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 £11,311 million *(2016: £11,006 million)*.

Capital and liquidity continued

C3 – Equity sensitivity analysis – IFRS basis

The sensitivity of the Group's total equity on an IFRS basis at 31 December 2017 to a 10% fall in global equity markets, a rise of 1% in global interest rates or a 0.5% increase in credit spreads is as follows:

31 December 2016 £bn	IFRS basis	31 December 2017 £bn	Equities down 10% £bn	Interest rates up 1% £bn	0.5% increased credit spread £bn
18.1	Long-term savings	**17.5**	**—**	**(0.7)**	**(0.4)**
10.1	General insurance and other	**10.3**	**(0.1)**	**(0.5)**	**0.6**
(8.6)	Borrowings	**(8.6)**	**—**	**—**	**—**
19.6	**Total equity**	**19.2**	**(0.1)**	**(1.2)**	**0.2**

These sensitivities assume a full tax charge/credit on market value assumptions. The interest rate sensitivity also assumes an equivalent movement in both inflation and discount rate (i.e. no change to real interest rates) and therefore incorporates the offsetting effects of these items on the pension scheme liabilities. A 1% increase in the real interest rate has the effect of reducing the pension scheme liability in the main UK pension scheme by £1.9 billion (before any associated tax impact).

The 0.5% increased credit spread sensitivity does not make an allowance for any adjustment to risk-free interest rates. The long-term business sensitivities provide for any impact of credit spread movements on liability valuations. The sensitivities also include the allocation of staff pension scheme sensitivities, which assume inflation rates and government bond yields remain constant. In practice, the sensitivity of the business to changes in credit spreads is subject to a number of complex interactions. The impact of the credit spread movements will be related to individual portfolio composition and may be driven by changes in credit or liquidity risk; hence, the actual impact may differ substantially from applying spread movements implied by various published credit spread indices to these sensitivities.

Analysis of assets

D1 – Total assets

As an insurance business, Aviva Group holds a variety of assets to match the characteristics and duration of its insurance liabilities. Appropriate and effective asset liability matching (on an economic basis) is the principal way in which Aviva manages its investments. In addition, to support this, Aviva also uses a variety of hedging and other risk management strategies to diversify away any residual mismatch risk that is outside of the Group's risk appetite.

2017	Policyholder assets £m	Participating fund assets £m	Shareholder assets £m	Total assets analysed £m	Less assets of operations classified as held for sale £m	Balance sheet total £m
Goodwill and acquired value of in-force business and intangible assets	—	—	6,798	6,798	(1,467)	5,331
Interests in joint ventures and associates	2	1,133	507	1,642	—	1,642
Property and equipment	—	175	339	514	(5)	509
Investment property	6,256	3,966	575	10,797	—	10,797
Loans	8	3,340	24,515	27,863	(6)	27,857
Financial investments						
Debt securities	30,987	95,775	49,186	175,948	(1,140)	174,808
Equity securities	74,110	15,058	995	90,163	(195)	89,968
Other investments	42,368	7,023	3,886	53,277	(6,971)	46,306
Reinsurance assets	6,103	235	7,277	13,615	(123)	13,492
Deferred tax assets	—	—	146	146	(2)	144
Current tax assets	—	—	94	94	—	94
Receivables and other financial assets	488	1,484	6,351	8,323	(38)	8,285
Deferred acquisition costs and other assets	27	565	5,952	6,544	(170)	6,374
Prepayments and accrued income	286	1,230	1,359	2,875	(15)	2,860
Cash and cash equivalents	12,000	18,855	13,231	44,086	(739)	43,347
Assets of operations classified as held for sale	—	—	—	—	10,871	10,871
Total	**172,635**	**148,839**	**121,211**	**442,685**	**—**	**442,685**
Total %	**39.0%**	**33.6%**	**27.4%**	**100.0%**	**—**	**100.0%**
2016 Total	161,128	157,775	121,516	440,419	—	440,419
2016 Total %	36.6%	35.8%	27.6%	100.0%	—	100.0%

As at 31 December 2017, 27.4% of Aviva's total asset base was shareholder assets, 33.6% participating fund assets where Aviva shareholders have partial exposure, and 39.0% policyholder assets where Aviva shareholders have no exposure. Of the total assets (excluding held for sale), investment property, loans and financial investments comprise £349.7 billion, compared to £335.4 billion at 31 December 2016.

D2 – Total assets – Valuation bases/fair value hierarchy

Total assets – 2017	Fair value £m	Amortised cost £m	Equity accounted/ tax assets[1] £m	Total £m
Goodwill and acquired value of in-force business and intangible assets	—	6,798	—	6,798
Interests in joint ventures and associates	—	—	1,642	1,642
Property and equipment	389	125	—	514
Investment property	10,797	—	—	10,797
Loans	24,398	3,465	—	27,863
Financial Investments				
Debt securities	175,948	—	—	175,948
Equity securities	90,163	—	—	90,163
Other investments	53,277	—	—	53,277
Reinsurance assets	6,094	7,521	—	13,615
Deferred tax assets	—	—	146	146
Current tax assets	—	—	94	94
Receivables and other financial assets	—	8,323	—	8,323
Deferred acquisition costs and other assets	—	6,544	—	6,544
Prepayments and accrued income	—	2,875	—	2,875
Cash and cash equivalents	44,086	—	—	44,086
Total	**405,152**	**35,651**	**1,882**	**442,685**
Total %	**91.5%**	**8.1%**	**0.4%**	**100.0%**
Assets of operations classified as held for sale	9,059	1,810	2	10,871
Total (excluding assets held for sale)	**396,093**	**33,841**	**1,880**	**431,814**
Total % (excluding assets held for sale)	**91.8%**	**7.8%**	**0.4%**	**100.0%**
2016 Total	400,358	37,674	2,387	440,419
2016 Total %	90.9%	8.6%	0.5%	100.0%

1 Within the Group's statement of financial position, assets are recognised for deferred tax and current tax. The valuation basis of these assets does not directly fall within any of the categories outlined above. As such, these assets have been reported together with equity accounted items within the analysis of the Group's assets.

D2 – Total assets – Valuation bases/fair value hierarchy continued

Total assets – Policyholder assets 2017	Fair value £m	Amortised cost £m	Equity accounted/ tax assets[1] £m	Total £m
Goodwill and acquired value of in-force business and intangible assets	—	—	—	—
Interests in joint ventures and associates	—	—	2	2
Property and equipment	—	—	—	—
Investment property	6,256	—	—	6,256
Loans	—	8	—	8
Financial Investments				
Debt securities	30,987	—	—	30,987
Equity securities	74,110	—	—	74,110
Other investments	42,368	—	—	42,368
Reinsurance assets	6,091	12	—	6,103
Deferred tax assets	—	—	—	—
Current tax assets	—	—	—	—
Receivables and other financial assets	—	488	—	488
Deferred acquisition costs and other assets	—	27	—	27
Prepayments and accrued income	—	286	—	286
Cash and cash equivalents	12,000	—	—	12,000
Total	**171,812**	**821**	**2**	**172,635**
Total %	**99.5%**	**0.5%**	**—**	**100.0%**
Assets of operations classified as held for sale	8,007	6	—	8,013
Total (excluding assets held for sale)	**163,805**	**815**	**2**	**164,622**
Total % (excluding assets held for sale)	**99.5%**	**0.5%**	**—**	**100.0%**
2016 Total	159,107	1,932	89	161,128
2016 Total %	98.7%	1.2%	0.1%	100.0%

1 Within the Group's statement of financial position, assets are recognised for deferred tax and current tax. The valuation basis of these assets does not directly fall within any of the categories outlined above. As such, these assets have been reported together with equity accounted items within the analysis of the Group's assets.

Total assets – Participating fund assets 2017	Fair value £m	Amortised cost £m	Equity accounted/ tax assets[1] £m	Total £m
Goodwill and acquired value of in-force business and intangible assets	—	—	—	—
Interests in joint ventures and associates	—	—	1,133	1,133
Property and equipment	168	7	—	175
Investment property	3,966	—	—	3,966
Loans	92	3,248	—	3,340
Financial Investments				
Debt securities	95,775	—	—	95,775
Equity securities	15,058	—	—	15,058
Other investments	7,023	—	—	7,023
Reinsurance assets	—	235	—	235
Deferred tax assets	—	—	—	—
Current tax assets	—	—	—	—
Receivables and other financial assets	—	1,484	—	1,484
Deferred acquisition costs and other assets	—	565	—	565
Prepayments and accrued income	—	1,230	—	1,230
Cash and cash equivalents	18,855	—	—	18,855
Total	**140,937**	**6,769**	**1,133**	**148,839**
Total %	**94.7%**	**4.5%**	**0.8%**	**100.0%**
Assets of operations classified as held for sale	—	—	—	—
Total (excluding assets held for sale)	**140,937**	**6,769**	**1,133**	**148,839**
Total % (excluding assets held for sale)	**94.7%**	**4.5%**	**0.8%**	**100.0%**
2016 Total	149,146	7,273	1,356	157,775
2016 Total %	94.5%	4.6%	0.9%	100.0%

1 Within the Group's statement of financial position, assets are recognised for deferred tax and current tax. The valuation basis of these assets does not directly fall within any of the categories outlined above. As such, these assets have been reported together with equity accounted items within the analysis of the Group's assets.

D2 – Total assets – Valuation bases/fair value hierarchy continued

Total assets – Shareholder assets 2017	Fair value £m	Amortised cost £m	Equity accounted/ tax assets[1] £m	Total £m
Goodwill and acquired value of in-force business and intangible assets	—	6,798	—	6,798
Interests in joint ventures and associates	—	—	507	507
Property and equipment	221	118	—	339
Investment property	575	—	—	575
Loans	24,306	209	—	24,515
Financial Investments				
Debt securities	49,186	—	—	49,186
Equity securities	995	—	—	995
Other investments	3,886	—	—	3,886
Reinsurance assets	3	7,274	—	7,277
Deferred tax assets	—	—	146	146
Current tax assets	—	—	94	94
Receivables and other financial assets	—	6,351	—	6,351
Deferred acquisition costs and other assets	—	5,952	—	5,952
Prepayments and accrued income	—	1,359	—	1,359
Cash and cash equivalents	13,231	—	—	13,231
Total	**92,403**	**28,061**	**747**	**121,211**
Total %	**76.2%**	**23.2%**	**0.6%**	**100.0%**
Assets of operations classified as held for sale	1,052	1,804	2	2,858
Total (excluding assets held for sale)	**91,351**	**26,257**	**745**	**118,353**
Total % (excluding assets held for sale)	**77.2%**	**22.2%**	**0.6%**	**100.0%**
2016 Total	92,105	28,469	942	121,516
2016 Total %	75.8%	23.4%	0.8%	100.0%

1 Within the Group's statement of financial position, assets are recognised for deferred tax and current tax. The valuation basis of these assets does not directly fall within any of the categories outlined above. As such, these assets have been reported together with equity accounted items within the analysis of the Group's assets.

Fair value hierarchy

To provide further information on the valuation techniques we use to measure assets carried at fair value, we have categorised the measurement basis for assets carried at fair value into a 'fair value hierarchy' described as follows, based on the lowest level input that is significant to the valuation as a whole:

- Inputs to Level 1 fair values are quoted prices (unadjusted) in active markets for identical assets.
- Inputs to Level 2 fair values are inputs other than quoted prices included within Level 1 that are observable for the asset, either directly or indirectly. If the asset has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the asset.
- Inputs to Level 3 fair values are unobservable inputs for the asset. 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 at the measurement date (or market information for the inputs to any valuation models). As such unobservable inputs reflect the assumption the business unit considers that market participants would use in pricing the asset. Examples are investment property, certain private equity investment and private placements.

	Fair value hierarchy						
Investment property and financial assets – Total 2017	Level 1 £m	Level 2 £m	Level 3 £m	Sub-total fair value £m	Amortised cost £m	Less: Assets of operations classified as held for sale £m	Balance sheet total £m
Investment property	—	—	10,797	10,797	—	—	10,797
Loans	—	449	23,949	24,398	3,465	(6)	27,857
Debt securities	108,535	51,921	15,492	175,948	—	(1,140)	174,808
Equity securities	89,313	—	850	90,163	—	(195)	89,968
Other investments (including derivatives)	43,556	5,194	4,527	53,277	—	(6,971)	46,306
Assets of operations classified as held for sale	—	—	—	—	—	8,312	8,312
Total	**241,404**	**57,564**	**55,615**	**354,583**	**3,465**	**—**	**358,048**
Total %	**67.4%**	**16.1%**	**15.5%**	**99.0%**	**1.0%**	**—**	**100.0%**
Assets of operations classified as held for sale	6,192	27	2,093	8,312	—	—	8,312
Total (excluding assets held for sale)	**235,212**	**57,537**	**53,522**	**346,271**	**3,465**	**—**	**349,736**
Total % (excluding assets held for sale)	**67.3%**	**16.4%**	**15.3%**	**99.0%**	**1.0%**	**—**	**100.0%**
2016 Total[1]	215,221	73,387	54,032	342,640	3,576	—	346,216
2016 Total %	62.2%	21.2%	15.6%	99.0%	1.0%	—	100.0%

1 Following a review of the Group's investment classifications, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to note D3.3 for further details of this adjustment and the financial statement impact arising.

At 31 December 2017, the proportion of total financial assets classified as Level 1 in the fair value hierarchy increased to 67.4% (*2016: 62.2%*). The proportion of Level 2 loans and financial assets was 16.1% (*2016: 21.2%*) and investment properties, loans and financial assets classified as Level 3 was 15.5% (*2016: 15.6%*).

Analysis of assets continued

D3 – Analysis of asset quality

The analysis of assets that follows provides a breakdown of information about the assets held by the Group.

D3.1 – Investment property

	2017				2016			
	Fair value hierarchy				Fair value hierarchy			
Investment property – Total	Level 1 £m	Level 2 £m	Level 3 £m	Total £m	Level 1 £m	Level 2 £m	Level 3 £m	Total £m
Lease to third parties under operating leases	—	—	10,514	10,514	—	—	10,754	10,754
Vacant investment property/held for capital appreciation	—	—	283	283	—	—	62	62
Total	—	—	10,797	10,797	—	—	10,816	10,816
Total %	—	—	100.0%	100.0%	—	—	100.0%	100.0%
Assets of operations classified as held for sale	—	—	—	—	—	—	48	48
Total (excluding assets held for sale)	—	—	10,797	10,797	—	—	10,768	10,768
Total % (excluding assets held for sale)	—	—	100.0%	100.0%	—	—	100.0%	100.0%

	2017				2016			
	Fair value hierarchy				Fair value hierarchy			
Investment property – Policyholder assets	Level 1 £m	Level 2 £m	Level 3 £m	Total £m	Level 1 £m	Level 2 £m	Level 3 £m	Total £m
Lease to third parties under operating leases	—	—	6,082	6,082	—	—	6,612	6,612
Vacant investment property/held for capital appreciation	—	—	174	174	—	—	13	13
Total	—	—	6,256	6,256	—	—	6,625	6,625
Total %	—	—	100.0%	100.0%	—	—	100.0%	100.0%
Assets of operations classified as held for sale	—	—	—	—	—	—	—	—
Total (excluding assets held for sale)	—	—	6,256	6,256	—	—	6,625	6,625
Total % (excluding assets held for sale)	—	—	100.0%	100.0%	—	—	100.0%	100.0%

	2017				2016			
	Fair value hierarchy				Fair value hierarchy			
Investment property – Participating fund assets	Level 1 £m	Level 2 £m	Level 3 £m	Total £m	Level 1 £m	Level 2 £m	Level 3 £m	Total £m
Lease to third parties under operating leases	—	—	3,871	3,871	—	—	3,616	3,616
Vacant investment property/held for capital appreciation	—	—	95	95	—	—	48	48
Total	—	—	3,966	3,966	—	—	3,664	3,664
Total %	—	—	100.0%	100.0%	—	—	100.0%	100.0%
Assets of operations classified as held for sale	—	—	—	—	—	—	48	48
Total (excluding assets held for sale)	—	—	3,966	3,966	—	—	3,616	3,616
Total % (excluding assets held for sale)	—	—	100.0%	100.0%	—	—	100.0%	100.0%

	2017				2016			
	Fair value hierarchy				Fair value hierarchy			
Investment property – Shareholder assets	Level 1 £m	Level 2 £m	Level 3 £m	Total £m	Level 1 £m	Level 2 £m	Level 3 £m	Total £m
Lease to third parties under operating leases	—	—	561	561	—	—	526	526
Vacant investment property/held for capital appreciation	—	—	14	14	—	—	1	1
Total	—	—	575	575	—	—	527	527
Total %	—	—	100.0%	100.0%	—	—	100.0%	100.0%
Assets of operations classified as held for sale	—	—	—	—	—	—	—	—
Total (excluding assets held for sale)	—	—	575	575	—	—	527	527
Total % (excluding assets held for sale)	—	—	100.0%	100.0%	—	—	100.0%	100.0%

Within total investment properties by value 94.7% (*2016: 95.1%*) are held in policyholder or participating fund assets. Shareholder exposure to investment properties is principally through investments in UK and French commercial property.

Investment properties are stated at their market values as assessed by qualified external independent valuers. The investment properties are valued on an income basis that is based on current rental income plus anticipated uplifts at the next rent review, lease expiry, or break option taking into consideration lease incentives and assuming no further growth in the estimated rental value of the property. This uplift and the discount rate are derived from rates implied by recent market transactions on similar property. These inputs are deemed unobservable.

Within total investment properties by value 97.4% (*2016: 99.4%*) are leased to third parties under operating leases, with the remainder either being vacant or held for capital appreciation.

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.2 – Loans

The Group loan portfolio is principally made up of:

- 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;
- Mortgage loans collateralised by property assets;
- Healthcare, Infrastructure & Private Finance Initiative ('PFI') other loans; and
- Other loans, which include loans to brokers and intermediaries.

Loans with fixed maturities, including policy loans, mortgage loans (at amortised cost) and loans and advances to banks, are recognised when cash is advanced to borrowers. These 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.

For certain mortgage loans, the Group has taken advantage of the fair value option under IAS 39 to present the mortgages, associated borrowings, other liabilities and derivative financial instruments at fair value, since they are managed together on a fair value basis. The mortgage loans are not traded in active markets. These investments are classified as level 3 as the assumptions used to derive the credit risk, liquidity premium and property risk are not deemed to be market observable.

Loans – Total 2017	United Kingdom £m	Canada £m	Europe £m	Asia £m	Total £m
Policy loans	**21**	**—**	**738**	**34**	**793**
Loans and advances to banks	**2,524**	**—**	**—**	**—**	**2,524**
Healthcare, Infrastructure & PFI other loans	**3,367**	**—**	**196**	**—**	**3,563**
Mortgage loans	**20,279**	**—**	**1**	**—**	**20,280**
Other loans	**509**	**180**	**14**	**—**	**703**
Total	**26,700**	**180**	**949**	**34**	**27,863**
Total %	**95.9%**	**0.6%**	**3.4%**	**0.1%**	**100.0%**
Assets of operations classified as held for sale	**—**	**—**	**6**	**—**	**6**
Total (excluding assets held for sale)	**26,700**	**180**	**943**	**34**	**27,857**
Total % (excluding assets held for sale)	**95.9%**	**0.6%**	**3.4%**	**0.1%**	**100.0%**
2016 Total	23,699	170	953	37	24,859
2016 Total %	95.4%	0.7%	3.8%	0.1%	100.0%

Loans – Policyholders assets 2017	United Kingdom £m	Canada £m	Europe £m	Asia £m	Total £m
Policy loans	**—**	**—**	**—**	**8**	**8**
Loans and advances to banks	**—**	**—**	**—**	**—**	**—**
Healthcare, Infrastructure & PFI other loans	**—**	**—**	**—**	**—**	**—**
Mortgage loans	**—**	**—**	**—**	**—**	**—**
Other loans	**—**	**—**	**—**	**—**	**—**
Total	**—**	**—**	**—**	**8**	**8**
Total %	**—**	**—**	**—**	**100.0%**	**100.0%**
Assets of operations classified as held for sale	**—**	**—**	**—**	**—**	**—**
Total (excluding assets held for sale)	**—**	**—**	**—**	**8**	**8**
Total % (excluding assets held for sale)	**—**	**—**	**—**	**100.0%**	**100.0%**
2016 Total	1,019	—	—	8	1,027
2016 Total %	99.2%	—	—	0.8%	100.0%

Loans – Participating fund assets 2017	United Kingdom £m	Canada £m	Europe £m	Asia £m	Total £m
Policy loans	**16**	**—**	**735**	**24**	**775**
Loans and advances to banks	**1,970**	**—**	**—**	**—**	**1,970**
Healthcare, Infrastructure & PFI other loans	**—**	**—**	**—**	**—**	**—**
Mortgage loans	**90**	**—**	**1**	**—**	**91**
Other loans	**504**	**—**	**—**	**—**	**504**
Total	**2,580**	**—**	**736**	**24**	**3,340**
Total %	**77.3%**	**—**	**22.0%**	**0.7%**	**100.0%**
Assets of operations classified as held for sale	**—**	**—**	**—**	**—**	**—**
Total (excluding assets held for sale)	**2,580**	**—**	**736**	**24**	**3,340**
Total % (excluding assets held for sale)	**77.3%**	**—**	**22.0%**	**0.7%**	**100.0%**
2016 Total	1,613	—	830	27	2,470
2016 Total %	65.3%	—	33.6%	1.1%	100.0%

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.2 – Loans continued

Loans – Shareholder assets 2017	United Kingdom £m	Canada £m	Europe £m	Asia £m	Total £m
Policy loans	**5**	**—**	**3**	**2**	**10**
Loans and advances to banks	**554**	**—**	**—**	**—**	**554**
Healthcare, Infrastructure & PFI other loans	**3,367**	**—**	**196**	**—**	**3,563**
Mortgage loans	**20,189**	**—**	**—**	**—**	**20,189**
Other loans	**5**	**180**	**14**	**—**	**199**
Total	**24,120**	**180**	**213**	**2**	**24,515**
Total %	**98.4%**	**0.7%**	**0.9%**	**—**	**100.0%**
Assets of operations classified as held for sale	**—**	**—**	**6**	**—**	**6**
Total (excluding assets held for sale)	**24,120**	**180**	**207**	**2**	**24,509**
Total % (excluding assets held for sale)	**98.5%**	**0.7%**	**0.8%**	**—**	**100.0%**
2016 Total	21,067	170	123	2	21,362
2016 Total %	98.6%	0.8%	0.6%	—	100.0%

The value of the Group's loan portfolio (including Policyholder, Participating Fund and Shareholder assets) excluding assets held for sale at 31 December 2017 stood at £27.9 billion (*2016: £24.8 billion*), an increase of £3.1 billion.

The total shareholder exposure to loans was £24.5 billion (*2016: £21.4 billion*) and represented 87.8% of the total loan portfolio, with the remaining 12.2% mainly held in participating funds (£3.3 billion (*2016: £2.4 billion*)) with £8 million (*2016: £1.0 billion*) in policyholder assets.

Of the Group's total loan portfolio excluding assets held for sale (including Policyholder, Participating Fund and Shareholder assets), 73% (*2016: 74%)* is invested in mortgage loans.

Primary Healthcare, Infrastructure and PFI other loans included within shareholder assets are £3.6 billion *(2016: £2.5 billion)* and are secured against the income from healthcare and educational premises.

Mortgage loans – Shareholder assets

2017	Total £m
Non-securitised mortgage loans	
– Residential (Equity release)	**6,799**
– Commercial	**7,547**
– Healthcare, Infrastructure & PFI mortgage loans	**3,380**
	17,726
Securitised mortgage loans	**2,463**
Total	**20,189**
Assets of operations classified as held for sale	**—**
Total (excluding assets held for sale)	**20,189**
2016 Total	**18,133**

The Group's mortgage loan portfolio is mainly focussed in the UK, across various sectors, including residential loans, commercial loans and government supported healthcare loans. Aviva's shareholder exposure to mortgage loans accounts for 82% of total shareholder asset loans. This section focuses on explaining the shareholder risk within these exposures.

United Kingdom
(Non-securitised mortgage loans)
Residential

The UK non-securitised residential mortgage portfolio has a total value at the end of 2017 of £6.8 billion (*2016: £5.7 billion*).

The movement in the year is due to £0.7 billion of net new loans and £0.1 billion of accrued interest (net of redemptions). Fair value movements were £0.3 billion.

These mortgages are all in the form of equity release, whereby homeowners mortgage their property to release cash equity. Due to the structure of equity release mortgages, whereby interest amounts due are not paid in cash but instead rolled into the amount outstanding, they predominantly have a current Loan to Value ('LTV') of below 70%. The average LTV across the portfolio is 24.6% (*2016: 24.5%).* The change from prior year reflects the change in portfolio mix following the transfer, as outlined above.

Analysis of assets continued

D3 – Analysis of asset quality continued
D3.2 – Loans continued
Commercial
Gross exposure by loan to value and arrears is shown in the table below.

Shareholder assets

2017	>120% £m	115–120% £m	110–115% £m	105–110% £m	100–105% £m	95–100% £m	90–95% £m	80–90% £m	70–80% £m	<70% £m	Total £m
Not in arrears	—	—	—	—	—	—	333	50	684	6,480	7,547
0 – 3 months	—	—	—	—	—	—	—	—	—	—	—
3 – 6 months	—	—	—	—	—	—	—	—	—	—	—
6 – 12 months	—	—	—	—	—	—	—	—	—	—	—
> 12 months	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	333	50	684	6,480	7,547

Of the £7.5 billion *(2016: £6.7 billion)* of UK non-securitised commercial mortgage loans in the shareholder fund held by UK Life, £7.1 billion are used to back annuity liabilities and are stated on a fair value basis. The loan exposures for UK Life are calculated on a discounted cash flow basis, and include a risk adjustment through the use of Credit Risk Adjusted Value ('CRAV') methods.

For commercial mortgages loan service collection ratios, a key indicator of mortgage portfolio performance, improved to 2.23x (*2016: 1.89x*). Loan Interest Cover (LIC), which is defined as the annual net rental income (including rental deposits and less ground rent) divided by the annual loan interest service, also improved to 2.51x (*2016: 2.18x*). Average mortgage LTV decreased by 2pp compared to 2016 from 58% to 56% (CRAV). There are no loans in arrears included within our shareholder assets (*2016: £0.1 million*).

Commercial mortgages and Healthcare, Infrastructure & PFI loans are held at fair value on the asset side of the statement of financial position. Insurance liabilities are valued using a discount rate derived from gross yield on assets, with adjustments to allow for risk. £13.9 billion of shareholder loan assets are backing annuity liabilities and comprise of commercial mortgage loans (£7.1 billion), Healthcare, Infrastructure and PFI mortgage loans (£3.4 billion) and Primary Healthcare, Infrastructure and PFI other loans (£3.4 billion). The Group carries a valuation allowance within the liabilities against the risk of default of commercial mortgages, including Healthcare and PFI mortgages, of £0.4 billion which equates to 40 bps at 31 December 2017 (*2016: 50 bps*). The total valuation allowance held by Aviva Annuity UK Limited in respect of corporate bonds and mortgages, including Healthcare and PFI mortgages are £1.3 billion (*2016: £1.3 billion*) over the remaining term of the UK Life corporate bond and mortgage portfolio.

The UK portfolio remains well diversified in terms of property type, location and tenants as well as the spread of loans written over time. The risks in commercial mortgages are addressed through several layers of protection with the mortgage risk profile being primarily driven by the ability of the underlying tenant rental income to cover loan interest and amortisation. Should any single tenant default on their rental payment, rental from other tenants backing the same loan often ensures the loan interest cover does not fall below 1.0x. Where there are multiple loans to a single borrower further protection may be achieved through cross-charging (or pooling) such that any single loan is also supported by rents received within other pool loans. Additionally, there may be support provided by the borrower of the loan itself and further loss mitigation from any general floating charge held over assets within the borrower companies.

If the LIC cover falls below 1.0x and the borrower defaults then Aviva still retains the option of selling the security or restructuring the loans and benefiting from the protection of the collateral. A combination of these benefits and the high recovery levels afforded by property collateral (compared to corporate debt or other uncollateralised credit exposures) results in the economic exposure being significantly lower than the gross exposure reported above. We will continue to actively manage this position.

Healthcare
Primary Healthcare, Infrastructure and PFI mortgage loans included within shareholder assets of £3.4 billion (*2016: £3.3 billion*) are secured against primary health care premises (including General Practitioner surgeries), education, social housing and 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.

On a market value basis, we estimate the average LTV of these mortgages to be 76% (*2016: 74%*), although as explained above, we do not consider this to be a key risk indicator. Income support from the Government bodies and the social need for these premises provide sustained income stability. Aviva therefore considers these loans to be lower risk relative to other mortgage loans.

Securitised mortgage loans
Securitised residential mortgages held are predominantly issued through vehicles in the UK.

As at 31 December 2017, the Group has £2.5 billion (*2016: £2.4 billion*) securitised mortgage loans. Funding for the securitised residential mortgage assets was obtained by issuing loan note securities. Of these loan notes approximately £231 million (*2016: £217 million*) are held by Group companies. The remainder is held by third parties external to Aviva. As any cash shortfall arising once all mortgages have redeemed is borne by the loan note holders, the majority of the credit risk of these mortgages is borne by third parties.

These mortgages are all in the form of equity release, whereby homeowners mortgage their property to release cash equity. Due to the structure of equity release mortgages, whereby interest amounts due are not paid in cash but instead rolled into the amount outstanding, they predominantly have a current Loan to Value ('LTV') of below 70%. The average LTV across the securitised mortgage loans is 37.2%.

D3 – Analysis of asset quality continued
D3.3 – Financial investments

	2017				2016			
Financial Investments – Total	Cost/ amortised cost £m	Unrealised gains £m	Impairment and unrealised losses £m	Fair value £m	Cost/ amortised cost £m	Unrealised gains £m	Impairment and unrealised losses £m	Fair value £m
Debt securities	**162,092**	**20,244**	**(6,388)**	**175,948**	172,007	16,014	(1,313)	186,708
Equity securities	**75,060**	**16,819**	**(1,716)**	**90,163**	60,194	14,152	(1,640)	72,706
Other investments	**37,570**	**15,930**	**(223)**	**53,277**	42,341	8,491	295	51,127
Total	**274,722**	**52,993**	**(8,327)**	**319,388**	274,542	38,657	(2,658)	310,541
Assets of operations classified as held for sale	**7,075**	**1,245**	**(14)**	**8,306**	9,872	865	(31)	10,706
Total (excluding assets held for sale)	**267,647**	**51,748**	**(8,313)**	**311,082**	264,670	37,792	(2,627)	299,835

Aviva holds large quantities of debt securities in the form of high quality bonds, primarily to match our liability to make guaranteed payments to policyholders. Some credit risk is taken, partly to increase returns to policyholders and partly to optimise the risk/return profile for shareholders. The risks are consistent with the products we offer and the related investment mandates, and are in line with our risk appetite.

The Group also holds equities, the majority of which are held in participating funds and policyholder funds, where they form an integral part of the investment expectations of policyholders and follow well-defined investment mandates. Some equities are also held in shareholder funds. The vast majority of equity investments are valued at quoted market prices and therefore classified as Level 1. Refer to D3.3.2 for further analysis of equities.

Other investments include investments such as unit trusts, derivative financial instruments and deposits with credit institutions. For further analysis, see D3.3.3.

Following a review of the Group's investment classifications, comparative amounts have been amended from those previously reported, reflecting the fact that equity and debt securities held indirectly through majority owned investment funds in the UK managed by third parties, which in 2016 were presented as unit trusts and other investment vehicles within other investments, are now presented as debt and equity securities. The effect of this change is to increase equity and debt securities by £3,434 million and £3,694 million respectively and decrease unit trusts and other investment vehicles within other investments by £7,128 million.

In addition, assets classified as held for sale of £10,706 million have been revised from available for sale to other than trading.

Analysis of assets continued

D3 – Analysis of asset quality continued
D3.3 – Financial investments continued
D3.3.1 – Debt securities

Debt securities – 2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total £m
UK Government	27,743	2,276	242	30,261
Non-UK government	37,948	11,283	3,510	52,741
Europe	30,991	6,368	2,966	40,325
North America	1,900	2,882	441	5,223
Asia Pacific & Other	5,057	2,033	103	7,193
Corporate bonds – Public utilities	4,383	6,206	540	11,129
Corporate convertible bonds	9	—	—	9
Other Corporate bonds	34,349	26,626	9,006	69,981
Other	4,103	5,530	2,194	11,827
Total	**108,535**	**51,921**	**15,492**	**175,948**
Total %	**61.7%**	**29.5%**	**8.8%**	**100.0%**
Assets of operations classified as held for sale	764	21	355	1,140
Total (excluding assets held for sale)	**107,771**	**51,900**	**15,137**	**174,808**
Total % (excluding assets held for sale)	**61.6%**	**29.7%**	**8.7%**	**100.0%**
2016 Total[1]	102,724	66,668	17,316	186,708
2016 Total %	55.0%	35.7%	9.3%	100.0%

Debt securities – Policyholders assets 2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total £m
UK Government	9,172	2	(1)	9,173
Non-UK government	4,983	726	6	5,715
Europe	1,453	385	1	1,839
North America	1,168	294	4	1,466
Asia Pacific & Other	2,362	47	1	2,410
Corporate bonds – Public utilities	810	393	5	1,208
Corporate convertible bonds	—	—	—	—
Other Corporate bonds	10,123	1,863	556	12,542
Other	1,289	1,060	—	2,349
Total	**26,377**	**4,044**	**566**	**30,987**
Total %	**85.1%**	**13.1%**	**1.8%**	**100.0%**
Assets of operations classified as held for sale	—	11	355	366
Total (excluding assets held for sale)	**26,377**	**4,033**	**211**	**30,621**
Total % (excluding assets held for sale)	**86.1%**	**13.2%**	**0.7%**	**100.0%**
2016 Total[1]	17,521	11,193	803	29,517
2016 Total %	59.4%	37.9%	2.7%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.1 – Debt securities continued

Debt securities – Participating fund assets 2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total £m
UK Government	9,269	975	77	10,321
Non-UK government	29,380	4,103	1,892	35,375
Europe	26,085	2,651	1,847	30,583
North America	691	22	1	714
Asia Pacific & Other	2,604	1,430	44	4,078
Corporate bonds – Public utilities	3,419	1,128	17	4,564
Corporate convertible bonds	9	—	—	9
Other Corporate bonds	23,027	9,544	5,792	38,363
Other	2,609	2,689	1,845	7,143
Total	**67,713**	**18,439**	**9,623**	**95,775**
Total %	**70.7%**	**19.3%**	**10.0%**	**100.0%**
Assets of operations classified as held for sale	—	—	—	—
Total (excluding assets held for sale)	**67,713**	**18,439**	**9,623**	**95,775**
Total % (excluding assets held for sale)	**70.7%**	**19.3%**	**10.0%**	**100.0%**
2016 Total[1]	70,161	23,256	10,280	103,697
2016 Total %	67.7%	22.4%	9.9%	100.0%

Debt securities – Shareholder assets 2017	Fair value hierarchy Level 1 £m	Level 2 £m	Level 3 £m	Total £m
UK Government	9,302	1,299	166	10,767
Non-UK government	3,585	6,454	1,612	11,651
Europe	3,453	3,332	1,118	7,903
North America	41	2,566	436	3,043
Asia Pacific & Other	91	556	58	705
Corporate bonds – Public utilities	154	4,685	518	5,357
Corporate convertible bonds	—	—	—	—
Other Corporate bonds	1,199	15,219	2,658	19,076
Other	205	1,781	349	2,335
Total	**14,445**	**29,438**	**5,303**	**49,186**
Total %	**29.3%**	**59.9%**	**10.8%**	**100.0%**
Assets of operations classified as held for sale	764	10	—	774
Total (excluding assets held for sale)	**13,681**	**29,428**	**5,303**	**48,412**
Total % (excluding assets held for sale)	**28.2%**	**60.8%**	**11.0%**	**100.0%**
2016 Total[1]	15,042	32,219	6,233	53,494
2016 Total %	28.1%	60.2%	11.7%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.

Within the shareholder assets 29.3% (*2016: 28.1%)* of exposure to debt securities is based on quoted prices in an active market and are therefore classified as fair value level 1.

Within the shareholder assets 59.9% (*2016: 60.2%*) of exposure to debt securities is based on inputs other than quoted prices and are observable for the asset or liability, either directly or indirectly and are therefore classified as fair value level 2.

Within the shareholder assets 10.8% (*2016: 11.7%)* of exposure to debt securities is fair valued using models with significant unobservable market parameters (classified as fair value 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.

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.1 – Debt securities continued

	External ratings						
Debt securities – Total 2017	AAA £m	AA £m	A £m	BBB £m	Less than BBB £m	Non-rated £m	Total £m
Government							
UK Government	164	29,756	75	—	138	109	30,242
UK local authorities	—	1	—	—	1	17	19
Non-UK Government	10,757	20,602	6,157	12,443	1,689	1,093	52,741
	10,921	50,359	6,232	12,443	1,828	1,219	83,002
Corporate							
Public utilities	2	175	4,165	5,517	670	600	11,129
Convertibles and bonds with warrants	—	—	—	9	—	—	9
Other corporate bonds	6,944	5,640	22,455	20,372	7,688	6,882	69,981
	6,946	5,815	26,620	25,898	8,358	7,482	81,119
Certificates of deposits	—	377	557	—	—	92	1,026
Structured							
RMBS[2] non-agency ALT A	—	—	—	—	—	—	—
RMBS[2] non-agency prime	12	27	93	1	59	—	192
RMBS[2] agency	53	—	—	—	—	—	53
	65	27	93	1	59	—	245
CMBS[3]	317	35	289	—	1	1	643
ABS[4]	38	465	469	101	81	—	1,154
CDO (including CLO)[5]	377	—	—	—	—	—	377
ABCP[6]	—	—	—	—	—	—	—
	732	500	758	101	82	1	2,174
Wrapped credit	—	18	485	81	43	12	639
Other	54	144	447	2,423	3,370	1,305	7,743
Total	18,718	57,240	35,192	40,947	13,740	10,111	175,948
Total %	10.6%	32.5%	20.0%	23.3%	7.8%	5.8%	100.0%
Assets of operations classified as held for sale	68	25	8	1,017	11	11	1,140
Total (excluding assets held for sale)	18,650	57,215	35,184	39,930	13,729	10,100	174,808
Total % (excluding assets held for sale)	10.7%	32.7%	20.1%	22.8%	7.9%	5.8%	100.0%
2016 Total[1]	22,030	62,495	35,403	44,660	11,163	10,957	186,708
2016 Total %	11.7%	33.5%	19.0%	23.9%	6.0%	5.9%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.
2 RMBS – Residential Mortgage Backed Security
3 CMBS – Commercial Mortgage Backed Security
4 ABS – Asset Backed Security
5 CDO – Collateralised Debt Obligation, CLO – Collateralised Loan Obligation
6 ABCP – Asset Backed Commercial Paper

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.1 – Debt securities continued

Debt securities – Policyholders assets 2017	AAA £m	AA £m	A £m	BBB £m (External ratings)	Less than BBB £m (External ratings)	Non-rated £m	Total £m
Government							
UK Government	164	8,871	—	—	138	—	9,173
UK local authorities	—	—	—	—	—	—	—
Non-UK Government	1,724	166	1,557	1,431	603	234	5,715
	1,888	9,037	1,557	1,431	741	234	14,888
Corporate							
Public utilities	—	17	431	392	363	5	1,208
Convertibles and bonds with warrants	—	—	—	—	—	—	—
Other corporate bonds	436	433	3,867	2,462	3,325	2,019	12,542
	436	450	4,298	2,854	3,688	2,024	13,750
Certificates of deposits	—	377	557	—	—	13	947
Structured							
RMBS[2] non-agency ALT A	—	—	—	—	—	—	—
RMBS[2] non-agency prime	—	2	12	—	—	—	14
RMBS[2] agency	—	—	—	—	—	—	—
	—	2	12	—	—	—	14
CMBS[3]	4	10	23	—	—	—	37
ABS[4]	—	—	35	2	22	—	59
CDO (including CLO)[5]	—	—	—	—	—	—	—
ABCP[6]	—	—	—	—	—	—	—
	4	10	58	2	22	—	96
Wrapped credit	—	—	—	4	—	—	4
Other	9	24	75	401	561	218	1,288
Total	2,337	9,900	6,557	4,692	5,012	2,489	30,987
Total %	7.6%	31.9%	21.2%	15.1%	16.2%	8.0%	100.0%
Assets of operations classified as held for sale	1	—	2	346	6	11	366
Total (excluding assets held for sale)	2,336	9,900	6,555	4,346	5,006	2,478	30,621
Total % (excluding assets held for sale)	7.7%	32.3%	21.4%	14.2%	16.3%	8.1%	100.0%
2016 Total[1]	1,661	8,946	5,011	6,028	4,002	3,869	29,517
2016 Total %	5.6%	30.3%	17.0%	20.4%	13.6%	13.1%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.
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D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.1 – Debt securities continued

Debt securities – Participating fund assets 2017	AAA £m	AA £m	A £m	BBB £m	Less than BBB £m	Non-rated £m	Total £m
	External ratings						
Government							
UK Government	—	10,285	1	—	—	33	10,319
UK local authorities	—	1	—	—	1	—	2
Non-UK Government	4,350	16,511	3,205	9,915	1,077	317	35,375
	4,350	26,797	3,206	9,915	1,078	350	45,696
Corporate							
Public utilities	2	61	1,241	2,799	277	184	4,564
Convertibles and bonds with warrants	—	—	—	9	—	—	9
Other corporate bonds	4,480	2,854	10,531	12,928	4,167	3,403	38,363
	4,482	2,915	11,772	15,736	4,444	3,587	42,936
Certificates of deposits	—	—	—	—	—	—	—
Structured							
RMBS[2] non-agency ALT A	—	—	—	—	—	—	—
RMBS[2] non-agency prime	11	15	16	—	10	—	52
RMBS[2] agency	—	—	—	—	—	—	—
	11	15	16	—	10	—	52
CMBS[3]	80	9	117	—	1	—	207
ABS[4]	—	91	160	59	16	—	326
CDO (including CLO)[5]	377	—	—	—	—	—	377
ABCP[6]	—	—	—	—	—	—	—
	457	100	277	59	17	—	910
Wrapped credit	—	5	81	10	—	—	96
Other	42	114	351	1,898	2,653	1,027	6,085
Total	9,342	29,946	15,703	27,618	8,202	4,964	95,775
Total %	9.7%	31.3%	16.4%	28.8%	8.6%	5.2%	100.0%
Assets of operations classified as held for sale	—	—	—	—	—	—	—
Total (excluding assets held for sale)	9,342	29,946	15,703	27,618	8,202	4,964	95,775
Total % (excluding assets held for sale)	9.7%	31.3%	16.4%	28.8%	8.6%	5.2%	100.0%
2016 Total[1]	13,070	33,782	16,508	29,533	6,586	4,218	103,697
2016 Total %	12.5%	32.6%	15.9%	28.5%	6.4%	4.1%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.
2 RMBS – Residential Mortgage Backed Security
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6 ABCP – Asset Backed Commercial Paper

D3 – Analysis of asset quality continued
D3.3 – Financial investments continued
D3.3.1 – Debt securities continued

Debt securities - Shareholder assets 2017	AAA £m	AA £m	A £m	External ratings BBB £m	Less than BBB £m	Non-rated £m	Total £m
Government							
UK Government	—	10,600	74	—	—	76	10,750
UK local authorities	—	—	—	—	—	17	17
Non-UK Government	4,683	3,925	1,395	1,097	9	542	11,651
	4,683	14,525	1,469	1,097	9	635	22,418
Corporate							
Public utilities	—	97	2,493	2,326	30	411	5,357
Convertibles and bonds with warrants	—	—	—	—	—	—	—
Other corporate bonds	2,028	2,353	8,057	4,982	196	1,460	19,076
	2,028	2,450	10,550	7,308	226	1,871	24,433
Certificates of deposits	—	—	—	—	—	79	79
Structured							
RMBS[2] non-agency ALT A	—	—	—	—	—	—	—
RMBS[2] non-agency prime	1	10	65	1	49	—	126
RMBS[2] agency	53	—	—	—	—	—	53
	54	10	65	1	49	—	179
CMBS[3]	233	16	149	—	—	1	399
ABS[4]	38	374	274	40	43	—	769
CDO (including CLO)[5]	—	—	—	—	—	—	—
ABCP[6]	—	—	—	—	—	—	—
	271	390	423	40	43	1	1,168
Wrapped credit	—	13	404	67	43	12	539
Other	3	6	21	124	156	60	370
Total	**7,039**	**17,394**	**12,932**	**8,637**	**526**	**2,658**	**49,186**
Total %	**14.2%**	**35.4%**	**26.3%**	**17.6%**	**1.1%**	**5.4%**	**100.0%**
Assets of operations classified as held for sale	67	25	6	671	5	—	774
Total (excluding assets held for sale)	**6,972**	**17,369**	**12,926**	**7,966**	**521**	**2,658**	**48,412**
Total % (excluding assets held for sale)	**14.3%**	**35.9%**	**26.7%**	**16.5%**	**1.1%**	**5.5%**	**100.0%**
2016 Total[1]	7,299	19,767	13,884	9,099	575	2,870	53,494
2016 Total %	13.7%	36.8%	26.0%	17.0%	1.1%	5.4%	100.0%

1 Following a review of the Group's investment classification, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to D3.3 for further details of this adjustment and the financial statement impact arising.
2 RMBS – Residential Mortgage Backed Security
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6 ABCP – Asset Backed Commercial Paper

Within shareholder assets debt securities, 46% of exposure is in government holdings *(2016: 43%)*. Our corporate debt securities portfolio represents 50% of total shareholder debt securities *(2016: 52%)*. At 31 December 2017, the proportion of our shareholder debt securities that are investment grade is 93.5% *(2016: 93.5%)*. The remaining 6.5% of shareholder debt securities that do not have an external rating of BBB or higher can be split as follows:

- 1.1% are debt securities that are rated as below investment grade;
- 5.4% are not rated by the major rating agencies.

The majority of non-rated corporate bonds are held by our businesses in the UK. Of the securities not rated by an external agency 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 £2.0 billion *(2016: £2.3 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.

The Group has limited shareholder exposure to CDOs, CLOs and 'Sub-prime' debt securities.

Out of the total asset backed securities (ABS), £713 million *(2016: £948 million)* are held by the UK Life business. The Group's shareholder holdings in ABS are investment grade of 94.1% *(2016: 95.7%)*. ABS that either have a rating below BBB or are not rated, represent approximately 0.1% of shareholder exposure to debt securities *(2016: 0.1%)*.

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.2 – Equity securities

Equity securities – Total assets	2017 Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
	Fair value hierarchy				Fair value hierarchy			
Public utilities	2,402	—	—	2,402	2,188	—	—	2,188
Banks, trusts and insurance companies	24,088	—	208	24,296	16,162	—	190	16,352
Industrial miscellaneous and all other	62,579	—	642	63,221	53,138	—	723	53,861
Non-redeemable preferred shares	244	—	—	244	305	—	—	305
Total	89,313	—	850	90,163	71,793	—	913	72,706
Total %	99.1%	—	0.9%	100.0%	98.7%	—	1.3%	100.0%
Assets of operations classified as held for sale	121	—	74	195	664	—	—	664
Total (excluding assets held for sale)	89,192	—	776	89,968	71,129	—	913	72,042
Total % (excluding assets held for sale)	99.1%	—	0.9%	100.0%	98.7%	—	1.3%	100.0%

Equity securities – Policyholder assets	2017 Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
	Fair value hierarchy				Fair value hierarchy			
Public utilities	2,042	—	—	2,042	1,767	—	—	1,767
Banks, trusts and insurance companies	19,784	—	13	19,797	12,322	—	5	12,327
Industrial miscellaneous and all other	52,179	—	64	52,243	41,447	—	19	41,466
Non-redeemable preferred shares	28	—	—	28	91	—	—	91
Total	74,033	—	77	74,110	55,627	—	24	55,651
Total %	99.9%	—	0.1%	100.0%	100.0%	—	—	100.0%
Assets of operations classified as held for sale	115	—	74	189	8	—	—	8
Total (excluding assets held for sale)	73,918	—	3	73,921	55,619	—	24	55,643
Total % (excluding assets held for sale)	100.0%	—	—	100.0%	100.0%	—	—	100.0%

Equity securities – Participating fund assets	2017 Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
	Fair value hierarchy				Fair value hierarchy			
Public utilities	356	—	—	356	415	—	—	415
Banks, trusts and insurance companies	4,270	—	89	4,359	3,715	—	104	3,819
Industrial miscellaneous and all other	9,776	—	563	10,339	11,585	—	689	12,274
Non-redeemable preferred shares	4	—	—	4	8	—	—	8
Total	14,406	—	652	15,058	15,723	—	793	16,516
Total %	95.7%	—	4.3%	100.0%	95.2%	—	4.8%	100.0%
Assets of operations classified as held for sale	—	—	—	—	656	—	—	656
Total (excluding assets held for sale)	14,406	—	652	15,058	15,067	—	793	15,860
Total % (excluding assets held for sale)	95.7%	—	4.3%	100.0%	95.0%	—	5.0%	100.0%

Equity securities – Shareholder assets	2017 Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
	Fair value hierarchy				Fair value hierarchy			
Public utilities	4	—	—	4	6	—	—	6
Banks, trusts and insurance companies	34	—	106	140	125	—	81	206
Industrial miscellaneous and all other	624	—	15	639	106	—	15	121
Non-redeemable preferred shares	212	—	—	212	206	—	—	206
Total	874	—	121	995	443	—	96	539
Total %	87.8%	—	12.2%	100.0%	82.2%	—	17.8%	100.0%
Assets of operations classified as held for sale	6	—	—	6	—	—	—	—
Total (excluding assets held for sale)	868	—	121	989	443	—	96	539
Total % (excluding assets held for sale)	87.8%	—	12.2%	100.0%	82.2%	—	17.8%	100.0%

1 Following a review of the Group's investment classifications, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to note D3.3 for further details of this adjustment and the financial statement impact arising.

Within our total shareholder exposure to equity securities 87.8% is based on quoted prices in an active market and as such is classified as level 1 *(2016: 82.2%)*.

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.3 – Other investments

Other investments – Total	2017 Fair value hierarchy Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Fair value hierarchy Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
Unit trusts and other investment vehicles	42,518	437	2,711	45,666	39,348	956	2,758	43,062
Derivative financial instruments	370	4,730	407	5,507	596	5,376	147	6,119
Deposits with credit institutions	161	—	—	161	325	—	—	325
Minority holdings in property management undertakings	—	27	1,408	1,435	—	27	1,159	1,186
Other	507	—	1	508	435	—	—	435
Total	43,556	5,194	4,527	53,277	40,704	6,359	4,064	51,127
Total %	81.8%	9.7%	8.5%	100.0%	79.6%	12.4%	8.0%	100.0%
Assets of operations classified as held for sale	5,307	—	1,664	6,971	2,122	119	63	2,304
Total (excluding assets held for sale)	38,249	5,194	2,863	46,306	38,582	6,240	4,001	48,823
Total % (excluding assets held for sale)	82.6%	11.2%	6.2%	100.0%	79.0%	12.8%	8.2%	100.0%

Other investments – Policyholder assets	2017 Fair value hierarchy Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Fair value hierarchy Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
Unit trusts and other investment vehicles	39,550	260	1,670	41,480	36,548	853	1,692	39,093
Derivative financial instruments	108	13	—	121	63	32	—	95
Deposits with credit institutions	147	—	—	147	294	—	—	294
Minority holdings in property management undertakings	—	—	183	183	—	—	172	172
Other	437	—	—	437	427	—	—	427
Total	40,242	273	1,853	42,368	37,332	885	1,864	40,081
Total %	95.0%	0.6%	4.4%	100.0%	93.1%	2.2%	4.7%	100.0%
Assets of operations classified as held for sale	5,231	—	1,660	6,891	1,876	85	39	2,000
Total (excluding assets held for sale)	35,011	273	193	35,477	35,456	800	1,825	38,081
Total % (excluding assets held for sale)	98.7%	0.8%	0.5%	100.0%	93.1%	2.1%	4.8%	100.0%

Other investments – Participating fund assets	2017 Fair value hierarchy Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Fair value hierarchy Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
Unit trusts and other investment vehicles	1,697	177	996	2,870	1,107	94	1,032	2,233
Derivative financial instruments	216	2,873	34	3,123	492	3,508	102	4,102
Deposits with credit institutions	10	—	—	10	28	—	—	28
Minority holdings in property management undertakings	—	—	1,020	1,020	—	—	825	825
Other	—	—	—	—	—	—	—	—
Total	1,923	3,050	2,050	7,023	1,627	3,602	1,959	7,188
Total %	27.4%	43.4%	29.2%	100.0%	22.6%	50.1%	27.3%	100.0%
Assets of operations classified as held for sale	—	—	—	—	246	34	24	304
Total (excluding assets held for sale)	1,923	3,050	2,050	7,023	1,381	3,568	1,935	6,884
Total % (excluding assets held for sale)	27.4%	43.4%	29.2%	100.0%	20.1%	51.8%	28.1%	100.0%

Other investments – Shareholders assets	2017 Fair value hierarchy Level 1 £m	2017 Level 2 £m	2017 Level 3 £m	2017 Total £m	2016[1] Fair value hierarchy Level 1 £m	2016[1] Level 2 £m	2016[1] Level 3 £m	2016[1] Total £m
Unit trusts and other investment vehicles	1,271	—	45	1,316	1,693	9	34	1,736
Derivative financial instruments	46	1,844	373	2,263	41	1,836	45	1,922
Deposits with credit institutions	4	—	—	4	3	—	—	3
Minority holdings in property management undertakings	—	27	205	232	—	27	162	189
Other	70	—	1	71	8	—	—	8
Total	1,391	1,871	624	3,886	1,745	1,872	241	3,858
Total %	35.8%	48.1%	16.1%	100.0%	45.2%	48.5%	6.3%	100.0%
Assets of operations classified as held for sale	76	—	4	80	—	—	—	—
Total (excluding assets held for sale)	1,315	1,871	620	3,806	1,745	1,872	241	3,858
Total % (excluding assets held for sale)	34.5%	49.2%	16.3%	100.0%	45.2%	48.5%	6.3%	100.0%

1 Following a review of the Group's investment classifications, comparative amounts in respect of unit trusts and other investment vehicles and equity and debt securities have been amended from those previously reported. Refer to note D3.3 for further details of this adjustment and the financial statement impact arising.

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.3 – Other investments continued

The unit trusts and other investment vehicles invest in a variety of assets, which can include cash equivalents, debt, equity and property securities. Total shareholder other investments classified as level 2 decreased during 2017 to 48.1% *(2016: 48.5%)*, primarily due a decrease in Unit trusts and other investment vehicles. Total shareholder other investments classified as level 3 have increased during 2017 to 16.1% *(2016: 6.3%)*, primarily due to disposals in minority holdings in property management undertakings.

In total 83.9% (*2016: 93.7%)* of total shareholder other investments are classified as level 1 or 2 in the fair value hierarchy.

D3.3.4 – Available for sale investments – Impairments and duration and amount of unrealised losses

The impairment expense during 2017 relating to AFS debt securities and other investments was £nil (*2016: £nil*) and £nil (*2016: £nil*) respectively.

Total unrealised losses on AFS debt securities, equity securities and other investments at 31 December 2017 was £1 million (*2016: £2 million*), £nil (*2016: £nil*) and £nil (*2016: £nil*) respectively.

	0 – 6 months		7 – 12 months		more than 12 months		Total	
2017	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m
Less than 20% loss position:								
Debt securities	—	—	**3**	—	**47**	**(1)**	**50**	**(1)**
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	**3**	—	**47**	**(1)**	**50**	**(1)**
20%-50% loss position:								
Debt securities	—	—	—	—	—	—	—	—
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Greater than 50% loss position:								
Debt securities	—	—	—	—	—	—	—	—
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Total								
Debt securities	—	—	**3**	—	**47**	**(1)**	**50**	**(1)**
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	**3**	—	**47**	**(1)**	**50**	**(1)**
Assets of operations classified as held for sale	—	—	—	—	—	—	—	—
Total (excluding assets held for sale)	—	—	**3**	—	**47**	**(1)**	**50**	**(1)**

1 Only includes AFS securities that are in unrealised loss positions.

	0 – 6 months		7 – 12 months		more than 12 months		Total	
2016	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m	Gross unrealised £m	Fair value[1] £m
Less than 20% loss position:								
Debt securities	—	—	6	—	73	(2)	79	(2)
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	6	—	73	(2)	79	(2)
20%-50% loss position:								
Debt securities	—	—	—	—	—	—	—	—
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Greater than 50% loss position:								
Debt securities	—	—	—	—	—	—	—	—
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Total								
Debt securities	—	—	6	—	73	(2)	79	(2)
Equity securities	—	—	—	—	—	—	—	—
Other investments	—	—	—	—	—	—	—	—
	—	—	6	—	73	(2)	79	(2)
Assets of operations classified as held for sale	—	—	—	—	—	—	—	—
Total (excluding assets held for sale)	—	—	6	—	73	(2)	79	(2)

1 Only includes AFS securities that are in unrealised loss positions.

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.5 – Exposures to peripheral European countries

Included in our debt securities and other financial assets are exposures to peripheral European countries. All of these assets are valued on a mark-to-market basis under IAS 39, and therefore our statement of financial position and income statement already reflect any reduction in value between the date of purchase and the balance sheet date. 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.

Net of non-controlling interests, our direct shareholder and participating fund asset exposure to the government (and local authorities and agencies) of Italy is £6.6 billion *(2016: £5.8 billion).*

Direct sovereign exposures to Greece, Ireland, Portugal, Italy and Spain (net of non-controlling interests, excluding policyholder assets)

	Participating		Shareholder		Total	
	2017 £bn	2016 £bn	**2017 £bn**	2016 £bn	**2017 £bn**	2016 £bn
Greece	**—**	—	**—**	—	**—**	—
Ireland	**0.7**	0.7	**0.1**	0.1	**0.8**	0.8
Portugal	**0.1**	0.1	**—**	—	**0.1**	0.1
Italy	**6.0**	5.4	**0.6**	0.4	**6.6**	5.8
Spain	**0.3**	1.0	**—**	0.4	**0.3**	1.4
Total Greece, Ireland, Portugal, Italy and Spain	**7.1**	7.2	**0.7**	0.9	**7.8**	8.1

Direct sovereign exposures to Greece, Ireland, Portugal, Italy and Spain (gross of non-controlling interests, excluding policyholder assets)

	Participating		Shareholder		Total	
	2017 £bn	2016 £bn	**2017 £bn**	2016 £bn	**2017 £bn**	2016 £bn
Greece	**—**	—	**—**	—	**—**	—
Ireland	**0.7**	0.7	**0.1**	0.1	**0.8**	0.8
Portugal	**0.1**	0.1	**—**	—	**0.1**	0.1
Italy	**8.2**	7.5	**0.8**	0.5	**9.0**	8.0
Spain	**0.3**	1.4	**0.2**	0.7	**0.5**	2.1
Total Greece, Ireland, Portugal, Italy and Spain	**9.3**	9.7	**1.1**	1.3	**10.4**	11.0

D3.3.6 – Non-UK Government debt securities (gross of non-controlling interests)

	Policyholder		Participating		Shareholder		Total	
Non-UK Government Debt Securities	**2017 £m**	2016[1] £m	**2017 £m**	2016[1] £m	**2017 £m**	2016[1] £m	**2017 £m**	2016[1] £m
Austria	**5**	11	**550**	715	**127**	138	**682**	864
Belgium	**22**	21	**967**	1,273	**314**	357	**1,303**	1,651
France	**133**	115	**13,454**	13,285	**2,093**	1,859	**15,680**	15,259
Germany	**127**	142	**1,437**	1,629	**615**	606	**2,179**	2,377
Greece	**—**	—	**—**	—	**—**	—	**—**	—
Ireland	**3**	3	**679**	662	**84**	130	**766**	795
Italy	**183**	223	**8,223**	7,500	**823**	556	**9,229**	8,279
Netherlands	**43**	47	**88**	976	**322**	329	**453**	1,352
Poland	**845**	807	**790**	769	**598**	384	**2,233**	1,960
Portugal	**2**	2	**136**	118	**—**	—	**138**	120
Spain	**87**	88	**314**	1,386	**233**	659	**634**	2,133
European Supranational debt	**213**	174	**1,841**	2,404	**1,777**	1,821	**3,831**	4,399
Other European countries	**176**	272	**2,104**	1,029	**917**	642	**3,197**	1,943
Europe	**1,839**	1,905	**30,583**	31,746	**7,903**	7,481	**40,325**	41,132
Canada	**23**	16	**53**	174	**2,512**	2,397	**2,588**	2,587
United States	**1,443**	1,424	**661**	871	**531**	1,022	**2,635**	3,317
North America	**1,466**	1,440	**714**	1,045	**3,043**	3,419	**5,223**	5,904
Singapore	**14**	2	**558**	904	**297**	330	**869**	1,236
Other	**2,396**	2,634	**3,520**	2,819	**408**	143	**6,324**	5,596
Asia Pacific and other	**2,410**	2,636	**4,078**	3,723	**705**	473	**7,193**	6,832
Total	**5,715**	5,981	**35,375**	36,514	**11,651**	11,373	**52,741**	53,868
Assets of operations classified as held for sale	**1**	—	**—**	2,325	**531**	—	**532**	2,325
Total (excluding assets held for sale)	**5,714**	5,981	**35,375**	34,189	**11,120**	11,373	**52,209**	51,543

At 31 December 2017, the Group's total government (non-UK) debt securities stood at £52.7 billion (*2016: £53.9 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 £11.7 billion *(2016: £11.4 billion)*. The primary exposures, relative to total shareholder (non-UK) government debt exposure, are to Canadian (22%), French (18%), Italian (7%), German (5%), Polish (5%), and US (5%) government debt securities.

D3 – Analysis of asset quality continued

D3.3 – Financial investments continued

D3.3.6 – Non-UK Government debt securities (gross of non-controlling interests) continued

The participating funds exposure to (non-UK) government debt amounts to £35.4 billion (*2016: £36.5 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 (23%), Germany (4%), Belgium (3%), Poland (2%), and Ireland (2%).

D3.3.7 – Exposure to worldwide bank 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		
2017	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	0.6	0.2	0.8
Denmark	—	—	—	0.6	—	0.6
France	0.5	0.1	0.6	2.6	0.6	3.2
Germany	—	—	—	0.5	0.3	0.8
Ireland	—	—	—	—	—	—
Italy	—	—	—	0.1	—	0.1
Netherlands	0.4	0.2	0.6	1.4	0.2	1.6
Spain	0.4	—	0.4	0.3	0.1	0.4
Sweden	0.2	—	0.2	0.4	0.1	0.5
Switzerland	—	—	—	1.3	—	1.3
United Kingdom	1.3	0.4	1.7	1.4	0.8	2.2
United States	1.0	0.2	1.2	1.7	0.1	1.8
Other	0.4	0.1	0.5	1.2	0.1	1.3
Total	**4.4**	**1.0**	**5.4**	**12.1**	**2.5**	**14.6**
Assets of operations classified as held for sale	—	—	—	—	—	—
Total (excluding assets held for sale)	**4.4**	**1.0**	**5.4**	**12.1**	**2.5**	**14.6**
2016 Total	5.4	1.2	6.6	14.8	3.1	17.9

Net of non-controlling interests, our direct shareholder assets exposure to worldwide bank debt securities is £5.4 billion (*2016: £6.6 billion*). The majority of our holding (81%) is in senior debt. The primary exposures are to UK (31%), US (22%), Dutch (11%), and French (11%) 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 £14.6 billion *(2016: £17.9 billion)*. The majority of the exposure (83%) is in senior debt. Participating funds are most exposed to French (22%), UK (15%) 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		
2017	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	0.6	0.2	0.8
Denmark	—	—	—	0.6	—	0.6
France	0.5	0.1	0.6	2.7	0.6	3.3
Germany	—	—	—	0.6	0.3	0.9
Ireland	—	—	—	—	—	—
Italy	—	—	—	0.2	—	0.2
Netherlands	0.4	0.2	0.6	1.4	0.2	1.6
Spain	0.4	—	0.4	0.3	0.1	0.4
Sweden	0.2	—	0.2	0.4	0.1	0.5
Switzerland	—	—	—	1.3	—	1.3
United Kingdom	1.3	0.4	1.7	1.5	0.8	2.3
United States	1.0	0.2	1.2	1.7	0.1	1.8
Other	0.4	0.1	0.5	1.2	0.1	1.3
Total	**4.4**	**1.0**	**5.4**	**12.5**	**2.5**	**15.0**
Assets of operations classified as held for sale	—	—	—	—	—	—
Total (excluding assets held for sale)	**4.4**	**1.0**	**5.4**	**12.5**	**2.5**	**15.0**
2016 Total	5.5	1.2	6.7	16.2	3.3	19.5

Gross of non-controlling interests, our direct shareholder assets exposure to worldwide bank debt securities is £5.4 billion *(2016: £6.7 billion)*. The majority of our holding (81%) is in senior debt. The primary exposures are to UK (31%), US (22%), Dutch (11%), and French (11%) 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 £15.0 billion *(2016: £19.5 billion)*. The majority of the exposure (83%) is in senior debt. Participating funds are most exposed to French (22%), UK (15%) and US (12%) banks.

Analysis of assets continued

D3 – Analysis of asset quality continued

D3.4 – Reinsurance assets

The Group assumes and cedes reinsurance in the normal course of business, with retention limits varying by line of business. Reinsurance assets primarily include balances due from both insurance and reinsurance companies for ceded insurance liabilities. Amounts recoverable from reinsurers are estimated in a manner consistent with the outstanding claims provisions or settled claims associated with the reinsured policies and in accordance with the relevant reinsurance contract.

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.

For the table below, reinsurance asset credit ratings are stated in accordance with information from leading rating agencies.

Ratings 2017	Ratings AAA £m	AA £m	A £m	BBB £m	Less than BBB £m	Not rated £m	Total £m
Policyholders assets	—	5,335	511	—	—	257	6,103
Participating fund assets	—	218	14	3	—	—	235
Shareholder assets	—	6,327	588	261	3	98	7,277
Total	**—**	**11,880**	**1,113**	**264**	**3**	**355**	**13,615**
Total %	**—**	**87.3%**	**8.2%**	**1.9%**	**—**	**2.6%**	**100.0%**
Assets of operations classified as held for sale	—	51	70	—	—	2	123
Total (excluding assets held for sale)	**—**	**11,829**	**1,043**	**264**	**3**	**353**	**13,492**
Total % (excluding assets held for sale)	**—**	**87.7%**	**7.7%**	**2.0%**	**—**	**2.6%**	**100.0%**
2016 Total	—	24,608	1,689	14	—	443	26,754
2016 Total %	—	92.0%	6.3%	—	—	1.7%	100.0%

D3.5 – Receivables and other financial assets

The credit quality of receivables and other financial assets is managed at the local business unit level. Where assets classed as 'past due and impaired' exceed local credit limits, and are also deemed at sufficiently high risk of default, an analysis of the asset is performed and a decision is made whether to seek sufficient collateral from the counterparty or to write down the value of the asset as impaired. At 2017, 99% (*2016: 99%)* of the receivables and other financial assets were neither past due nor impaired.

Credit terms vary from subsidiary to subsidiary, and from country to country, and are set locally within overall credit limits prescribed by the Group credit limit framework, and in line with the Group Credit Policy. The carrying value of receivables is reviewed at each reporting period. If the carrying value of a receivable or other financial asset is greater than the recoverable amount, the carrying value is reduced through a charge to the income statement in the period of impairment.

D3.6 – Cash and cash equivalents

Cash and cash equivalents consist of cash at banks 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 normally those with less than three months maturity from the date of acquisition, and include certificates of deposit with maturities of less than three months at the date of issue.

D4 – Pension fund assets

In addition to the assets recognised directly on the Group's statement of financial position outlined in the disclosures above, the Group is also exposed to the 'Scheme assets' that are shown net of the present value of scheme liabilities within the IAS 19 net pension surplus. Pension surpluses are included within other assets and pension deficits are recognised within provisions in the Group's consolidated statement of financial position. Refer to note B15 for details on the movements in the main schemes' surpluses and deficits.

Scheme assets are stated at their fair values. Total scheme assets are comprised in the UK, Ireland and Canada as follows:

	2017				2016			
	UK £m	**Ireland £m**	**Canada £m**	**Total £m**	UK £m	Ireland £m	Canada £m	Total £m
Bonds								
Fixed interest	**6,925**	**408**	**163**	**7,496**	7,085	249	151	7,485
Index-linked	**11,744**	**292**	**—**	**12,036**	11,469	157	—	11,626
Equities	**129**	**—**	**—**	**129**	71	—	—	71
Property	**365**	**—**	**—**	**365**	338	—	—	338
Pooled investment vehicles	**4,955**	**238**	**107**	**5,300**	3,433	200	96	3,729
Derivatives	**(34)**	**4**	**—**	**(30)**	86	1	—	87
Cash and other[1]	**(5,710)**	**(284)**	**6**	**(5,988)**	(3,046)	3	34	(3,009)
Total fair value of scheme assets	**18,374**	**658**	**276**	**19,308**	19,436	610	281	20,327
Less: consolidation elimination for non-transferable Group insurance policy[2]	**(630)**	**—**	**—**	**(630)**	(633)	—	—	(633)
Total IAS 19 fair value of scheme assets	**17,744**	**658**	**276**	**18,678**	18,803	610	281	19,694

1 Cash and other assets comprise cash at bank, insurance policies, receivables, payables and repos. At 31 December 2017, cash and other assets primarily consist of repos of £5,386 million *(2016: £4,666 million)*.
2 The Friends Provident Pension Scheme (FPPS) assets are included in the UK balances. As at 31 December 2017, the FPPS's cash and other balances includes an insurance policy of £630 million *(2016: £633 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 price in an active market and those that do not as follows:

	2017			2016		
	Total Quoted £m	**Total Unquoted £m**	**Total £m**	Total Quoted £m	Total Unquoted £m	Total £m
Bonds						
Fixed interest	**4,334**	**3,162**	**7,496**	3,697	3,788	7,485
Index-linked	**11,627**	**409**	**12,036**	11,141	485	11,626
Equities	**35**	**94**	**129**	71	—	71
Property	**—**	**365**	**365**	—	338	338
Pooled investment vehicles	**167**	**5,133**	**5,300**	189	3,540	3,729
Derivatives	**4**	**(34)**	**(30)**	70	17	87
Cash and other[1]	**(1,801)**	**(4,187)**	**(5,988)**	714	(3,723)	(3,009)
Total fair value of scheme assets	**14,366**	**4,942**	**19,308**	15,882	4,445	20,327
Less: consolidation elimination for non-transferable Group insurance policy[2]	**—**	**(630)**	**(630)**	—	(633)	(633)
Total IAS 19 fair value of scheme assets	**14,366**	**4,312**	**18,678**	15,882	3,812	19,694

1 Cash and other assets comprise cash at bank, insurance policies, receivables, payables and repos. At 31 December 2017, cash and other assets primarily consist of repos of £5,386 million *(2016: £4,666 million)*.
2 The Friends Provident Pension Scheme (FPPS) assets are included in the UK balances. As at 31 December 2017, the FPPS's cash and other balances includes an insurance policy of £630 million *(2016: £633 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.

Risk management and asset allocation strategy

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. 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 basis.

Main UK Scheme

The Company works closely with the trustee, who is required to consult it on the investment strategy.

Interest rate and inflation risk 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 appetite. Currency risk is relatively small and is largely hedged. The other principal risk is longevity risk. This risk has reduced due to the Aviva Staff Pension Scheme 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. During 2015, the RAC pension scheme entered into a longevity swap covering approximately £600 million of pensioner in payment scheme liabilities.

D5 – Available funds

To ensure access to liquidity as and when needed, the Group maintains £1.7 billion of undrawn committed central borrowing facilities with a range of leading international banks, all of which have investment grade credit ratings. These facilities are used to support the Group's commercial paper programme. The expiry profile of the undrawn committed central borrowing facilities is as follows:

	2017 £m	2016 £m
Expiring within one year	**—**	—
Expiring beyond one year	**1,650**	1,650
Total	**1,650**	1,650

D6 – Guarantees

As a normal part of their operating activities, various Group companies have given guarantees and options, including investment return guarantees, in respect of certain long-term insurance and fund management products.

For the UK Life with-profits business, provisions in respect of these guarantees and options are calculated on a market consistent basis, in which stochastic models are used to evaluate the level of risk (and additional cost) under a number of economic scenarios, which allow for the impact of volatility in both interest rates and equity prices. For UK Life non-profit business, provisions do not materially differ from those determined on a market consistent basis.

In all other businesses, provisions for guarantees and options are calculated on a local basis with sensitivity analysis undertaken where appropriate to assess the impact on provisioning levels of a movement in interest rates and equity levels (typically a 1% decrease in interest rates and 10% decline in equity markets).

VNB & Sales analysis

VNB & Sales analysis

E1 – Sales, VNB and new business margin analysis by market (adjusted Solvency II basis)

The table below sets out the present value of new business premiums (PVNBP) written by the life and related businesses, value generated by new business written during the period (VNB) and the resulting margin, gross of tax and non-controlling interests, on an adjusted Solvency II basis. Following the introduction of the Solvency II regime on 1 January 2016, MCEV (which was calculated on the expired Solvency I basis) is no longer used as an indicator of the drivers of financial performance of the Group's in-force Life and related businesses. The MCEV VNB and MCEV PVNBP were disclosed for the last time at 31 December 2016.

The VNB shown below is the present value of the projected stream of pre-tax distributable profit generated by the new business written during the period, including expected profit between point of sale and the valuation date on an adjusted Solvency II basis. It reflects the additional value to shareholders created through the activity of writing new business including the impacts of interactions between in-force and new business. The VNB and PVNBP for 2016 include £(12) million and £257 million respectively relating to the internal transfer of annuities from a with-profits fund to a non-profit fund during the second half of 2016 in the UK. The methodology underlying the calculation of adjusted Solvency II VNB remains unchanged from the prior year as set out in note 4. The demographic assumptions used are derived from an analysis of recent operating experience to give a best estimate of future experience. The demographic assumptions have been updated to reflect the position as at 31 December 2017 and produce an adjusted Solvency II VNB which is materially the same as using the assumptions used at 31 December 2016 as set out in D.2.2 of the Aviva 2016 Solvency and Financial Condition Report (SFCR). The economic assumptions have been updated to be those relevant at the point of sale which has been implemented with the assumptions being taken as those appropriate to the start of each quarter. For contracts that are re-priced more frequently, weekly or monthly economic assumptions have been used. The principal economic assumptions are set out in note E14. Adjusted Solvency II PVNBP is calculated using assumptions consistent with those used to determine the adjusted Solvency II VNB.

	Present value of new business premiums[1]		Value of new business[2]		New business margin[2]	
Gross of tax and non-controlling interests	2017 £m	2016 £m	2017 £m	2016 £m	2017 £m	2016 £m
United Kingdom	**23,764**	18,142	**527**	429	**2.2%**	2.4%
France	**4,453**	5,523	**228**	225	**5.1%**	4.1%
Poland	**468**	421	**57**	54	**12.2%**	12.8%
Italy	**4,617**	3,634	**179**	83	**3.9%**	2.3%
Ireland[3]	**1,050**	710	**11**	12	**1.0%**	1.7%
Spain	**1,004**	935	**38**	34	**3.8%**	3.6%
Turkey	**473**	455	**20**	21	**4.2%**	4.6%
Europe	**12,065**	11,678	**533**	429	**4.4%**	3.7%
Asia	**2,719**	2,372	**162**	106	**6.0%**	4.5%
Aviva Investors	**2,247**	2,845	**21**	28	**0.9%**	1.0%
Total	**40,795**	35,037	**1,243**	992	**3.0%**	2.8%

1 A reconciliation to IFRS net written premiums can be found in note E13.
2 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.
3 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

E2 – Trend analysis of adjusted Solvency II VNB – cumulative

					Growth on 2H16	
Gross of tax and non-controlling interests	1H16 YTD £m	2H16 YTD £m	1H17 YTD £m	2H17 YTD £m	Sterling %	Constant currency %
United Kingdom[1]	200	429	267	**527**	**23%**	**23%**
France[2]	101	225	120	**228**	**1%**	**(5)%**
Poland[3]	22	54	28	**57**	**5%**	**(4)%**
Italy	42	83	60	**179**	**116%**	**102%**
Ireland[4]	5	12	3	**11**	**(3)%**	**(9)%**
Spain	12	34	25	**38**	**10%**	**3%**
Turkey	11	21	10	**20**	**(7)%**	**7%**
Europe	193	429	246	**533**	**24%**	**17%**
Asia	43	106	71	**162**	**52%**	**47%**
Aviva Investors	12	28	12	**21**	**(23)%**	**(23)%**
Total	448	992	596	**1,243**	**25%**	**21%**

1 Includes £(12) million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
2 France includes Antarius up until 2H16.
3 Poland includes Lithuania.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

VNB & Sales analysis continued

E3 – Trend analysis of adjusted Solvency II VNB – discrete

Gross of tax and non-controlling interests	1H16 Discrete £m	2H16 Discrete £m	1H17 Discrete £m	2H17 Discrete £m	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
United Kingdom[1]	200	229	267	**260**	**13%**	**13%**
France[2]	101	124	120	**108**	**(13)%**	**(19)%**
Poland[3]	22	32	28	**29**	**(8)%**	**(16)%**
Italy	42	41	60	**119**	**192%**	**173%**
Ireland[4]	5	7	3	**8**	**22%**	**14%**
Spain	12	22	25	**13**	**(43)%**	**(47)%**
Turkey	11	10	10	**10**	**(13)%**	**—**
Europe	193	236	246	**287**	**21%**	**14%**
Asia	43	63	71	**91**	**45%**	**40%**
Aviva Investors	12	16	12	**9**	**(40)%**	**(40)%**
Total	448	544	596	**647**	**19%**	**15%**

1 Includes £(12) million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
2 France includes Antarius up until 2H16.
3 Poland includes Lithuania.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

E4 – Trend analysis of PVNBP – cumulative

Present value of new business premiums[1]	1H16 YTD £m	2H16 YTD £m	1H17 YTD £m	2H17 YTD £m	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
United Kingdom[2]	8,232	18,142	11,191	**23,764**	**31%**	**31%**
France[3]	2,898	5,523	2,405	**4,453**	**(19)%**	**(25)%**
Poland[4]	190	421	202	**468**	**11%**	**1%**
Italy	2,024	3,634	2,191	**4,617**	**27%**	**19%**
Ireland[5]	339	710	495	**1,050**	**48%**	**38%**
Spain	299	935	677	**1,004**	**7%**	**—**
Turkey	216	455	274	**473**	**4%**	**20%**
Europe	5,966	11,678	6,244	**12,065**	**3%**	**(3)%**
Asia	982	2,372	1,328	**2,719**	**15%**	**11%**
Aviva Investors	1,388	2,845	1,262	**2,247**	**(21)%**	**(21)%**
Total	16,568	35,037	20,025	**40,795**	**16%**	**14%**

1 Present value of new business premiums (PVNBP) is the present value of new regular premiums plus 100% of single premiums, calculated using assumptions consistent with those used to determine the value of new business.
2 Includes £257 million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
3 France includes Antarius up until 2H16.
4 Poland includes Lithuania.
5 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

E5 – Trend analysis of PVNBP – discrete

Present value of new business premiums[1]	1H16 Discrete £m	2H16 Discrete £m	1H17 Discrete £m	2H17 Discrete £m	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
United Kingdom[2]	8,232	9,910	11,191	**12,573**	**27%**	**27%**
France[3]	2,898	2,625	2,405	**2,048**	**(22)%**	**(27)%**
Poland[4]	190	231	202	**266**	**15%**	**5%**
Italy	2,024	1,610	2,191	**2,426**	**51%**	**41%**
Ireland[5]	339	371	495	**555**	**49%**	**40%**
Spain	299	636	677	**327**	**(48)%**	**(52)%**
Turkey	216	239	274	**199**	**(16)%**	**(3)%**
Europe	5,966	5,712	6,244	**5,821**	**2%**	**(4)%**
Asia	982	1,390	1,328	**1,391**	**—**	**(3)%**
Aviva Investors	1,388	1,457	1,262	**985**	**(32)%**	**(32)%**
Total	16,568	18,469	20,025	**20,770**	**12%**	**10%**

1 Present value of new business premiums (PVNBP) is the present value of new regular premiums plus 100% of single premiums, calculated using assumptions consistent with those used to determine the value of new business.
2 Includes £257 million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
3 France includes Antarius up until 2H16.
4 Poland includes Lithuania.
5 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated

VNB & Sales analysis continued

E6 – Trend analysis of PVNBP by product – cumulative

Present value of new business premiums[1]	1H16 YTD £m	2H16 YTD £m	1H17 YTD £m	2H17 YTD £m	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
Pensions	5,578	11,615	7,169	**14,430**	**24%**	**24%**
Annuities[2]	571	2,074	1,075	**3,510**	**69%**	**69%**
Bonds	62	141	70	**284**	**101%**	**101%**
Protection	887	1,770	1,006	**1,964**	**11%**	**11%**
Equity release	247	637	360	**777**	**22%**	**22%**
Other	887	1,905	1,511	**2,799**	**47%**	**47%**
United Kingdom	8,232	18,142	11,191	**23,764**	**31%**	**31%**
Savings	2,704	5,114	2,151	**4,043**	**(21)%**	**(26)%**
Protection	194	409	254	**410**	**—**	**(6)%**
France[3]	2,898	5,523	2,405	**4,453**	**(19)%**	**(25)%**
Pensions	515	1,195	721	**1,372**	**15%**	**14%**
Savings	2,188	4,177	2,604	**5,229**	**25%**	**18%**
Annuities	63	109	119	**233**	**115%**	**101%**
Protection	302	674	395	**778**	**15%**	**9%**
Poland[4], Italy, Ireland[5], Spain and Turkey	3,068	6,155	3,839	**7,612**	**24%**	**17%**
Europe	5,966	11,678	6,244	**12,065**	**3%**	**(3)%**
Asia	982	2,372	1,328	**2,719**	**15%**	**11%**
Aviva Investors	1,388	2,845	1,262	**2,247**	**(21)%**	**(21)%**
Total	16,568	35,037	20,025	**40,795**	**16%**	**14%**

1 Present value of new business premiums (PVNBP) is the present value of new regular premiums plus 100% of single premiums, calculated using assumptions consistent with those used to determine the value of new business.
2 Includes £257 million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
3 France includes Antarius up until 2H16.
4 Poland includes Lithuania.
5 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

E7 – Trend analysis of PVNBP by product – discrete

Present value of new business premiums[1]	1H16 Discrete £m	2H16 Discrete £m	1H17 Discrete £m	2H17 Discrete £m	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
Pensions	5,578	6,037	7,169	**7,261**	**20%**	**20%**
Annuities[2]	571	1,503	1,075	**2,435**	**62%**	**62%**
Bonds	62	79	70	**214**	**171%**	**171%**
Protection	887	883	1,006	**958**	**8%**	**8%**
Equity release	247	390	360	**417**	**7%**	**7%**
Other	887	1,018	1,511	**1,288**	**27%**	**27%**
United Kingdom	8,232	9,910	11,191	**12,573**	**27%**	**27%**
Savings	2,704	2,410	2,151	**1,892**	**(22)%**	**(27)%**
Protection	194	215	254	**156**	**(27)%**	**(32)%**
France[3]	2,898	2,625	2,405	**2,048**	**(22)%**	**(27)%**
Pensions	515	680	721	**651**	**(4)%**	**(5)%**
Savings	2,188	1,989	2,604	**2,625**	**32%**	**23%**
Annuities	63	46	119	**114**	**151%**	**134%**
Protection	302	372	395	**383**	**3%**	**(3)%**
Poland[4], Italy, Ireland[5], Spain and Turkey	3,068	3,087	3,839	**3,773**	**22%**	**16%**
Europe	5,966	5,712	6,244	**5,821**	**2%**	**(4)%**
Asia	982	1,390	1,328	**1,391**	**—**	**(3)%**
Aviva Investors	1,388	1,457	1,262	**985**	**(32)%**	**(32)%**
Total	16,568	18,469	20,025	**20,770**	**12%**	**10%**

1 Present value of new business premiums (PVNBP) is the present value of new regular premiums plus 100% of single premiums, calculated using assumptions consistent with those used to determine the value of new business.
2 Includes £257 million relating to the internal transfer of annuities from a with-profits fund to a non-profit fund in 2H16.
3 France includes Antarius up until 2H16.
4 Poland includes Lithuania.
5 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated

E8 – Geographical analysis of regular and single premiums

	Regular premiums							Single premiums		
	2017 £m	**Constant currency growth**	**WACF**	**Present value £m**	2016 £m	WACF	Present value £m	**2017 £m**	2016 £m	**Constant currency growth**
United Kingdom	**1,807**	**8%**	**5.3**	**9,605**	1,679	5.3	8,881	**14,159**	9,261	**53%**
France	**94**	**(14)%**	**9.0**	**842**	103	8.7	899	**3,611**	4,624	**(27)%**
Poland[1]	**51**	**10%**	**7.3**	**371**	42	7.7	324	**97**	97	**(8)%**
Italy	**50**	**(28)%**	**7.5**	**375**	65	3.0	194	**4,242**	3,440	**15%**
Ireland[2]	**40**	**15%**	**7.0**	**281**	32	6.3	203	**769**	507	**42%**
Spain	**32**	**(15)%**	**6.3**	**202**	34	6.9	236	**802**	699	**7%**
Turkey	**97**	**14%**	**3.7**	**358**	98	3.8	373	**115**	82	**62%**
Europe	**364**	**(5)%**	**6.7**	**2,429**	374	5.9	2,229	**9,636**	9,449	**(5)%**
Asia	**301**	**28%**	**7.0**	**2,092**	227	7.6	1,733	**627**	639	**(3)%**
Aviva Investors	**—**	**—**	**—**	**—**	—	—	—	**2,247**	2,845	**(21)%**
Total	**2,472**	**8%**	**5.7**	**14,126**	2,280	5.6	12,843	**26,669**	22,194	**17%**

1 Poland includes Lithuania.
2 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported with Europe. As a result, comparative balances have been restated.

E9 – Trend analysis of investment sales – cumulative

					Growth on 2H16	
Investment sales[1]	1H16 YTD £m	2H16 YTD £m	1H17 YTD £m	**2H17 YTD £m**	**Sterling %**	**Constant currency %**
United Kingdom[2]	575	1,390	1,143	**2,137**	**54%**	**54%**
Aviva Investors[3]	3,587	5,765	2,949	**5,510**	**(4)%**	**(8)%**
Asia[4]	58	137	116	**241**	**76%**	**67%**
Total investment sales[5]	4,220	7,292	4,208	**7,888**	**8%**	**5%**

1 Investment sales are calculated as new single premiums plus the annualised value of new regular premiums.
2 UK investment sales are also reported in UK Life PVNBP, YTD investment sales of £575 million for 1H16, £1,390 million for 2H16, £1,143 million for 1H17 and £2,137 million for 2H17 are equivalent to £636 million, £1,484 million, £1,202 million and £2,258 million respectively on a PVNBP basis.
3 YTD investment sales of £1,381 million for 1H16, £2,834 million for 2H16, £1,259 million for 1H17 and £2,243 million 2H17 are also included in Aviva Investors' PVNBP.
4 Asia investment sales are also reported in Asia PVNBP.
5 This is an Alternative Performance Measure (APM) which provides useful information to enhance the understanding of financial performance. See the glossary for further details.

E10 – Trend analysis of investment sales – discrete

					Growth on 2H16	
Investment sales[1]	1H16 Discrete £m	2H16 Discrete £m	1H17 Discrete £m	**2H17 Discrete £m**	**Sterling %**	**Constant currency %**
United Kingdom[2]	575	815	1,143	**994**	**22%**	**22%**
Aviva Investors[3]	3,587	2,178	2,949	**2,561**	**18%**	**21%**
Asia[4]	58	79	116	**125**	**60%**	**58%**
Total investment sales	4,220	3,072	4,208	**3,680**	**20%**	**22%**

1 Investment sales are calculated as new single premiums plus the annualised value of new regular premiums.
2 UK investment sales are also reported in UK Life PVNBP, YTD investment sales of £575 million for 1H16, £815 million for 2H16, £1,143 million for 1H17 and £994 million for 2H17 are equivalent to £636 million, £847 million, £1,202 million and £1,056 million respectively on a PVNBP basis.
3 Discrete investment sales of £1,381 million for 1H16, £1,453 million for 2H16, £1,259 million for 1H17 and £984 million for 2H17 are also included in Aviva Investors' PVNBP.
4 Asia investment sales are also reported in Asia PVNBP.

VNB & Sales analysis continued

E11 – Trend analysis of general insurance and health net written premiums – cumulative

	1H16 YTD £m	2H16 YTD £m	1H17 YTD £m	**2H17 YTD £m**	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
General insurance						
United Kingdom[4]	2,001	3,930	2,105	**4,078**	**4%**	**4%**
Canada	1,049	2,453	1,477	**3,028**	**23%**	**15%**
Europe[4]	936	1,816	1,100	**2,018**	**11%**	**4%**
Asia and Other	5	12	6	**17**	**47%**	**40%**
	3,991	8,211	4,688	**9,141**	**11%**	**7%**
Health insurance						
United Kingdom[1]	292	514	293	**509**	**(1)%**	**(1)%**
Europe[2]	198	284	165	**240**	**(15)%**	**(22)%**
Asia[3]	64	125	78	**145**	**16%**	**10%**
	554	923	536	**894**	**(3)%**	**(6)%**
Total	4,545	9,134	5,224	**10,035**	**10%**	**6%**

1 These premiums are also reported in UK Life PVNBP, 1H16 YTD NWP of £292 million, 2H16 YTD NWP of £514 million, 1H17 YTD NWP of £293 million, 2H17 YTD NWP of £509 million are equivalent to £255 million, £424 million, £308 million and £540 million on a PVNBP basis respectively.
2 The sale of Ireland Health business was completed in 2016. Ireland Health businesses have been aligned to the new management structure and reported within Europe.
3 Singapore long-term health business is also reported in Asia PVNBP. For Singapore long-term health business, 1H16 YTD NWP of £30 million, 2H16 YTD NWP of £67 million, 1H17 YTD NWP of £38 million and 2H17 YTD NWP £82 million are equivalent to £97 million, £209 million, £69 million and £147million on a PVNBP basis respectively.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

E12 – Trend analysis of general insurance and health net written premiums – discrete

	1H16 Discrete £m	2H16 Discrete £m	1H17 Discrete £m	**2H17 Discrete £m**	Growth on 2H16 Sterling %	Growth on 2H16 Constant currency %
General insurance						
United Kingdom[4]	2,001	1,929	2,105	**1,973**	**2%**	**2%**
Canada	1,049	1,404	1,477	**1,551**	**10%**	**8%**
Europe[4]	936	880	1,100	**918**	**4%**	**3%**
Asia and Other	5	7	6	**11**	**82%**	**82%**
	3,991	4,220	4,688	**4,453**	**6%**	**4%**
Health insurance						
United Kingdom[1]	292	222	293	**216**	**(2)%**	**(2)%**
Europe[2]	198	86	165	**75**	**(13)%**	**(10)%**
Asia[3]	64	61	78	**67**	**9%**	**10%**
	554	369	536	**358**	**(3)%**	**(2)%**
Total	4,545	4,589	5,224	**4,811**	**5%**	**4%**

1 These premiums are also reported in UK Life PVNBP. 1H16 NWP of £292 million, 2H16 NWP of £222 million, 1H17 NWP of £293 million and 2H17 NWP of £216 million , are equivalent to £255 million, £255 million, £308 million and £232 million on a PVNBP basis respectively.
2 The sale of the Ireland Health business was completed in 2016. Ireland Health businesses have been aligned to the new management structure and reported within Europe.
3 Singapore long-term health business is also reported in Asia PVNBP. For Singapore long-term health business, 1H16 NWP of £30 million, 2H16 NWP of £37 million, 1H17 NWP of £38 million and 2H17 NWP of £44 million are equivalent to £97 million, £112 million, £69 million and £78 million on a PVNBP basis respectively.
4 Following the launch of UK Insurance which brings together UK Life, UK General Insurance and UK Health into a combined business, the Ireland Life and General Insurance businesses have been aligned to the new management structure and reported within Europe. As a result, comparative balances have been restated.

E13 – Reconciliation of sales to net written premiums in IFRS

The table below presents our consolidated sales for the year ended 31 December 2017 and the year ended 31 December 2016 as well as the reconciliation of sales to net written premiums in IFRS.

	2017 £m	2016 £m
Present value of new business premiums	**40,795**	35,037
Investment sales	**7,888**	7,292
General insurance and health net written premiums	**10,035**	9,134
Less: long-term health and collectives business[1]	**(5,213)**	(4,944)
Total sales	**53,505**	46,519
Less: Effect of capitalisation factor on regular premium long-term business	**(11,412)**	(10,563)
Share of long-term new business sales from JVs and associates	**(618)**	(552)
Annualisation impact of regular premium long-term business	**(281)**	(264)
Deposits taken on non-participating investment contracts and equity release contracts	**(10,953)**	(7,834)
Retail sales of mutual fund type products (investment sales)	**(7,888)**	(7,292)
Add: IFRS gross written premiums from existing long-term business	**4,765**	4,867
Less: long-term insurance and savings business premiums ceded to reinsurers	**(1,741)**	(1,696)
Less: Outward reinsurance premium relating to general insurance business	**—**	(107)
Total IFRS net written premiums	**25,377**	23,078
Analysed as:		
Long-term insurance and savings net written premiums	**15,342**	14,051
General insurance and health net written premiums	**10,035**	9,027
	25,377	23,078

1 Long-term health and collectives business are included as part of PVNBP.

Effect of capitalisation factor on regular premium long-term business

PVNBP is derived from the single and regular premiums of the products sold during the financial period and is expressed at the point of sale. The PVNBP calculation is equal to total single premium sales received in the year plus the discounted value of regular premiums expected to be received over the term of the new contracts. The discounted value of regular premiums is calculated using the same methodology as for VNB (on an adjusted Solvency II basis).

The discounted value reflects the expected income streams over the life of the contract, adjusted for expected levels of persistency, discounted back to present value. The discounted value can also be expressed as annualised regular premiums multiplied by a weighted average capitalisation factor (WACF). The WACF varies over time depending on the mix of new products sold, the average outstanding term of the new contracts and the projection assumptions.

Share of long-term new business sales from joint ventures and associates

Total long-term new business sales include our share of sales from joint ventures and associates. Under IFRS reporting, premiums from these sales are excluded from our consolidated accounts, with only our share of profits or losses from such businesses being brought into the income statement separately.

Annualisation impact of regular premium long-term business

As noted above, the calculation of PVNBP includes annualised regular premiums. The impact of this annualisation is removed in order to reconcile the non-GAAP new business sales to IFRS premiums and will vary depending on the volume of regular premium sales during the year.

Deposits taken on non-participating investment contracts and equity release contracts

Under IFRS, non-participating investment contracts are recognised in the Statement of Financial Position by recording the cash received as a deposit and an associated liability and are not recorded as premiums received in the IFRS income statement. Only the margin earned is recognised in the IFRS income statement.

Retail sales of mutual fund type products (investment sales)

Investment sales included in the total sales number represent the cash inflows received from customers to invest in mutual fund type products such as unit trusts and OEICs. We earn fees on the investment and management of these funds which are recorded separately in the IFRS income statement as 'fees and commissions received' and are not included in statutory premiums.

IFRS gross written premiums from existing long-term business

The non-GAAP measure of long-term and savings sales focuses on new business written in the year under review while the IFRS income statement includes premiums received from all business, both new and existing.

VNB & Sales analysis continued

E14 – Principal assumptions underlying the calculation of VNB (on an adjusted SII basis)

Economic assumptions are derived actively, based on market yields on risk-free fixed interest assets at the end of each reporting period.

The risk-free interest rate curves used to calculate VNB reflect the basic risk-free interest rate curves (including the credit risk adjustment), volatility adjustment and fundamental spread for the matching adjustment published by EIOPA on their website. The details on methodology are unchanged from those set out in D.2.2.3 of the Aviva 2016 Solvency and Financial Condition Report (SFCR).

(a) Basic risk-free interest rates

The basic risk-free rate curves are stated in the table below, including a credit risk adjustment.

United Kingdom	**4Q 2017**	3Q 2017	2Q 2017	1Q 2017	4Q 2016	3Q 2017	2Q 2016	1Q 2016
Reference rate								
1 year	**0.6%**	0.5%	0.4%	0.4%	0.4%	0.3%	0.4%	0.6%
5 years	**0.9%**	1.0%	0.8%	0.7%	0.7%	0.4%	0.5%	0.9%
10 years	**1.2%**	1.3%	1.2%	1.0%	1.1%	0.6%	0.9%	1.3%
15 years	**1.3%**	1.5%	1.4%	1.2%	1.3%	0.8%	1.1%	1.5%
20 years	**1.4%**	1.6%	1.5%	1.3%	1.3%	0.9%	1.1%	1.6%

Eurozone	**4Q 2017**	3Q 2017	2Q 2017	1Q 2017	4Q 2016	3Q 2017	2Q 2016	1Q 2016
Reference rate								
1 year	**(0.4)%**	(0.4)%	(0.3)%	(0.3)%	(0.3)%	(0.3)%	(0.3)%	(0.2)%
5 years	**0.2%**	0.2%	0.2%	0.1%	—	(0.2)%	(0.2)%	(0.1)%
10 years	**0.8%**	0.8%	0.8%	0.7%	0.6%	0.2%	0.3%	0.5%
15 years	**1.2%**	1.3%	1.2%	1.1%	1.0%	0.5%	0.7%	0.8%
20 years	**1.4%**	1.5%	1.4%	1.3%	1.1%	0.7%	0.8%	0.9%

(b) Matching adjustment

The matching adjustment (MA) is an increase applied to the risk-free rate used to value insurance liabilities where the cash flows are relatively fixed (e.g. no future premiums or surrender risk) and are well matched by assets that are intended to be held to maturity and have cash flows that are also relatively fixed. The intention is that, if held to maturity, the business can earn the additional yield on these assets that relate to illiquidity risk.

Aviva applies a matching adjustment to certain obligations in UK Life and Spain Life, using methodology which is set out in the SFCR Report. The matching adjustments used to value new business will reflect the characteristics of the assets allocated to back the new business. The allocation of assets to new business anticipates the expected assets chosen to back new business at the end of year closing balance sheet. These may be different to the matching adjustments applied at the portfolio level.

The matching adjustments used for new business are shown in the table below:

Matching adjustment portfolio	**2H 2017**	**1H 2017**	2H 2016	1H 2016
UK Life	**116**	**123**	171	152
Spain Life	**—**	**19**	24	30

A combined MA of 116 bps and 123 bps was calculated for new business at FY17 and HY17 respectively within the Friends Life UK and the Aviva UK annuity portfolios. Prior to HY17 separate MAs were calculated for these portfolios and the assumptions shown in the table above for the comparative periods relate to the Aviva UK annuity portfolio. For Friends Life UK, the MAs were 106 bps and 123 bps at 2H2016 and 1H2016 respectively. In the comparative periods, the higher MA for Aviva UK new business partly reflects the allocation to Aviva UK of a higher proportion of illiquid assets. Following the sale of the majority of the Spanish business in the second half of 2017, none of the retained entities apply a MA.

(c) Volatility adjustment

The volatility adjustment (VA) is intended to reflect temporary distortions in spreads caused by illiquidity in the market or extreme widening of credit spreads, in particular in relation to government bonds. VAs are prescribed by EIOPA and published along with the basic risk-free interest rate curves on their website. Where applicable the VA is applied to all those liabilities where a MA is not applied, with the exception of unit-linked business in UK Life where, in line with the approved applications, no allowance for the VA is made.

The volatility adjustments used are shown in the table below:

Volatility Adjustment (bps)	**2H 2017**	**1H 2017**	2H 2016	1H 2016
United Kingdom	**18**	**21**	30	38
Eurozone	**4**	**9**	13	16

Glossary

This glossary to the Analyst Pack contains the definitions of non-GAAP financial Alternative Performance Measures (APMs) which are not bound by the requirements of IFRS.

Annual Premium Equivalent (APE)
Annual Premium Equivalent is a measure of sales in our life insurance businesses. APE is calculated as the sum of new regular premiums plus 10% of new single premiums written in the period. Whilst not a key performance metric of the Group, the APE measure provides useful information on sales and new business when considered alongside other measures such as the present value of new business premiums (PVNBP) or Solvency II value of new business (VNB).

Assets under management (AUM)
Assets under management represent all assets managed or administered by or on behalf of the Group, including those assets managed by third parties. AUM include managed assets that are included within the Group's statement of financial position and those assets belonging to external clients outside the Aviva Group which are therefore not included in the Group's statement of financial position. AUM is monitored as this reflects the potential earnings arising from investment interest and commission and measures the size and scale of the AUM business.

Cash remittances
Cash remittances represent amounts paid by our operating businesses to the Group, comprise dividends and interest on internal loans. Dividend payments by operating businesses may be subject to insurance regulations that restrict the amount that can be paid. The business monitors total cash remittances at a group level and in each of its markets.

These amounts eliminate on consolidation and hence are not directly reconcilable to the Group's IFRS consolidated statement of cash flows.

Claims ratio
A financial measure of the performance of our general insurance business which is derived from incurred claims as a percentage of net earned premiums.

Combined Operating Ratio (COR)
A financial measure of the Group's general insurance underwriting profitability which is derived from total underwriting costs – comprising of incurred claims, written commissions and expenses – expressed as a percentage of net earned premiums. A combined operating ratio below 100% indicates profitable underwriting.

Commission and expense ratio
A financial measure of the performance of our general insurance business which is derived from the sum of written commissions and expenses expressed as a percentage of net earned premiums.

Estimated Solvency II cover ratio
The Solvency II cover ratio is an indicator of the Group's balance sheet strength which is derived from 'Own funds' divided by the Solvency Capital Requirement (SCR), as calculated on a shareholder view. The shareholder view excludes the contribution to Group SCR and Group 'Own funds' of fully ring fenced with-profits funds and staff pension schemes in surplus. These exclusions have no impact on Solvency II surplus.

The most material fully ring fenced with-profits funds and staff pension schemes are self-supporting on a Solvency II capital basis with any surplus capital above SCR not recognised in the Group position. The shareholder view is therefore considered by management to be more representative of the shareholders' risk-exposure and the Group's ability to cover the SCR with eligible own funds.

The Solvency II cover ratio is shown inclusive of pro forma adjustments to align it with the capital information presented to management internally. Pro forma adjustments are made when, in the opinion of the Directors, the 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.

Estimated Solvency II own funds
Available capital resources determined under Solvency II are referred to as 'Own Funds'. This includes the excess of assets over liabilities in the Solvency II balance sheet (calculated on best estimate, market consistent assumptions and net of transitional measures on technical provisions), subordinated liabilities that qualify as capital under Solvency II, and off-balance sheet Own Funds.

Estimated Solvency II Surplus
The surplus represents 'Own funds' less the SCR. Holding capital in excess of the SCR demonstrates an insurer has adequate financial resources in place to meet all its liabilities as and when they fall due and that there is sufficient capital to absorb significant losses.

Excess centre cash flow
This represents the cash remitted by business units to the Group centre less central operating expenses and debt financing costs. Excess centre cash flow is a measure of the cash available to pay dividends, reduce debt or invest back into our business.

These amounts eliminate on consolidation and hence are not directly reconcilable to the Group's IFRS consolidated statement of cash flows.

Group adjusted operating profit (operating profit)
Operating profit is a non-GAAP APM which is reported to the Group chief operating decision maker for the purpose of decision making and internal performance management of the Group's operating segments that incorporates an expected return on investments supporting the life and non-life insurance businesses. Throughout the Preliminary Announcement, Group adjusted operating profit is referred to as operating profit.

The various items taken out of operating profit are:

Investment variances and economic assumptions changes
Operating profit for the life insurance 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.

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

Glossary continued

- 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 risks. Where such securities are classified as available for sale the expected return comprises interest or dividend payments and amortisation of the premium or discount at purchase.
- The expected return on equities and properties is calculated by reference to the opening 10-year swap rate in the relevant currency plus an appropriate risk margin.

Operating profit includes the effect of variances in experience for non-economic items, such as mortality, persistency and expenses, and the effect of changes in non-economic assumptions. This would include movements in liabilities due to changes in discount rate arising from management decisions that impact on product profitability over the lifetime of products. Changes due to economic items, such as market value movement 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 operating profit.

Operating profit for the non-life insurance business is based on expected investment returns on financial investments backing shareholder funds over the period.

- Expected investment returns are calculated for equities and properties by multiplying the opening market value of the investments, adjusted for sales and purchases during the year, by the longer-term rate of return. This rate of return is the same as that applied for the long-term business expected returns.
- The longer-term return for other investments is the actual income receivable for the period.

Changes due to market value movement and interest rate changes, which give rise to variances between actual and expected investment returns, are disclosed separately outside operating profit. The impact of changes in the discount rate applied to claims provisions is also disclosed outside operating profit.

The exclusion of short-term investment variances from this APM reflects the long-term nature of much of our business. The operating profit which is used in managing the performance of our operating segments excludes the impact economic factors, to provide a comparable measure year-on-year.

Impairment, amortisation and profit/loss on disposal

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 re-measurement of subsidiaries, joint ventures and associates. These items principally relate to merger 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 chief operating decision maker.

Other items

These items are, in the Directors' view, required to be separately disclosed by virtue of their nature or incidence to enable a full understanding of the Group's financial performance.

Operating profit is presented before and after integration and restructuring costs.

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.

Investment sales

This measure comprises of retail sales of mutual fund-type products such as unit trusts, individual savings accounts (ISAs) and open ended investment companies (OEICs).

Net Asset Value (NAV) per share

NAV per share is calculated as the equity attributable to shareholders of Aviva plc, less preference share capital (both within the consolidated statement of financial position), divided by the actual number of shares in issue as at the balance sheet date.

Net fund flows

Net fund flows is one of the measures of growth used by management and is a component of the movement in the Life and platform business managed assets (excluding UK with-profits) during the period. It is the difference between the inflows (being IFRS net written premiums plus deposits received under investment contracts) and outflows (being IFRS net paid claims plus redemptions and surrenders under investment contracts). It excludes market and other movements.

New business income

New business income represents the impact on group adjusted operating profit of new business written in the period. New business income comprises income arising from premiums written during the period less initial reserves, expenses and commission. Expense and commission are shown net of deferred acquisition costs. Whilst not a key performance metric of the Group, new business income provides useful information on sales and new business when considered alongside other measures such as the present value of new business premiums (PVNBP) or Solvency II value of new business (VNB).

New business margin

New business margins are calculated as the adjusted Solvency II value of new business divided by the adjusted Solvency II present value of new business premiums (PVNBP), and expressed as a percentage.

Normalised accident year claims ratio

The normalised accident year claims ratio is derived from the claims ratio (as defined above) with adjustments made to exclude the impact of exceptional and non-recurring items; prior year claims development and weather variations versus expectations. These adjustments are made so that the underlying performance of the Group can be assessed excluding factors that might distort the trend in the claims ratio on a year-on-year basis. The ratio is shown gross of the impact of profit sharing arrangements.

Normalised accident year Combined Operating Ratio

The normalised accident year combined operating ratio is derived from the COR (as defined above) with adjustments made to exclude the impact of exceptional and non-recurring items; prior year claims development and weather variations versus expectations, gross of the impact of profit sharing arrangements. These adjustments are made so that the underlying performance of the Group can be assessed excluding factors

Glossary continued

that might distort the trend in the claims ratio on a year-on-year basis.

Operating Capital Generation (OCG)

Operating Capital Generation represents the movement in the Solvency II surplus in the period due to the impact of new business, expected returns on existing business, operating variances, non-economic assumption changes and non-recurring capital actions.

OCG excludes economic variances, economic assumption changes and integration and restructuring costs. The exclusion of these items from OCG reflects the long-term nature of much of the Group's business and excludes the impact of economic factors which are typically outside the control of management. 'Underlying' OCG is the component of the OCG which excludes the effect of non-recurring capital actions and non-economic assumption changes and is therefore considered to be more representative of the long-term trend.

Operating Earnings per Share (EPS)

Operating EPS is calculated based on the adjusted operating profit attributable to ordinary shareholders net of tax, deducting non-controlling interests, preference dividends, the direct capital instrument (DCI) and tier one note coupons divided by the weighted average number of ordinary shares in issue, after deducting treasury shares.

Operating expense ratio

The operating expense ratio expresses operating expenses as a percentage of operating income.

Operating income is calculated as Group adjusted operating profit before Group debt costs and operating expenses.

Operating expenses

The day-to-day expenses involved in running the business are classified as operating expenses. These expenses include other acquisition costs and claims handling costs as these are considered to be controllable by the Group's operating segments and directly impact their performance.

Operating expenses exclude 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 re-measurement of subsidiaries, joint ventures and associates. These items principally relate to merger and acquisition activity which we view as strategic in nature, hence they are excluded as this measure is principally used to manage segment performance. Operating expenses also exclude integration & restructuring costs and other similar expenses incurred which are considered to be non-recurring and strategic in nature.

Present value of new business premiums

The present value of new business premiums (PVNBP) is a financial measure which is used as a measure of sales in the Group's life insurance businesses. PVNBP is derived from the present value of new regular premiums plus 100% of single premiums from new business written at the point of sale. PVNBP also includes any changes to existing contracts which were not anticipated at the outset of the contract that generates additional shareholder risk and associated premium income of the nature of a new policy. An example of a change to existing contracts that is considered to generate additional PVNBP is an internal transfer of annuities from a with-profits fund to a non-profit fund.

Return on equity

The return on equity calculation is based on operating return after tax attributable to ordinary shareholders expressed as a percentage of weighted average ordinary shareholders' equity (excluding non-controlling interests and direct capital instrument and tier 1 notes).

Return on capital employed (ROCE)

ROCE indicates the efficiency with which a company uses its assets to generate profits. Usually calculated as pre-tax profit divided by capital employed (total assets minus current liabilities) and expressed as a percentage.

Solvency Capital Requirement (SCR)

The Solvency II regime requires insurers to hold own funds in excess of the Solvency Capital Requirement. The SCR is calculated at Group level using a risk based capital model which is calibrated to reflect the cost of mitigating the risk of insolvency to a 99.5% confidence level over a one year time horizon – equivalent to a 1 in 200 year event – against financial and non-financial shocks. As a number of subsidiaries utilise the standard formula rather than a risk based capital model to assess economic capital requirements, the overall Aviva Group SCR is calculated using a partial internal model, and it is shown after the impact of diversification benefit.

Spread margin

The spread margin represents the return made on the Group's annuity and other non-linked business, based on the expected investment return, less amounts credited to policyholders. Whilst not a key performance metric of the Group, the spread margin is a useful indicator of the expected investment return arising on this business.

Underwriting margin

The underwriting margin represents the release of reserves held to cover claims, surrenders and administrative expenses less the cost of actual claims and surrenders in the period. Whilst not a key performance metric of the Group; the underwriting margin is a useful measure of the financial performance of our Life insurance business when considered alongside other financial metrics.

Unit linked margin

The unit linked margin represents the annual management charges on unit-linked business based on expected investment return. Whilst not a key performance metric of the Group, the unit linked margin is a useful indicator of the expected investment return arising on this business.

Value of New Business (VNB)

The Solvency II value of new business (VNB) represents the increase in own funds arising from business written in the period, with adjustments made to i) include VNB not included in Solvency II (e.g. UK and Asia Healthcare business, retail fund management business and UK Equity Release business) ii) remove the impact of contract boundaries and iii) include a 'look through' to the value of profits arising in service companies (which would otherwise be excluded from Solvency II). These adjustments are considered to reflect a more realistic basis than the prudential Solvency II rules. The VNB is derived from the present value of projected pre-tax distributable profits generated by new business plus a risk margin. Adjusted Solvency II VNB can be reconciled to the Solvency II Own Funds impact of new business; however there is no equivalent IFRS metric.