# News Release

**Aviva plc**
2011 Preliminary Results
8 March, 2012

AVIVA

# Good progress – beating operating targets

| | |
|---|---|
| **Strong operating performance – beating our targets** | ■ Operating profit of £2.5 billion, up 6% on a continuing basis*<br>■ £2.1 billion operating capital generation *(FY 2010: £1.7 billion)*<br>■ New business internal rate of return increased to 14.4% *(FY 2010: 13.3%)*<br>■ Group combined operating ratio improved to 96.8% *(FY 2010: 97.1%)*<br>■ Full year dividend of 26 pence *(FY 2010: 25.5 pence)* |
| **Profitable growth in life insurance** | ■ Life insurance operating profit up 7% to £2.1 billion *(FY 2010: £2.0 billion)*<br>■ Long term savings sales of £31.4 billion, 6% lower *(FY 2010: £33.6 billion)*<br>■ UK life and pension profits up 8% to £920 million *(FY 2010: £850 million)* |
| **Underwriting excellence driving profitable growth in general insurance** | ■ General insurance operating profit up 3% to £935 million *(FY 2010: £904 million)*<br>■ General insurance & health net written premiums up 8% to £9.2 billion *(FY 2010: £8.5 billion)*<br>■ UK general insurance and health profit up 7% to £520 million *(FY 2010: £488 million)* |
| **Resilience in volatile markets** | ■ Profit before tax of £87 million (FY 2010: £2.4 billion) was mainly impacted by adverse unrealised investment variances<br>■ IFRS NAV resilient at 435p *(FY 2010: 454p)*<br>■ Estimated IGD surplus of £3.3 billion at 29 February 2012 (31 December 2011: £2.2 billion) |

**Andrew Moss, Group Chief Executive, commented:**

"We delivered a strong operating performance in 2011. Despite challenging market conditions we have beaten all our operating targets. We have made good strategic progress, focusing on markets where we will grow and earn higher returns.

"Aviva continues to perform well, even in tough times. We made great progress in the UK, growing profits and market share and we increased operating profits in Europe.

"Looking to 2012, we have increased our operating targets underlining our confidence in Aviva's continued success."

* Operating profit on a continuing basis, excluding Delta Lloyd, was £2.1 billion (FY 2010: £2.0 billion).

# Key financial highlights

## Key financial highlights

| IFRS | 2011 £m | 2010 £m | Sterling % change |
|---|---|---|---|
| Long-term business | **2,123** | 1,988 | 7% |
| General insurance and health | **935** | 904 | 3% |
| Fund management | **99** | 98 | 1% |
| Other operations and regional costs | **(207)** | (177) | (17)% |
| Corporate centre | **(138)** | (143) | 3% |
| Group debt and other interest costs | **(657)** | (644) | (2)% |
| **Operating profit before tax (excluding Delta Lloyd as an associate) – continuing operations** | **2,155** | 2,026 | 6% |
| Share of operating profit (before tax) of Delta Lloyd, as an associate | **157** | — | n/a |
| **Operating profit before tax – continuing operations** | **2,312** | 2,026 | 14 % |
| Operating profit before tax – discontinued operations | **191** | 524 | (64)% |
| **Operating profit before tax** | **2,503** | 2,550 | (2)% |
| **Profit after tax** | **60** | 1,892 | (97)% |
| **Earnings per share** | **5.8p** | 50.4p | (88)% |
| **Operating earnings per share** | **53.8p** | 55.1p | (2)% |
| **Profit before tax** | **87** | 2,440 | (96)% |
| **Return on equity** | **12.0%** | 14.8% | (2.8)% |

### Capital

| | 31 December 2011 | 31 December 2010 | Sterling % change |
|---|---|---|---|
| Operating capital generation | **£2.1bn** | £1.7bn | 24% |
| Total dividend per share | **26.0p** | 25.5p | 2% |

| | 29 February 2012 | 31 December 2011 | 31 December 2010 | Sterling % change |
|---|---|---|---|---|
| Estimated proforma IGD solvency surplus at 29 February 2012* | **£3.3bn** | | | |
| IGD solvency surplus | | **£2.2bn** | £3.8bn | (42)% |
| IFRS net asset value per share | **457p****** | **435p** | 454p | (4)% |
| EEV equivalent net asset value per share | | **595p** | 621p | (4)% |

* Proforma includes the benefit of capital transactions in 2012.

** Estimated IFRS NAV at 29 February 2012.

### Long-term business

| Continuing operations | Long-term savings sales 12 months 2011 £m | Long-term savings sales 12 months 2010 £m | IRR 12 months 2011 % | IRR 12 months 2010 % |
|---|---|---|---|---|
| United Kingdom | **11,315** | 10,298 | **15%** | 15% |
| Aviva Europe | **10,891** | 13,537 | **14%** | 13% |
| North America | **3,932** | 4,728 | **14%** | 14% |
| Asia Pacific | **1,782** | 1,617 | **13%** | 11% |
| **Total life and pensions – continuing operations** | **27,920** | 30,180 | **14%** | 13% |
| **Total investment sales** | **3,473** | 3,387 | | |
| **Total long-term savings sales – continuing operations** | **31,393** | 33,567 | | |

### General insurance and health

| Continuing operations | Net written premiums 12 months 2011 £m | Net written premiums 12 months 2010 £m | Operating profit 12 months 2011 £m | Operating profit 12 months 2010 £m | GI COR 12 months 2011 % | GI COR 12 months 2010 % |
|---|---|---|---|---|---|---|
| United Kingdom | **4,912** | 4,539 | **552** | 579 | **96%** | 96% |
| Aviva Europe | **2,059** | 1,953 | **137** | 109 | **101%** | 103% |
| North America | **2,083** | 1,958 | **254** | 222 | **95%** | 97% |
| Asia Pacific | **108** | 72 | **(8)** | (6) | **108%** | 134% |
| **Total general insurance and health – continuing operations** | **9,162** | 8,522 | **935** | 904 | **97%** | 97% |

The Group's accounting policy for operating profit (also referred to as Group adjusted operating profit) remains consistent with prior periods and is set out on page 44.

# Group chief executive's review

## A year of good progress

### In a year dominated by uncertainty in Europe...

Concerns over the macro-economic environment in Europe dominated market sentiment, resulting in exceptional market volatility and uncertainty in 2011. Against this backdrop, I am pleased to report a year of good progress and operating profits of £2.5 billion.

### ...we have beaten our operating targets…

During the year we beat our operating targets. We generated £2.1 billion of operating capital. In life insurance, we delivered an internal rate of return (IRR) of 14.4%. In general insurance, we achieved a combined operating ratio (COR) of 96.8%. We also remain on track to meet our £400 million cost and efficiency target by the end of 2012.

### ...and we are paying an increased dividend...

In a challenging year, our resilient performance enabled us to pay a total dividend to our shareholders of 26p for 2011, an increase of 2% over 2010.

### ...because our strategy is working.

Our strategic priorities for 2011 were to increase operating capital generation, allocate capital to our chosen markets where we can grow and earn the highest returns, and simplify our portfolio. We have made good progress against each priority.

We have significantly increased operating capital generation. In our 12 priority markets operating profits increased by 9% and we have delivered a strong performance in a number of our other markets. We have achieved this by making tough choices, supporting new business growth in markets where we can earn a strong return, such as the UK, and writing less capital intensive business in other markets. As a result, whilst life and pensions sales are marginally lower we are growing the business profitably.

In the UK, which accounts for approximately half of our profits, we have made good progress in our ambition to be the undisputed market leader. With our broad product range and our strengths in underwriting, claims and distribution we have grown operating profits, sales and market share and are well prepared to take advantage of changes such as the Retail Distribution Review and auto-enrolment.

In Europe, we increased operating profits and improved new business profitability and delivered strong operating performances in major markets such as France, Spain and Poland. In markets where conditions have been difficult we've taken action. In Ireland, for example, we have decided to combine the business with the UK region so that it can benefit from the UK's scale and underwriting expertise. Whilst in the short term trading conditions in some European markets will be challenging, in the medium-term, Europe contains some of the most attractive insurance markets in the world with strong savings rates.

In North America, operating earnings increased in both our US and Canadian businesses. In Asia, our investment in our relatively young businesses is clearly paying off as we successfully grow profits and build an attractive franchise.

Aviva Investors made good progress with net external sales at a record £5.6 billion on an underlying basis.

In 2011, consistent with our focus on investing our capital where we can grow and earn the highest returns, we sold a further 15% stake in Delta Lloyd, raising around £0.4 billion and reducing our presence in the Benelux markets. We also sold our roadside breakdown business RAC at 17 times earnings for £1 billion.

In addition we sold Aviva Investors business in Australia, concluded our partnership in the UAE and, in January 2012, we agreed the sale of our operations in Hungary, Romania, the Czech Republic and our exit from Slovakia.

Our progress in 2011 owes much to the actions we have taken over a number of years to transform Aviva. Since 2009 we have increased operating profits from £2.0 billion to £2.5 billion, doubled operating capital generation and reduced our cost base from £5.1 billion to £4.1 billion**. In addition, the pension deficit of £1.7 billion has now moved into a surplus. As a result Aviva is a leaner and stronger company today.

### We delivered further profitable growth in life insurance...

Life insurance performance was strong in 2011. We have allocated capital to more profitable areas, such as unit linked and term assurance, and away from more capital intensive products such as with-profits in Europe. We improved the profitability of our life insurance business with a 14.4% life new business IRR, ahead of our target of at least 12%, and increased life insurance operating profits by 7% to £2,123 million.

In the UK, the life insurance result is a real highlight. We grew our share of an expanding life and pensions market and sales increased 10% to £11,315 million. We have a 25% market share in individual annuities and are number two in the life insurance protection market. UK life insurance operating profits increased by 8% to £920 million, double the level six years ago, and new business profitability remained strong with an IRR of 15%.

### ...and achieved a good general insurance result.

We continued to grow our general insurance business profitably reflecting progress made in recent years to reduce costs and improve pricing. Our underwriting strength is a major competitive advantage and we increased underwriting profits significantly last year. Total general insurance and health net written premiums increased 8% to £9,162 million and we grew operating profits by 3% to £935 million.

UK general insurance performance has been particularly strong. General insurance and health sales increased 8% and we delivered a COR of 96%. We are the market leader in the UK and we hold top three positions in all our major classes of business, including personal motor (with 413,000 net new customers in 2011), homeowner, commercial motor and commercial property.

** on a continuing basis excluding Delta Lloyd

In Aviva Europe general insurance and health net written premiums increased 5% to £2,059 million driven by successful rating actions in a number of markets. General insurance profitability improved and we delivered a COR of 101% (FY 2010:103%).

### And we have remained focused on balance sheet strength

The strength of our balance sheet is a clear priority and we have taken steps to ensure our capital position remains resilient. Over the last few years we have de-risked the business and strengthened our capital position which enabled us to withstand the extreme volatility in the European sovereign debt market in the second half of 2011. Our estimated IGD solvency surplus at 29 February 2012 was £3.3 billion (31 December 2011: £2.2 billion) as a result of market improvements and actions we have taken since the beginning of 2012.

Aviva has an excellent track record of managing our assets and market exposures. We suffered minimal defaults on our financial investments in 2011. Whilst our balance sheet has been impacted by unrealised losses, we hold the vast majority of our assets for the longer term and the equity hedging we have in place means our capital is largely protected against adverse market movements.

We continue to engage constructively with regulators and policy-makers and take the necessary steps to ensure that we are well prepared for the introduction of Solvency II.

### Our customers are central to our success…

We serve 43 million customers and we know that for Aviva to be a sustainable and successful business we must continue to provide good value and excellent service. As governments face increasing budget pressure, there will be an increasing demand for insurers, like Aviva, to fill the long-term savings gap. But customers will only choose Aviva, stay with us and recommend us if we look after them well.

### ...so we continue to invest in new ways to serve them...

We continue to invest and innovate in digital technology and social media so that we can serve our customers more effectively. We have made good progress and currently have a number of research and development pilots underway in areas such as claims, underwriting and customer service and we were ranked 8th, and the top financial services company, in the FTSE 100 Social Media Index.

### …with the support of our distribution partners...

We continue to work closely with our distribution partners around the world so that we can serve our customers effectively. Our diverse network of partners - including banks and brokers - is one of Aviva's core strengths and an area in which we will continue to invest.

We have created one of the largest and most successful bancassurance franchises in the insurance sector with 130 partners. In the UK alone last year we expanded our distribution network with new agreements with HSBC, Santander and Barclays.

### …so that more and more customers recommend us.

Last year more of our customers were willing to recommend us than ever before. We improved our customer satisfaction measure, Net Promoter Score™, last year and now more than half of our businesses operate in the upper quartile relative to local competition. We won more than 50 awards across 10 countries for customer service, innovation and performance including being named general insurer of the year by Insurance Times in the UK; Aviva France's product range was recognised by several awards from specialist industry publication "Les Dossiers de l'Épargne" and our Singapore business won the service channel innovation award for our direct channel at the IDC Financial Insights Awards.

### Our success depends on our people...

I am grateful to all my colleagues for their dedication, hard work, and professionalism. I am delighted that we have made encouraging progress in improving employee satisfaction during 2011 and we will continue to work hard at this.

During the year we further strengthened the senior management team. Trevor Matthews, a highly experienced and well-regarded insurance industry leader, became UK CEO in December. We also appointed Cathryn Riley to the group executive committee as Chief Information Officer to lead our global IT strategy and drive the best use of emerging technology for Aviva and its customers.

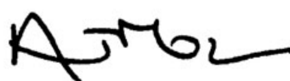
### ...and we play a responsible role in society.

Aviva is a profitable and sustainable business able to meet our responsibilities not just to our shareholders but also to our customers, our employees and society. During 2011, we paid out £33 billion in claims and benefits to our customers, and our staff across the group dedicated 60,000 hours of time to volunteering schemes.

We have an important role to provide our customers with prosperity and peace of mind. But we also have a wider commitment to society, supporting those who are not our customers through our Street to School programme where we have now helped 400,000 children. We have been ranked in the top five companies globally in FTSE4 Good's rating of companies' corporate responsibility commitments and performance, and recognised as the most reputable financial services company in the UK by the Reputation Institute.

### Well placed to build on our strong performance

We are well placed to build on last year's performance and we are therefore increasing our operating targets. Although the economic environment is likely to remain tough for the foreseeable future, we have built a strong, sustainable and diverse business well positioned for further profitable growth.



**Andrew Moss**
Group Chief Executive

# Chief financial officer's review

## Strong operating capital generation

The actions we took in 2011 to improve profitability, increase operating capital generation and focus on our balance sheet strength, have underpinned Aviva's resilience.

### Growing profits…

Operating profit was £2.5 billion, broadly in line with 2010 despite the reduced contribution from Delta Lloyd following its deconsolidation in May 2011. On a continuing basis, excluding Delta Lloyd, operating profit increased 6% to £2,155 million (FY 2010: £2,026 million). This was the result of successfully allocating capital to our most profitable markets, disciplined underwriting and management of expenses and the underlying strength and scale of our in-force portfolios.

### … and significantly increased operating capital generation

In 2011 Aviva increased operating capital generation by £0.4 billion to £2.1 billion, an excellent result especially in the context of challenging financial markets.

Improved profitability in both life insurance and general insurance businesses meant that capital generation from the in-force life portfolio increased to £2.3 billion and the general insurance business contributed £0.6 billion overall. At the same time we reduced capital consumed in writing new life business by £0.3 billion, driven by both improved capital efficiency and our management of business volumes.

Since 2009 we have more than doubled the amount of operating capital we generate. This has been achieved through cost management on our in-force portfolio and the active management of new business volumes, mix and profitability. We have also benefitted from key management initiatives such as the reattribution of the inherited estate in the UK life business.

The disciplined allocation of capital to areas where we can earn the greatest returns means that we increased our life new business IRR to 14.4% with each region delivering new business profitability levels above our target.

In Europe we have significantly reduced sales of capital intensive with-profits products which led to an improvement in the life new business IRR to 14%. In the UK we have rapidly grown market share in individual annuities and delivered an IRR of over 25% in this product area.

### A strong life insurance result…

Our life insurance performance was strong with operating profits of £2,123 million, an increase of 7% (FY 2010: £1,988 million). This improvement was driven by increases in a number of drivers of our profits. Underwriting margin increased by £63 million to £815 million (FY 2010: £752 million) particularly as a result of higher expense margins.

New business income contributed £1,037 million, with strong annuity volumes and profit growth in the UK offsetting lower volumes in Europe and the US. New business income margin, as a percentage of annual premium equivalent sales, was stable at 29%.

Investment return was another important driver of operating profits, up 6% at £2,760 million (FY 2010: £2,606 million), underlining our strong track record of effective management of credit risk. Within this total, credit spread income on our annuity portfolio increased by £125 million to £813 million, reflecting our ability to earn good margins in a low interest rate environment.

### …and a good contribution from general insurance

We have successfully grown our general insurance business and delivered high quality earnings as a result of actions we've taken in pricing, underwriting and costs. General insurance and health profits increased by 3% to £935 million. The Group delivered a strong underwriting result up by 10% to £224 million.

The improved combined operating ratio (COR) of 96.8% (FY 2010: 97.1%) was a result of the significant improvements we have made in pricing and efficiency over the last few years. These results are driven by current year profitability with the current year COR at 96.4%, and are not dependent on prior year reserve releases giving us confidence in the sustainability of this performance.

We have successfully increased rates in a number of markets. In the UK for example we delivered a particularly strong performance as we took action to increase rates in personal and commercial motor and net written premiums were 8% higher at £4,371 million.

Our strength in underwriting also contributed significantly. In the UK, for example, our direct book has seen a decreasing trend in bodily injury claims frequency in the last three years whilst the market has seen an increasing trend.

### Total earnings impacted by market conditions

IFRS profit before tax was £87 million (FY 2010: £2.4 billion). This includes a loss of £726 million relating to Delta Lloyd for the first four months of the year as a result of the reversal of investment variance gains seen in 2010. Profits from Aviva's continuing operations (including our share of Delta Lloyd as an associate) were £813 million for the year. Operating profits were offset by adverse investment variances of £1,062 million, the vast majority of which were unrealised, which arose largely from widening credit spreads on government and corporate bonds. The profit on disposal of the RAC business was offset by restructuring and integration costs and write downs in the value of our holdings in Delta Lloyd.

Aviva has high quality, well managed and diverse fixed income portfolios and we have delivered a consistently strong performance across these assets over a number of years.

Operating earnings per share (EPS) was 53.8p (FY 2010: 55.1p). Total EPS was 5.8p (FY 2010: 50.4p) reflecting those credit spread movements seen in the year and the impact of the reversal of investment gains in Delta Lloyd in 2010.

### Capital management

The actions we have taken in 2011, particularly with the sell down of Delta Lloyd and the sale of RAC, provided important support to

our capital position as economic conditions worsened in the second half of the year.

The sale of a further 15% in Delta Lloyd deconsolidated Delta Lloyd from Aviva's accounts and significantly de-risked our balance sheet.

We also sold RAC for cash consideration of £1.0 billion, at 17 times earnings, at the same time increasing Aviva's tangible net assets by £1.0 billion. The deficit in the Group's pension schemes was eliminated during 2011 and now shows a surplus on an IAS19 basis.

We have substantially reduced our asset risk: our mortgage book has reduced from £35 billion in 2010 to £21 billion in 2011 as a result of the deconsolidation of Delta Lloyd and equity holdings in shareholder assets has decreased from £5.3 billion to little more than £1.3 billion over the same period.

The group estimated regulatory capital surplus based on the EU Groups Directive (IGD) was £2.2 billion at 31 December 2011. This was impacted by adverse market movements seen in the second half of the year, particularly in interest rates and credit spreads in continental Europe, which reduced the total by around £1.5 billion. This was offset by the positive contribution from operating profits and capital management actions we have taken.

Asset valuations improved in the first two months of 2012 and the estimated IGD solvency surplus at 29 February 2012 was £3.3 billion which represents a coverage ratio of 150%.

Aviva's estimated economic capital surplus* coverage was approximately 125% at 31 December 2011 (FY 2010: 140%). This was impacted by negative movements in credit markets offsetting the increase in retained profits. Since the end of the year as a result of market improvements and management actions the estimated economic capital surplus coverage has increased to approximately 145% to 150% as at 29 February 2012.

Our IFRS net asset value was 435p (FY 2010: 454p). This reflects the profits of the business, the sale of RAC and actuarial gains on the pension scheme, offset by the sell down of Delta Lloyd and the adverse impact of falls in equity, credit and foreign exchange markets.

Aviva's EEV equivalent net asset value per share was 595p (FY 2010: 621p) with the reduction from 2010 driven by the impact of the sell down of Delta Lloyd more than offsetting the increase in retained earnings. Total undiscounted expected profits increased slightly to £33.0 billion (FY 2010: £31.4 billion).

### We have a well managed and high quality asset portfolio

Overall asset quality remains strong with modest impairments seen in 2011. In UK corporate bonds, for example, we had very limited default experience of less than 5 basis points and the £770 million UK mortgage provision remains in place.

Our direct shareholder asset exposure (net of minorities) to debt securities of the governments of Greece, Portugal, Ireland, Italy and Spain (including local authorities and government agencies) at 31 December 2011 was £1.3 billion (FY 2010: £1.6 billion), 1% of total shareholder assets.

### Focused on capital generation and effective balance sheet management

By focusing on balance sheet strength, operating capital generation and effective allocation of capital, Aviva has shown its resilience in 2011. This has enabled us to pay a healthy dividend.

Our robust performance in life insurance was underpinned by further improvements in capital efficiency and a reduction in costs. Aviva's general insurance business has gone from strength to strength as we delivered a strong underwriting performance and growth in net written premiums.

We are well placed to build on last year's performance and are therefore increasing our operating targets for 2012. We are targeting a general insurance COR of 97% or better, excluding RAC which was a positive contributor to the COR; a life new business IRR of 13%; and between £1.6 and £1.9 billion of operating capital generation.

We are confident about our prospects in 2012 as we continue to focus on operating capital generation and manage our balance sheet effectively to ensure that Aviva remains financially strong.

**Pat Regan**
Chief financial officer

*The economic capital surplus represents an estimated unaudited position. The capital requirement is based on Aviva's own internal assessment and capital management policies. The term 'economic capital' does not imply capital as required by regulators or other third parties. Pension scheme risk is allowed for through five years of stressed contributions.

# Regional performance

## United Kingdom

As the UK's leading insurer, having our life and general insurance businesses under one powerful brand, combined with our scale and broad product offering and distribution, gives us a strong competitive advantage.

Our life insurance business goes from strength to strength, with operating profits at a record level. Our broad product range and unrivalled distribution network helped to drive up our overall share of the UK life and pensions market to 12%* with gains in our core markets of workplace savings, 'at retirement' (annuities and equity release) and protection.

As we continue to serve customers and price our products well, customers are choosing to stay with us. For example we have achieved further increases in the already high proportion of people continuing to invest with us when their Aviva pension policies mature.

The general insurance business, which is the UK market leader, generated good, profitable growth as a result of our expertise in underwriting and claims management, our risk selection and sophisticated pricing. We achieved particularly strong results in personal motor insurance with net written premiums (excluding RAC) up 32% at more than £1.1 billion.

We have more than two million personal motor customers in the UK, as a result of the successful roll out of direct pricing to brokers and the launch of quotemehappy.com, which offers low-cost insurance to careful drivers and already contributes more than 10% of our total new personal motor customers.

Customer satisfaction levels and employee engagement have increased, with customer complaints down 20% in 2011. We've been changing the way we look after our customers by simplifying our processes and making them more customer-friendly. In our existing annuity business this has delivered a 26 point improvement in our Transactional Net Promoter Score™, achieved significant cost savings and helped reduce call volumes by around 20%.

Our progress has been recognised by the industry. We were voted General Insurer of the Year (Insurance Times) and Health Insurer of the Year (Health Insurance Awards).

Looking ahead, we aim to become the undisputed UK market leader in life and general insurance. We will focus on underwriting and disciplined risk-selection in general insurance. In life insurance, our strategy and strong market positions mean we are well-placed to take advantage of regulatory changes, such as the Retail Distribution Review and auto-enrolment. We will also maintain our strong position in markets less likely to be affected by these changes, such as protection and annuities.

- Operating profit up 8% to £1,451 million
- Life operating profits up 9% to £931 million† with sales up 10% to £11,315 million and new business IRR of 15%
- General insurance and health operating profit‡ up 7% to £520 million with net written premiums up 8%‡ at £4,844 million and COR of 96%

*Q311 ABI returns †Includes £11 million of fund management operating profit ‡Excludes Aviva Re and agencies in run off.

## Europe

Aviva has a strong presence in France, Spain, Italy, Poland and Ireland, and growing businesses in Russia and Turkey. We are a top six life insurer in all our markets, which together account for 15% of the world's insurance premiums.

Consistent with our strategic aim to sharpen our geographic focus we ended our partnership in UAE and, in January 2012, we agreed the sale of our businesses in the Czech Republic, Hungary, Romania and our exit from Slovakia.

In France our pricing and underwriting expertise enabled us to deliver a very strong general insurance result. Our life business is resilient and delivered robust profits. We continued to focus on value over volume reducing sales of capital intensive with-profit products. Sales through Credit du Nord grew 13%, a successful performance in a challenging market.

Spain, despite difficult economic conditions, delivered record operating profits of £216 million. As part of our focus on delivering good value and service for customers we introduced a new unit-linked product, helping to support our strong life new business IRR at 23%.

In Italy our key focus was value over volume, taking strong actions to reduce sales of capital intensive with-profit products, resulting in increased life operating profits and a smaller Italian balance sheet. Our general insurance business in Italy was significantly impacted by adverse development on prior year reserves in motor. We initiated management actions to start to return COR to Group target.

In Poland we refocused our direct sales force ahead of pension legislation changes, equipping them with the skills and tools to offer customers a broader range of insurance products. This resulted in significant growth in unit-linked products, protection sales and general insurance.

We are combining the Irish business with the UK to improve competitiveness and efficiency and management actions have begun to capitalise on our UK capability and scale.

In Russia and Turkey our life and pension sales growth continues as we begin to take advantage of the market potential.

In the short-term we expect that volume and mix in our mature markets of France, Italy and Spain, will be impacted by subdued consumer demand as a result of the macroeconomic environment.

In the longer term our combination of life and general insurance, strong market franchises and our underwriting and pricing expertise will enable us to benefit from the significant opportunity in Europe.

- Operating profit up 4% to £937 million
- Life operating profits up 1% to £898 million with sales down 20% at £10,891 million and life new business IRR of 14%
- General insurance and health operating profit up 26% to £137 million with net written premiums up 5% at £2,059 million and COR of 101%

## North America

In North America we produced a third consecutive year of growth in operating profits as a result of our pricing, sophisticated underwriting and cost management. While the insurance market in North America is exceptionally competitive, we improved operating profits by 15% and generated £0.4 billion of operating capital.

We increased profits in the US as a result of pricing discipline and the growth in profitability of our life and annuity in-force book. We've increased sales of life insurance products, which now account for more than a quarter of our total US sales. We've achieved this by offering attractive products which provide financial security for our customers, delivering excellent customer service and by maintaining deep relationships with our key distribution partners.

In Canada, where we are the second-largest general insurer, we continued to improve our results by focusing on profitable business, reducing our costs to make Aviva significantly more competitive and using technology to enhance our underwriting capabilities. We believe we are one of the more sophisticated insurers in the market at assessing and selecting risks.

We are confident that by maintaining strong pricing discipline, focusing on customer service, and building on strengths in underwriting, we will deliver further profitable growth.

- Operating profit up 15% to £433 million
- Life operating profits up 13% to £197 million with sales down 17% at £3,932 million and life new business IRR of 14%
- General insurance operating profit up 14% to £254 million with net written premiums up 6% at £2,083 million and COR of 95%

## Asia Pacific

We more than doubled operating profit as we redesigned and promoted products to address consumers' changing needs, reduced our costs and developed new ways to reach our customers, including internet sales and the introduction of Aviva Advisors in Singapore and Hong Kong.

We produced a strong performance in Singapore, where our bancassurance agreement with DBS Bank grew from strength to strength. This enabled us to reach more customers and contributed to a 56% increase in life and pension sales.

In China, a combination of regulatory changes, coupled with the impact of high interest rates on short term deposits led to reduced sales across the industry. Throughout this period, we continued to focus on building our customer base in the high-net-worth market, restructured our agency force and emphasised the importance of long term savings and retirement planning to our customers. As a result our profitability increased.

In India regulatory changes caused the industry to shift towards traditional endowment and protection products. We were early in identifying the trend and started to offer these products in 2010, resulting in significantly higher margins in 2011.

The longer-term outlook for our business in Asia remains positive with the low penetration rates of insurance products in many markets, high GDP growth, a growing middle-class and rising wealth. We remain focused on increasing our franchise value through profitable, organic growth.

- Operating profit up 126% to £70 million
- Life operating profits up 52% to £108 million with sales up 10% to £1,782 million and life new business IRR of 13%*

*Excluding Taiwan, regional IRR is 14%

## Aviva Investors

We achieved record net funded external sales up 137% on an underlying basis* with in addition £1 billion of committed but unfunded sales. We did this by focusing our sales effort on a range of core investment solutions and strategies in key institutional markets. Independent internal and external client service rankings also improved.

We continued to invest in our global infrastructure to support future business growth and meet the increasing expectations of regulators and clients. Combined with market movements and the impact of clients' lower risk appetite, this led to slightly lower operating profits of £91 million.

In the fourth quarter we reviewed our business to ensure we are well-placed to prosper despite challenging market conditions. We propose to streamline our business, concentrating on our core strengths in fixed income, real estate and multi asset solutions, and focusing sales and marketing activity on institutional markets.

We plan to scale back distribution to retail investors, although in the UK in particular we will continue to offer investment products and solutions to retail investors through Aviva and our network of banks, insurers and brokers.

* Underlying sales exclude the exceptional impact of £0.5 billion of assets redeemed as a result of the sale of our Australian business during the year.

- Operating profit down 9% to £91 million
- Underlying* net funded external sales excluding liquidity funds up 137% to £5.6 billion
- 60% of institutional funds performed above benchmark
- Further improvement in internal and external client service rankings (Investit)

# Notes to editors

## Notes to editors

Aviva provides 43 million customers with insurance, savings and investment products.

We are the UK's largest insurer and one of Europe's leading providers of life and general insurance.

We combine strong life insurance, general insurance and asset management businesses under one powerful brand.

We are committed to serving our customers well in order to build a stronger, sustainable business, which makes a positive contribution to society, and for which our people are proud to work.

The Aviva media centre at www.aviva.com/media includes images, company and product information and a news release archive. Follow us on twitter @avivaplc.

All figures have been translated at average exchange rates applying for the period. The average rates employed in this announcement are 1 euro = £0.87 (12 months to 31 December 2010 : 1 euro = £0.85) and US$1 = £0.63 (12 months to 31 December 2010: US$1 = £0.65).

Income statements and cash flows of foreign entities are translated at average exchange rates while their balance sheets are translated at the closing exchange rates on 31 December 2011.

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

### Cautionary statements:

This should be read in conjunction with the documents filed by Aviva plc (the "Company" or "Aviva") with the United States Securities and Exchange Commission ("SEC").

This announcement contains, and we may make verbal statements containing, "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", "plans", "seeks", "aims", "may", "could", "outlook", "estimates" 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 these factors include, but are not limited to: the impact of difficult conditions in the global capital markets and the economy generally; the impact of new government initiatives related to the financial crisis; defaults in our bond, mortgage and structured credit portfolios; the impact of volatility in the equity, capital and credit markets on our profitability and ability to access capital and credit; changes in general economic conditions, including foreign currency exchange rates, interest rates and other factors that could affect our profitability; risks associated with arrangements with third parties, including joint ventures; inability of reinsurers to meet obligations or unavailability of reinsurance coverage; a decline in our ratings with Standard & Poor's, Moody's, Fitch and A.M. Best; increased competition in the U.K. and in other countries where we have significant operations; changes in 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; changes in local political, regulatory and economic conditions, business risks and challenges which may impact demand for our products, our investment portfolio and credit quality of counterparties; the impact of actual experience differing from estimates on amortisation of deferred acquisition costs and acquired value of in-force business; 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 various legal proceedings and regulatory investigations; the impact of operational risks; the loss of key personnel; the impact of catastrophic events on our results; changes in government regulations or tax laws in jurisdictions where we conduct business; funding risks associated with our pension schemes; the effect of undisclosed liabilities, integration issues and other risks associated with our acquisitions; and the timing impact and other uncertainties relating to acquisitions and disposals and relating to other future acquisitions, combinations or disposals within relevant industries.

For a more detailed description of these risks, uncertainties and other factors, please see Item 3, "Risk Factors", and Item 5, "Operating and Financial Review and Prospects" in Aviva's Annual Report on Form 20-F as filed with the SEC on 24 March 2011. 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 announcement are current only as of the date on which such statements are made.

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**Timings**

Media conference call
0730 hrs GMT

Analyst presentation
0930 hrs GMT

Presentation slides available at www.aviva.com from 0930 hrs GMT

Live webcast
www.aviva.com

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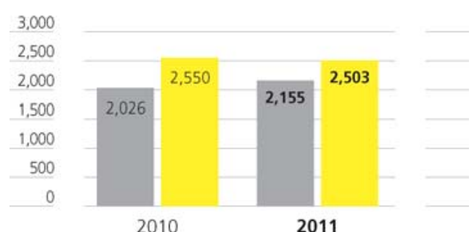
# Key financial highlights

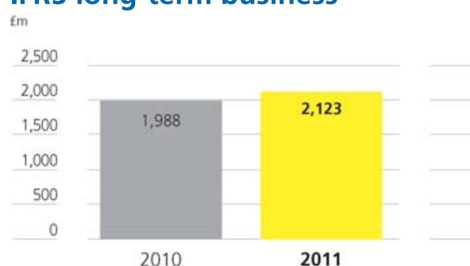
## Delivery of strong operating profit

### IFRS operating profit



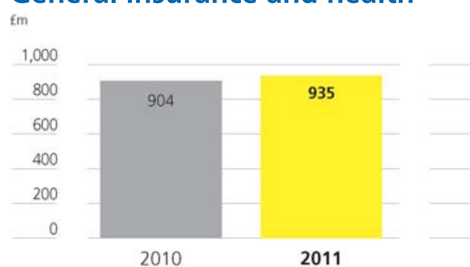

- Total IFRS operating profit was broadly in line with the previous year at £2,503 million (*FY10: £2,550 million*). This was despite the impact of the partial disposal of Delta Lloyd on 6 May 2011 which means that the Group operating profit includes 100% of Delta Lloyd's operating profit up to the date of transaction and only a 42% share thereafter. Total contribution to Aviva's operating profit from Delta Lloyd decreased to £348 million *(FY10: £524 million).*
- IFRS operating profit (excluding Delta Lloyd) was £2,155 million *(FY10: £2,026 million),* an increase of 6% reflecting good performance in the UK, Europe, North America and Asia Pacific.
- Total IFRS profit after tax was £60 million *(FY10: £1,892 million)* driven by adverse investment return variances, impairments (predominantly in Europe) and losses from Delta Lloyd offset by profits on the sale of the RAC.

### IFRS long-term business



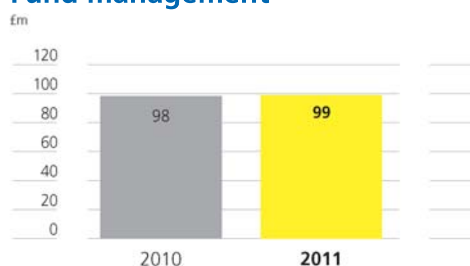

- Long-term business operating profit, excluding Delta Lloyd, increased 7% to £2,123 million *(FY10: £1,988 million)* driven primarily by the UK, North America and Asia. The 2011 UK result includes the benefit of £93 million relating to the integration of the RBS life business. In 2010 the UK result included the benefit of a special distribution of £84 million.
- Total income increased 5% to £4,612 million *(FY10: £4,391 million)* while expenses and commissions grew 3% to £2,118 million *(FY10: £2,057 million)*
- IFRS new business income was stable at £1,037 million *(FY10: £1,033 million)* with a small improvement in margin offsetting a small reduction in volume.
- Income from investment returns increased 6% to £2,760 million *(FY10: £2,606 million)*, and underwriting margin grew 8% to £815 million *(FY10: £752 million).*

### General insurance and health




- Excluding Delta Lloyd, general insurance and health operating profit increased to £935 million *(FY10: £904 million)* reflecting improved performance in UKGI, Europe and North America.
- Excluding Delta Lloyd the underwriting result increased to £224 million *(FY10: £203 million),* due to improved profitability in Canada and strong performance in France (partly driven by reserve releases). This reserve release was broadly offset by reserve strengthening in Italy.
- Excluding Delta Lloyd the combined operating ratio improved to 96.8% *(FY10: 97.1%).*
- Net written premiums, excluding Delta Lloyd, increased 8% to £9,162 million *(FY10: £8,522 million)*, with growth across all regions.

### Fund management

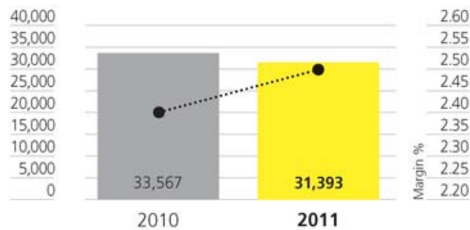



- Operating profit (excluding Delta Lloyd) increased to £99 million *(FY10: £98 million).*
- Excluding Delta Lloyd, total funds under management remained broadly stable at £337 billion *(FY10: £340 billion).*

## New business

### New business and MCEV margin

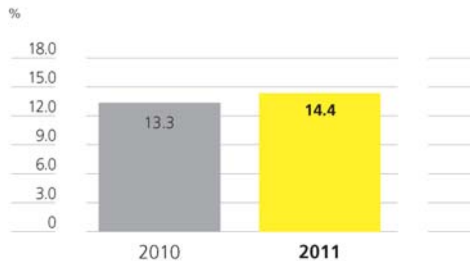
Life and pension sales (£m) ● Margin (%)




- Worldwide long term savings sales (including investment products), excluding Delta Lloyd, were £31.4 billion *(FY10: £33.6 billion),* a reduction of 6%, with increases in the UK and Asia Pacific offset by reductions in Europe and North America.
- The reduction in long-term savings sales is primarily driven by Italy, France and the US where we have taken management actions to improve profitability and capital consumption. In the UK, long-term savings sales increased by 10%.
- Total life and pensions sales (excluding Delta Lloyd) were £27.9 billion *(FY10: £30.2 billion)*, a decrease of 7%.
- MCEV new business margin (excluding Delta Lloyd) is 2.5% *(FY10: 2.4 %)* with improvements in Asia Pacific and the US.

### Internal Rate of Return

%

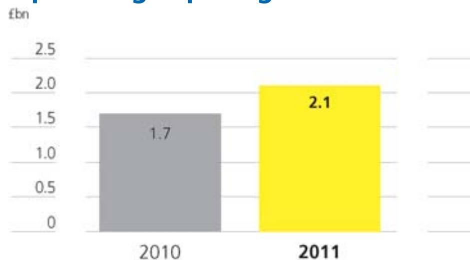



- Overall group IRR (excluding Delta Lloyd) increased to 14.4% from 13.3% for FY10 driven particularly by increases in Europe and Asia Pacific.
- Payback periods (excluding Delta Lloyd) have remained stable at 7 years.

## Group performance

### Operating capital generation

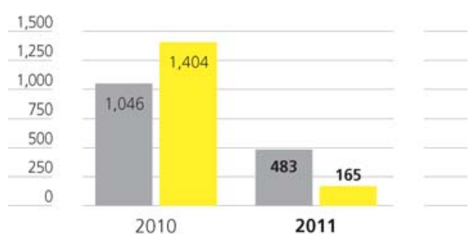
£bn




- Operating capital generation (OCG) is £2.1 billion *(FY10: £1.7 billion).* Capital generated from existing business was £2.9 billion (*FY10: £2.7 billion*) offset by capital investment in new business of £0.8 billion *(FY10: £1.0 billion).*
- Within the £0.8 billion of capital invested in new business, the life component has reduced by £0.3 billion compared with FY10 driven by improved efficiency of new business and reduction in new business volumes. This reduction has been offset by a smaller release of capital invested in non-life business.

### IFRS Total Return

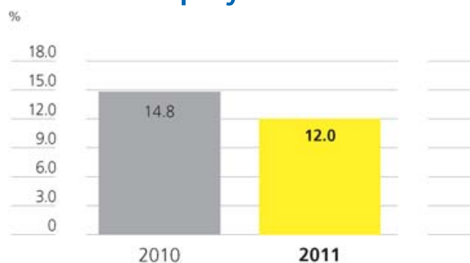
IFRS total return from continuing operations (£m) IFRS total return (£m)




- Total return was £165 million *(FY10: £1,404 million).* Excluding discontinued operations (Delta Lloyd), total return was £483 million.
- Delta Lloyd total return for the period on a discontinued basis was a loss of £318 million. This includes a loss of around £360 million (net of tax and non-controlling interest) that relates to a reversal of the positive investment variances seen in 2010.
- Total return (continuing operations) of £483 million *(FY10: £1,046 million)* reflects increased operating profit for the period, profit on sale of the RAC offset by adverse investment variances and impairments in Europe.
- Adverse investment variances for continuing operations (excluding Delta Lloyd) of £796 million relate largely to the impact of lower risk-free interest rates, wider credit spreads and increased market volatility in the UK and Europe.

### Return on equity

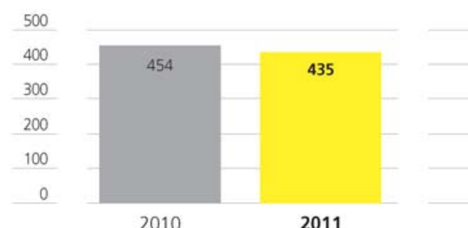
%




- IFRS ROE is 12.0% *(FY10: 14.8%).* The main driver of the change is the 24% growth in the capital base over 2010 driven by profits in the period and the actuarial gains on staff pension scheme.

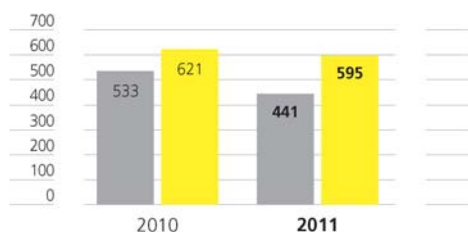
## Balance Sheet

### IFRS net asset value per share



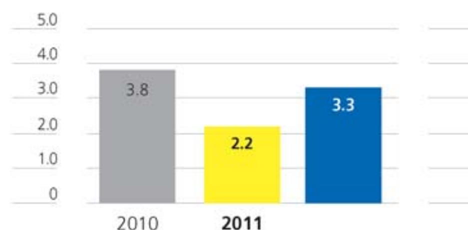

- IFRS net asset value (NAV) is 435 pence *(FY10: 454 pence)*. This is an increase compared with the NAV on a pro-forma basis as at 31 December 2010 of 423 pence allowing for the partial disposal of Delta Lloyd.
- Profits for the period and actuarial gains on pension schemes have been offset by payment of the final dividend and adverse investment market movements and impairments in Europe.
- IFRS equity attributable to ordinary shareholders on Aviva plc at FY11 is £12.6 billion *(FY10: £12.8 billion)*.

### MCEV and EEV equivalent net asset value per share




- The MCEV NAV has decreased to 441 pence *(restated FY10: 533 pence)*. This change is driven by operating profits for the period being more than offset by significant adverse investment variances.
- The estimated MCEV NAV at 29 February 2012 was 511 pence.
- The EEV equivalent NAV was 595 pence at 31 December 2011 *(FY10: 621 pence)*. The main drivers of this reduction are adverse investment variances and the partial disposal and consequent change in the classification of the Delta Lloyd business to non-covered business.
- The expected undiscounted future cash flows from our in-force life book have increased to £33.0 billion (*FY10: £31.4 billion*) excluding Delta Lloyd.
- The main component of the reduction in MCEV NAV is adverse investment movements, primarily relating to wider credit spreads and increased market volatility. The impact of these is equivalent to a 121 pence reduction in MCEV NAV.

### IGD Solvency




- IGD solvency surplus at 31 December 2011 is £2.2 billion *(FY10: £3.8 billion)*.
- Updating this for market and other movements to the end of February 2012, (including the benefit of reinsurance transactions in the UK completed in 2012) the estimated IGD solvency surplus on a pro forma basis increases to £3.3 billion.
- At 31 December 2011 IGD cover is 1.3 times *(FY10: 1.6 times)*.

## Other

| | |
|---|---|
| **Final dividend of 16 pence per share** | ■ Final dividend of 16.0 pence per share in line with 2010.<br>■ Total dividend for 2011 of 26.0 pence per share is an increase of 2% on 2010. |
| **Asset quality** | ■ The asset portfolio remains of high quality.<br>■ Excluding Delta Lloyd and net of non-controlling interests, our exposure within shareholder funds to the governments (and local authorities and agencies) of Italy, Greece, Ireland, Portugal and Spain was marginally reduced at £1.3 billion *(FY10: £1.6 billion).* |
| **Liquidity** | ■ Liquidity position is unchanged with direct access to £1.5 billion of liquid assets *(FY10: £1.5 billion).*<br>■ £2.1 billion of undrawn committed credit facilities provided by a range of leading international banks. |
| **Group's rating from Standard and Poor's is AA- ("very strong")** | ■ The group's rating from Standard and Poor's is AA- ("very strong") with a negative outlook; Aa3 ("excellent") with a negative outlook from Moody's; and A ("excellent"), under review with negative implications outlook, from A M Best.<br>■ The Group's financial strength ratings continue to reflect our strong competitive position, diversified underlying earnings profile, positive strategic management and substantial liquid assets. |
| **Underlying costs** | ■ Total expenses, excluding Delta Lloyd, have increased by 2% from £4,052 million to £4,117 million in FY11. On a like-for-like basis (excluding the impact of foreign exchange, restructuring and acquisitions and disposals) costs remained flat at £3,779 million *(FY10: £3,778 million).* |
| **Funds under management** | ■ Total funds under management excluding Delta Lloyd remained broadly stable at £337 billion *(FY10: £340 billion)*.<br>■ Funds managed by Aviva Investors increased 1% to £263 billion *(FY10: £260 billion)*. |
| **Pension schemes** | ■ At FY11 there was an overall surplus in the pension schemes (on an IAS 19 basis) of £1,264 million *(FY10: £3 million deficit).* Key drivers of the increase were market movements and contributions paid into the schemes. |
| **Impact of foreign exchange** | ■ Total foreign currency movements during 2011 resulted in a loss recognised in the income statement of £35 million *(FY10: £34 million gain)*. |
| **Risk profile** | ■ The types of risk to which the Group is exposed have not changed significantly over the year to 31 December 2011.<br>■ However, the reduction of the shareholding in Delta Lloyd has decreased the Group's IFRS balance sheet risks and, in particular, has led to a substantial fall in equity and mortgage risk exposures. |

# Key financial highlights

| IFRS | 2011 £m Continuing operations | Discontinued operations | Total | 2010 £m Continuing operations | Discontinued operations | Total | Total change % |
|---|---|---|---|---|---|---|---|
| Long-term business | **2,123** | **185** | **2,308** | 1,988 | 330 | 2,318 | 0% |
| General insurance and health | **935** | **1** | **936** | 904 | 146 | 1,050 | (11)% |
| Fund management | **99** | **11** | **110** | 98 | 103 | 201 | (45)% |
| Other operations and regional costs | **(207)** | **(2)** | **(209)** | (177) | (43) | (220) | 5% |
| Corporate centre | **(138)** | **—** | **(138)** | (143) | — | (143) | 3% |
| Group debt and other interest costs | **(657)** | **(4)** | **(661)** | (644) | (12) | (656) | (1)% |
| **Operating profit before tax (excluding Delta Lloyd as an associate)** | **2,155** | **191** | **2,346** | 2,026 | 524 | 2,550 | (8)% |
| Share of operating profit (before tax) of Delta Lloyd, as an associate | **157** | **—** | **157** | — | — | — | — |
| **Operating profit before tax** | **2,312** | **191** | **2,503** | 2,026 | 524 | 2,550 | (2)% |
| **Profit/(loss) after tax** | **584** | **(524)** | **60** | 1,222 | 670 | 1,892 | (97)% |
| IFRS total return | **483** | **(318)** | **165** | 1,046 | 358 | 1,404 | |
| Operating capital generation | | | **2.1bn** | | | 1.7bn | |
| IRR | **14.4%** | | | 13.3% | | | |
| Combined operating ratio | **96.8%** | | | 97.1% | | | |
| Earnings per share | **17.0p** | **(11.2p)** | **5.8p** | 37.6p | 12.8p | 50.4p | |
| Operating profit per share | **50.5p** | **3.3p** | **53.8p** | 47.2p | 7.9p | 55.1p | |
| Total dividend per share | | | **26.0p** | | | 25.5p | |
| Net asset value per share | | | **435p** | | | 454p | |
| Equity attributable to the ordinary shareholders of Aviva plc | | | **12,643** | | | 12,794 | |
| Return on equity shareholders' funds | | | **12.0%** | | | 14.8% | |

| MCEV | 2011 £m Continuing operations | Discontinued operations | Total | Restated 2010 £m Continuing operations | Discontinued operations | Total | Total change % |
|---|---|---|---|---|---|---|---|
| MCEV earnings | **3,129** | **270** | **3,399** | 3,496 | 83 | 3,579 | (5)% |
| General insurance and health | **935** | **1** | **936** | 904 | 146 | 1,050 | (11)% |
| Fund management | **32** | **9** | **41** | 31 | 94 | 125 | (67)% |
| Other operations and regional costs | **(204)** | **7** | **(197)** | (171) | (24) | (195) | (1)% |
| Corporate centre | **(138)** | **—** | **(138)** | (143) | — | (143) | 3% |
| Group debt and other interest costs | **(657)** | **(4)** | **(661)** | (644) | (12) | (656) | (1)% |
| **Operating profit before tax (excluding Delta Lloyd as an associate)** | **3,097** | **283** | **3,380** | 3,473 | 287 | 3,760 | (10)% |
| Share of operating profit (before tax) of Delta Lloyd, as an associate | **157** | **—** | **157** | — | — | — | — |
| **Operating profit before tax** | **3,254** | **283** | **3,537** | 3,473 | 287 | 3,760 | (6)% |
| **(Loss)/profit after tax** | **(2,786)** | **85** | **(2,701)** | 1,461 | 13 | 1,474 | (283)% |
| MCEV new business margin | **2.5%** | | | 2.4% | | | |
| Long-term savings sales | **31,393** | **1,255** | **32,648** | 33,567 | 3,793 | 37,360 | |
| Earnings per share | **(67.3p)** | **4.0p** | **(63.3p)** | 48.4p | 1.0p | 49.4p | |
| Net asset value per share | | | **441p** | | | 533p | |
| EEV equivalent NAV | | | **595p** | | | 621p | |
| Equity attributable to the ordinary shareholders of Aviva plc | | | **12,829** | | | 15,038 | |
| Return on equity shareholders' funds | | | **14.2%** | | | 16.4% | |

# Group performance – IFRS basis

## Pro forma reconciliation of Group operating profit to profit after tax – IFRS basis

For the year ended 31 December 2011

| | 2011 £m | | | 2010 £m | | |
|---|---|---|---|---|---|---|
| | **Continuing operations** | **Discontinued operations** | **Total** | Continuing operations | Discontinued operations | Total |
| **Operating profit before tax attributable to shareholders' profits** | | | | | | |
| **Long-term business** | | | | | | |
| United Kingdom | **920** | **—** | **920** | 850 | — | 850 |
| Europe | **898** | **185** | **1,083** | 893 | 330 | 1,223 |
| North America | **197** | **—** | **197** | 174 | — | 174 |
| Asia Pacific | **108** | **—** | **108** | 71 | — | 71 |
| **Total long-term business (note 1)** | **2,123** | **185** | **2,308** | 1,988 | 330 | 2,318 |
| **General insurance and health** | | | | | | |
| United Kingdom | **552** | **—** | **552** | 579 | — | 579 |
| Europe | **137** | **1** | **138** | 109 | 146 | 255 |
| North America | **254** | **—** | **254** | 222 | — | 222 |
| Asia Pacific | **(8)** | **—** | **(8)** | (6) | — | (6) |
| **Total general insurance and health (note 3)** | **935** | **1** | **936** | 904 | 146 | 1,050 |
| **Fund management** | | | | | | |
| Aviva Investors | **88** | **—** | **88** | 97 | — | 97 |
| United Kingdom | **11** | **—** | **11** | 3 | — | 3 |
| Europe | **—** | **11** | **11** | — | 103 | 103 |
| Asia Pacific | **—** | **—** | **—** | (2) | — | (2) |
| **Total fund management (note 4)** | **99** | **11** | **110** | 98 | 103 | 201 |
| **Other:** | | | | | | |
| Other operations and regional costs (note 5) | **(207)** | **(2)** | **(209)** | (177) | (43) | (220) |
| **Regional operating profit** | **2,950** | **195** | **3,145** | 2,813 | 536 | 3,349 |
| Corporate centre (note 6) | **(138)** | **—** | **(138)** | (143) | — | (143) |
| Group debt costs and other interest (note 7) | **(657)** | **(4)** | **(661)** | (644) | (12) | (656) |
| **Operating profit before tax attributable to shareholders' profits (excluding Delta Lloyd as an associate)** | **2,155** | **191** | **2,346** | 2,026 | 524 | 2,550 |
| Share of operating profit (before tax) of Delta Lloyd as an associate | **157** | **—** | **157** | — | — | — |
| **Operating profit before tax attributable to shareholders' profits** | **2,312** | **191** | **2,503** | 2,026 | 524 | 2,550 |
| Adjusted for the following: | | | | | | |
| Investment return variances and economic assumption changes on long-term business (note 8) | **(796)** | **(820)** | **(1,616)** | (219) | 1,010 | 791 |
| Short-term fluctuation in return on investments on non-long-term business (note 9) | **(266)** | **(60)** | **(326)** | (199) | (44) | (243) |
| Economic assumption changes on general insurance and health business (note 10) | **(90)** | **—** | **(90)** | (61) | — | (61) |
| Impairment of goodwill, associates and joint ventures (note 11) | **(392)** | **—** | **(392)** | (23) | (1) | (24) |
| Amortisation and impairment of intangibles | **(171)** | **(5)** | **(176)** | (193) | (23) | (216) |
| (Loss) / profit on the disposal of subsidiaries and associates (note 12) | **565** | **(32)** | **533** | 163 | (4) | 159 |
| Integration and restructuring costs (note 13) | **(268)** | **—** | **(268)** | (225) | (18) | (243) |
| Exceptional items (note 14) | **(57)** | **—** | **(57)** | 276 | (549) | (273) |
| **Non-operating items before tax (excluding Delta Lloyd as an associate)** | **(1,475)** | **(917)** | **(2,392)** | (481) | 371 | (110) |
| Share of Delta Lloyd's non-operating items (before tax) as an associate | **10** | **—** | **10** | — | — | — |
| **Non-operating items before tax** | **(1,465)** | **(917)** | **(2,382)** | (481) | 371 | (110) |
| Share of Delta Lloyd's tax expense, as an associate | **(34)** | **—** | **(34)** | — | — | — |
| **Profit/(loss) before tax attributable to shareholders' profits** | **813** | **(726)** | **87** | 1,545 | 895 | 2,440 |
| Tax on operating profit | **(625)** | **(25)** | **(650)** | (529) | (96) | (625) |
| Tax on other activities | **396** | **227** | **623** | 206 | (129) | 77 |
| | **(229)** | **202** | **(27)** | (323) | (225) | (548) |
| **Profit/(loss) for the period** | **584** | **(524)** | **60** | 1,222 | 670 | 1,892 |

## Earnings per share – IFRS basis

| | | | 2011 £m | | | 2010 £m |
|---|---|---|---|---|---|---|
| | **Continuing operations** | **Discontinued operations** | **Total** | Continuing operations | Discontinued operations | Total |
| **Operating profit per share on an IFRS basis after tax, attributable to ordinary shareholders of Aviva plc** | | | | | | |
| Basic (pence per share) | **50.5p** | **3.3p** | **53.8p** | 47.2p | 7.9p | 55.1p |
| Diluted (pence per share) | **49.7p** | **3.2p** | **52.9p** | 46.5p | 7.7p | 54.2p |
| **Earnings after tax on an IFRS basis, attributable to ordinary shareholders of Aviva plc** | | | | | | |
| Basic (pence per share) | **17.0p** | **(11.2p)** | **5.8p** | 37.6p | 12.8p | 50.4p |
| Diluted (pence per share)[1] | **16.7p** | **(11.2p)** | **5.7p** | 37.0p | 12.6p | 49.6p |

1 The effect of future share awards and options in the loss from discontinued operations is anti-dilutive, therefore the diluted earnings per share has been maintained at (11.2) pence

## 1 – Long-term business IFRS operating profit

| | 2011 £m | 2010 £m |
|---|---|---|
| With-profit | **66** | 147 |
| Non-profit | **854** | 703 |
| **United Kingdom** | **920** | 850 |
| France | **323** | 319 |
| Ireland | **47** | 122 |
| Italy | **140** | 119 |
| Poland | **167** | 157 |
| Spain | **216** | 179 |
| Other Europe | **5** | (3) |
| **Aviva Europe** | **898** | 893 |
| **North America** | **197** | 174 |
| **Asia Pacific** | **108** | 71 |
| **Total – continuing operations** | **2,123** | 1,988 |
| **Total – discontinued operations** | **185** | 330 |
| **Total** | **2,308** | 2,318 |

Long-term business IFRS operating profit before shareholder tax for continuing operations was £2,123 million *(2010: £1,988 million)*, an increase of 7% on the prior period. There was good underlying growth in all regions, despite challenging economic and market conditions. Total long-term business operating profit including the contribution from Delta Lloyd was stable at £2,308 million *(2010: £2,318 million).*

### United Kingdom

IFRS operating profit was up 8% at £920 million *(2010: £850 million).* The non-profit result increased by 21% to £854 million *(2010: £703 million)* driven by continued strong performance in annuities, increased annual management charges and inclusion of the full results of RBS Life, following its purchase by Aviva at the end of 2010. Included in the result are one-off benefits of £93 million relating to the Part VII transfers of the former RBS JV entities, and £30 million relating to the release of tax provisions associated with the reattribution of the inherited estate.

The with-profit result, which includes the shareholders' share of regular and terminal bonus payments, was £66 million *(2010: £147 million)* with the variance from 2010 mainly driven by the absence of the final special distribution (*2010: £84 million*).

### Aviva Europe

Aviva Europe's life operating profit was stable at £898 million *(2010: £893 million).* An increase in underlying profits in our major markets was partly offset by lower positive one-off items in the current year result. Operating profit increased in Italy and Spain, despite difficult trading conditions. In France and Poland, the contribution from life business increased, primarily driven by higher profit in our in-force portfolios. Life operating profit in Ireland was flat on an underlying basis, as the prior year result included a favourable one-off item of £75 million relating to the release of reserves for protection business following adoption of realistic reserving.

### North America

In the US, the focus on profitable growth combined with underwriting and pricing discipline resulted in a 13% increase in operating profit to £197 million *(2010: £174 million),* due to growth in the business and the positive impact of higher margins.

### Asia Pacific

Life operating profit increased to £108 million *(2010: £71 million)*, driven by the increased scale and profitability of our existing business. The current year includes a release of reserves of £25 million in Hong Kong following a review of reserving assumptions, and the prior year result included a £27 million benefit from changes to local GAAP reporting in China.

### Discontinued operations – Delta Lloyd

Operating profit for Delta Lloyd included in the Group long-term business total represents 100% of the result as a subsidiary up to 6 May 2011. For this period, the life operating profit included for Delta Lloyd group was £185 million compared with £330 million for the full year in 2010. An improvement in the underlying operating profit was principally driven by expense savings throughout the Delta Lloyd group.

## 2 – Long-term business IFRS profit driver analysis

| | Note | United Kingdom £m | Aviva Europe £m | Rest of the world[1] £m | Total £m |
|---|---|---|---|---|---|
| | | | | | **2011** |
| New business income | a | **527** | **364** | **146** | **1,037** |
| Underwriting margin | b | **183** | **434** | **198** | **815** |
| Unit-linked margin | c | **395** | **551** | **30** | **976** |
| Participating business | d | **66** | **465** | **25** | **556** |
| Spread margin | e | **172** | **51** | **590** | **813** |
| Expected return | f | **195** | **163** | **57** | **415** |
| Investment return | | **828** | **1,230** | **702** | **2,760** |
| **Income** | | **1,538** | **2,028** | **1,046** | **4,612** |
| Acquisition expenses | g | **(385)** | **(492)** | **(118)** | **(995)** |
| Administration expenses | h | **(347)** | **(494)** | **(282)** | **(1,123)** |
| **Expenses** | | **(732)** | **(986)** | **(400)** | **(2,118)** |
| DAC/AVIF amortisation and other | i | **114** | **(144)** | **(341)** | **(371)** |
| **IFRS operating profit – continuing operations** | | **920** | **898** | **305** | **2,123** |
| **IFRS operating profit – discontinued operations** | | **—** | **—** | **185** | **185** |
| **IFRS operating profit** | | **920** | **898** | **490** | **2,308** |

1 'Rest of the world' (continuing operations) includes North America and Asia Pacific.

| | Note | United Kingdom £m | Aviva Europe £m | Rest of the world[1] £m | Total £m |
|---|---|---|---|---|---|
| | | | | | 2010 |
| New business income | a | 499 | 382 | 152 | 1,033 |
| Underwriting margin | b | 178 | 433 | 141 | 752 |
| Unit-linked margin | c | 348 | 541 | 31 | 920 |
| Participating business | d | 147 | 394 | 28 | 569 |
| Spread margin | e | 173 | 44 | 471 | 688 |
| Expected return | f | 223 | 138 | 68 | 429 |
| Investment return | | 891 | 1,117 | 598 | 2,606 |
| **Income** | | 1,568 | 1,932 | 891 | 4,391 |
| Acquisition expenses | g | (353) | (515) | (122) | (990) |
| Administration expenses | h | (333) | (515) | (219) | (1,067) |
| **Expenses** | | (686) | (1,030) | (341) | (2,057) |
| DAC/AVIF amortisation and other | i | (32) | (9) | (305) | (346) |
| **IFRS operating profit – continuing operations** | | 850 | 893 | 245 | 1,988 |
| **IFRS operating profit – discontinued operations** | | — | — | 330 | 330 |
| **IFRS operating profit** | | 850 | 893 | 575 | 2,318 |

1 'Rest of the world' (continuing operations) includes North America and Asia Pacific.

## 2 – Long-term business IFRS profit driver analysis continued

| | 2011 | | | | 2010 | | | |
|---|---|---|---|---|---|---|---|---|
| | United Kingdom £m | Aviva Europe £m | Rest of the world (excluding Delta Lloyd) £m | Total £m | United Kingdom £m | Aviva Europe £m | Rest of the world (excluding Delta Lloyd) £m | Total £m |
| **Note (a)** | | | | | | | | |
| **New business margin (£m)** | **527** | **364** | **146** | **1,037** | 499 | 382 | 152 | 1,033 |
| APE (£m) | **1,520** | **1,276** | **723** | **3,519** | 1,310 | 1,544 | 759 | 3,613 |
| As margin on APE (%) | **35%** | **29%** | **20%** | **29%** | 38% | 25% | 20% | 29% |

New business margin reflects premiums less initial reserves.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (b)** | | | | | | | | |
| **Underwriting margin (£m)** | **183** | **434** | **198** | **815** | 178 | 433 | 141 | 752 |
| Analysed by: | | | | | | | | |
| Expenses (£m) | **85** | **188** | **174** | **447** | 90 | 166 | 115 | 371 |
| Mortality and longevity (£m) | **75** | **177** | **10** | **262** | 63 | 209 | 17 | 289 |
| Persistency (£m) | **23** | **69** | **14** | **106** | 25 | 58 | 9 | 92 |

Expense margin represents unwind of expense allowance on risk business and assumption changes. Mortality and persistency margin reflect conservative reserving for unit-linked, risk and spread business.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (c)** | | | | | | | | |
| **Unit-linked margin (£m)** | **395** | **551** | **30** | **976** | 348 | 541 | 31 | 920 |
| As annual management charge on average reserves (bps) | **95** | **118** | **194** | **109** | 94 | 121 | 238 | 111 |
| Average reserves (£bn) | **41.5** | **46.6** | **1.5** | **89.6** | 36.9 | 44.6 | 1.3 | 82.8 |

Unit-linked margin represents the return made on unit-linked business.
Average reserves include managed pension fund assets not consolidated in IFRS balance sheet.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (d)** | | | | | | | | |
| **Participating business (£m)** | **66** | **465** | **25** | **556** | 147 | 394 | 28 | 569 |
| As bonus on average reserves (bps) | **16** | **71** | **87** | **51** | 35 | 65 | 97 | 54 |
| Average reserves (£bn) | **41.1** | **65.8** | **2.9** | **109.8** | 42.5 | 60.9 | 2.9 | 106.3 |

Participating business is shareholders' share of the bonus to policyholders on with profit and other participating business.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (e)** | | | | | | | | |
| **Spread margin (£m)** | **172** | **51** | **590** | **813** | 173 | 44 | 471 | 688 |
| As spread margin on average reserves (bps) | **52** | **88** | **188** | **116** | 61 | 82 | 157 | 108 |
| Average reserves (£bn) | **32.8** | **5.8** | **31.4** | **70.0** | 28.5 | 5.4 | 30.0 | 63.9 |

Spread margin represents the return made on annuity and other non-linked business.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (f)** | | | | | | | | |
| **Expected return on shareholder assets (£m)** | **195** | **163** | **57** | **415** | 223 | 138 | 68 | 429 |
| Equity (%) | **7.2%** | **6.9%** | **n/a** | **6.9%** | 7.8% | 7.2% | n/a | 7.2% |
| Property (%) | **5.7%** | **5.4%** | **n/a** | **5.6%** | 6.3% | 5.7% | n/a | 6.2% |
| Bonds (%) | **5.5%** | **4.3%** | **4.3%** | **4.9%** | 5.5% | 4.4% | 3.6% | 4.8% |

Expected return being the return made on shareholder net assets.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (g)** | | | | | | | | |
| **Acquisition expenses (£m)** | **(385)** | **(492)** | **(118)** | **(995)** | (353) | (515) | (122) | (990) |
| APE (£m) | **1,520** | **1,276** | **723** | **3,519** | 1,310 | 1,544 | 759 | 3,613 |
| As acquisition expense ratio on APE (%) | **25%** | **39%** | **16%** | **28%** | 27% | 33% | 16% | 27% |

Acquisition expenses include initial expense and commission incurred in writing new business less deferred costs.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Note (h)** | | | | | | | | |
| **Administrative expenses (£m)** | **(347)** | **(494)** | **(282)** | **(1,123)** | (333) | (515) | (219) | (1,067) |
| As existing business expense ratio on average reserves (bps) | **30** | **42** | **79** | **42** | 31 | 46 | 64 | 42 |
| Average reserves (£bn) | **115.4** | **118.2** | **35.8** | **269.4** | 107.9 | 110.9 | 34.2 | 253.0 |

Administrative expenses comprise expenses and renewal commissions incurred in managing the existing book.

## 2 – Long-term business IFRS profit driver analysis continued

### (a) New business income

New business income was stable at £1,037 million *(2010: £1,033 million)* with strong growth in the UK offset by lower sales volumes in Europe and the US. New business income margin as a percentage of APE sales was maintained at 29% *(2010: 29%).* The UK continued to benefit from good performance in individual annuity and protection business. In Aviva Europe, new business income margin increased to 29% *(2010: 25%)* as a result of management action to drive more profitable sales. In the Rest of the World, new business income growth in Asia Pacific was driven by volume increases in Singapore, offset by lower sales in North America.

### (b) Underwriting margin

The underwriting margin increased to £815 million *(2010: £752 million)*. In the UK, reduced expense margins were offset by higher mortality gains. The underwriting result was stable in Aviva Europe, with contributions maintained from all major markets. In the Rest of the World, the margin increased due to growth in the in-force book in the US and favourable experience variances in Asia Pacific.

### (c) Unit-linked margin

The unit-linked margin, which mainly relates to unit-linked business in the UK and the major markets in Aviva Europe, grew from £920 million to £976 million as market growth in the second half of 2010 resulted in higher average unit-linked reserves of £90 billion *(2010: £83 billion)*. The UK unit-linked margin benefited from inclusion of the RBS Life business. The margin as a proportion of average reserves reduced slightly to 109 bps *(2010: 111 bps),* due to lower charges in Poland following legislative changes.

### (d) Participating business

Income from participating business reduced slightly to £556 million *(2010: £569 million).* This reflects a lower shareholder transfer in the UK following the final tranche of the special distribution of £84 million in the first half of 2010. This was largely offset by increased income in Aviva Europe of £465 million *(2010: £394 million),* which is mainly from France, where there is a fixed management charge of around 50bps on AFER business, supported by contributions from Italy and Spain. The contribution from Rest of the World relates primarily to closed block business in the United States.

### (e) Spread margin

Spread income increased to £813 million *(2010: £688 million)* with a spread margin on average reserves of 116 bps *(2010: 108 bps).* Spread margins relate mainly to US equity indexed deferred annuity and life business, and UK annuity business. The increase in income is driven by growth in existing business and higher margins in the US.

### (f) Expected return on shareholder assets

Expected returns were £415 million *(2010: £429 million)*, reflecting investment income on surplus funds. A reduced contribution from the UK and US was partly offset by higher income in Aviva Europe. The UK return included £114 million related to the reattribution of the inherited estate *(2010: £135 million)*. Of this, earnings on the reattributed estate were £36 million and £78 million arose from unwind of guarantees.

### (g) Acquisition expenses

Acquisition expenses were stable at £995 million *(2010: £990 million)* with higher new business in the UK offset by lower sales in Aviva Europe.

### (h) Administration expenses

Administration expenses increased to £1,123 million *(2010: £1,067 million)* with higher costs in the UK and the Rest of the World partly offset by cost savings across the Aviva Europe markets. The expense ratio on average reserves was unchanged at 42 bps *(2010: 42 bps)*.

### (i) DAC, AVIF and other

DAC, AVIF and other items amounted to a charge of £371 million *(2010: £346 million charge).* DAC and AVIF amortisation charges were higher in the UK and the US, as a result of the increased spread margin noted above. This was offset by the higher positive effect of one-off items in the UK. One-off benefits in the current year include £93 million relating to the integration of the RBS Life business and a £30 million release of tax provisions in the UK, and reserve releases of £25 million in Hong Kong following a review of reserving assumptions. The prior year result included one-off reserve releases of £75 million in Ireland and £27 million in China.

## 3 – General insurance and health

| | Net written premiums 2011 £m | Net written premiums 2010 £m | Underwriting result 2011 £m | Underwriting result 2010 £m | Longer-term investment return 2011 £m | Longer-term investment return 2010 £m | Operating profit[2] 2011 £m | Operating profit[2] 2010 £m |
|---|---|---|---|---|---|---|---|---|
| **General insurance – continuing operations** | | | | | | | | |
| **United Kingdom[1,2]** | **4,439** | 4,109 | **129** | 184 | **438** | 419 | **540** | 567 |
| France | **789** | 734 | **70** | 1 | **62** | 49 | **132** | 50 |
| Ireland[2] | **367** | 397 | **(5)** | (17) | **38** | 50 | **32** | 32 |
| Other[3] | **572** | 526 | **(82)** | (49) | **31** | 31 | **(51)** | (18) |
| **Aviva Europe** | **1,728** | 1,657 | **(17)** | (65) | **131** | 130 | **113** | 64 |
| **North America[2]** | **2,083** | 1,958 | **97** | 60 | **168** | 173 | **254** | 222 |
| **Asia Pacific** | **25** | 19 | **(2)** | (7) | **2** | 3 | **—** | (4) |
| | **8,275** | 7,743 | **207** | 172 | **739** | 725 | **907** | 849 |
| **Health insurance – continuing operations** | | | | | | | | |
| **United Kingdom** | **473** | 430 | **4** | 5 | **8** | 7 | **12** | 12 |
| France | **227** | 234 | **11** | 11 | **1** | 15 | **12** | 26 |
| Ireland | **104** | 62 | **10** | 17 | **2** | 2 | **12** | 19 |
| **Aviva Europe** | **331** | 296 | **21** | 28 | **3** | 17 | **24** | 45 |
| **Asia Pacific** | **83** | 53 | **(8)** | (2) | **—** | — | **(8)** | (2) |
| | **887** | 779 | **17** | 31 | **11** | 24 | **28** | 55 |
| **Total – continuing operations** | **9,162** | 8,522 | **224** | 203 | **750** | 749 | **935** | 904 |
| **Total – discontinued operations[2,4]** | **557** | 1,177 | **(28)** | 60 | **34** | 97 | **1** | 146 |
| **Total** | **9,719** | 9,699 | **196** | 263 | **784** | 846 | **936** | 1,050 |

1 United Kingdom includes Aviva Re and agencies in run-off.
2 Group operating profits include an unfavourable impact of £44 million resulting from the unwind of discount and pension scheme net finance costs (FY10: £59 million). £27 million relates to UKGI (FY10: £36 million), £5 million relates to Delta Lloyd (FY10: £11 million), £11 million relates to Canada (FY10: £11 million) and £1 million relates to Ireland (FY10: £1 million).
3 Other Europe includes Italy, Poland and Turkey.
4 Current period discontinued operating results of Delta Lloyd are up to 6 May 2011 only.

### Combined operating ratios – general insurance business only

| | Claims ratio 2011 % | Claims ratio 2010 % | Expense ratio 2011 % | Expense ratio 2010 % | Combined operation ratio 2011 % | Combined operation ratio 2010 % |
|---|---|---|---|---|---|---|
| **United Kingdom[1]** | **62.1%** | 63.9% | **10.3%** | 11.0% | **96%** | 96% |
| France | **61.2%** | 71.2% | **11.1%** | 10.5% | **90%** | 99% |
| Ireland | **70.7%** | 74.9% | **21.1%** | 19.5% | **102%** | 105% |
| **Aviva Europe** | **70.8%** | 73.0% | **12.9%** | 13.1% | **101%** | 103% |
| **North America** | **64.1%** | 64.3% | **11.9%** | 13.6% | **95%** | 97% |
| **Total – continuing operations** | **64.4%** | 65.0% | **11.3%** | 12.2% | **97%** | 97% |

1 United Kingdom excluding Aviva Re and agencies in run-off.

Detailed analysis is given within the IFRS supplement, note A18, page 96.

Ratios are measured in local currency. The total Group ratios are based on average exchange rates applying to the respective periods.

**Definitions:**

| | |
|---|---|
| Claims ratio | Incurred claims expressed as a percentage of net earned premiums. |
| Expense ratio | Written expenses excluding commissions expressed as a percentage of net written premiums. |
| Combined operating ratio | Aggregate of claims ratio, expense ratio and commission ratio. |

## 3 – General insurance and health continued

Group operating profit from continuing general insurance and health operations for the period was £935 million *(FY10: £904 million).* The general insurance and health underwriting result from continuing operations increased to £224 million *(FY10: £203 million),* driven by increased business volumes and improvements in premium rates as well as benign weather in Europe.

We continue to apply our reserving policy consistently and to focus on understanding the true cost of claims to ensure that reserves are maintained at a robust 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. Current year underwriting results have improved significantly following actions including improving risk selection, expense management and reshaping the book. Over 2011 operating profit was impacted by a small net strengthening of reserves of £36 million, net of reinsurance and excluding Delta Lloyd *(FY10: £124 million benefit excluding Delta Lloyd).*

The worldwide general insurance combined operating ratio (COR) for continuing operations improved to 96.8% *(FY10: 97.1%)* in line with the Group's target for the year. The worldwide expense ratio for continuing operations has decreased to 11.3% from 12.2% in 2010, reflecting cost savings from our efficiency programmes and actions taken across the Group to manage the cost base.

The longer term investment return (LTIR) on general insurance and health business assets for continuing operations was unchanged at £750 million *(FY10: £749 million).*

### United Kingdom

The result for our general insurance and health business in the UK includes the UK General Insurance business, the UK Health Insurance business, our Group captive reinsurer, Aviva Re, and agencies in run off. Operating profit of £552 million *(2010: £579 million)* comprises UK General Insurance operating profit of £508 million *(2010: £476 million*), a contribution of £32 million *(2010: £91 million)* from Aviva Re and agencies in run off and £12 million from our UK health business *(2010: £12 million)*. All subsequent commentary relates solely to UK General Insurance.

2011 has been another successful year where we have increased sales and profitability. Business volumes have continued to grow, with total **net written premiums** rising 8% to £4,371 million *(2010: £4,046 million)*. Excluding RAC, net written premiums increased by 11% to £4,110 million *(2010: £3,705 million)*. In personal motor we have attracted 413,000 net new customers during the year and net written premiums (excluding RAC) were up 32% at £1,126 million *(2010: £854 million)*, reflecting rating action, strong growth in direct and the successful roll out of direct pricing to brokers. The launch of quotemehappy.com and our multi-car offering have proved successful and will help ensure we can continue this profitable growth into 2012.

Total **operating profit** increased to £508 million, up 7% on last year *(2010: £476 million)*. Excluding RAC, operating profit has grown by 11% to £433 million *(2010: £391 million)*. The result has benefited from favourable weather; an increase in investment return to £425 million *(2010: £406 million)*; and a further improvement in underlying profitability. The result includes the impact of a small strengthening in prior year claims reserves (excluding adverse 2010 freeze development) of £37 million *(2010: £87 million release)*. This primarily reflects adverse experience on 2010 commercial motor business (for some vans, taxis and scheme accounts) and on one historic professional indemnity account. We have already taken rating action and made selective exits with respect to these poor performing business lines.

Our **combined operating ratio** for the year was ahead of group target at 96% *(2010: 96%)*. The expense ratio has improved to 10.3% *(2010: 11.0%),* reflecting a further improvement in efficiency with the £325 million growth in premiums delivered on a reduced cost base, and the benign weather and underlying performance have had a positive impact on the current year loss ratio. These factors have been offset by an increase in the commission ratio reflecting higher profit commission payments on the favourable claims experience and the impact of changes in business mix.

Performance in **personal lines** has been strong. Personal motor performance has benefited from earned rate increases that have been ahead of claims inflation, coupled with the success of our sophisticated pricing. During the year personal motor rates increased by 13%. Homeowner has seen good profitability through a combination of sophisticated pricing, excellent claims and supply chain management, efficiency savings and benign weather. Rates increased by 5% (including indexation).

**Commercial lines** have been more challenging. Commercial motor profitability has been adversely impacted by the poor performing business lines noted above. During the year we have applied significant rate action of 13% in commercial motor. In property and liability, rate increases remain below claims inflation in low single digits adversely impacting profitability. We are maintaining our disciplined approach to writing business in these competitive segments.

### Aviva Europe

General insurance **net written premiums** have increased by 4% to £1,728 million *(FY10:£1,657 million)* driven by successful pricing actions in personal motor. Health net written premium increased by 12% to £331 million *(FY10: £296 million)* reflecting continued growth in Ireland offsetting a small decline in France as customers reduced protection cover in a difficult economic environment.

General insurance and health **operating profit** has increased by 26% to £137 million *(FY10: £109 million)* with growth in general insurance profit in France offset by a reduction in Italy and an overall reduction in health insurance profits.

In France we also released surplus reserves margins of around £45 million to align with the Group's reserving policy but the benefit of this was fully offset by some reserve strengthening in Italy in respect of prior year.

General insurance **combined operating ratio** of 101% is 2pp better than that reported at FY10 principally as a result of better weather experience in 2011. Although we delivered a strong general insurance result in France, the overall European combined operating ratio remains behind the group's target. We are taking further actions to improve this, particularly in Italy where we are actively developing our pricing and underwriting capabilities.

## 3 – General insurance and health continued

### North America

**Net written premiums** in Canada increased 6% to £2,083 million *(FY10: £1,958 million)*, due to pricing actions in Personal and Commercial businesses and reduced reinsurance costs.

**Operating profit** increased to £254 million *(FY10: £222 million)* driven by growth in underwriting profit which offset a small decline in LTIR to £168 million *(FY10: £173 million).* We see a low interest rate environment continuing into 2012 and expect this to give rise to a further fall in LTIR.

The **underwriting results** were strong at £97 million *(FY10: £60 million)* due to expense savings, lower commissions and favourable claims experience in our motor business.

Our **combined operating ratio** was 95%, an improvement of 2pp from 2010 *(FY10: 97%).*

### Asia Pacific

The **net written premiums** in the general insurance and health business rose to £108 million *(FY10: £72 million)* due to the contribution of the Indonesia health business, which was acquired on 1 July 2010 and a successful sales campaign in the Singapore health business.

The **operating loss** was £8 million *(FY10: £6 million loss)* due to continued investment in the health business and break even in the general insurance business.

### Discontinued operations – Delta Lloyd

As a result of the partial disposal of Aviva's stake in Delta Lloyd, from 6 May 2011 the Group has ceased to consolidate the results and net assets of the Delta Lloyd group. The results of Delta Lloyd up to the transaction date have therefore been classified as discontinued operations. **Net written premiums** for the period to 6 May 2011 were £557 million *(FY10: £1,177 million)* and **operating profit** decreased to £1 million *(FY10: £146 million).*

## 4 – Fund management

**Geographical analysis of fund management operating profits**

| | 2011 £m | 2010 £m |
|---|---|---|
| United Kingdom | **31** | 44 |
| Europe | **35** | 36 |
| North America | **33** | 22 |
| Asia Pacific | **(11)** | (5) |
| **Aviva Investors[1]** | **88** | 97 |
| **United Kingdom** | **11** | 3 |
| **Asia Pacific** | **—** | (2) |
| **Total – continuing operations** | **99** | 98 |
| **Total – discontinued operations** | **11** | 103 |
| **Total** | **110** | 201 |

1 Aviva Investors total Regional operating profit of £91 million (*FY10: £100 million*) also includes profit from the Aviva Investors pooled pensions business of £3 million (*FY10: £3 million*), which is included in the life segment.

Our worldwide fund management operating profit for continuing operations increased to £99 million *(FY10: £98 million)* on an IFRS basis.

### Aviva Investors

Operating profit was lower at £88 million in 2011 (*FY10: £97 million*), the fall in operating profit reflects the impact of ongoing investment in our global infrastructure and clients re-evaluating their risk appetite in the face of the continuing economic downturn which, in some instances has led them to re-allocate towards lower fee-bearing asset classes, with a consequential impact on revenue.

Net funded external sales (excluding liquidity funds) grew to £5.6 billion [1] as we achieved record funded external sales, up 137% on an underlying [1] basis, with an additional £1 billion of committed but unfunded sales.

### Other fund management businesses

United Kingdom operating profit of £11 million relates solely to the Aviva UK investment business (*FY10: £3 million*). The increase in operating profit is a result of increased funds under management. The 2010 figures included £5 million loss from the RBS collective investment business which was sold in December 2010.

Operating profit in Asia Pacific includes our Navigator business in Singapore. The prior year result included an operating loss of £1 million in Hong Kong Navigator, which was closed to business in 2010. On an underlying basis, operating profit is in line with the prior period, showing a breakeven position for the year.

**Funds under management**

Funds under management at 31 December 2011 were £337 billion *(31 December 2010: £340 billion, excluding Delta Lloyd)*. The total funds under management reported at 31 December 2010 of £402 billion included £62 billion relating to Delta Lloyd, which has now been deconsolidated (see note A3 on page 45).

| | 2011 | | | 2010 | | |
|---|---|---|---|---|---|---|
| | Aviva Investors £m | Other Aviva and external managers £m | Total £m | Aviva Investors £m | Other Aviva and external managers £m | Total £m |
| Internal funds under management | **210,341** | **58,663** | **269,004** | 209,094 | 117,666 | 326,760 |
| Third party funds under management | **52,165** | **15,392** | **67,557** | 50,693 | 24,798 | 75,491 |
| **Funds under management** | **262,506** | **74,055** | **336,561** | 259,787 | 142,464 | 402,251 |
| Delta Lloyd | **—** | **—** | **—** | — | (62,362) | (62,362) |
| **Funds under management (excluding Delta Lloyd)** | **262,506** | **74,055** | **336,561** | 259,787 | 80,102 | 339,889 |

Funds managed by Aviva Investors were up 1% to £263 billion *(31 December 2010: £260 billion)*, with assets managed for external clients increasing 3% to £52 billion *(31 December 2010: £51 billion)*. The growth in funds under management was due to positive net flows and capital appreciation. Detailed analysis is given within the IFRS supplement, note A19, page 97.

1 On an underlying basis excludes Australia. Including Australia net funded sales was £5.1bn. On1st October we completed a sale of our Aviva Investors Australia business.

## 4 – Fund management continued

### Net flows

| | Funds under management at 1 Jan 2011 £m | Premiums and deposits, net of reinsurance £m | Claims and redemptions, net of reinsurance £m | Net flows £m | Market and other movements £m | Funds under management at 31 Dec 2011 £m |
|---|---|---|---|---|---|---|
| **Life business** | | | | | | |
| UK – non-profit | **72,964** | **8,609** | **(6,612)** | **1,997** | **2,710** | **77,671** |
| UK – with-profits | **48,432** | **831** | **(5,377)** | **(4,546)** | **2,292** | **46,178** |
| **United Kingdom** | **121,396** | **9,440** | **(11,989)** | **(2,549)** | **5,002** | **123,849** |
| **Aviva Europe** | **105,859** | **10,568** | **(11,635)** | **(1,067)** | **(6,605)** | **98,187** |
| **North America** | **31,198** | **3,877** | **(3,007)** | **870** | **2,188** | **34,256** |
| **Asia Pacific** | **2,866** | **475** | **(284)** | **191** | **(168)** | **2,889** |
| **Life business – continuing operations** | **261,319** | **24,360** | **(26,915)** | **(2,555)** | **417** | **259,181** |
| Other funds under management included within consolidated IFRS assets | **19,625** | | | | | **21,637** |
| Third party funds under management not included within consolidated IFRS assets | **58,945** | | | | | **55,743** |
| **Funds under management (excluding Delta Lloyd)** | **339,889** | | | | | **336,561** |
| Delta Lloyd | **62,362** | | | | | **—** |
| **Total funds under management** | **402,251** | | | | | **336,561** |

#### Life business

**United Kingdom**

At 31 December 2011, positive net inflows of £2.0 billion on non-profit business are mainly the result of continued significant sales of individual and bulk purchase annuities. Net outflows on our with-profits book amounted to £4.5 billion during the period, is in line with our expectations.

**Aviva Europe**

Net outflows of £1.1 billion are primarily driven by lower with-profit sales in France and Italy and partial withdrawals in France which reflected the challenging market and economic conditions. Other movements in life investments primarily reflect adverse foreign exchange movements of £2.8 billion, driven by the weakening of the Euro against Sterling, together with unrealised losses of £4.7 billion, which were partially offset by other positive movements of £0.9 billion.

**North America**

Net inflows in our US business are mainly due to continued growth of our protection and annuity portfolios. Other movements reflect favourable foreign exchange impacts and fair value movements.

## 5 – Other operations and regional costs

| | 2011 Regional costs £m | 2011 Other operations £m | 2011 Total £m | 2010 Regional costs £m | 2010 Other operations £m | 2010 Total £m |
|---|---|---|---|---|---|---|
| **United Kingdom** | **—** | **(61)** | **(61)** | — | (21) | (21) |
| **Aviva Europe** | **(57)** | **(41)** | **(98)** | (55) | (49) | (104) |
| **North America** | **(15)** | **(3)** | **(18)** | (26) | 6 | (20) |
| **Asia Pacific** | **(30)** | **—** | **(30)** | (32) | — | (32) |
| **Total – continuing operations** | **(102)** | **(105)** | **(207)** | (113) | (64) | (177) |
| **Total – discontinued operations** | **—** | **(2)** | **(2)** | — | (43) | (43) |
| **Total** | **(102)** | **(107)** | **(209)** | (113) | (107) | (220) |

Continuing other operations and regional costs have increased to £207 million (*FY10: £177 million*). Costs within Aviva Europe, North America and Asia Pacific have decreased. Of the £61 million in the UK, £8 million relates to the UK region and the balance to Group Centre. The FY10 comparative included a favourable non-recurring item of £12 million. Note A20 on page 97 in the IFRS supplement gives further information on the operational cost base.

## 6 – Corporate centre

| | 2011 £m | 2010 £m |
|---|---|---|
| Project spend | **(19)** | (37) |
| Share awards and other incentive schemes | **(16)** | (14) |
| Central spend | **(103)** | (92) |
| **Total** | **(138)** | (143) |

Total corporate centre costs decreased to £138 million *(FY10: £143 million)* driven by reductions in project spend which was partly offset by central spend which increased by £11 million reflecting the continued commitment to meeting increased regulatory and reporting requirements.

## 7 – Group debt costs and other interest

| | 2011 £m | 2010 £m |
|---|---|---|
| External debt | | |
| Subordinated debt | **(302)** | (290) |
| Other | **(22)** | (21) |
| Total external debt | **(324)** | (311) |
| Internal lending arrangements | **(287)** | (246) |
| Net finance charge on main UK pension scheme | **(46)** | (87) |
| **Total – continuing operations** | **(657)** | (644) |
| **Total – discontinued operations** | **(4)** | (12) |
| **Total** | **(661)** | (656) |

Group debt costs and other interest for continuing operations of £657 million *(FY10: £644 million)* comprise external interest on borrowings, subordinated debt and internal lending arrangements. External interest costs increased to £324 million *(FY10: £311 million)*, reflecting loan mix which led to an increase in average interest cost. Interest costs on internal lending arrangements increased to £287 million *(FY10: £246 million)* due to changes in internal debt balances through the period.

The UK pension scheme net charge represents the difference between the expected return on pension scheme assets and the interest charged on pension scheme liabilities. The net pension charge reduced to £46 million *(FY10: £87 million)* due mostly to the closure of the scheme to future accruals with effect from 1 April 2011 and the consequent reduction in scheme liabilities.

## 8 – Investment return variances and economic assumption changes on long-term business

### (a) Definitions

Operating profit for long-term 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. 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 exceptional. In 2010, the strengthening of annuitant longevity assumptions in the Netherlands was treated as an exceptional item outside operating profit. 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.

### (b) Economic volatility

The investment variances and economic assumption changes excluded from the long-term business operating profit are as follows:

| | Long-term business | |
|---|---|---|
| | **2011 £m** | 2010 £m |
| Investment variances and economic assumptions – continuing operations | **(796)** | (219) |
| Investment variances and economic assumptions – discontinued operations | **(820)** | 1,010 |
| Investment variances and economic assumptions | **(1,616)** | 791 |

In 2010, investment variances of £791 million included £1,010 million relating to Delta Lloyd. Of this, around £800 million was due to differing movements in asset and liability yield curves with the remainder primarily related to gains on interest rate derivatives. Liabilities in Delta Lloyd are discounted using a yield curve based on a fully collateralised AAA bond portfolio. The discount rate increased in 2010 as an increase of around 80bps in credit spreads on collateralised bonds was only partly offset by lower risk-free yields. As a result, whilst lower interest rates increased the market value of assets, this was not offset by a corresponding movement in liabilities. The AAA collateralised bond spread movement in 2010 reflected the perceived risk regarding the curve's components which include bonds issued by Spanish savings banks and a range of other European organisations.

Over the period from the start of 2011 to the partial disposal of Delta Lloyd on 6 May 2011, the AAA collateralised bond spread narrowed by about 80bps as a result of changes in the underlying bond index. This movement was the main driver of the negative variance of £820 million for discontinued operations in 2011, largely reversing the positive variance reported in the prior year.

For continuing operations, the negative investment variance of £796 million relates largely to the impact of lower risk-free interest rates, wider credit spreads and increased market volatility in the UK and Europe. In the UK these factors have increased the cost of guarantees in the New With-Profits sub-fund. In Europe the variance is driven by wider credit spreads on bonds in Ireland, Italy and Spain. Any future increases in credit spreads on corporate and government bonds would cause further negative investment variances.

The overall allowances for credit defaults on UK corporate bonds and commercial mortgages remain at broadly consistent levels.

### (c) Assumptions

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

The principal assumptions underlying the calculation of the expected investment return for equities and properties are:

| | Equities | | Properties | |
|---|---|---|---|---|
| | **2011 %** | 2010 % | **2011 %** | 2010 % |
| United Kingdom | **7.2%** | 7.8% | **5.7%** | 6.3% |
| Eurozone | **6.9%** | 7.2% | **5.4%** | 5.7% |

The expected return on equities and properties is calculated by reference to the 10 year swap rate in the relevant currency plus an appropriate risk margin. These are the same assumptions as are used under MCEV principles to calculate the longer-term investment return for the Group's long-term business.

For fixed interest securities classified as FV, the expected investment returns are based on average prospective yields for the actual assets held. Where such securities are classified as AFS, such as in the US, the expected investment return comprises the expected interest or dividend payments and amortisation of the premium or discount at purchase.

## 9 – Short-term fluctuation in return on investments on general insurance and health business

| Continuing operations | General insurance and health 2011 £m | General insurance and health 2010 £m |
|---|---|---|
| Net investment income | **725** | 497 |
| Foreign exchange on unrealised gains/losses and other charges | **(99)** | 53 |
| | **626** | 550 |
| Analysed between: | | |
| Longer term investment return, reported within operating profit | **750** | 749 |
| Short-term fluctuations in investment return, reported outside operating profit | **(124)** | (199) |
| | **626** | 550 |
| Short-term fluctuations on general insurance and health | **(124)** | (199) |
| Short-term fluctuations on other operations | **(142)** | — |
| Total short-term fluctuations as per pro forma reconciliation of Group operating profit to profit after tax – continuing operations | **(266)** | (199) |
| Total short-term fluctuations as per pro forma reconciliation of Group operating profit to profit after tax – discontinued operations | **(60)** | (44) |
| **Total short-term fluctuations as per pro forma Group operating profit** | **(326)** | (243) |

The longer-term investment return is calculated separately for each principal non-long-term 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. Other operations reflect assets in the France holding company backing non-long-term business.

General insurance and health includes the impact of the unrealised and realised gains on Group centre investments, including the centre hedging programme which is designed to economically protect the total Group's capital against adverse equity and FX movements.

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

| | 2011 £m | 2010 £m |
|---|---|---|
| Debt securities | **9,371** | 11,404 |
| Equity securities | **551** | 918 |
| Properties | **152** | 146 |
| Cash and cash equivalents | **2,315** | 1,787 |
| Other | **5,871** | 4,021 |
| **Assets supporting general insurance and health business** | **18,260** | 18,276 |
| Assets supporting other non-long term business[1] | **268** | 1,689 |
| **Total assets supporting non long-term business** | **18,528** | 19,965 |

1 For 2011 represents assets in France holding company backing non-long-term business. For 2010 represents Delta Lloyd Group's banking and mortgage activities which are no longer consolidated following the partial disposal of Delta Lloyd on 6 May 2011.

These assets have reduced due to the deconsolidation of Delta Lloyd following the partial disposal on 6 May 2011.

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

| | Longer-term rates of return equities 2011 % | Longer-term rates of return equities 2010 % | Longer-term rates of return property 2011 % | Longer-term rates of return property 2010 % |
|---|---|---|---|---|
| United Kingdom | **7.2%** | 7.8% | **5.7%** | 6.3% |
| France | **6.9%** | 7.2% | **5.4%** | 5.7% |
| Ireland | **6.9%** | 7.2% | **5.4%** | 5.7% |
| Canada | **7.0%** | 7.5% | **5.5%** | 6.0% |
| Netherlands – Discontinued | **6.9%** | 7.2% | **5.4%** | 5.7% |

The underlying reference rates are at E18 within the MCEV financial supplement.

## 10 – Economic assumption changes on general insurance and health business

Economic assumption changes of £90 million adverse *(FY10: £61 million adverse)* mainly arise as a result of the reduction in the swap rate used to discount latent claims reserves.

## 11 – Impairment of goodwill, associates and joint ventures

Impairment of goodwill, associates and joint ventures is a charge of £392 million *(FY10: £24 million).* The charge was driven by the write-down of our holdings in Delta Lloyd, Ireland and other subsidiaries.

Following the deconsolidation of Delta Lloyd, the recoverable amount of Delta Lloyd NV has been determined based on the market price at 31 December 2011. As a result a write-down of £217 million has been recognised in respect of our associate holding.

Following the announcement of the termination of Aviva Ireland's bancassurance distribution contract, a write-down of £120 million has been recognised in the goodwill associated with this business. Other impairments of £55 million have been recognised in respect of smaller businesses in the group.

## 12 – Profit/loss on the disposal of subsidiaries and associates

The total Group profit on disposal of subsidiaries and associates was £533 million *(FY10: £159 million profit)*. On 30 September 2011, the Group sold RAC Limited ("RAC") to The Carlyle Group for £977 million, realising a profit of £532 million. Aviva is continuing its commercial relationship with RAC, both as a key underwriter of motor insurance on RAC's panel and as a partner, selling RAC breakdown cover to our customers. The Group has retained the RAC (2003) Pension Scheme which, at 31 December 2011, had an IAS 19 deficit of £51 million.

The Group sold its Australian fund management business, Aviva Investors Australia Ltd, to nabInvest, National Australia Bank's direct asset management business, for £35 million. Net assets disposed of were £11 million, comprising assets of £15 million and liabilities of £4 million, giving a profit before tax of £20 million after transaction costs. Recycling currency translation reserves of £3 million to the income statement resulted in an overall profit on disposal of £23 million before tax.

The Group recorded a loss of £32 million arising from the sale of 25 million ordinary shares in Delta Lloyd N.V, on 6 May 2011, which reduced our holding to approximately 43% and resulted in the deconsolidation of Delta Lloyd. Cash consideration of £380 million was received for the sale of shares, and £8 million of costs are attributable to the disposal transaction. Note A3 on page 45 in the notes to the condensed financial statements gives further information on the calculation of the loss.

## 13 – Integration and restructuring costs

Integration and restructuring costs are £268 million *(FY10: £243 million)*. This includes costs associated with preparing the businesses for Solvency II implementation of £96 million, a £30 million charge in the UK relating to the reattribution of the inherited estate and expenditure relating to the Quantum Leap project in Europe of £51 million. Expenditure relating to other restructuring exercises across the group amounted to £91 million.

## 14 – Exceptional items

There were two exceptional items during 2011 totalling £57 million *(FY10: £273 million)*; relating to a £22 million provision for compensation scheme costs for the leveraged property fund in Ireland, as well as a £35 million expense for the discounted cost of strengthening latent claims provisions in the UK on business written a significant number of years ago. In FY10 exceptional items mainly arose in Delta Lloyd which recognised a total of £549 million comprising the cost of adopting new longevity tables as well as the closure of its German business. This was offset by £286 million benefit from the closure of the final salary section of the UK staff pension scheme.

# New business

## 15 – Life and pension sales

| Life and pensions (gross of tax and minority interest) | Present value of new business premiums 2011 £m | 2010 £m | Value of new business 2011 £m | 2010 £m | New business margin 2011 % | 2010 % |
|---|---|---|---|---|---|---|
| **United Kingdom** | **11,315** | 10,298 | **380** | 354 | **3.4%** | 3.4% |
| France | **4,047** | 4,918 | **142** | 175 | **3.5%** | 3.6% |
| Ireland | **917** | 938 | **(4)** | 1 | **(0.4)%** | 0.1% |
| Italy | **2,993** | 4,456 | **75** | 142 | **2.5%** | 3.2% |
| Poland | **487** | 603 | **45** | 40 | **9.2%** | 6.6% |
| Spain | **1,926** | 2,084 | **86** | 128 | **4.5%** | 6.1% |
| Other Europe[1] | **521** | 538 | **25** | 18 | **4.8%** | 3.3% |
| **Aviva Europe** | **10,891** | 13,537 | **369** | 504 | **3.4%** | 3.7% |
| **North America** | **3,932** | 4,728 | **(131)** | (194) | **(3.3)%** | (4.1)% |
| **Asia Pacific** | **1,782** | 1,617 | **71** | 52 | **4.0%** | 3.2% |
| **Total life and pensions – continuing operations** | **27,920** | 30,180 | **689** | 716 | **2.5%** | 2.4% |
| **Total life and pensions – discontinued operations[2]** | **1,085** | 3,178 | **1** | (92) | **0.1%** | (2.9)% |
| **Total life and pensions** | **29,005** | 33,358 | **690** | 624 | **2.4%** | 1.9% |

1 'Other Europe' includes business in Czech Republic, Hungary and Romania which were sold in January, subject to local regulatory approvals, to Metlife,Inc
2 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

See New Business Supplement on page 100 for further analysis of sales volumes. Regional new business internal rates of return are included in the Capital Performance section, page 109.

### United Kingdom

Aviva UK Life delivered a strong result in 2011. Sales of **Life and Pensions** products were up 10% on the previous year at £11,315 million *(FY10: £10,298 million)* and we grew our life and pensions market share to 12%[3] *(9M10: 10%)*. Our adherence to strict pricing disciplines has enabled us to sustain strong IRR, margin and payback, despite tough market conditions. IRR remained at 15% *(FY10: 15%)*, and over hurdle rate at an individual product level. Margin was maintained at 3.4% *(FY10: 3.4%)*, and payback at 7 years.

Sales of **Group Personal Pensions** were up 66% to £2,961 million *(FY10: £1,789 million)*, reflecting the strength of our proposition in the marketplace. Also in the corporate market, sales of **bulk purchase annuities** were £1,075 million (*FY10: £871 million)* as we witnessed a continued appetite from pension scheme trustees to de-risk scheme liabilities. We continue to believe that there are significant opportunities to write profitable business in this market.

Sales of **individual annuities** were up 21% to £2,756 million *(FY10: £2,299 million)* as we continue to benefit from our competitive position in the open market, winning around 30%[3] of all business in this market (as at 9M11). This resulted in a 25% market share[2], a market leading position overall. Our focus on value against a backdrop of greater competition has seen our sales of **equity release** reduced by 27% to £317 million from last year's record levels *(FY10: £436 million)*. Despite this, we continue to be market leader with a 37%[3] share of the market, and see this as a core offering for those reaching retirement.

Total **protection** sales were up 9% at £1,025 million *(FY10: £944 million)* with sales of core protection up 7%. We are positive about the opportunities within the protection market as distribution agreements with Santander and Barclays come fully on-stream in 2012, supporting our ambition of being number one in the protection market.

Sales of **Individual Pensions** rose by 2% to £1,876 million *(FY10: £1,831 million),* as we continue to support advisors in the run up to the Retail Distribution Review (RDR) in January 2013. We are also seeing a transition in business towards advisor charging both in personal pensions and platform offerings. Sales of **Bonds** continue to be lower than FY10, at £800 million *(FY10: £1,686 million)*, reflecting our continued focus on writing profitable business, the impact of the changing distributor landscape pre-RDR, and reduced attractiveness of bonds following tax treatment changes.

**Collective investment sales** were up 9% against the FY10 at £1,689 million *(FY10: £1,548 million)* supported by growth in managed funds, including new multi-asset funds, and good performance from global property.

There is a significant level of regulatory change throughout 2013/2014. We have an extensive programme in place to ensure regulatory compliance whilst leveraging our experience, expertise and strong brand to take advantage of opportunities presented.

Even in uncertain economic times we feel there is a significant opportunity for providers who focus on the fundamentals of delivering excellent products and excellent service, built around the customer, and in doing so, we expect to continue to grow our business profitably in 2012.

3 ABI data Q3 2011

## 15 – Life and pension sales continued

### Aviva Europe

Aviva Europe has delivered a robust performance during 2011, with our focus on value generation delivering a strong life new business IRR of 14% *(FY10: 13%)*. We took actions to reduce sales of capital intensive with-profit products in France and Italy and focused on driving increased proportions of unit linked and protection business across all markets. This has enabled us to move our business mix, with unit-linked and protection sales now constituting 29% of the portfolio compared with 26% last year. Overall life and pensions sales are down 20% at the end of 2011 to £10,891 million, primarily driven by the deliberate reduction in with-profits business, which was 27% lower than FY10. Margin remains healthy at 3.4% *(FY10: 3.7%)* but has been impacted by a deterioration in investment market conditions.

In **France** our focus on value over volume has seen France life new business IRR increase to 11% *(FY10: 9%)*. This focus combined with the difficult economic climate has resulted in an 18% decrease in life and pension sales to £4,047 million.
Sales of the AFER product declined 38% to £1,639 million *(FY10: £2,646 million)* reflecting high sales in 2010 combined with management action to increase capital efficiency in 2011.
Sales through Credit du Nord continue to be strong increasing by 13% to £1,407 million (11% on a local currency basis), a successful performance in the context of a 15% decline in the French bancassurance market[4].

In **Spain** against challenging market conditions, sales have been resilient, down only 8% to £1,926 million. With unemployment of 23% and a decrease in GDP forecast[5] for 2012 we believe sales will continue to be under pressure. Despite a 36%[6] decrease in mortgage activity, sales of individual protection have only declined 17%, retaining our position as the second largest provider[7] in this sector. This has impacted our business mix which in turn contributed to the deterioration of margin to 4.5% *(FY10: 6.1%).* Weak consumer confidence has depressed pension sales in the fourth quarter, which combined with higher sales in non profit savings products has led to an increase in life new business IRR to 23% *(FY10: 22%)*. There is currently significant structural reform underway amongst the Spanish savings banks. We are working through this with our savings bank partners with the aim of protecting our bancassurance franchise.

In **Italy** management actions to emphasise capital efficient products and move the product mix led to a 42% fall in with-profit sales and an overall 33% reduction in sales volumes to £2,993 million *(FY10: £4,456 million)*. We have also increased life new business IRR to 12% *(FY10: 11%).* We are a market leader[8] in Italy for sales of protection and have driven a change in our business mix with protection now being 9% of new business premiums, from 6% in 2010. However the lending market is currently under pressure and this could impact protection sales going forward.

In **Ireland** life sales have decreased by 2% to £917 million *(FY10: £938 million)*. Excluding low margin single premium investment bonds sales are down to £583 million *(FY10: £707 million)*, reflecting the economic situation in Ireland. Life new business IRR at 6% *(FY10: 5%)* is behind Group target and margin has fallen to (0.4)% *(FY10: 0.1%)*. Ireland remains a priority market for Aviva and we are working with the UK region to improve the competiveness of this business and take significant action to restore profitability.

In **Poland** non pensions sales have increased by 25% to £387 million *(FY10: £309 million)* as a result of our focus on unit-linked and protection products (up 30% and 82% respectively). Pension sales have decreased by 66% to £100 million (*FY10: £294 million)* as expected as a result of the legislative changes. The proportion of non-pensions sales has increased to 80% compared to 51% at FY10, resulting in a life new business IRR of 24% *(FY10: 25%).*

Our sales in **Turkey** and **Russia** have grown 9% to £321 million *(FY10: £295 million)* driven by our solid partnership with Akbank which continues to offer significant growth potential. Over the second half of 2011 we have continued to grow our retail life distribution reach in Turkey which had 53 active agencies operating at the end of 2011.

4 According to the document Suivi mensuel vie et capitalisation published by the Fédération Française des Sociétés d'Assurances (FFSA) and GEMA (Groupement des entreprises mutuelles d'assurances) as at 31 December 2011
5 Bank of Spain
6 According to the Instituto Nacional de Estadística (INE) based on a 36% decrease in mortgage approvals by value from the first 11 months of 2010 compared to the first 11months of 2011
7 ICEA (Investigación Cooperativa entre Entidades Aseguradoras) December 2011
8 According to ISVAP based on Italy life protection being 35% of the market based on gross written premiums as at 30 September 2011

## 15 – Life and pension sales continued

### North America

In the year, US total life and annuity sales declined 17% to £3,932 million (FY10: £4,728 million), due to a 24% reduction in **annuity sales** to £2,839 million (FY10: £3,729 million). This decrease was primarily driven by our focus on value over volume, with strong annuity price competition and increased consumer demand for variable annuity products in the first half of 2011.

Whilst annuity sales declined, **life sales** increased 9% to £1,093 million (FY10: £999 million) reflecting our focus on growth in our life business. Life sales now account for 28% of our business (FY10: 21%). Our pricing discipline allowed us to maintain a strong IRR of 14%.

### Asia Pacific

Asia Pacific delivered a strong result with an increase in sales and significantly higher IRR and margins. This was achieved despite regulatory changes in our larger markets and the economic downturn in the second half of 2011.

Life and pensions sales rose by 10% to £1,782 million (FY10: £1,617 million). The new business IRR improved to 13.1% (FY10: 10.6%) and new business margin improved to 4.0% (FY10: 3.2%) as a result of management actions to improve product mix and expense efficiency. Excluding the Taiwan business (which is held for sale) new business margin is 4.1% and IRR is 13.9%.

**Singapore** led the region's growth with an increase in life and pension sales of 56% to £538 million (FY10: £345 million) largely driven by strong bancassurance sales with the Development Bank of Singapore and the success of the Aviva Advisors channel.

**South Korea** produced a 19% growth to £481 million (FY10: £405 million) driven by strong performance in the bancassurance and agency channels.

The impact of regulatory changes in **China** was felt across the industry. Life and pension sales decreased by 16% to £366 million (FY10: £436 million) with a significant downturn in the bancassurance channel. In spite of the challenging environment, we have improved our new business margin and profitability by careful portfolio management. We continue to focus on profitable growth by strengthening our distribution channel and moving into the high net worth sector.

Sales in **India** were down marginally as a result of a large depreciation of the Indian Rupee. In local currency, sales have improved marginally despite recent regulatory changes. This is a result of our successful reorientation of the product suite away from predominantly unit linked insurance plans towards higher-margin products such as endowment policies, life term plans and personal pensions.

We obtained an operating license in **Vietnam** in July 2011 and started writing business in November 2011.

### Delta Lloyd

As a result of the partial disposal of Aviva's stake in Delta Lloyd, from 6 May 2011 the Group has ceased to consolidate the results and net assets of the Delta Lloyd group. The results of Delta Lloyd up to the transaction date have therefore been classified as discontinued operations.

## 16 – Investment sales

| | 2011 £m | 2010 £m |
|---|---|---|
| **Investment sales** | | |
| **United Kingdom** | **1,689** | 1,548 |
| **Europe (Aviva Investors)** | **1,346** | 1,350 |
| Asia (Aviva Investors) | **237** | 266 |
| Asia | **201** | 223 |
| **Asia Pacific** | **438** | 489 |
| **Total investment sales – continuing operations** | **3,473** | 3,387 |
| **Total investment sales – discontinued operations**[1] | **170** | 615 |
| **Total investment sales** | **3,643** | 4,002 |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

Total investment sales (excluding Delta Lloyd) of £3,473 million were 3% higher than the same period last year *(FY10: £3,387 million)*.

**UK** collective investment sales were up 9% at £1,689 million *(FY10: £1,548 million)* supported by growth in managed funds, including the new multi-asset funds, and good performance from global property.

**Europe** investment sales were flat at £1,346 million (*FY10: £1,350 million*) reflecting suppressed consumer demand in turbulent market conditions.

Investment sales in **Asia Pacific** were 10% lower at £438 million (*FY10: £489 million*) reflecting the loss of Australian sales post the disposal of the Aviva Investors Australia operation in October 2011 and decrease in other Asian markets reflecting lower consumer confidence in turbulent investment markets.

As described above, the results of **Delta Lloyd** up to 6 May 2011 have been classified as discontinued operations.

# Capital performance



Aviva uses a range of metrics to measure the performance of capital including capital generation, internal rate of return and payback period for life new business and return on equity. An analysis of these measures is included below.

## 17 – Capital generation and utilisation

The active management of the generation and utilisation of capital is a primary Group focus, with the balancing of new business investment and shareholder distribution with operating capital generation a key financial priority.

The full-year 2011 result of £2.1 billion reinforces our confidence in the capital generation of the Group. Profits from existing life business remain strong, generating £2.3 billion of capital (*2010: £2.1 billion*), with a further £0.6 billion (*2010: £0.6 billion*) generated by the general insurance, fund management and non-insurance businesses. Capital invested in new business has reduced to £0.8 billion (*2010: £1.0 billion*). Investment in life new business was £0.9 billion, a reduction of £0.3 billion compared with full-year 2010. This is mainly a result of actions taken to manage the consumption of capital on writing new life products, in particular managing volumes, product mix and pricing. This reduction is partly offset by a smaller release of capital from non-life business investment of £0.1 billion (*2010: £0.2 billion release*).

| | **2011 £bn** | 2010 £bn |
|---|---|---|
| **Operating capital generation:** | | |
| Life in-force profits[1] | **2.3** | 2.1 |
| General insurance, fund management and non-insurance profits | **0.6** | 0.6 |
| **Operating capital generation before investment in new business** | **2.9** | 2.7 |
| Capital invested in new business | **(0.8)** | (1.0) |
| **Operating capital generation after investment in new business** | **2.1** | 1.7 |

1 The life in-force profits in full year 2010 excludes the negative impact of the Delta Lloyd longevity assumption change of £0.2 billion which is included in the MCEV analysis of free surplus generated.

Operating capital generation comprises the following components:
- Operating Free surplus emergence, including release of required capital, for the life in-force business (net of tax and non-controlling interests);
- Operating profits for the general insurance and non-life businesses (net of tax and non-controlling interests);
- Capital invested in new business. For life business this is the impact of initial and required capital on free surplus. For general insurance business this reflects the movement in required capital, which has been assumed to equal the regulatory minimum multiplied by the local management target level. Where appropriate movements in capital requirements exclude the impact of foreign exchange and other movements deemed to be non-operating in nature.
- Post disposal, all Delta Lloyd capital generation, including life business, has been included within general insurance, fund management and non-insurance profits on an IFRS basis.

## 18 – Internal rate of return and payback period

As set out above, the Group generates a significant amount of capital each year. This capital generation supports both shareholder distribution and reinvestment in new business. The internal rates of return on new business written during the period are set out below. We manage new business against a target IRR hurdle rate of 12% or above and a target payback hurdle rate of 10 years or less.

| | **2011 IRR %** | 2010 IRR % | **2011 Payback period years** | 2010 Payback period years |
|---|---|---|---|---|
| **United Kingdom** | **15%** | 15% | **7** | 7 |
| France | **11%** | 9% | **8** | 9 |
| Ireland | **6%** | 5% | **12** | 11 |
| Italy | **12%** | 11% | **6** | 6 |
| Poland | **24%** | 25% | **4** | 4 |
| Spain | **23%** | 22% | **4** | 4 |
| Other Europe | **16%** | 14% | **6** | 6 |
| **Aviva Europe** | **14%** | 13% | **7** | 7 |
| **North America** | **14%** | 14% | **5** | 4 |
| **Asia Pacific[1]** | **13%** | 11% | **12** | 13 |
| **Total excluding Delta Lloyd** | **14.4%** | 13.3% | **7** | 7 |
| Delta Lloyd[2] | **10%** | 6% | **10** | 16 |
| **Total** | **14.3%** | 12.5% | **7** | 8 |

1 The Asia Pacific region IRR and payback period excluding Taiwan, (which is held for sale), are 14% and 8 years respectively (*2010: 11% and 8 years*).
2 Current period Delta Lloyd represents the results of Delta Lloyd up to 6 May 2011.

## 19 – Return on equity

The Group measures its return on equity (RoE) on both an IFRS and MCEV basis. On an IFRS basis return on equity shareholders' funds is 12.0% (*2010: 14.8%*). Although operating profits after tax and minority interests are broadly flat since full year 2010, the main driver of the decrease in RoE is the 24% growth in the capital base from £10.4 billion at the start of 2010 to £12.8 billion at the start of 2011, driven by profits in the period and actuarial gains on staff pension schemes. On an MCEV basis return on equity shareholders' funds is 14.2% (*2010: 16.4%*) decreasing due to similar factors.

| | IFRS | | MCEV | |
|---|---|---|---|---|
| | **2011** % | Restated 2010 % | **2011** % | Restated 2010 % |
| Life assurance | **10.7%** | 10.1% | **12.0%** | 13.5% |
| General insurance and health | **13.8%** | 13.1% | **13.8%** | 13.1% |
| Fund management | **32.1%** | 26.2% | **10.2%** | 8.0% |
| Other business | **124.4%** | 19.3% | **121.0%** | 18.7% |
| Corporate | **39.5%** | 13.5% | **39.5%** | 13.5% |
| **Return on total capital employed (excluding Delta Lloyd)** | **9.4%** | 10.4% | **10.5%** | 13.2% |
| Delta Lloyd | **5.7%** | 11.0% | **8.5%** | 5.5% |
| **Return on total capital employed** | **8.6%** | 10.5% | **10.2%** | 11.9% |
| Subordinated debt | **4.9%** | 4.5% | **4.9%** | 4.5% |
| External debt | **1.3%** | 2.8% | **1.3%** | 2.8% |
| **Return on total equity** | **10.2%** | 12.8% | **12.1%** | 14.2% |
| Less: Non-controlling interests | **6.0%** | 9.4% | **6.4%** | 10.0% |
| Direct capital instrument | **4.3%** | 4.2% | **4.3%** | 4.2% |
| Preference capital | **8.5%** | 8.5% | **8.5%** | 8.5% |
| **Return on equity shareholders' funds** | **12.0%** | 14.8% | **14.2%** | 16.4% |

# Capital strength



Capital is measured and managed on a number of different bases including IFRS, MCEV, IGD Solvency and an economic basis. An analysis of capital strength including sensitivity to a number of factors is shown below.

## 20 – Net asset value

IFRS net asset value per share has reduced during the period to 435p (*2010: 454p*), primarily driven by the impact of the partial disposal of Delta Lloyd (see below) and the impact of financial markets. After taking account of the impact of the Delta Lloyd disposal on opening net asset value, IFRS total equity has increased from £14,903 million to £15,363 million.

MCEV net asset value per share has decreased to 441p (*2010: 533p*).

### Impact of partial disposal of Delta Lloyd on IFRS net asset value

As set out in note A3 - Subsidiaries on page 45, as a result of the partial disposal of Delta Lloyd on 6 May 2011 Aviva's share of Delta Lloyd's voting rights has fallen below 50%, so Delta Lloyd has been deconsolidated. Notwithstanding that Aviva retained a 43% associate interest in Delta Lloyd's ordinary share capital following the partial disposal, deconsolidation is accounted for as the disposal of the Group's entire 58% interest pre-transaction, resulting in a loss on disposal on the entire 58% interest.

During the period ended 6 May 2011, Delta Lloyd's total equity decreased by £420 million, from £4,310 million to £3,890 million, mainly due to spreads narrowing by circa 80bps on the yield curve used to value liabilities.

Aviva's share of Delta Lloyd's total equity at 6 May 2011 was £2,120 million, with £1,770 million owned by non-controlling interests. Given net proceeds of £1,488 million, the movement in ordinary shareholders' equity following the partial disposal is therefore a reduction of £632 million.

In the income statement, the reported loss is £32 million, as the movement in ordinary shareholders' equity has mostly been offset by a credit of £600 million which represents other reserves relating to Delta Lloyd that have been recycled to the income statement on disposal.

| | IFRS | | MCEV | |
|---|---|---|---|---|
| | **2011 £m** | 2010 £m | **2011 £m** | Restated 2010 £m |
| **Total equity at 1 January** | **17,725** | 15,086 | **20,205** | 18,573 |
| Movement in Delta Lloyd equity to 6 May 2011 | | | | |
| (Loss)/profit after tax recognised in the income statement, excluding loss on disposal | **(492)** | — | **(74)** | — |
| Other comprehensive income, net of tax | **82** | — | **131** | — |
| Other net equity movements | **(10)** | — | **(41)** | — |
| | **(420)** | — | **16** | — |
| Deconsolidation of Delta Lloyd: | | | | |
| Movement in ordinary shareholders' equity | **(632)** | — | **(157)** | — |
| Movement in non-controlling interests | **(1,770)** | — | **(1,484)** | — |
| | **14,903** | 15,086 | **18,580** | 18,573 |
| Operating profit after tax – continuing operations | **1,648** | 1,497 | **2,241** | 2,429 |
| Operating profit after tax – discontinued operations | **—** | 428 | **—** | 208 |
| Non-operating items after tax – continuing operations | **(1,064)** | (275) | **(5,027)** | (968) |
| Non-operating items after tax – discontinued operations | **—** | 242 | **—** | (195) |
| Actuarial gains/(losses) on pension schemes | **974** | 1,060 | **974** | 1,060 |
| Foreign exchange rate movements | **(254)** | 55 | **(461)** | (57) |
| Other comprehensive income, net of tax – continuing operations | **(106)** | 380 | **(310)** | 37 |
| Other comprehensive income, net of tax – discontinued operations | **—** | (64) | **—** | (198) |
| Dividends and appropriations net of scrip | **(506)** | (548) | **(506)** | (548) |
| Other net equity movements | **(232)** | (136) | **4** | (136) |
| **Total equity at 31 December** | **15,363** | 17,725 | **15,495** | 20,205 |
| Preference share capital and direct capital instruments | **(1,190)** | (1,190) | **(1,190)** | (1,190) |
| Non-controlling interests | **(1,530)** | (3,741) | **(1,476)** | (3,977) |
| **Net assets attributable to Ordinary shareholders of Aviva plc at 31 December (excluding preference shares)** | **12,643** | 12,794 | **12,829** | 15,038 |
| Number of shares | **2,906** | 2,820 | **2,906** | 2,820 |
| **Net asset value per share** | **435p** | 454p | **441p** | 533p |

## 21 – European Insurance Groups Directive (IGD)

| | UK life funds £bn | Other business £bn | Total 2011 £bn | Total 2010 £bn |
|---|---|---|---|---|
| Insurance Groups Directive (IGD) capital resources | **5.6** | **8.5** | **14.1** | 16.3 |
| Less: capital resource requirement (CRR) | **(5.6)** | **(6.3)** | **(11.9)** | (12.5) |
| Insurance Group Directive (IGD) excess solvency | **—** | **2.2** | **2.2** | 3.8 |
| Cover over EU minimum (calculated excluding UK life funds) | | | **1.3 times** | 1.6 times |

The EU Insurance Groups Directive (IGD) regulatory capital solvency surplus has decreased by £1.6 billion since 31 December 2010 to £2.2 billion. The key movements over the period are set out in the following table:

| | £bn |
|---|---|
| IGD solvency surplus at 31 December 2010 | **3.8** |
| Operating profits net of other income and expenses | **1.0** |
| Dividends net of scrip | **(0.5)** |
| Market movements including foreign exchange | **(1.9)** |
| Pension scheme funding | **(0.3)** |
| Impact of Delta Lloyd sell down | **0.1** |
| Impact of RAC sale | **0.2** |
| Restructuring of UK regulated general insurance entities | **0.2** |
| Increase in Capital Resource Requirement | **(0.3)** |
| Other regulatory adjustments | **(0.1)** |
| **Estimated IGD solvency surplus at 31 December 2011** | **2.2** |

Market movements include the impact of equity, credit spread, interest rate and foreign exchange movements net of the effect of hedging instruments.

Updating the IGD solvency surplus for market and other movements to the end of February 2012, (including the benefit of reinsurance transactions in the UK completed in 2012) the estimated IGD solvency surplus on a pro forma basis increases to £3.3 billion.

## 22 – Sensitivity analysis

The sensitivity of the Group's total equity, excluding Delta Lloyd, on an MCEV basis and IFRS basis at 31 December 2011 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:

| Restated 2010 £bn | MCEV basis | 2011 £bn | Equities down 10% Direct £bn | Equities down 10% Indirect £bn | Interest rates up 1% £bn | 0.5% increased credit spread £bn |
|---|---|---|---|---|---|---|
| 18.5 | Long-term savings[1] | **15.2** | **(0.1)** | **(0.4)** | **(0.3)** | **(2.0)** |
| 7.8 | General insurance and other | **5.6** | **(0.1)** | **—** | **(0.7)** | **0.4** |
| (6.1) | Borrowings[2] | **(5.3)** | **—** | **—** | **—** | **—** |
| 20.2 | **Total equity** | **15.5** | **(0.2)** | **(0.4)** | **(1.0)** | **(1.6)** |

| Restated 2010 £bn | IFRS basis | 2011 £bn | Equities down 10% £bn | Interest rates up 1% £bn | 0.5% increased credit spread £bn |
|---|---|---|---|---|---|
| 14.9 | Long-term savings | **15.1** | **(0.1)** | **(0.8)** | **(0.5)** |
| 8.9 | General insurance and other | **5.6** | **(0.1)** | **(0.7)** | **0.4** |
| (6.1) | Borrowings[2] | **(5.3)** | **—** | **—** | **—** |
| 17.7 | **Total equity** | **15.4** | **(0.2)** | **(1.5)** | **(0.1)** |

1 Assumes MCEV assumptions adjusted to reflect revised bond yields.
2 Comprising external and subordinated debt.

The full-year 2011 sensitivities contained in the above tables exclude any contribution from Delta Lloyd following deconsolidation of this business. The main financial sensitivities in Delta Lloyd are covered in note C5 – IFRS Sensitivity analysis on page 117.

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 by £1.3 billion.

The 0.5% increased credit spread sensitivities for MCEV and IFRS do not make an allowance for any adjustment to risk-free interest rates. MCEV sensitivities assume that the credit spread movement relates to credit risk and not liquidity risk; in practice, credit spread movements may be partially offset due to changes in liquidity risk. Life IFRS sensitivities provide for any impact of credit spread movements on liability valuations. The MCEV and IFRS 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.

### Group IGD

The sensitivity of the Group's IGD surplus reflects the impact of the hedges we have put in place as part of our long-term strategy to protect the Group from extreme market movements.

We continue to actively manage our exposures to further market volatility, with ongoing hedging strategies in place. The impact of further equity market falls on the Group's IGD surplus is as follows:

| | £bn |
|---|---|
| Equities down 10% | **(0.1)** |
| Equities down 20% | **(0.3)** |
| Equities down 30% | **(0.4)** |
| Equities down 40% | **(0.5)** |

The exposure of the Group's IGD surplus to increases in interest rates has significantly reduced since 30 June 2011 primarily driven by the decrease in value of debt securities in continental Europe. IGD is not materially exposed to a further 1% increase in interest rates as at 31 December 2011 based on local regulatory requirements.

## 23 – Financial flexibility

The Group's borrowings are primarily comprised of long dated hybrid instruments with maturities spread over many years, minimising refinancing risk. In addition to central liquid asset holdings of £1.5 billion, the Group also has access to unutilised committed credit facilities of £2.1 billion provided by a range of leading international banks.

## 24 – Risk management

As a global insurance group, risk management is at the heart of what we do and is the source of value creation as well as a vital form of control. It is an integral part of maintaining financial stability for our customers, shareholders and other stakeholders. Our sustainability and financial strength are underpinned by effective risk management, which allows us to predict future changes, move more quickly and take better decisions for our customers, giving them prosperity and peace of mind.

The group's risk strategy is to invest its available capital to optimise the balance between return and risk while maintaining an appropriate level of economic (i.e. risk-based) capital and regulatory capital in accordance with our risk appetite. Consequently, our risk management objectives are to:

- Embed rigorous risk management throughout the business, based on setting clear risk appetites and staying within these;
- Allocate capital where it will make the highest returns on a risk-adjusted basis; and
- Meet the expectations of our customers, investors and regulators that we will maintain sufficient capital surpluses to meet our liabilities even if a number of extreme risks materialise.

### Risk environment

The first half of 2011 was characterised by relatively benign investment market conditions. However, the third quarter saw a sharp worsening in the global economic outlook and substantial deterioration in equity and credit markets in the US, the UK and Europe. While equity markets recovered to some degree in the fourth quarter, the ongoing stressed conditions in the eurozone led to further widening in sovereign bond spreads for a number of countries and weighed heavily on corporate bond prices. The continued political and economic uncertainty relating to the eurozone combined with the high levels of debt in many western economies act as a brake on economic growth and lead to the potential for a low growth, low interest rate environment to persist for some time.

### Risk profile

The types of risk to which the group is exposed have not changed significantly over the year and remain credit, market, insurance, liquidity, operational and reputational risks as described in note A17. However, the decision to sell a 15% stake in Delta Lloyd reduced our IFRS balance sheet sensitivity to equity markets and mortgages and the sale of the RAC reduced our strategic equity exposure. The risk profile was also modified by the extension of the equity hedging programme, implementation of credit and inflation hedges and reducing sales of products with onerous guarantees. We provide more detail on the risk profile and risk management approach and on the material risks and uncertainties facing the group in note A17 – Risk Management on page 80. Our risk management processes ensure close and ongoing monitoring of all our capital measures and control any mismatch between our assets and liabilities. These processes include the use of derivative hedges which are described in more detail below.

### Equity hedging

Alongside use of derivatives for portfolio management and the local management of equity risk within each business unit, the group has maintained a long-term strategy to manage its residual overall equity risk through the use of derivatives. As at 31 December 2011 the group's shareholder funds held £3 billion notional of equity hedges, with up to 12 months to maturity with an average strike of 89% of the prevailing market levels on the 31 December 2011.

### Credit hedging

The group has entered into index based credit hedges to reduce its overall exposure to downside credit risk.

### Interest rate hedging

Interest rate hedges may be used to manage asymmetric interest rate exposures across our life insurance businesses as well as an efficient way to manage cash flow and duration matching. The most material examples of uses to hedge guarantees relate to guaranteed annuity exposures in both the UK and Ireland. These hedges are used to protect against interest rate falls and are sufficient in scale to materially reduce the group's interest rate exposure.

### Currency hedging

At a group level we actively seek to manage foreign currency risk primarily by matching assets and liabilities in functional currencies at the business unit level. Foreign currency dividends from subsidiaries are hedged using foreign exchange forward contracts to provide certainty regarding the sterling value to be received by group. Derivatives have also been used to reduce foreign exchange balance sheet translation risk. At 31 December 2011 the group had in place zero cost collar Euro and Canadian Dollar hedges with a notional value of £2.0 billion and £0.3 billion respectively. These hedges are used to protect the group's capital against a significant depreciation in the local currency versus sterling.

## 25 – EEV equivalent embedded value

The embedded value of Aviva shown below is based on the projected future profits allowing for expected investment returns in excess of risk-free, and discounts those profits at a risk-discount rate. This result is deemed more comparable to our UK insurers who publish European Embedded Value (EEV) than market consistent embedded value.

The expected release of future profits and required capital is shown in five-year groups. Projected cash flows are those used for Implied Discount Rate (IDR) calculations for in-force business.

The discount rate applied is 7.05% *(FY10: 7.75%)*, based on a risk-free rate of 2.3%, a risk margin of 4.35% and an allowance for the time value of options and guarantees of 0.4%.

The new business margin on continuing operations (net of tax and non-controlling interests) for business written during the period to 31 December 2011 is 2.0% (MCEV: 1.8%).

## Segmental analysis of life and related business EEV equivalent embedded value

| | Net worth | | VIF on traditional embedded value | | Embedded value | |
|---|---|---|---|---|---|---|
| | **2011 £bn** | Restated 2010 £bn | **2011 £bn** | Restated 2010 £bn | **2011 £bn** | Restated 2010 £bn |
| **United Kingdom** | **3.9** | 4.1 | **3.4** | 2.8 | **7.3** | 6.9 |
| **Aviva Europe** | **3.5** | 3.1 | **2.7** | 3.0 | **6.2** | 6.1 |
| **North America** | **1.5** | 1.1 | **1.1** | 1.4 | **2.6** | 2.5 |
| **Asia Pacific** | **0.4** | 0.3 | **0.3** | 0.3 | **0.7** | 0.6 |
| **Total covered business excluding Delta Lloyd** | **9.3** | 8.6 | **7.5** | 7.5 | **16.8** | 16.1 |
| Delta Lloyd[1] | **—** | 1.3 | **—** | 0.9 | **—** | 2.2 |
| **Total covered business** | **9.3** | 9.9 | **7.5** | 8.4 | **16.8** | 18.3 |
| **Non-covered business[1]** | | | | | **1.7** | 0.4 |
| **Total Group EV** | | | | | **18.5** | 18.7 |
| **Less preference share capital and direct capital instruments** | | | | | **(1.2)** | (1.2) |
| **Equity attributable to ordinary shareholders on an EV basis** | | | | | **17.3** | 17.5 |

1 Delta Lloyd is included in covered business at 31 December 2010 and in non-covered business at 31 December 2011.

## Maturity profile of undiscounted EEV equivalent embedded value cash flows

### Total in-force business

To show the profile of the free surplus emergence implicit in the traditional embedded value calculation for in-force business, the cash flows have been split into five year tranches depending on the date when the profit is expected to emerge.

| **2011** | | **Release of future profits and required capital** | | | | | |
|---|---|---|---|---|---|---|---|
| **£bn** | **Free surplus** | **0-5** | **6-10** | **11-15** | **16-20** | **20+** | **Total net of non-controlling interest** |
| **United Kingdom** | **1.0** | **2.6** | **2.9** | **2.4** | **1.9** | **4.4** | **14.2** |
| **Aviva Europe** | **0.2** | **3.3** | **2.3** | **1.8** | **1.5** | **4.2** | **13.1** |
| **North America** | **0.0** | **1.7** | **0.9** | **0.7** | **0.6** | **0.8** | **4.7** |
| **Asia Pacific** | **0.1** | **0.4** | **0.2** | **0.1** | **0.1** | **0.2** | **1.0** |
| **Total** | **1.3** | **8.0** | **6.3** | **5.0** | **4.1** | **9.6** | **33.0** |

| Restated 2010 | | Release of future profits and required capital | | | | | |
|---|---|---|---|---|---|---|---|
| £bn | Free surplus | 0-5 | 6-10 | 11-15 | 16-20 | 20+ | Total net of non-controlling interest |
| United Kingdom | 1.1 | 2.4 | 2.9 | 2.4 | 1.9 | 4.4 | 14.0 |
| Aviva Europe | 0.3 | 3.5 | 2.4 | 1.9 | 1.5 | 2.5 | 11.8 |
| North America | (0.3) | 2.0 | 1.1 | 0.7 | 0.4 | 0.5 | 4.7 |
| Asia Pacific | 0.1 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 | 0.9 |
| Total excluding Delta Lloyd | 1.2 | 8.2 | 6.6 | 5.1 | 3.9 | 7.6 | 31.4 |
| Delta Lloyd[1] | 0.4 | 1.1 | 0.8 | 0.7 | 0.6 | 1.3 | 4.5 |
| Total | 1.6 | 9.3 | 7.4 | 5.8 | 4.5 | 8.9 | 35.9 |

1 Delta Lloyd is included in covered business at 31 December 2010 and in non-covered business at 31 December 2011.

# Analysis of assets

## 26 – 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 we manage our investments. In addition, to support this, we also use a variety of hedging and other risk management strategies to diversify away residual mis-match risk that is outside of our risk appetite.

During 2011 Aviva completed a partial disposal of its equity holding in Delta Lloyd. At 31 December 2010 Aviva held a controlling interest of 58% in Delta Lloyd's issued equity, and as a result and in accordance with IFRS, consolidated 100% of Delta Lloyd's assets and liabilities. At 31 December 2011 Aviva held 42% of Delta Lloyd's issued equity and is no longer considered to have control of Delta Lloyd. The Group therefore no longer consolidates Delta Lloyd's assets and liabilities as at 31 December 2011. In place of 100% of Delta Lloyd's assets, there is a substantial asset shown as a 'Share in joint ventures and associates' which represents Aviva's equity share of Delta Lloyd. As a result, a direct comparison of the 31 December 2010 and 31 December 2011 balance sheets for asset quality purposes would be distorted by the effect of this deconsolidation. Throughout the disclosure, therefore, Delta Lloyd has been excluded for the purposes of the 31 December 2010 balance sheet to allow a proper comparison.

| 2011 | 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 |
|---|---|---|---|---|---|---|
| Loans | **917** | **6,471** | **20,728** | **28,116** | **—** | **28,116** |
| Financial investments | | | | | | |
| Debt securities | **15,295** | **79,450** | **58,600** | **153,345** | **(93)** | **153,252** |
| Equity securities | **20,602** | **10,788** | **1,293** | **32,683** | **(37)** | **32,646** |
| Other investments | **23,233** | **5,078** | **2,066** | **30,377** | **(217)** | **30,160** |
| Total loans and financial investments | **60,047** | **101,787** | **82,687** | **244,521** | **(347)** | **244,174** |
| Cash and cash equivalents | **3,980** | **10,467** | **8,622** | **23,069** | **(26)** | **23,043** |
| Other assets | **6,340** | **12,377** | **26,069** | **44,786** | **(53)** | **44,733** |
| Assets of operations classified as held for sale | **—** | **—** | **—** | **—** | **426** | **426** |
| **Total** | **70,367** | **124,631** | **117,378** | **312,376** | **—** | **312,376** |
| **Interest in Delta Lloyd as an associate** | **—** | **—** | **776** | **776** | **—** | **776** |
| **Total (excluding Delta Lloyd as an associate)** | **70,367** | **124,631** | **116,602** | **311,600** | **—** | **311,600** |
| **Total % (excluding Delta Lloyd as an associate)** | **22.6%** | **40.0%** | **37.4%** | **100.0%** | **—** | **100.0%** |
| 2010 as reported | 85,462 | 136,787 | 147,858 | 370,107 | — | 370,107 |
| Delta Lloyd | 10,947 | 8,815 | 39,501 | 59,263 | — | 59,263 |
| 2010 Total (excluding Delta Lloyd) | 74,515 | 127,972 | 108,357 | 310,844 | — | 310,844 |
| 2010 Total % (excluding Delta Lloyd) | 24.0% | 41.2% | 34.8% | 100.0% | — | 100.0% |

The assets and liabilities of operations classified as held for sale as at 31 December 2011 relate to Aviva's operations in Hungary (and Slovakia), Czech Republic, Romania and Taiwan.

## 26 – Total assets continued

### Total assets – Valuation bases

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | **Fair value £m** | **Amortised cost £m** | **Equity accounted/ tax assets £m** | **Total £m** | Fair value £m | Amortised cost £m | Equity accounted/ tax assets £m | Total £m |
| Policyholder assets | **67,310** | **2,804** | **253** | **70,367** | 72,280 | 1,644 | 591 | 74,515 |
| Participating fund assets | **113,287** | **9,884** | **1,460** | **124,631** | 118,517 | 8,936 | 519 | 127,972 |
| Shareholder assets | **89,215** | **26,668** | **719** | **116,602** | 80,176 | 26,591 | 1,590 | 108,357 |
| **Total** | **269,812** | **39,356** | **2,432** | **311,600** | 270,973 | 37,171 | 2,700 | 310,844 |
| **Total %** | **86.6%** | **12.6%** | **0.8%** | **100.0%** | 87.2% | 11.9% | 0.9% | 100.0% |

The proportion of total assets measured at fair value (which includes 100% of financial investments) has remained stable at 86.6% *(31 December 2010: 87.2%)*. The principal asset classes measured at fair value are loans, debt securities, equity securities and other financial investments.

### Total assets – financial investments

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | **Cost/ amortised cost £m** | **Unrealised gain £m** | **Unrealised losses and impairments £m** | **Fair value £m** | Cost/ amortised cost £m | Unrealised gain £m | Unrealised losses and impairments £m | Fair value £m |
| Debt securities | **147,537** | **12,395** | **(6,587)** | **153,345** | 145,418 | 7,104 | (3,671) | 148,851 |
| Equity securities | **33,055** | **3,637** | **(4,009)** | **32,683** | 32,077 | 5,431 | (2,038) | 35,470 |
| Other investments | **30,362** | **553** | **(538)** | **30,377** | 33,225 | 2,733 | (618) | 35,340 |
| **Total**[1] | **210,954** | **16,585** | **(11,134)** | **216,405** | 210,720 | 15,268 | (6,327) | 219,661 |

1 Includes assets classified as held for sale.

All unrealised losses on financial investments have been recognised in profit or loss, except unrealised losses on those financial investments classified as available-for-sale (AFS). Unrealised losses on AFS financial investments are recognised in profit or loss on disposal or in the event of impairment. Since the disposal of Delta Lloyd the Group no longer has any significant direct interest in financial investments classified as available for sale other than debt securities. Total unrealised losses on available for sale debt securities at 31 December 2011 were £229 million *(31 December 2010: £252 million)*.

Of the total AFS debt security impairment expense for 2011, £19 million relates to our US business, of which £12 million relates to Alt-A securities and £6 million to commercial mortgage backed securities, that are not yet in default but showed continued deterioration in market values, NAIC rating downgrades or defaults on more junior tranches which are considered indicators of impairment.

## 27 – Shareholders' assets

As at 31 December 2011, total shareholder investments in loans and financial investments included within shareholder assets was £82.7 billion *(31 December 2010 excluding Delta Lloyd: £75.5 billion)*, including loans of £20.7 billion, debt securities of £58.6 billion, equity securities of £1.3 billion and other investments of £2.1 billion.

**Shareholders' assets – loans**

| 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Policy loans | **7** | **12** | **233** | **37** | **289** |
| Loans and advances to banks | **—** | **—** | **—** | **—** | **—** |
| Mortgage loans – securitised | **2,154** | **—** | **—** | **—** | **2,154** |
| Mortgage loans – non-securitised | **15,514** | **—** | **2,507** | **—** | **18,021** |
| Other loans | **174** | **4** | **84** | **2** | **264** |
| **Total** | **17,849** | **16** | **2,824** | **39** | **20,728** |
| **Total %** | **86.1%** | **0.1%** | **13.6%** | **0.2%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | **15,899** | **18** | **2,256** | **40** | **18,213** |

Our well diversified UK commercial mortgage portfolio remains of high quality and capital and expected bad debt losses continue to be within expectations. Loan Interest Cover (LIC) remains strong at 1.32 times and over 95.4% of mortgages are neither in arrears nor otherwise impaired. Mortgage LTV's increased during the year to 103% *(31 December 2010: 95%)* as a result of falling gilt yields increasing loan values (property values increased a modest c1.2% on average during 2011).

The valuation allowance (including supplementary provisions) made in the UK for corporate bonds and commercial mortgages carried at fair value equates to 60 bps and 92bps respectively at 31 December 2011 *(31 December 2010: 63bps and 105bps respectively)*. This is equivalent to a valuation allowance of £1.6 billion *(31 December 2010: £1.3 billion)* over the remaining term of the UK Life corporate bond and commercial mortgage portfolio. The increase is driven by changes in the long term valuation allowance for both commercial mortgages and corporate bonds which has increased in line with the growth in the underlying asset portfolio.

In addition, we hold £84 million (*31 December 2010: £60 million)* of provisions in our UK General Insurance mortgage portfolio, which is carried at amortised cost. This is after a £30 million write-off in respect to Southern Cross and £7 million for Superview.

**Shareholders' assets – financial investments**

| | 2011 Fair value hierarchy Level 1 £m | 2011 Level 2 £m | 2011 Level 3 £m | 2011 Total £m | 2010 Excluding Delta Lloyd Fair value hierarchy Level 1 £m | 2010 Level 2 £m | 2010 Level 3 £m | 2010 Total £m |
|---|---|---|---|---|---|---|---|---|
| Debt securities | **23,038** | **35,001** | **561** | **58,600** | 21,040 | 32,285 | 845 | 54,170 |
| Equity securities | **477** | **472** | **344** | **1,293** | 472 | 276 | 365 | 1,113 |
| Other investments | **586** | **936** | **544** | **2,066** | 512 | 1,174 | 351 | 2,037 |
| **Total** | **24,101** | **36,409** | **1,449** | **61,959** | 22,024 | 33,735 | 1,561 | 57,320 |
| **Total %** | **38.9%** | **58.8%** | **2.3%** | **100.0%** | 38.4% | 58.9% | 2.7% | 100.0% |

The proportion of financial investments classified as "Level 1", which means that they are valued using quoted prices in active markets, has remained stable at 38.9% (*31 December 2010: 38.4%*).

The majority of the debt instruments held by our North American businesses are valued by independent pricing firms in accordance with usual market practice in that region and consistent with other companies operating in the region are classified as Level 2 in the Fair Value hierarchy. Excluding our North American businesses, the proportion of shareholder debt securities classified as Level 1 in the Fair Value hierarchy would be 84% *(31 December 2010: 83%)*.

## 27– Shareholders' assets continued

### Shareholders' assets – debt securities

| 2011 | AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Not rated £m | Total £m |
|---|---|---|---|---|---|---|---|
| | Rating | | | | | | |
| Government | **8,169** | **2,417** | **1,971** | **265** | **213** | **223** | **13,258** |
| Corporate | **1,238** | **4,736** | **15,028** | **11,419** | **1,556** | **5,029** | **39,006** |
| Certificates of deposits | **—** | **54** | **144** | **96** | **101** | **—** | **395** |
| Structured | **3,604** | **624** | **760** | **321** | **546** | **86** | **5,941** |
| **Total** | **13,011** | **7,831** | **17,903** | **12,101** | **2,416** | **5,338** | **58,600** |
| **Total %** | **22.2%** | **13.4%** | **30.6%** | **20.7%** | **4.1%** | **9.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 13,280 | 8,112 | 14,796 | 10,936 | 2,146 | 4,900 | 54,170 |
| 2010 % (excluding Delta Lloyd) | 24.5% | 15.0% | 27.3% | 20.2% | 4.0% | 9.0% | 100.0% |

We grade debt securities according to external credit ratings issued at the balance sheet date. The credit rating used for each individual security is the second highest of the available ratings from Standard & Poor's, Moody's and Fitch. If a credit rating is available from only one of these three rating agencies then this rating is used. If an individual security has not been given a credit rating by any of these three rating agencies, the security is classified as "not rated".

For the table above we have expressed our rating using Standard & Poor's rating scale whereby investment grade debt securities are classified within the range of AAA (extremely strong) to BBB (good) ratings, with AAA being the highest possible rating. Debt securities which fall outside this range are classified as less than BBB. Where we use a rating provided by Moody's or Fitch, we have expressed it as the Standard & Poor's equivalent rating. For example, we consider Standard & Poor's rating of AA (very strong) to be equivalent to Moody's rating of AA (excellent) and Fitch's rating of AA (very strong).

At 31 December 2011, the proportion of our shareholder debt securities that are investment grade remained stable at 87% *(31 December 2010 (excluding Delta Lloyd): 87%)*. The remaining 13% of shareholder debt securities that do not have an external rating of BBB or higher can be split as follows:

- 4% are debt securities that are rated as below investment grade
- 5% are US private placements which are not rated by the major ratings agencies, but are rated as an average equivalent of A by the Securities Valuation Office of the National Association of Insurance Commissioners (NAIC), a US national regulatory agency
- 4% are not rated by the major rating agencies or the NAIC

Of the securities not rated by an external agency or NAIC most are allocated an internal rating using a methodology largely consistent with that adopted by an external ratings agency, and are considered to be of investment grade credit quality; these include £2.4 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.

Gross of non-controlling interests, £1.9 billion *(31 December 2010: £2.0 billion)* of shareholder holdings in debt securities represent exposures to the governments (and local authorities and agencies) of Greece, Ireland, Portugal, Italy and Spain. This corresponds to just 0.6% of total balance sheet assets at 31 December 2011. Net of non-controlling interests, our exposure to these governments is reduced to £1.3 billion *(31 December 2010: £1.6 billion)*. Net of non-controlling interests, our exposure to Greece and Portugal amounts only to £10 million *(31 December 2010: £14 million)*.

A further £11.3 billion *(31 December 2010: £11.3 billion)* of exposures to the governments (and local authorities and agencies) of Greece, Ireland, Portugal, Italy and Spain, are held in participating fund assets (£6.9 billion net of non-controlling interests). Shareholder market risk exposure to these assets is governed by the nature and extent of shareholder participation in these funds. All of these bonds are valued on a mark to market basis under IAS 39, and therefore our balance sheet and profit and loss statement already reflect any reduction in value between the date of purchase and the balance sheet date.

Within structured assets, the group continues to have very limited exposure (2.4% of total balance sheet assets) to sub-prime and Alt A RMBS, CMBS, ABS, Wrapped Credit, CDOs and CLOs. Of our remaining exposures to RMBS, the majority are backed by US Government Sponsored Entities, and so are considered to have minimal credit risk.

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# Financial statements IFRS

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# IFRS consolidated financial statements

## Consolidated income statement

For the year ended 31 December 2011

| | 2011 £m Continuing operations | 2011 £m Discontinued operations | 2010 £m Continuing operations | 2010 £m Discontinued operations |
|---|---|---|---|---|
| **Income** | | | | |
| Gross written premiums | **30,000** | **2,118** | 31,805 | 4,469 |
| Premiums ceded to reinsurers | **(1,673)** | **(75)** | (1,734) | (129) |
| Premiums written net of reinsurance | **28,327** | **2,043** | 30,071 | 4,340 |
| Net change in provision for unearned premiums | **(236)** | **(56)** | (73) | (2) |
| Net earned premiums | **28,091** | **1,987** | 29,998 | 4,338 |
| Fee and commission income | **1,479** | **97** | 1,450 | 332 |
| Net investment income | **5,991** | **436** | 18,749 | 3,244 |
| Share of loss/(profit) after tax of joint ventures and associates | **(123)** | **28** | 141 | (10) |
| Profit/(loss) on the disposal and re-measurement of subsidiaries and associates | **565** | **(32)** | 163 | (4) |
| | **36,003** | **2,516** | 50,501 | 7,900 |
| **Expenses** | | | | |
| Claims and benefits paid, net of recoveries from reinsurers | **(26,934)** | **(1,475)** | (24,918) | (4,234) |
| Change in insurance liabilities, net of reinsurance | **(3,730)** | **(909)** | (6,608) | (569) |
| Change in investment contract provisions | **1,224** | **(94)** | (8,693) | (48) |
| Change in unallocated divisible surplus | **2,721** | **(19)** | 362 | (33) |
| Fee and commission expense | **(4,554)** | **(192)** | (5,433) | (434) |
| Other expenses | **(3,297)** | **(291)** | (2,573) | (964) |
| Finance costs | **(798)** | **(262)** | (699) | (723) |
| | **(35,368)** | **(3,242)** | (48,562) | (7,005) |
| **Profit/(loss) before tax** | **635** | **(726)** | 1,939 | 895 |
| Tax attributable to policyholders' returns | **178** | **—** | (394) | — |
| **Profit/(loss) before tax attributable to shareholders' profits** | **813** | **(726)** | 1,545 | 895 |
| Tax (expense)/credit | **(51)** | **202** | (717) | (225) |
| Less: tax attributable to policyholders' returns | **(178)** | **—** | 394 | — |
| Tax attributable to shareholders' profits | **(229)** | **202** | (323) | (225) |
| **Profit/(loss) after tax** | **584** | **(524)** | 1,222 | 670 |
| **(Loss)/profit from discontinued operations** | **(524)** | | 670 | |
| **Profit for the year** | **60** | | 1,892 | |
| Attributable to: | | | | |
| Equity shareholders of Aviva plc | **225** | | 1,463 | |
| Non-controlling interests | **(165)** | | 429 | |
| | **60** | | 1,892 | |
| **Earnings per share** | | | | |
| Basic (pence per share) | **5.8p** | | 50.4p | |
| Diluted (pence per share) | **5.7p** | | 49.6p | |
| Continuing operations – Basic (pence per share) | **17.0p** | | 37.6p | |
| Continuing operations – Diluted (pence per share) | **16.7p** | | 37.0p | |

## Consolidated statement of comprehensive income

For the year ended 31 December 2011

| | 2011 £m | 2010 £m |
|---|---|---|
| **Profit for the year from continuing operations** | **584** | 1,222 |
| **(Loss)/profit for the year from discontinued operations** | **(524)** | 670 |
| **Total profit for the year** | **60** | 1,892 |
| **Other comprehensive income from continuing operations:** | | |
| Investments classified as available for sale | | |
| Fair value gains | **414** | 505 |
| Fair value gains transferred to profit on disposals | **(148)** | (73) |
| Impairment losses on assets previously revalued through other comprehensive income now taken to the income statement | **21** | 78 |
| Owner-occupied properties | | |
| Fair value gains/(losses) | **2** | (14) |
| Share of other comprehensive income of joint ventures and associates | **(134)** | — |
| Actuarial gains on pension schemes | **996** | 1,078 |
| Other pension scheme movements | **(22)** | (18) |
| Foreign exchange rate movements | **(254)** | 55 |
| Aggregate tax effect – shareholder tax | **(261)** | (116) |
| **Other comprehensive income, net of tax from continuing operations** | **614** | 1,495 |
| **Other comprehensive income, net of tax from discontinued operations** | **82** | (64) |
| **Total other comprehensive income, net of tax** | **696** | 1,431 |
| **Total comprehensive income for the year from continuing operations** | **1,198** | 2,717 |
| **Total comprehensive income for the year from discontinued operations** | **(442)** | 606 |
| **Total comprehensive income for the year** | **756** | 3,323 |
| Attributable to: | | |
| Equity shareholders of Aviva plc | **923** | 2,950 |
| Non-controlling interests | **(167)** | 373 |
| | **756** | 3,323 |

## Consolidated statement of changes in equity

For the year ended 31 December 2011

| | Ordinary share capital £m | Preference share capital £m | Share premium £m | Merger reserve £m | Shares held by employee trusts £m | Currency translation reserve £m | Owner-occupied properties reserve £m | Investment valuation reserve £m | Hedging instruments reserve £m | Equity compen-sation reserve £m | Retained earnings £m | **Equity attribu-table to share-holders of Aviva plc £m** | Direct capital instruments £m | Non-controlling interests £m | **Total equity £m** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Balance at 1 January** | 705 | 200 | 1,194 | 3,271 | (32) | 2,183 | 83 | 573 | (693) | 99 | 5,411 | 12,994 | 990 | 3,741 | 17,725 |
| Profit for the year | — | — | — | — | — | — | — | — | — | — | 225 | 225 | — | (165) | 60 |
| Other comprehensive income | — | — | — | — | — | (165) | 4 | 72 | 30 | — | 757 | 698 | — | (2) | 696 |
| **Total comprehensive income for the year** | — | — | — | — | — | (165) | 4 | 72 | 30 | — | 982 | 923 | — | (167) | 756 |
| Owner-occupied properties fair value gains transferred to retained earnings on disposals | — | — | — | — | — | — | (6) | — | — | — | 6 | — | — | — | — |
| Dividends and appropriations | — | — | — | — | — | — | — | — | — | — | (813) | (813) | — | — | (813) |
| Shares issued in lieu of dividends | 21 | — | (21) | — | — | — | — | — | — | — | 307 | 307 | — | — | 307 |
| Capital contributions from non-controlling interests | — | — | — | — | — | — | — | — | — | — | — | — | — | 68 | 68 |
| Effect of deconsolidation of Delta Lloyd | — | — | — | — | — | (485) | (2) | (115) | — | — | 2 | (600) | — | (1,770) | (2,370) |
| Non controlling interests share of dividends declared in the year | — | — | — | — | — | — | — | — | — | — | — | — | — | (126) | (126) |
| Transfer to profit on disposal of subsidiaries | — | — | — | — | — | (3) | — | — | — | — | — | (3) | — | — | (3) |
| Changes in non-controlling interests in existing subsidiaries | — | — | — | — | — | — | — | — | — | — | — | — | — | (11) | (11) |
| Shares acquired by employee trusts | — | — | — | — | (29) | — | — | — | — | — | — | (29) | — | — | (29) |
| Shares distributed by employee trusts | — | — | — | — | 18 | — | — | — | — | — | (18) | — | — | — | — |
| Reserves credit for equity compensation plans | — | — | — | — | — | — | — | — | — | 48 | — | 48 | — | — | 48 |
| Shares issued under equity compensation plans | — | — | — | — | — | — | — | — | — | (61) | 61 | — | — | — | — |
| Reclassification to financial liabilities | — | — | — | — | — | — | — | — | — | — | — | — | — | (205) | (205) |
| Aggregate tax effect – shareholder tax (note A5(c)) | — | — | — | — | — | — | — | — | — | — | 16 | 16 | — | — | 16 |
| **Balance at 31 December** | 726 | 200 | 1,173 | 3,271 | (43) | 1,530 | 79 | 530 | (663) | 86 | 5,954 | 12,843 | 990 | 1,530 | 15,363 |

## Consolidated statement of changes in equity continued

For the year ended 31 December 2010

| | Ordinary share capital £m | Preference share capital £m | Share premium £m | Merger reserve £m | Shares held by employee trusts £m | Currency translation reserve £m | Owner-occupied properties reserve £m | Investment valuation reserve £m | Hedging instruments reserve £m | Equity compen-sation reserve £m | Retained earnings £m | Equity attribu-table to share-holders of Aviva plc £m | Direct capital instruments £m | Non-controlling interests £m | Total equity £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Balance at 1 January | 692 | 200 | 1,207 | 3,271 | (68) | 2,224 | 104 | 163 | (771) | 109 | 3,425 | 10,556 | 990 | 3,540 | 15,086 |
| Profit for the year | — | — | — | — | — | — | — | — | — | — | 1,463 | 1,463 | — | 429 | 1,892 |
| Other comprehensive income | — | — | — | — | — | (38) | (21) | 411 | 78 | — | 1,057 | 1,487 | — | (56) | 1,431 |
| Total comprehensive income for the year | — | — | — | — | — | (38) | (21) | 411 | 78 | — | 2,520 | 2,950 | — | 373 | 3,323 |
| Dividends and appropriations | — | — | — | — | — | — | — | — | — | — | (757) | (757) | — | — | (757) |
| Shares issued in lieu of dividends | 13 | — | (13) | — | — | — | — | — | — | — | 209 | 209 | — | — | 209 |
| Capital contributions from non-controlling interests | — | — | — | — | — | — | — | — | — | — | — | — | — | 42 | 42 |
| Dilution of shareholding in Delta Lloyd | — | — | — | — | — | (3) | — | (1) | — | — | (4) | (8) | — | 8 | — |
| Non-controlling interests' share of dividends declared in the year | — | — | — | — | — | — | — | — | — | — | — | — | — | (187) | (187) |
| Non-controlling interests in acquired/(disposed) subsidiaries | — | — | — | — | — | — | — | — | — | — | — | — | — | 3 | 3 |
| Changes in non-controlling interests in existing subsidiaries | — | — | — | — | — | — | — | — | — | — | — | — | — | (38) | (38) |
| Shares acquired by employee trusts | — | — | — | — | (14) | — | — | — | — | — | — | (14) | — | — | (14) |
| Shares distributed by employee trusts | — | — | — | — | 50 | — | — | — | — | — | (50) | — | — | — | — |
| Reserves credit for equity compensation plans | — | — | — | — | — | — | — | — | — | 41 | — | 41 | — | — | 41 |
| Shares issued under equity compensation plans | — | — | — | — | — | — | — | — | — | (51) | 51 | — | — | — | — |
| Aggregate tax effect – shareholder tax (note A5(c)) | — | — | — | — | — | — | — | — | — | — | 17 | 17 | — | — | 17 |
| **Balance at 31 December** | 705 | 200 | 1,194 | 3,271 | (32) | 2,183 | 83 | 573 | (693) | 99 | 5,411 | 12,994 | 990 | 3,741 | 17,725 |

## Consolidated statement of financial position

As at 31 December 2011

| | 2011 £m | 2010 £m |
|---|---|---|
| **Assets** | | |
| Goodwill | **2,640** | 3,391 |
| Acquired value of in-force business and intangible assets | **2,021** | 2,806 |
| Interests in, and loans to, joint ventures | **1,700** | 1,994 |
| Interests in, and loans to, associates | **1,118** | 643 |
| Property and equipment | **510** | 750 |
| Investment property | **11,638** | 13,064 |
| Loans | **28,116** | 43,074 |
| Financial investments | **216,058** | 253,288 |
| Reinsurance assets | **7,112** | 7,084 |
| Deferred tax assets | **238** | 288 |
| Current tax assets | **140** | 198 |
| Receivables | **7,937** | 8,295 |
| Deferred acquisition costs and other assets | **6,444** | 6,072 |
| Prepayments and accrued income | **3,235** | 3,691 |
| Cash and cash equivalents | **23,043** | 25,455 |
| Assets of operations classified as held for sale | **426** | 14 |
| **Total assets** | **312,376** | 370,107 |
| **Equity** | | |
| Capital | | |
| Ordinary share capital | **726** | 705 |
| Preference share capital | **200** | 200 |
| | **926** | 905 |
| Capital reserves | | |
| Share premium | **1,173** | 1,194 |
| Merger reserve | **3,271** | 3,271 |
| | **4,444** | 4,465 |
| Shares held by employee trusts | **(43)** | (32) |
| Other reserves | **1,562** | 2,245 |
| Retained earnings | **5,954** | 5,411 |
| **Equity attributable to shareholders of Aviva plc** | **12,843** | 12,994 |
| Direct capital instruments | **990** | 990 |
| Non-controlling interests | **1,530** | 3,741 |
| **Total equity** | **15,363** | 17,725 |
| **Liabilities** | | |
| Gross insurance liabilities | **150,101** | 177,700 |
| Gross liabilities for investment contracts | **110,644** | 117,787 |
| Unallocated divisible surplus | **650** | 3,428 |
| Net asset value attributable to unitholders | **10,352** | 9,032 |
| Provisions | **992** | 2,943 |
| Deferred tax liabilities | **1,171** | 1,758 |
| Current tax liabilities | **232** | 314 |
| Borrowings | **8,450** | 14,949 |
| Payables and other financial liabilities | **11,230** | 20,292 |
| Other liabilities | **2,828** | 4,179 |
| Liabilities of operations classified as held for sale | **363** | — |
| **Total liabilities** | **297,013** | 352,382 |
| **Total equity and liabilities** | **312,376** | 370,107 |

## Consolidated statement of cash flows

For the year ended 31 December 2011

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.

| | 2011 £m | 2010 £m |
|---|---|---|
| **Cash flows from operating activities** | | |
| Cash generated from continuing operations | **107** | 1,337 |
| Tax paid | **(434)** | (412) |
| Net cash (used in)/from operating activities – continuing operations | **(327)** | 925 |
| Net cash (used in)/from operating activities – discontinued operations | **(15)** | 882 |
| Total net cash (used in)/from operating activities | **(342)** | 1,807 |
| **Cash flows from investing activities** | | |
| Acquisitions of, and additions to, subsidiaries, joint ventures and associates, net of cash acquired | **(114)** | 542 |
| Disposals of subsidiaries, joint ventures and associates, net of cash transferred | **877** | 222 |
| New loans to joint ventures | **(18)** | (64) |
| Repayment of loans to joint ventures | **17** | 5 |
| Net new loans to joint ventures | **(1)** | (59) |
| Purchases of property and equipment | **(97)** | (161) |
| Proceeds on sale of property and equipment | **48** | 18 |
| Purchases of intangible assets | **(123)** | (131) |
| Net cash from investing activities – continuing operations | **590** | 431 |
| Net cash used in investing activities – discontinued operations | **(512)** | (82) |
| Total net cash from investing activities | **78** | 349 |
| **Cash flows from financing activities** | | |
| Treasury shares purchased for employee trusts | **(29)** | (14) |
| New borrowings drawn down, net of expenses | **3,646** | 2,885 |
| Repayment of borrowings | **(3,602)** | (2,059) |
| Net drawdown of borrowings | **44** | 826 |
| Interest paid on borrowings | **(708)** | (696) |
| Preference dividends paid | **(17)** | (17) |
| Ordinary dividends paid | **(431)** | (472) |
| Coupon payments on direct capital instruments | **(58)** | (59) |
| Capital contributions from non-controlling interests | **68** | 42 |
| Dividends paid to non-controlling interests of subsidiaries | **(126)** | (157) |
| Changes in controlling interest in subsidiary | **—** | 15 |
| Net cash used in financing activities – continuing operations | **(1,257)** | (532) |
| Net cash used in financing activities – discontinued operations | **(516)** | (821) |
| Total net cash used in financing activities | **(1,773)** | (1,353) |
| **Total net (decrease)/increase in cash and cash equivalents** | **(2,037)** | 803 |
| Cash and cash equivalents at 1 January | **24,695** | 24,251 |
| Effect of exchange rate changes on cash and cash equivalents | **(257)** | (359) |
| **Cash and cash equivalents at 31 December** | **22,401** | 24,695 |

# Notes to the consolidated financial statements

## A1 – Basis of preparation

**(a)** The results for the year ended 31 December 2011 have been prepared using International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) and endorsed by the European Union (EU). The results in this preliminary announcement have been prepared in accordance with IFRS applicable at 31 December 2011 and have been taken from the Group's Annual Report and Accounts, which will be available on the Company's website on 29 March 2012.

During 2009 and 2010, the IASB issued amendments to IFRS 1, *First Time Adoption of IFRS*, IAS 24, *Related Party Disclosures*, and IAS 32, *Financial Instruments – Presentation*, and the results of its annual improvements project, all of which have been endorsed by the EU. In addition, IFRIC interpretation 19, *Extinguishing Financial Liabilities with Equity Instruments*, and an amendment to interpretation 14*, IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction*, issued in 2008 and 2009, have now been endorsed by the EU. These are all applicable for the first time in the current accounting period and are now reflected in the Group's financial reporting, with no material impact.

The preliminary announcement for the year ended 31 December 2011 does not constitute statutory accounts as defined in Section 434 of the Companies Act 2006. The results on an IFRS basis for the full year 2011 and 2010 have been audited by Ernst & Young LLP. The auditor has reported on the 2011 and 2010 financial statements, and the report was unqualified and did not contain a statement under section 498 (2) or (3) of the Companies Act 2006. The Group's 2010 Report and Accounts has been filed with the Registrar of Companies.

After making enquiries, the directors have a reasonable expectation that the Company and the Group as a whole have adequate resources to continue in operational existence for the foreseeable future. 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 sterling, which is the Company's functional and presentational currency. Unless otherwise noted, the amounts shown in the financial statements are in millions of pounds sterling (£m).

**(c)** The Group's shareholding in Delta Lloyd N.V. ("Delta Lloyd") was reduced to 42.7%, representing 40% of shareholder voting rights, following the sale of shares on 6 May 2011. As the Group no longer commands a majority of shareholder voting rights, it no longer controls Delta Lloyd. Accordingly, from 6 May 2011 the Group has ceased to consolidate the results and net assets of Delta Lloyd. The effect of this in the various movements reconciliation tables in these notes is described as "Deconsolidation of Delta Lloyd".

The transaction resulted in the loss of control of a major geographical area of operations, previously presented as 'Delta Lloyd' in the segmental reporting note. The results of Delta Lloyd up to the transaction date, as well as those for preceding years, have therefore been classified as discontinued operations. The Group's share of the profits of its retained interest in Delta Lloyd as an associate after the transaction date form part of continuing operations.

**(d)** The long-term nature of much of the Group's operations means that, for management's decision-making and internal performance management, short-term realised and unrealised investment gains and losses are treated as non-operating items. The Group focuses instead on an operating profit measure (also referred to as adjusted operating profit) that incorporates an expected return on investments supporting its long-term and non-long-term businesses. 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. Operating profit also excludes amortisation and impairment of goodwill and intangibles; the profit or loss on disposal of subsidiaries, joint ventures and associates; integration and restructuring costs; and exceptional items.

## A2 – Exchange rates

The Group's principal overseas operations during the year were located within the Eurozone and the United States. 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:

| | **2011** | 2010 |
|---|---|---|
| Eurozone | | |
| – Average rate (€1 equals) | **£0.87** | £0.85 |
| – Period end rate (€1 equals) | **£0.84** | £0.86 |
| United States | | |
| – Average rate ($US1 equals) | **£0.63** | £0.65 |
| – Period end rate ($US1 equals) | **£0.65** | £0.64 |

Total foreign currency movements during 2011 resulted in a loss recognised in the income statement of £35 million *(2010: £34 million gain).*

## A3 – Subsidiaries

### (a) Acquisitions

**(i) Material acquisitions**

There were no material acquisitions in the year ended 31 December 2011.

**(ii) Other goodwill arising**

Goodwill on acquisitions and additions was £13 million, of which £8 million arose on the acquisition of an insurance broker in Canada and £5 million from additional capital in our Indonesian life and health subsidiary.

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

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

| | 2011 £m | 2010 £m |
|---|---|---|
| **Continuing operations** | | |
| United Kingdom | | |
| RAC Limited (see (i) below) | **532** | — |
| RBS Life and RBS Collective | — | 128 |
| Non-core operations | — | 4 |
| France | — | 26 |
| Australia (see (ii) below) | **23** | — |
| Other small operations | **10** | 5 |
| **Profit on disposal and remeasurement from continuing operations** | **565** | 163 |
| Loss on disposal from discontinued operations (see (iii) below) | **(32)** | (4) |
| **Total profit on disposal and remeasurement** | **533** | 159 |

No tax arises on the profits and losses on these disposals.

**(i) RAC Limited**

On 30 September 2011, the Group sold RAC Limited ("RAC") to The Carlyle Group for £977 million, realising a profit of £532 million. Aviva is continuing its commercial relationship with RAC, both as a key underwriter of motor insurance on RAC's panel and as a partner, selling RAC breakdown cover to our customers. The Group has retained the RAC (2003) Pension Scheme which, at 31 December 2011, had an IAS 19 deficit of £51 million.

The profit on disposal is calculated as follows:

| | 2011 £m |
|---|---|
| **Assets** | |
| Goodwill | **284** |
| Intangible assets | **229** |
| Property and equipment | **30** |
| Receivables | **85** |
| Other assets | **43** |
| **Total assets** | **671** |
| **Liabilities** | |
| Insurance liabilities | **161** |
| Tax liabilities | **57** |
| Other liabilities | **73** |
| **Total liabilities** | **291** |
| **Net assets disposed of** | **380** |
| Cash consideration | **977** |
| Less: transaction costs and provisions | **(65)** |
| **Net consideration** | **912** |
| **Profit on disposal** | **532** |

**(ii) Aviva Investors Australia**

On 1 October 2011, the Group sold its Australian fund management business, Aviva Investors Australia Ltd, to nabInvest, National Australia Bank's direct asset management business, for £35 million, which includes contingent consideration with a fair value of £3 million. Net assets disposed of were £11 million, comprising assets of £15 million and liabilities of £4 million, giving a profit of £20 million after transaction costs. Recycling currency translation reserves of £3 million to the income statement resulted in an overall profit on disposal of £23 million.

## A3 – Subsidiaries continued

**(iii) Delta Lloyd**

On 6 May 2011, the Group sold 25 million shares in Delta Lloyd N.V. ("Delta Lloyd") (the Group's Dutch long-term insurance, general insurance and fund management operation), reducing our holding to 42.7% of Delta Lloyd's ordinary share capital, representing 40% of shareholder voting rights. As the Group no longer commands a majority of shareholder voting rights, it no longer controls Delta Lloyd. Accordingly, from 6 May 2011 the Group has ceased to consolidate the results and net assets of Delta Lloyd.

Cash consideration of £380 million was received for the sale of shares, and £8 million of costs were attributable to the disposal transaction.

The Group retained significant influence over Delta Lloyd through its initial 42.7% shareholding (diluted since then to 41.9% at 31 December 2011 through Delta Lloyd's issue of scrip dividends which we did not take up) and contractual right to appoint two members of Delta Lloyd's supervisory board. Our continuing interest in Delta Lloyd has been classified as an associate and initially re-measured at fair value as at 6 May 2011, using the closing market value of the Delta Lloyd shares listed on Euronext on that day. As Delta Lloyd is no longer consolidated, equity reserves for accumulated currency translation differences and accumulated fair value differences on available for sale financial investments relating to that company have been recycled to the income statement. Equity reserves relating to Delta Lloyd's owner-occupied property have been transferred directly to retained earnings.

The transaction resulted in the loss of control of a major geographical area of operations, previously presented as 'Delta Lloyd' in the segmental reporting note. The results of Delta Lloyd, up to the transaction date as well as those for the previous year have therefore been classified as discontinued operations. The Group's share of the profits of its retained interest in Delta Lloyd as an associate after the transaction date is reported in a separate segment as part of continuing operations.

The loss on the disposal of Delta Lloyd is calculated as follows:

| | 2011 £m |
|---|---|
| Net cash proceeds from disposal | **372** |
| Fair value of continuing interest in associate at 6 May 2011 | **1,116** |
| Currency translation and investment valuation equity reserves recycled to the income statement | **600** |
| Consolidated net assets of Delta Lloyd as at 6 May 2011, net of non-controlling interests | **(2,120)** |
| **Loss on disposal recognised through the income statement** | **(32)** |

Aviva's interest in the carrying value of Delta Lloyd's IFRS net assets prior to disposal and fair value adjustments at the date of initial recognition of the associate were as follows:

| | 2011 £m |
|---|---|
| **Assets** | |
| Goodwill | **316** |
| Acquired value of in-force business and intangible assets | **59** |
| Interests in, and loans to, joint ventures and associates | **359** |
| Property and equipment | **242** |
| Investment property | **2,131** |
| Loans | **20,196** |
| Financial investments | **34,081** |
| Deferred acquisition costs | **195** |
| Other assets | **3,528** |
| **Total assets** | **61,107** |
| **Liabilities** | |
| Insurance liabilities | **32,481** |
| Liabilities for investment contracts | **3,355** |
| Unallocated divisible surplus | **144** |
| Net asset value attributable to unitholders | **631** |
| External borrowings | **6,499** |
| Other liabilities | **14,107** |
| **Total liabilities** | **57,217** |
| **Net assets** | **3,890** |
| Non-controlling interests before disposal | **(1,770)** |
| **Group's share of net assets before disposal** | **2,120** |
| Net assets sold (14.9%) | **(577)** |
| Fair value adjustments on initial recognition of associate | **(427)** |
| **Residual interest in associate** | **1,116** |

The fair value adjustments represent the difference between the net asset value of the Group's residual interest in Delta Lloyd and its fair value at the transaction date, based on the market price of its listed shares on that date. This adjustment principally comprises the de-recognition of all previously recognised goodwill and an increase in insurance liabilities, partially offset by an increase in the value of loan investments, and adjustments to other assets and liabilities of the associate.

## A3 – Subsidiaries continued

### (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 2011 relate to our subsidiaries in the Czech Republic, Hungary and Romania and a joint venture in Taiwan, and are as follows:

| | 2011 £m | 2010 £m |
|---|---|---|
| **Assets** | | |
| Intangible assets | **1** | — |
| Interests in, and loans to, joint ventures and associates | **12** | 14 |
| Property and equipment | **1** | — |
| Financial investments | **347** | — |
| Receivables and other financial assets | **62** | — |
| Prepayments and accrued income | **3** | — |
| **Total assets** | **426** | 14 |
| **Liabilities** | | |
| Insurance liabilities | **(344)** | — |
| Other liabilities | **(19)** | — |
| **Total liabilities** | **(363)** | — |
| **Net assets** | **63** | 14 |

During 2011, the Group decided to sell, and was actively marketing, its operations in the Czech Republic, Hungary and Romania. On 30 January 2012, we announced the sale of these businesses to MetLife, Inc. The transaction, which is subject to regulatory approvals in each jurisdiction, is expected to be completed in 2012. The assets and liabilities of these businesses have therefore been classified as held for sale at their expected disposal proceeds in the consolidated statement of financial position at 31 December 2011. The operations held for sale at 31 December 2010 related to our interest in the Taiwan joint venture.

### (d) Irish long-term business

Our Irish long-term business is carried out through a subsidiary, Aviva Life Holdings Ireland Limited ("ALHI"), which is 75% owned by Aviva and 25% owned by Allied Irish Bank ("AIB"). ALHI holds two subsidiaries, one of which is Ark Life Assurance Company Limited ("Ark") which carries out bancassurance business via a distribution agreement with AIB. The original distribution agreement was renewable in 2011 but, on 15 December 2011, AIB notified us that they did not wish to renew it and the existing shareholders' agreement governing ALHI was terminated. The termination of this agreement triggered the ability for both parties to exercise put and call options that will result in the unwind of the original structure such that the Ark business returns 100% to AIB and the Group will purchase the 25% minority stake in ALHI. The formal exercise of these options was approved on 17 January 2012 and, as a result, the Ark business became held for sale on that date. Any change in that company's ownership is subject to regulatory approval in Ireland, so completion is not expected until later in 2012.

As a result of these events, we have tested the goodwill relating to ALHI's life businesses, as well as the distribution agreement intangible asset, for impairment. This has resulted in charges of £120 million and £44 million respectively being made in the income statement.

The shareholders' agreement with AIB specifies that calculation of the Ark exit value should be based on the embedded value of the business at 31 December 2011. This is estimated as £360 million, which is lower than its carrying value following the above impairments. As a result, a further charge to profit of £40 million has been recognised in 2011. The Irish business is currently reported within Europe in our segmental disclosures in note A4(a).

The obligation created by the put options over AIB's minority share in ALHI has led to our recognition of a financial liability of £205 million and an equal reduction in non-controlling interests within equity.

## A4 – Segmental information

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

### (a) Operating segments

The Group has determined its operating segments along regional lines. These reflect the management structure whereby a member of the Executive Management team is accountable to the Group Chief Executive for the operating segment for which he is responsible. The activities of each operating segment are described below:

**United Kingdom**

The United Kingdom comprises two operating segments – UK Life and UK General Insurance (UK GI). The principal activities of UK Life are life insurance, long-term health and accident insurance, savings, pensions and annuity business, whilst UK GI 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. UK GI also includes the Group reinsurance result and the results of run-off agency business, and, for the period to its disposal on 30 September 2011, the RAC motor recovery business.

**Aviva Europe**

Activities reported in the Aviva Europe operating segment exclude operations in the UK and Delta Lloyd but include those in Russia and Turkey. Principal activities are long-term business in France, Ireland, Italy, Poland and Spain, and general insurance in France, Ireland and Italy.

**North America**

Our activities in North America principally comprise our long-term business operation in the US and general insurance business operation in Canada.

**Asia Pacific**

Our activities in Asia Pacific principally comprise our long-term business operations in China, India, Singapore, Hong Kong, Sri Lanka, Taiwan, Malaysia, South Korea, Vietnam and Indonesia.

**Aviva Investors**

Aviva Investors operates in most of the regions in which the Group operates, in particular the UK, France, the US and Canada 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'. Similarly, central core structural borrowings and certain tax balances are included in 'Other Group activities' in the segmental statement of financial position. Also included in 'Other Group activities' are consolidation and elimination adjustments.

**Delta Lloyd and discontinued operations**

The activities of Delta Lloyd comprise long-term business operations in the Netherlands and Belgium, and general insurance, fund management and banking operations in the Netherlands.

As described in note A3(b), on 6 May 2011 the Group ceased to hold a majority of the shareholder voting rights in Delta Lloyd and therefore the results of that company up to 6 May 2011 are presented as discontinued operations. After this date, the Group ceased to consolidate Delta Lloyd. The Group's share of the profits of its retained interest in Delta Lloyd as an associate are shown in the Delta Lloyd segment within continuing operations.

**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 on normal commercial terms. The Group evaluates performance of operating segments on the basis of:

(i) profit or loss from operations before tax attributable to shareholders: and
(ii) profit or loss from operations before tax attributable to shareholders, adjusted for non-operating items outside the segment management's control, including investment market performance and economic assumption changes.

## A4 – Segmental information continued

### (i) Segmental income statement for the year ended 31 December 2011

| | United Kingdom | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Life £m | GI# £m | Aviva Europe £m | North America £m | Asia Pacific £m | Aviva Investors £m | Delta Lloyd £m | Other Group activities £m | Continuing operations £m | Discontinued operations £m | Total £m |
| Gross written premiums | 7,030 | 4,592 | 11,797 | 5,909 | 672 | — | — | — | 30,000 | 2,118 | 32,118 |
| Premiums ceded to reinsurers | (692) | (185) | (514) | (195) | (89) | — | — | — | (1,675) | (73) | (1,748) |
| Internal reinsurance revenue | — | 32 | (19) | (11) | — | — | — | — | 2 | (2) | — |
| Net written premiums | 6,338 | 4,439 | 11,264 | 5,703 | 583 | — | — | — | 28,327 | 2,043 | 30,370 |
| Net change in provision for unearned premiums | (39) | (82) | (57) | (46) | (12) | — | — | — | (236) | (56) | (292) |
| Net earned premiums | 6,299 | 4,357 | 11,207 | 5,657 | 571 | — | — | — | 28,091 | 1,987 | 30,078 |
| Fee and commission income | 374 | 198 | 522 | 48 | 9 | 328 | — | — | 1,479 | 97 | 1,576 |
| | 6,673 | 4,555 | 11,729 | 5,705 | 580 | 328 | — | — | 29,570 | 2,084 | 31,654 |
| Net investment income | 5,365 | 428 | (1,638) | 1,886 | (36) | 79 | — | (93) | 5,991 | 436 | 6,427 |
| Inter-segment revenue | — | — | — | — | — | 219 | — | — | 219 | — | 219 |
| Share of profit of joint ventures and associates | (41) | — | — | — | (2) | 4 | (84) | — | (123) | 28 | (95) |
| Profit/(loss) on the disposal of subsidiaries and associates | — | 528 | 50 | — | — | 23 | (3) | (33) | 565 | (32) | 533 |
| **Segmental income*** | **11,997** | **5,511** | **10,141** | **7,591** | **542** | **653** | **(87)** | **(126)** | **36,222** | **2,516** | **38,738** |
| Claims and benefits paid, net of recoveries from reinsurers | (9,000) | (2,809) | (10,917) | (3,862) | (346) | — | — | — | (26,934) | (1,475) | (28,409) |
| Change in insurance liabilities, net of reinsurance | (2,256) | (12) | 109 | (1,615) | 44 | — | — | — | (3,730) | (909) | (4,639) |
| Change in investment contract provisions | 856 | — | 591 | (86) | — | (137) | — | — | 1,224 | (94) | 1,130 |
| Change in unallocated divisible surplus | 351 | — | 2,404 | — | (34) | — | — | — | 2,721 | (19) | 2,702 |
| Amortisation of acquired value of in-force business on insurance contracts | (27) | — | (40) | (199) | (3) | — | — | — | (269) | (1) | (270) |
| Depreciation and other amortisation expense | (88) | (33) | (214) | (74) | (5) | (17) | — | — | (431) | (9) | (440) |
| Other operating expenses | (1,250) | (1,731) | (1,984) | (1,110) | (156) | (424) | — | (369) | (7,024) | (471) | (7,495) |
| Impairment losses** | — | (60) | (35) | (31) | — | (1) | — | — | (127) | (2) | (129) |
| Inter-segment expenses | (125) | (6) | (14) | (74) | — | — | — | — | (219) | — | (219) |
| Finance costs | (253) | (35) | (39) | (33) | — | (3) | — | (435) | (798) | (262) | (1,060) |
| **Segmental expenses** | **(11,792)** | **(4,686)** | **(10,139)** | **(7,084)** | **(500)** | **(582)** | **—** | **(804)** | **(35,587)** | **(3,242)** | **(38,829)** |
| Profit/(loss) before tax | 205 | 825 | 2 | 507 | 42 | 71 | (87) | (930) | 635 | (726) | (91) |
| Tax attributable to policyholders' returns | 196 | — | (10) | — | (8) | — | — | — | 178 | — | 178 |
| **Profit/(loss) before tax attributable to shareholders** | **401** | **825** | **(8)** | **507** | **34** | **71** | **(87)** | **(930)** | **813** | **(726)** | **87** |
| Adjusted for non-operating items: | | | | | | | | | | | |
| Reclassification of corporate costs and unallocated interest | — | (5) | 32 | 8 | — | 2 | — | (37) | — | — | — |
| Investment return variances and economic assumption changes on long-term business | 435 | — | 442 | (101) | 20 | — | — | — | 796 | 820 | 1,616 |
| Short-term fluctuation in return on investments backing non-long-term business | — | 54 | 201 | (64) | — | — | — | 75 | 266 | 60 | 326 |
| Economic assumption changes on general insurance and health business | — | 85 | 1 | 4 | — | — | — | — | 90 | — | 90 |
| Impairment of goodwill, associates and joint ventures | 29 | — | 131 | — | 15 | — | 217 | — | 392 | — | 392 |
| Amortisation and impairment of intangibles | 23 | 9 | 63 | 65 | 1 | 10 | — | — | 171 | 5 | 176 |
| (Profit)/loss on the disposal of subsidiaries and associates | — | (528) | (50) | — | — | (23) | 3 | 33 | (565) | 32 | (533) |
| Integration and restructuring costs | 43 | 28 | 103 | 14 | — | 31 | — | 49 | 268 | — | 268 |
| Exceptional items | — | 35 | 22 | — | — | — | — | — | 57 | — | 57 |
| Share of Delta Lloyd's non-operating items (before tax), as an associate | — | — | — | — | — | — | (10) | — | (10) | — | (10) |
| Share of Delta Lloyd's tax expense, as an associate | — | — | — | — | — | — | 34 | — | 34 | — | 34 |
| **Operating profit/(loss) before tax attributable to shareholders** | **931** | **503** | **937** | **433** | **70** | **91** | **157** | **(810)** | **2,312** | **191** | **2,503** |

* Total reported income from continuing operations, excluding inter-segment revenue, is split United Kingdom £17,508 million, France £4,504 million, USA £5,290 million and Rest of the World £8,701 million. Income is attributed on the basis of geographical origin which does not materially differ from revenue by geographical destination, as most risks are located in the countries where the contracts were written.

** Impairment losses, and reversal of such losses, recognised directly in other comprehensive income were £21 million and £nil respectively.

# United Kingdom General Insurance includes the Group Reinsurance business, agency run-off business and the non-insurance business for the RAC prior to its disposal.

## A4 – Segmental information continued

### (ii) Segmental income statement for the year ended 31 December 2010

| | United Kingdom | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Life £m | GI# £m | Aviva Europe £m | North America £m | Asia Pacific £m | Aviva Investors £m | Other Group activities £m | Continuing operations £m | Discontinued operations £m | Total £m |
| Gross written premiums | 6,572 | 4,405 | 13,507 | 6,680 | 641 | — | — | 31,805 | 4,469 | 36,274 |
| Premiums ceded to reinsurers | (673) | (333) | (452) | (221) | (60) | — | — | (1,739) | (124) | (1,863) |
| Internal reinsurance revenue | — | 37 | (14) | (16) | (2) | — | — | 5 | (5) | — |
| Net written premiums | 5,899 | 4,109 | 13,041 | 6,443 | 579 | — | — | 30,071 | 4,340 | 34,411 |
| Net change in provision for unearned premiums | (12) | (16) | (68) | 29 | (6) | — | — | (73) | (2) | (75) |
| Net earned premiums | 5,887 | 4,093 | 12,973 | 6,472 | 573 | — | — | 29,998 | 4,338 | 34,336 |
| Fee and commission income | 302 | 248 | 512 | 41 | 6 | 341 | — | 1,450 | 332 | 1,782 |
| | 6,189 | 4,341 | 13,485 | 6,513 | 579 | 341 | — | 31,448 | 4,670 | 36,118 |
| Net investment income | 10,945 | 424 | 3,961 | 2,223 | 211 | 171 | 814 | 18,749 | 3,244 | 21,993 |
| Inter-segment revenue | — | — | — | — | — | 214 | — | 214 | — | 214 |
| Share of profit/(loss) of joint ventures and associates | 128 | — | (14) | — | 33 | 3 | (9) | 141 | (10) | 131 |
| Profit/(loss) on the disposal of subsidiaries and associates | 128 | 5 | 26 | 1 | — | — | 3 | 163 | (4) | 159 |
| **Segmental income*** | 17,390 | 4,770 | 17,458 | 8,737 | 823 | 729 | 808 | 50,715 | 7,900 | 58,615 |
| Claims and benefits paid, net of recoveries from reinsurers | (8,144) | (2,829) | (9,413) | (4,069) | (463) | — | — | (24,918) | (4,234) | (29,152) |
| Change in insurance liabilities, net of reinsurance | (2,923) | 237 | (687) | (3,020) | (215) | — | — | (6,608) | (569) | (7,177) |
| Change in investment contract provisions | (3,300) | — | (5,034) | (129) | — | (230) | — | (8,693) | (48) | (8,741) |
| Change in unallocated divisible surplus | (166) | — | 478 | — | 50 | — | — | 362 | (33) | 329 |
| Amortisation of acquired value of in-force business on insurance contracts | — | — | (43) | (115) | (4) | — | — | (162) | (12) | (174) |
| Depreciation and other amortisation expense | (71) | (42) | (54) | (82) | (5) | (10) | — | (264) | (37) | (301) |
| Other operating expenses | (1,300) | (1,636) | (2,060) | (834) | (140) | (425) | (1,101) | (7,496) | (1,226) | (8,722) |
| Impairment losses** | — | (3) | — | (81) | — | — | — | (84) | (123) | (207) |
| Inter-segment expenses | (125) | (2) | (16) | (71) | — | — | — | (214) | — | (214) |
| Finance costs | (193) | (38) | (18) | (27) | — | (3) | (420) | (699) | (723) | (1,422) |
| **Segmental expenses** | (16,222) | (4,313) | (16,847) | (8,428) | (777) | (668) | (1,521) | (48,776) | (7,005) | (55,781) |
| Profit/(loss) before tax | 1,168 | 457 | 611 | 309 | 46 | 61 | (713) | 1,939 | 895 | 2,834 |
| Tax attributable to policyholders' returns | (384) | — | (3) | — | (7) | — | — | (394) | — | (394) |
| **Profit/(loss) before tax attributable to shareholders** | 784 | 457 | 608 | 309 | 39 | 61 | (713) | 1,545 | 895 | 2,440 |
| Adjusted for non-operating items: | | | | | | | | | | |
| Reclassification of corporate costs and unallocated interest | 99 | 148 | 7 | 5 | — | 12 | (271) | — | — | — |
| Investment return variances and economic assumption changes on long-term business | 87 | — | 154 | (10) | (12) | — | — | 219 | (1,010) | (791) |
| Short-term fluctuation in return on investments backing non-long-term business | — | (31) | 47 | (44) | — | — | 227 | 199 | 44 | 243 |
| Economic assumption changes on general insurance and health business | — | 60 | 1 | — | — | — | — | 61 | — | 61 |
| Impairment of goodwill, associates and joint ventures | 4 | — | 9 | — | 1 | — | 9 | 23 | 1 | 24 |
| Amortisation and impairment of intangibles | 68 | 7 | 37 | 75 | 1 | 5 | — | 193 | 23 | 216 |
| (Profit)/loss on the disposal of subsidiaries and associates | (128) | (5) | (26) | (1) | — | — | (3) | (163) | 4 | (159) |
| Integration and restructuring costs | 41 | 35 | 61 | 32 | 2 | 30 | 24 | 225 | 18 | 243 |
| Exceptional items | (99) | (157) | — | 10 | — | (11) | (19) | (276) | 549 | 273 |
| **Operating profit/(loss) before tax attributable to shareholders** | 856 | 514 | 898 | 376 | 31 | 97 | (746) | 2,026 | 524 | 2,550 |

* Total reported income, excluding inter-segment revenue, is split United Kingdom £22,160 million, France £8,748 million, Netherlands £7,782 million, USA £6,497 million and Rest of the World £13,214 million. Income is attributed on the basis of geographical origin which does not materially differ from revenue by geographical destination, as most risks are located in the countries where the contracts were written.
** Impairment losses, and reversal of such losses, recognised directly in other comprehensive income were £78 million and £nil million respectively.
# United Kingdom General Insurance includes the Group Reinsurance business, agency run-off business and the non-insurance business for the RAC.

## A4 – Segmental information continued

### (iii) Segmental statement of financial position as at 31 December 2011

| | United Kingdom | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Life £m | GI £m | Aviva Europe £m | North America £m | Asia Pacific £m | Aviva Investors £m | Delta Lloyd £m | Other Group activities £m | Total £m |
| Goodwill | — | 924 | 777 | 850 | 60 | 29 | — | — | 2,640 |
| Acquired value of in-force business and intangible assets | 204 | 67 | 967 | 728 | 11 | 44 | — | — | 2,021 |
| Interests in, and loans to, joint ventures and associates | 1,274 | — | 276 | 1 | 476 | 15 | 776 | — | 2,818 |
| Property and equipment | 228 | 42 | 82 | 133 | 9 | 16 | — | — | 510 |
| Investment property | 8,205 | 10 | 1,484 | 6 | — | 1,133 | — | 800 | 11,638 |
| Loans | 23,435 | 524 | 970 | 3,147 | 40 | — | — | — | 28,116 |
| Financial investments | 82,990 | 2,357 | 89,698 | 34,296 | 2,755 | 884 | — | 3,078 | 216,058 |
| Deferred acquisition costs | 1,439 | 529 | 558 | 2,224 | 5 | — | — | — | 4,755 |
| Other assets | 14,847 | 3,401 | 17,262 | 2,936 | 295 | 579 | — | 4,500 | 43,820 |
| **Total assets** | **132,622** | **7,854** | **112,074** | **44,321** | **3,651** | **2,700** | **776** | **8,378** | **312,376** |
| Insurance liabilities | | | | | | | | | |
| Long-term business and outstanding claims provisions | 69,029 | 5,121 | 35,511 | 33,235 | 2,441 | — | — | — | 145,337 |
| Unearned premiums | 224 | 2,017 | 1,063 | 1,122 | 57 | — | — | — | 4,483 |
| Other insurance liabilities | — | 79 | 102 | 100 | — | — | — | — | 281 |
| Liability for investment contracts | 43,771 | — | 61,903 | 2,833 | — | 2,137 | — | — | 110,644 |
| Unallocated divisible surplus | 1,683 | — | (1,104) | — | 71 | — | — | — | 650 |
| Net asset value attributable to unitholders | 1,279 | — | 3,380 | — | — | — | — | 5,693 | 10,352 |
| Borrowings | 2,912 | 2 | 122 | 159 | — | — | — | 5,255 | 8,450 |
| Other liabilities, including inter-segment liabilities | 8,156 | (3,638) | 5,289 | 2,662 | 134 | 309 | — | 3,904 | 16,816 |
| **Total liabilities** | **127,054** | **3,581** | **106,266** | **40,111** | **2,703** | **2,446** | **—** | **14,852** | **297,013** |
| **Total equity** | | | | | | | | | **15,363** |
| **Total equity and liabilities** | | | | | | | | | **312,376** |
| Capital expenditure (excluding business combinations) | 55 | 78 | 27 | 29 | 5 | 20 | — | — | 214 |

External borrowings by holding companies within the Group which are not allocated to operating companies are included in 'Other Group activities'.

### (iv) Segmental statement of financial position as at 31 December 2010

| | United Kingdom | | Europe | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Life £m | GI £m | Aviva Europe £m | Delta Lloyd £m | North America £m | Asia Pacific £m | Aviva Investors £m | Other Group activities £m | Total £m |
| Goodwill | 29 | 1,208 | 927 | 307 | 838 | 54 | 28 | — | 3,391 |
| Acquired value of in-force business and intangible assets | 277 | 241 | 1,072 | 58 | 1,102 | 16 | 40 | — | 2,806 |
| Interests in, and loans to, joint ventures and associates | 1,603 | — | 315 | 323 | 1 | 381 | 14 | — | 2,637 |
| Property and equipment | 152 | 90 | 99 | 236 | 149 | 7 | 17 | — | 750 |
| Investment property | 8,121 | 37 | 1,382 | 2,043 | 6 | — | 1,060 | 415 | 13,064 |
| Loans | 19,781 | 502 | 977 | 19,120 | 2,529 | 40 | — | 125 | 43,074 |
| Financial investments | 83,099 | 2,525 | 95,940 | 33,627 | 31,829 | 2,639 | 1,062 | 2,567 | 253,288 |
| Deferred acquisition costs | 1,445 | 628 | 632 | 188 | 2,518 | 5 | — | — | 5,416 |
| Other assets | 14,409 | 3,724 | 17,748 | 3,361 | 2,939 | 446 | 1,164 | 1,890 | 45,681 |
| **Total assets** | 128,916 | 8,955 | 119,092 | 59,263 | 41,911 | 3,588 | 3,385 | 4,997 | 370,107 |
| Insurance liabilities | | | | | | | | | |
| Long-term business and outstanding claims provisions | 66,261 | 5,136 | 37,165 | 30,240 | 31,218 | 2,482 | — | — | 172,502 |
| Unearned premiums | 185 | 2,171 | 1,023 | 336 | 1,098 | 42 | — | — | 4,855 |
| Other insurance liabilities | — | 69 | 111 | 61 | 100 | 2 | — | — | 343 |
| Liability for investment contracts | 44,350 | — | 65,020 | 3,220 | 2,929 | — | 2,268 | — | 117,787 |
| Unallocated divisible surplus | 2,010 | — | 1,243 | 138 | — | 37 | — | — | 3,428 |
| Net asset value attributable to unitholders | 991 | — | 4,231 | 678 | — | — | — | 3,132 | 9,032 |
| External borrowings | 2,796 | — | 127 | 6,574 | 178 | — | — | 5,274 | 14,949 |
| Other liabilities, including inter-segment liabilities | 7,316 | (1,823) | 3,760 | 13,706 | 2,541 | 193 | 901 | 2,892 | 29,486 |
| **Total liabilities** | 123,909 | 5,553 | 112,680 | 54,953 | 38,064 | 2,756 | 3,169 | 11,298 | 352,382 |
| **Total equity** | | | | | | | | | 17,725 |
| **Total equity and liabilities** | | | | | | | | | 370,107 |
| Capital expenditure (excluding business combinations) | 379 | 11 | 20 | 88 | 68 | 6 | 12 | — | 584 |

## A4 – Segmental information continued

### (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 and 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, provides investment management services for institutional pension fund mandates and 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 the RAC non-insurance operations (up to the disposal date of 30 September 2011), service companies, head office expenses, such as Group treasury and finance functions, and certain financing costs and taxes not allocated to business segments.

**Delta Lloyd**

In the products and services analysis, the results of Delta Lloyd up to 6 May 2011 are presented as discontinued operations. After this date, the Group's share of the profits of its retained interest in Delta Lloyd as an associate are shown only within other activities within continuing operations.

Overview IFRS New business Capital management Analysis of assets MCEV

## A4 – Segmental information continued

### (i) Segmental income statement – products and services for the year ended 31 December 2011

| | Long-term business £m | General insurance and health** £m | Fund management £m | Other £m | Total £m |
|---|---|---|---|---|---|
| Gross written premiums* | 20,250 | 9,750 | — | — | 30,000 |
| Premiums ceded to reinsurers | (1,085) | (588) | — | — | (1,673) |
| Net written premiums | 19,165 | 9,162 | — | — | 28,327 |
| Net change in provision for unearned premiums | — | (236) | — | — | (236) |
| Net earned premiums | 19,165 | 8,926 | — | — | 28,091 |
| Fee and commission income | 715 | 54 | 377 | 333 | 1,479 |
| | 19,880 | 8,980 | 377 | 333 | 29,570 |
| Net investment income/(expense) | 5,469 | 725 | 4 | (207) | 5,991 |
| Inter-segment revenue | — | — | 227 | — | 227 |
| Share of (loss) of joint ventures and associates | (10) | — | (2) | (111) | (123) |
| Profit/(loss) on the disposal of subsidiaries and associates | — | (28) | 24 | 569 | 565 |
| **Segmental income** | **25,339** | **9,677** | **630** | **584** | **36,230** |
| Claims and benefits paid, net of recoveries from reinsurers | (20,989) | (5,945) | — | — | (26,934) |
| Change in insurance liabilities, net of reinsurance | (3,727) | (3) | — | — | (3,730) |
| Change in investment contract provisions | 1,224 | — | — | — | 1,224 |
| Change in unallocated divisible surplus | 2,721 | — | — | — | 2,721 |
| Amortisation of acquired value of in-force business on insurance contracts | (269) | — | — | — | (269) |
| Depreciation and other amortisation expense | (332) | (19) | (16) | (64) | (431) |
| Other operating expenses | (2,714) | (2,994) | (483) | (833) | (7,024) |
| Impairment losses | (48) | (60) | — | (19) | (127) |
| Inter-segment expenses | (216) | (11) | — | — | (227) |
| Finance costs | (224) | (36) | (51) | (487) | (798) |
| **Segmental expenses** | **(24,574)** | **(9,068)** | **(550)** | **(1,403)** | **(35,595)** |
| Profit/(loss) before tax from continuing operations | 765 | 609 | 80 | (819) | 635 |
| Tax attributable to policyholder returns | 178 | — | — | — | 178 |
| Profit/(loss) before tax attributable to shareholders from continuing operations | 943 | 609 | 80 | (819) | 813 |
| Adjusted for: | | | | | |
| Non-operating items from continuing operations (excluding Delta Lloyd as an associate) | 1,180 | 326 | 19 | (50) | 1,475 |
| Share of Delta Lloyd's non-operating items (before tax), as an associate | — | — | — | (10) | (10) |
| Share of Delta Lloyd's tax expense, as an associate | — | — | — | 34 | 34 |
| **Operating profit/(loss) before tax attributable to shareholders' profits from continuing operations** | **2,123** | **935** | **99** | **(845)** | **2,312** |
| **Operating profit/(loss) before tax attributable to shareholders' profits from discontinued operations** | **185** | **1** | **11** | **(6)** | **191** |
| **Operating profit/(loss) before tax attributable to shareholders' profits** | **2,308** | **936** | **110** | **(851)** | **2,503** |

* Gross written premiums includes inward reinsurance premiums assumed from other companies amounting to £243 million, of which £110 million relates to property and liability insurance and £133 million relates to long-term business.
** General insurance and health business segment includes gross written premiums of £1,107 million relating to health business. The remaining business relates to property and liability insurance.

## A4 – Segmental information continued

### (ii) Segmental income statement – products and services for the year ended 31 December 2010

| | Long-term business £m | General insurance and health** £m | Fund manage-ment £m | Other £m | Total £m |
|---|---|---|---|---|---|
| Gross written premiums* | 22,600 | 9,205 | — | — | 31,805 |
| Premiums ceded to reinsurers | (1,051) | (683) | — | — | (1,734) |
| Net written premiums | 21,549 | 8,522 | — | — | 30,071 |
| Net change in provision for unearned premiums | — | (73) | — | — | (73) |
| Net earned premiums | 21,549 | 8,449 | — | — | 29,998 |
| Fee and commission income | 624 | 94 | 389 | 343 | 1,450 |
| | 22,173 | 8,543 | 389 | 343 | 31,448 |
| Net investment income | 17,183 | 500 | 7 | 1,059 | 18,749 |
| Inter-segment revenue | — | — | 216 | — | 216 |
| Share of profit/(loss) of joint ventures and associates | 180 | — | (5) | (34) | 141 |
| Profit on the disposal of subsidiaries and associates | 130 | 1 | — | 32 | 163 |
| Segmental income | 39,666 | 9,044 | 607 | 1,400 | 50,717 |
| Claims and benefits paid, net of recoveries from reinsurers | (18,909) | (6,009) | — | — | (24,918) |
| Change in insurance liabilities, net of reinsurance | (6,997) | 389 | — | — | (6,608) |
| Change in investment contract provisions | (8,693) | — | — | — | (8,693) |
| Change in unallocated divisible surplus | 362 | — | — | — | 362 |
| Amortisation of acquired value of in-force business in insurance contracts | (162) | — | — | — | (162) |
| Depreciation and other amortisation expense | (177) | (27) | (10) | (50) | (264) |
| Other operating expenses | (2,581) | (2,788) | (469) | (1,658) | (7,496) |
| Impairment losses | (82) | (3) | — | 1 | (84) |
| Inter-segment expenses | (206) | (8) | — | (2) | (216) |
| Finance costs | (155) | (48) | (65) | (431) | (699) |
| Segmental expenses | (37,600) | (8,494) | (544) | (2,140) | (48,778) |
| Profit/(loss) before tax from continuing operations | 2,066 | 550 | 63 | (740) | 1,939 |
| Tax attributable to policyholder returns | (394) | — | — | — | (394) |
| Profit/(loss) before tax attributable to shareholders from continuing operations | 1,672 | 550 | 63 | (740) | 1,545 |
| Adjusted for non-operating items | 316 | 354 | 35 | (224) | 481 |
| Operating profit/(loss) before tax attributable to shareholders' profits from continuing operations | 1,988 | 904 | 98 | (964) | 2,026 |
| Operating profit/(loss) before tax attributable to shareholders' profits from discontinued operations | 330 | 146 | 103 | (55) | 524 |
| Operating profit/(loss) before tax attributable to shareholders' profits | 2,318 | 1,050 | 201 | (1,019) | 2,550 |

* Gross written premiums includes inward reinsurance premiums assumed from other companies amounting to £255 million, of which £113 million relates to property and liability insurance and £142 million relates to long-term business.
** General insurance and health business segment includes gross written premiums of £942 million relating to health business. The remaining business relates to property and liability insurance.

### (iii) Segmental statement of financial position – products and services as at 31 December 2011

| | **Long-term business £m** | **General insurance and health £m** | **Fund manage-ment £m** | **Other* £m** | **Total £m** |
|---|---|---|---|---|---|
| Goodwill | **1,466** | **1,067** | **29** | **78** | **2,640** |
| Acquired value of in-force business and intangible assets | **1,742** | **145** | **44** | **90** | **2,021** |
| Interests in, and loans to, joint ventures and associates | **2,035** | **5** | **—** | **778** | **2,818** |
| Property and equipment | **395** | **34** | **16** | **65** | **510** |
| Investment property | **10,686** | **152** | **—** | **800** | **11,638** |
| Loans | **27,511** | **605** | **—** | **—** | **28,116** |
| Financial investments | **203,247** | **9,391** | **43** | **3,377** | **216,058** |
| Deferred acquisition costs | **3,755** | **986** | **14** | **—** | **4,755** |
| Other assets | **31,449** | **6,717** | **495** | **5,159** | **43,820** |
| **Total assets** | **282,286** | **19,102** | **641** | **10,347** | **312,376** |
| Gross insurance liabilities | **134,860** | **15,241** | **—** | **—** | **150,101** |
| Gross liabilities for investment contracts | **110,644** | **—** | **—** | **—** | **110,644** |
| Unallocated divisible surplus | **650** | **—** | **—** | **—** | **650** |
| Net asset value attributable to unitholders | **4,659** | **—** | **—** | **5,693** | **10,352** |
| Borrowings | **3,016** | **—** | **—** | **5,434** | **8,450** |
| Other liabilities, including inter-segment liabilities | **12,793** | **(3,170)** | **374** | **6,819** | **16,816** |
| **Total liabilities** | **266,622** | **12,071** | **374** | **17,946** | **297,013** |
| **Total equity** | | | | | **15,363** |
| **Total equity and liabilities** | | | | | **312,376** |

*Aviva's continuing associate interest in Delta Lloyd is included within "Other".

## A4 – Segmental information continued

**(iv) Segmental statement of financial position – products and services as at 31 December 2010**

| | Long-term business £m | General insurance and health £m | Fund management £m | Other £m | Total £m |
|---|---|---|---|---|---|
| Goodwill | 1,615 | 459 | 28 | 1,289 | 3,391 |
| Acquired value of in-force business and intangible assets | 2,328 | 356 | 59 | 63 | 2,806 |
| Interests in, and loans to, joint ventures and associates | 2,630 | 6 | — | 1 | 2,637 |
| Property and equipment | 472 | 47 | 18 | 213 | 750 |
| Investment property | 12,490 | 146 | — | 428 | 13,064 |
| Loans | 28,596 | 664 | — | 13,814 | 43,074 |
| Financial investments | 237,659 | 11,481 | 82 | 4,066 | 253,288 |
| Deferred acquisition costs | 4,261 | 1,141 | 14 | — | 5,416 |
| Other assets | 34,678 | 7,517 | 1,627 | 1,859 | 45,681 |
| **Total assets** | 324,729 | 21,817 | 1,828 | 21,733 | 370,107 |
| Gross insurance liabilities | 160,579 | 17,121 | — | — | 177,700 |
| Gross liabilities for investment contracts | 117,787 | — | — | — | 117,787 |
| Unallocated divisible surplus | 3,428 | — | — | — | 3,428 |
| Net asset value attributable to unitholders | 5,892 | 8 | — | 3,132 | 9,032 |
| Borrowings | 3,653 | 86 | 139 | 11,071 | 14,949 |
| Other liabilities, including inter-segment liabilities | 14,334 | (1,129) | 1,361 | 14,920 | 29,486 |
| **Total liabilities** | 305,673 | 16,086 | 1,500 | 29,123 | 352,382 |
| **Total equity** | | | | | 17,725 |
| **Total equity and liabilities** | | | | | 370,107 |

## A5 – Tax

This note analyses the tax (credit)/charge for the year and explains the factors that affect it.

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

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

| Continuing operations | 2011 £m | 2010 £m |
|---|---|---|
| **Current tax** | | |
| For this year | **539** | 583 |
| Prior year adjustments | **(16)** | (44) |
| Total current tax from continuing operations | **523** | 539 |
| **Deferred tax** | | |
| Origination and reversal of temporary differences | **(514)** | 280 |
| Changes in tax rates or tax laws | **(28)** | (35) |
| Write-down/(back) of deferred tax assets | **70** | (67) |
| Total deferred tax from continuing operations | **(472)** | 178 |
| Total tax charged to income statement from continuing operations | **51** | 717 |
| Total tax (credited)/charged to income statement from discontinued operations | **(202)** | 225 |
| Total tax (credited)/charged to income statement | **(151)** | 942 |

(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 (credit)/charge. The tax credit attributable to policyholders' returns included in the credit above is £178 million *(2010: £394 million charge)*.

(iii) The tax (credit)/charge can be analysed as follows:

| | 2011 £m | 2010 £m |
|---|---|---|
| UK tax | **(304)** | 447 |
| Overseas tax | **153** | 495 |
| | **(151)** | 942 |

(iv) Unrecognised tax losses and temporary differences of previous years were used to reduce the current tax expense and deferred tax expense by £25 million and £108 million *(2010: £34 million and £88 million),* respectively.

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

| Continuing operations | 2011 £m | 2010 £m |
|---|---|---|
| Long-term business technical provisions and other insurance items | **939** | 42 |
| Deferred acquisition costs | **96** | 223 |
| Unrealised (losses)/gains on investments | **(1,265)** | 175 |
| Pensions and other post-retirement obligations | **2** | 23 |
| Unused losses and tax credits | **105** | 24 |
| Subsidiaries, associates and joint ventures | **1** | 2 |
| Intangibles and additional value of in-force long-term business | **(99)** | (111) |
| Provisions and other temporary differences | **(251)** | (200) |
| Deferred tax (credited)/charged to income statement from continuing operations | **(472)** | 178 |
| Deferred tax (credited)/charged to income statement from discontinued operations | **(41)** | 220 |
| Total deferred tax (credited)/charged to income statement | **(513)** | 398 |

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## A5 – Tax continued

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

(i) The total tax charge comprises:

| | 2011 £m | 2010 £m |
|---|---|---|
| Current tax from continuing operations | | |
| In respect of pensions and other post-retirement obligations | **(88)** | (29) |
| In respect of foreign exchange movements | **(8)** | (5) |
| | **(96)** | (34) |
| Deferred tax from continuing operations | | |
| In respect of pensions and other post-retirement obligations | **260** | (3) |
| In respect of fair value gains on owner-occupied properties | **(1)** | 2 |
| In respect of unrealised gains on investments | **98** | 151 |
| | **357** | 150 |
| Tax charged to other comprehensive income arising from continuing operations | **261** | 116 |
| Tax credited to other comprehensive income arising from discontinued operations | **(3)** | (4) |
| Total tax charged to other comprehensive income | **258** | 112 |

(ii) The tax charge attributable to policyholders' returns included above is £nil *(2010: £nil)*.

### (c) Tax credited to equity

Tax credited directly to equity in the year amounted to £16 million *(2010: £17 million)*, and is wholly in respect of coupon payments on direct capital instruments.

### (d) Tax reconciliation

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

| | 2011 | | |
|---|---|---|---|
| | Shareholder £m | Policy-holder £m | Total £m |
| Total profit/(loss) before tax | **87** | **(178)** | **(91)** |
| Tax calculated at standard UK corporation tax rate of 26.5% | **23** | **(47)** | **(24)** |
| Reconciling items | | | |
| Different basis of tax – policyholders | **—** | **(129)** | **(129)** |
| Adjustment to tax charge in respect of prior years | **(25)** | **—** | **(25)** |
| Non-assessable income | **(60)** | **—** | **(60)** |
| Non-taxable profit on sale of subsidiaries and associates | **(135)** | **—** | **(135)** |
| Disallowable expenses | **215** | **—** | **215** |
| Different local basis of tax on overseas profits | **84** | **(2)** | **82** |
| Change in future local statutory tax rates | **(32)** | **—** | **(32)** |
| Movement in deferred tax not recognised | **(5)** | **—** | **(5)** |
| Tax effect of profit from associates and joint ventures | **(41)** | **—** | **(41)** |
| Other | **3** | **—** | **3** |
| Total tax charged/(credited) to income statement | **27** | **(178)** | **(151)** |

| | 2010 | | |
|---|---|---|---|
| | Shareholder £m | Policy-holder £m | Total £m |
| Total profit before tax | 2,440 | 394 | 2,834 |
| Tax calculated at standard UK corporation tax rate of 28% | 684 | 110 | 794 |
| Reconciling items | | | |
| Different basis of tax – policyholders | — | 272 | 272 |
| Adjustment to tax charge in respect of prior years | (28) | — | (28) |
| Non-assessable income | (93) | — | (93) |
| Non-taxable profit on sale of subsidiaries and associates | (44) | — | (44) |
| Disallowable expenses | 142 | — | 142 |
| Different local basis of tax on overseas profits | 95 | — | 95 |
| Change in future local statutory tax rates | (26) | — | (26) |
| Movement in deferred tax not recognised | (156) | — | (156) |
| Tax effect of profit from associates and joint ventures | (4) | — | (4) |
| Other | (22) | 12 | (10) |
| Total tax charged to income statement | 548 | 394 | 942 |

## A5 – Tax continued

The tax (credit)/charge attributable to policyholders' returns is removed from the Group's total (loss)/profit before tax in arriving at the Group's profits before tax attributable to shareholders' profits. As the net of tax profits attributable to with-profit and unit-linked policyholders is zero, the Group's pre-tax (loss)/profit attributable to policyholders is an amount equal and opposite to the tax (credit)/charge attributable to policyholders included in the total tax (credit)/charge. The difference between the policyholder tax (credit)/charge and the impact of this item in the tax reconciliation can be explained as follows:

| | 2011 £m | 2010 £m |
|---|---|---|
| Tax attributable to policyholder returns | **(178)** | 394 |
| UK corporation tax at a rate of 26.5% (2010: 28%) in respect of the policyholder tax deduction | **47** | (110) |
| Other life insurance regime impacts | **—** | (12) |
| Different local basis of tax on overseas profits | **2** | — |
| Different basis of tax – policyholders per tax reconciliation | **(129)** | 272 |

A reduction in the UK corporation tax rate from 28% to 26% was substantively enacted in March 2011 and was effective from 1 April 2011. A further reduction from 26% to 25% was substantively enacted in July 2011 and will be effective from 1 April 2012. Accordingly, these rates have been applied in the measurement of the Group's deferred tax assets and liabilities as at 31 December 2011.

In addition, the Government announced its intention to further reduce the UK corporation tax rate to 24% from 1 April 2013 and to 23% from 1 April 2014. The aggregate impact of the proposed reductions from 25% to 23% would reduce the deferred tax assets and deferred tax liabilities by approximately £60 million.

Considerable changes to the regime for taxing UK life insurance companies will be made with effect from 1 January 2013. Draft legislation on this was included in the draft 2012 Finance Bill published on 6 December 2011, and consultation on the changes and the draft legislation has continued since then. Based on the draft legislation published in December 2011 and the continued consultation, it is not expected that these changes will have a material impact on the deferred tax assets and liabilities shown in the consolidated statement of financial position.

## A6 – Earnings per share

This note shows how we calculate earnings per share, 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 operating profit as we believe this gives a better indication of operating performance.

### (a) Basic earnings per share

(i) The profit attributable to ordinary shareholders is:

| | | | 2011 |
|---|---|---|---|
| **Continuing operations** | **Operating profit £m** | **Non-operating items £m** | **Total £m** |
| Profit before tax attributable to shareholders' profits | **2,312** | **(1,465)** | **847** |
| Share of Delta Lloyd's tax expense as an associate | **(39)** | **5** | **(34)** |
| Profit before tax | **2,273** | **(1,460)** | **813** |
| Tax attributable to shareholders' profits | **(625)** | **396** | **(229)** |
| Profit for the year | **1,648** | **(1,064)** | **584** |
| Amount attributable to non-controlling interests | **(150)** | **109** | **(41)** |
| Cumulative preference dividends for the year | **(17)** | **—** | **(17)** |
| Coupon payments in respect of direct capital instruments (DCI) (net of tax) | **(43)** | **—** | **(43)** |
| Profit attributable to ordinary shareholders from continuing operations | **1,438** | **(955)** | **483** |
| Loss attributable to ordinary shareholders from discontinued operations | **93** | **(411)** | **(318)** |
| **Profit attributable to ordinary shareholders** | **1,531** | **(1,366)** | **165** |

## A6 – Earnings per share continued

| Continuing operations | Operating profit £m | Non-operating items £m | Total £m |
|---|---|---|---|
| | | | 2010 |
| Profit before tax attributable to shareholders' profits | 2,026 | (481) | 1,545 |
| Tax attributable to shareholders' profits | (529) | 206 | (323) |
| Profit for the year | 1,497 | (275) | 1,222 |
| Amount attributable to non-controlling interests | (123) | 6 | (117) |
| Cumulative preference dividends for the year | (17) | — | (17) |
| Coupon payments in respect of direct capital instruments (DCI) (net of tax) | (42) | — | (42) |
| Profit attributable to ordinary shareholders from continuing operations | 1,315 | (269) | 1,046 |
| Profit attributable to ordinary shareholders from discontinued operations | 219 | 139 | 358 |
| **Profit attributable to ordinary shareholders** | 1,534 | (130) | 1,404 |

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

| **Continuing operations** | **Before tax £m** | **Net of tax, non-controlling interests, preference dividends and DCI £m** | **Per share p** |
|---|---|---|---|
| | | | **2011** |
| Operating profit attributable to ordinary shareholders | **2,312** | **1,438** | **50.5** |
| Non-operating items: | | | |
| Investment return variances and economic assumption changes on long-term business | **(796)** | **(476)** | **(16.7)** |
| Short-term fluctuation in return on investments backing non-long-term business | **(266)** | **(198)** | **(7.0)** |
| Economic assumption changes on general insurance and health business | **(90)** | **(67)** | **(2.4)** |
| Impairment of goodwill, associates and joint ventures | **(392)** | **(359)** | **(12.6)** |
| Amortisation and net impairment of intangibles | **(171)** | **(178)** | **(6.3)** |
| Profit on the disposal of subsidiaries and associates | **565** | **552** | **19.5** |
| Integration and restructuring costs and exceptional items | **(325)** | **(244)** | **(8.5)** |
| Share of Delta Lloyd's non-operating items (before tax) as an associate | **10** | **15** | **0.5** |
| Share of Delta Lloyd's tax expense as an associate | **(34)** | **—** | **—** |
| Profit attributable to ordinary shareholders from continuing operations | **813** | **483** | **17.0** |
| Loss attributable to ordinary shareholders from discontinued operations | **(726)** | **(318)** | **(11.2)** |
| **Profit attributable to ordinary shareholders** | **87** | **165** | **5.8** |

## A6 – Earnings per share continued

| Continuing operations | Before tax £m | Net of tax, non-controlling interests, preference dividends and DCI £m | Per share p |
|---|---|---|---|
| | | | 2010 |
| Operating profit attributable to ordinary shareholders | 2,026 | 1,315 | 47.2 |
| Non-operating items: | | | |
| Investment return variances and economic assumption changes on long-term business | (219) | (90) | (3.2) |
| Short-term fluctuation in return on investments backing non-long-term business | (199) | (157) | (5.6) |
| Economic assumption changes on general insurance and health business | (61) | (44) | (1.6) |
| Impairment of goodwill, associates and joint ventures | (23) | (23) | (0.9) |
| Amortisation and net impairment of intangibles | (193) | (115) | (4.1) |
| Profit on the disposal of subsidiaries and associates | 163 | 163 | 5.9 |
| Integration and restructuring costs and exceptional items | 51 | (3) | (0.1) |
| Profit attributable to ordinary shareholders from continuing operations | 1,545 | 1,046 | 37.6 |
| Profit attributable to ordinary shareholders from discontinued operations | 895 | 358 | 12.8 |
| Profit attributable to ordinary shareholders | 2,440 | 1,404 | 50.4 |

(iii) The calculation of basic earnings per share uses a weighted average of 2,845 million *(2010: 2,784 million)* ordinary shares in issue, after deducting shares owned by the employee share trusts. The actual number of shares in issue at 31 December 2011 was 2,906 million *(2010: 2,820 million)* and 2,892 million *(2010: 2,812 million)* excluding shares owned by the employee share trusts.

### (b) Diluted earnings per share

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

| | **Total £m** | **Weighted average number of shares m** | **Per share p** |
|---|---|---|---|
| | | | **2011** |
| Profit attributable to ordinary shareholders | **483** | **2,845** | **17.0** |
| Dilutive effect of share awards and options | **—** | **50** | **(0.3)** |
| **Diluted earnings per share from continuing operations** | **483** | **2,895** | **16.7** |
| Loss attributable to ordinary shareholders | **(318)** | **2,845** | **(11.2)** |
| Dilutive effect of share awards and options | **—** | **50** | **—** |
| **Diluted loss per share from discontinued operations[1]** | **(318)** | **2,895** | **(11.2)** |
| **Diluted earnings per share** | **165** | **2,895** | **5.7** |

[1] The effect of future share awards and options in the loss from discontinued operations is anti-dilutive, therefore the diluted earnings per share has been maintained at (11.2) pence

## A6 – Earnings per share continued

| | 2010 | | |
|---|---|---|---|
| | Total £m | Weighted average number of shares m | Per share p |
| Profit attributable to ordinary shareholders | 1,046 | 2,784 | 37.6 |
| Dilutive effect of share awards and options | — | 47 | (0.6) |
| **Diluted earnings per share from continuing operations** | 1,046 | 2,831 | 37.0 |
| Profit attributable to ordinary shareholders | 358 | 2,784 | 12.8 |
| Dilutive effect of share awards and options | — | 47 | (0.2) |
| **Diluted earnings per share from discontinued operations** | 358 | 2,831 | 12.6 |
| **Diluted earnings per share** | 1,404 | 2,831 | 49.6 |

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

| | **2011** | | |
|---|---|---|---|
| | **Total £m** | **Weighted average number of shares m** | **Per share p** |
| Operating profit attributable to ordinary shareholders | **1,438** | **2,845** | **50.5** |
| Dilutive effect of share awards and options | **—** | **50** | **(0.8)** |
| **Diluted operating profit per share from continuing operations** | **1,438** | **2,895** | **49.7** |
| Operating profit attributable to ordinary shareholders | **93** | **2,845** | **3.3** |
| Dilutive effect of share awards and options | **—** | **50** | **(0.1)** |
| **Diluted operating profit per share from discontinued operations** | **93** | **2,895** | **3.2** |
| **Diluted operating profit per share** | **1,531** | **2,895** | **52.9** |

| | 2010 | | |
|---|---|---|---|
| | Total £m | Weighted average number of shares m | Per share p |
| Operating profit attributable to ordinary shareholders | 1,315 | 2,784 | 47.2 |
| Dilutive effect of share awards and options | — | 47 | (0.7) |
| **Diluted operating profit per share from continuing operations** | 1,315 | 2,831 | 46.5 |
| Operating profit attributable to ordinary shareholders | 219 | 2,784 | 7.9 |
| Dilutive effect of share awards and options | — | 47 | (0.2) |
| **Diluted operating profit per share from discontinued operations** | 219 | 2,831 | 7.7 |
| **Diluted operating profit per share** | 1,534 | 2,831 | 54.2 |

## A7 – 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.

| | **2011 £m** | 2010 £m |
|---|---|---|
| Ordinary dividends declared and charged to equity in the period | | |
| Final 2010 – 16.00 pence per share, paid on 17 May 2011 | **451** | — |
| Final 2009 – 15.00 pence per share, paid on 17 May 2010 | **—** | 415 |
| Interim 2011 – 10.00 pence per share, paid on 17 November 2011 | **287** | — |
| Interim 2010 – 9.50 pence per share, paid on 17 November 2010 | **—** | 266 |
| | **738** | 681 |
| Preference dividends declared and charged to equity in the year | **17** | 17 |
| Coupon payments on direct capital instruments | **58** | 59 |
| | **813** | 757 |

Subsequent to 31 December 2011, the directors proposed a final dividend for 2011 of 16.0 pence per ordinary share *(2010: 16.0 pence)*, amounting to £465 million *(2010: £451 million)* in total. Subject to approval by shareholders at the AGM, the dividend will be paid on 17 May 2012 and will be accounted for as an appropriation of retained earnings in the year ending 31 December 2012.

Interest on the direct capital instruments issued in November 2004 is treated as an appropriation of retained profits and, accordingly, it is accounted for when paid. Tax relief is obtained at a rate of 26.5% *(2010: 28.0%)*.

## A8 – Insurance liabilities

This note analyses our insurance contract liabilities by type of product and describes how we calculate these liabilities and the assumptions we used.

### (a) Carrying amount

Insurance liabilities at 31 December comprise:

| | | | **2011** | | | 2010 |
|---|---|---|---|---|---|---|
| | **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 | **55,594** | **—** | **55,594** | 64,043 | — | 64,043 |
| Unit-linked non-participating | **10,168** | **—** | **10,168** | 21,450 | — | 21,450 |
| Other non-participating | **68,131** | **—** | **68,131** | 75,453 | — | 75,453 |
| | **133,893** | **—** | **133,893** | 160,946 | — | 160,946 |
| Outstanding claims provisions | **1,311** | **8,099** | **9,410** | 1,078 | 9,528 | 10,606 |
| Provision for claims incurred but not reported | **—** | **2,646** | **2,646** | — | 2,735 | 2,735 |
| | **1,311** | **10,745** | **12,056** | 1,078 | 12,263 | 13,341 |
| Provision for unearned premiums | **—** | **4,483** | **4,483** | — | 4,855 | 4,855 |
| Provision arising from liability adequacy tests | **—** | **13** | **13** | — | 2 | 2 |
| Other technical provisions | **—** | **—** | **—** | — | 1 | 1 |
| **Total** | **135,204** | **15,241** | **150,445** | 162,024 | 17,121 | 179,145 |
| Less: | | | | | | |
| Obligations to staff pension schemes transferred to provisions | **—** | **—** | **—** | (1,445) | — | (1,445) |
| Amounts classified as held for sale | **(344)** | **—** | **(344)** | — | — | — |
| | **134,860** | **15,241** | **150,101** | 160,579 | 17,121 | 177,700 |

## A8 – 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 mainly in:
  - New With-Profits sub-fund (NWPSF) of Aviva Life & Pensions UK (UKLAP), where the with-profit policyholders are entitled to at least 90% of the distributed profits, 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), With-Profits sub-fund (WPSF) and Provident Mutual sub-fund (PMSF) of UKLAP, where the with-profit policyholders are entitled to at least 90% of the distributed profits, the shareholders receiving the balance.
  - ‘Non-profit’ funds of Aviva Annuity UK and UKLAP, where shareholders are entitled to 100% of the distributed profits. Shareholder profits on unitised with-profit business written by WPSF and on stakeholder unitised with-profit business are derived from management fees and policy charges, and emerge in the non-profit funds.
  - The RIEESA of UKLAP, which 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 will be used to write non-profit business and also to provide capital support to NWPSF.
- In France, where 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 the US, there are two main types of business – protection products and accumulation products. Protection products include interest-sensitive whole life, term life, universal life and indexed life insurance policies. The accumulation product segment includes traditional fixed and indexed deferred annuities for individuals and funding agreements for business customers. In addition, there are two closed blocks of participating contracts arising from demutualisations of subsidiary companies. All products are classified as insurance contracts except for the funding agreements and term certain immediate annuities, which are classified as non-participating investment contracts.
- In other operations in Europe and Asia.

#### (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. In Ireland, the allowance for Irish government bonds was made in proportion to the spread over the yields for equivalent AAA-rated government bonds.

In 2010, a test case was taken to the European Court of Justice to rule on the current law and practice whereby insurers may take into account a person’s gender in the assessment of risk and consequently the pricing of insurance products. The ruling was issued on 1 March 2011 and requires gender equality for pricing from 21 December 2012. At 31 December 2011, the impact of the ruling on existing long-term business provisions in our UK and European businesses was not considered to be material *(2010: not applicable).*

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.

#### (iii) Methodology and assumptions

There are two main methods of actuarial valuation of liabilities arising under long-term insurance contracts – the net premium method and the gross premium method – both of which involve the discounting of projected premiums and claims.

Under the net premium method, the premium taken into account in calculating the provision is determined actuarially, based on the valuation assumptions regarding discount rates, mortality and disability. The difference between this premium and the actual premium payable provides a margin for expenses. This method does not allow for voluntary early termination of the contract by the policyholder, and so no assumption is required for persistency. Explicit provision is made for vested bonuses (including those vesting following the most recent fund valuation), but no such provision is made for future regular or terminal bonuses. However, this method makes implicit allowance for future regular or terminal bonuses already earned, by margins in the valuation discount rate used.

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. Explicit provision is made for vested bonuses and explicit allowance is also made for future regular bonuses, but not terminal bonuses.

## A8 – Insurance liabilities continued

***(a) UK***

***With-profit business***

The valuation of with-profit business uses the methodology developed for the Realistic Balance Sheet, adjusted to remove the shareholders' share of future bonuses. The key elements of the Realistic Balance Sheet methodology are the with-profit 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. 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 items included in the cost of future policy-related liabilities include:

- Maturity Guarantees;
- Guaranteed Annuity Options;
- GMP underpin on Section 32 transfers; and
- Expected payments under Mortgage Endowment Promise.

In the Provident Mutual and With-Profits sub-funds in UKLAP, this is offset by the expected cost of charges to WPBR to be made in respect of guarantees.

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 based on experience, adjusted to take into account future trends.

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 government securities, plus a margin of 0.1% is used. The rates vary according to the outstanding term of the policy, with a typical rate as at 31 December 2011 of 2.20% *(2010: 3.78%)* 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 | |
|---|---|---|
| | **2011** | 2010 |
| Equity returns | **26.4%** | 26.1% |
| Property returns | **15.0%** | 15.0% |
| Fixed interest yields | **18.0%** | 13.2% |

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. Fixed interest yield volatility is also dependent on term and money-ness. The figure shown is for a ten-year swap option, currently at the money.

***Future regular bonuses***

Annual bonus assumptions for 2012 have been set consistently with the year-end 2011 declaration. Future annual bonus rates reflect the principles and practices of the 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-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 table used | |
|---|---|---|
| | **2011** | 2010 |
| 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 |

## A8 – Insurance liabilities continued

***Non-profit business***

Conventional non-profit contracts, including those written in the with-profit 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.

For unit-linked and some unitised with-profit 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 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 restricting the yields for equities and properties with reference to a margin over long-term interest rates or 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.

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

| | Valuation discount rates | |
|---|---|---|
| | **2011** | 2010 |
| Assurances | | |
| Life conventional non-profit | **1.8% to 1.9%** | 2.8% |
| Pensions conventional non-profit | **2.6%** | 3.5% to 3.7% |
| Annuities | | |
| Conventional immediate and deferred annuities | **2.2% to 4.3%** | 3.7% to 5.3% |
| Non-unit reserves on Unit Linked business | | |
| Life | **1.8% to 2.2%** | 3.1% |
| Pensions | **2.2% to 2.7%** | 3.8% |
| Income Protection | | |
| Active lives | **2.4%** | 3.5% |
| Claims in payment – level | **3.6%** | 4.5% |
| Claims in payment – index linked | **(1.0)%** | (0.7)% |

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 | |
|---|---|---|
| | **2011** | 2010 |
| **Assurances** | | |
| Non-profit | **AM00/AF00 or TM00/TF00 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 | **PCMA00/PCFA00 adjusted plus allowance for future mortality improvement** | PCMA00/PCFA00 adjusted plus allowance for future mortality improvement |
| General annuity business | **IML00/IFL00 adjusted plus allowance for future mortality improvement** | IML00/IFL00 adjusted plus allowance for future mortality improvement |

## A8 – Insurance liabilities continued

***(b) France***

The majority of reserves arise from a single premium savings product and is based on the accumulated fund value, adjusted to maintain consistency with the value of the assets backing the policyholder liabilities. 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 |
|---|---|---|
| | 2011 and 2010 | 2011 and 2010 |
| Life assurances | 0% to 4.5% | TD73-77, TD88-90, TH00-02, TF00-02,H_AVDBS, F_AVDBS, H_SSDBS, F_SSDBS. |
| Annuities | 0% to 4.5% | TGF05/TGH05 |

***(c) United States***

For the major part of our US business, insurance liabilities are measured in accordance with US GAAP as at the date of acquisition.

The liability for future policy benefits for traditional life insurance is computed using the net level method, based on guaranteed interest and mortality rates as used in calculating cash surrender values. Reserve interest assumptions ranged from 2.00% to 7.50% in 2011 *(2010: 2.00% to 7.50%)*. The weighted average interest rate for all traditional life policy reserves in 2011 was 4.50% *(2010: 4.50%)*.

Future policy benefit reserves for universal life insurance, deferred annuity products and funding agreements are computed under a retrospective deposit method and represent policy account balances before applicable surrender charges. For the indexed products, the liability held is calculated based on the option budget method and is equal to the host contract and the calculated value of the derivative. The value of the derivative is based on the present value of the difference between the projected fund value and the underlying fund guarantee. The range of interest crediting rates for deferred annuity products, the largest component of the US business, excluding sales inducement payouts, was 1.00% to 5.20% in 2011 *(2010: 1.00% to 5.20%)*. An additional liability is established for universal life contracts with death or other insurance benefit features, which is determined using an equally weighted range of scenarios with respect to investment returns, policyholder lapses, benefit election rates, premium payout patterns and mortality. The additional liability represents the present value of future expected benefits based on current product assumptions.

The indexed life and annuity products guarantee the return of principal to the customer, and credit interest based on certain indices. A portion of the premium from each customer is invested in fixed income securities and is intended to cover the minimum guaranteed value. A further portion of the premium is used to purchase derivatives to hedge the growth in interest credited to the customer as a direct result of increases in the related indices. Both the derivatives and the options embedded in the policy are valued at their fair value.

Deferred income reserves are established for fees charged for insurance benefit features which are assessed in a manner that is expected to result in higher profits in earlier years, followed by lower profits or losses in subsequent years. The excess charges are deferred and amortised using the same assumptions and factors used to amortise deferred acquisition costs. Shadow adjustments may be made to deferred acquisition costs, acquired value of in-force business, deferred income reserves and contract liabilities. The shadow adjustments are recognised directly in other comprehensive income so that unrealised gains or losses on investments that are recognised directly in other comprehensive income affect the measurement of the liability, or related assets, in the same way as realised gains or losses.

***(d) 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.

## A8 – Insurance liabilities continued

**(iv) Movements**

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

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **160,946** | 154,058 |
| Provisions in respect of new business | **11,149** | 12,502 |
| Expected change in existing business provisions | **(8,964)** | (9,259) |
| Variance between actual and expected experience | **(2,279)** | 1,858 |
| Impact of other operating assumption changes | **(61)** | (520) |
| Impact of economic assumption changes | **5,663** | 1,959 |
| Exceptional strengthening of longevity assumptions (see below) | **—** | 483 |
| Other movements | **(623)** | (197) |
| Change in liability recognised as an expense | **4,885** | 6,826 |
| Effect of portfolio transfers, acquisitions and disposals | **(6)** | 1,117 |
| Deconsolidation of Delta Lloyd | **(32,159)** | — |
| Foreign exchange rate movements | **227** | (1,055) |
| **Carrying amount at 31 December** | **133,893** | 160,946 |

The variance between actual and expected experience of £2.3 billion in 2011 was primarily due to the impact of falling equity markets on liabilities for unit-linked insurance contracts. 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. Minor variances arise from differences between actual and expected experience for persistency, mortality and other demographic factors.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of insurance liabilities. The £5.7 billion impact of economic assumption changes reflects reductions in valuation interest rates, 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.

### (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.

We only establish loss reserves for losses that have already occurred. We therefore do 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, we take 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 2011 | | | As at 31 December 2010 | | |
|---|---|---|---|---|---|---|
| | Outstanding claim provisions £m | IBNR provisions £m | Total claim provisions £m | Outstanding claim provisions £m | IBNR provisions £m | Total claim provisions £m |
| Motor | **3,960** | **995** | **4,955** | 4,419 | 924 | 5,343 |
| Property | **1,392** | **155** | **1,547** | 1,669 | 188 | 1,857 |
| Liability | **2,206** | **1,321** | **3,527** | 2,388 | 1,303 | 3,691 |
| Creditor | **59** | **19** | **78** | 77 | 24 | 101 |
| Other | **482** | **156** | **638** | 975 | 296 | 1,271 |
| | **8,099** | **2,646** | **10,745** | 9,528 | 2,735 | 12,263 |

## A8 – Insurance liabilities continued

**(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 | **2011** | 2010 | **2011** | 2010 |
| Reinsured London Market business | **2.20%** | 3.30% | **13 years** | 12 years |
| Latent claims | **0.75% to 3.25%** | 0.88% to 4.18% | **7 to 16 years** | 7 to 15 years |
| Structured settlements | **2.70%** | 3.20% | **31 years** | 35 years |
| Netherlands Permanent health and injury | **n/a**[1] | 3.75% | **n/a**[1] | 7 years |

1 Delta Lloyd no longer consolidated following the partial disposal on 6 May 2011.

The gross outstanding claims provision before discounting was £11,420 million *(2010: £13,179 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 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 7 and 16 years depending on the geographical region. Any change in discount rates between the start and the end of the accounting period is reflected below operating profit as an economic assumption change.

During 2011, we have continued to experience a steady increase in the number of bodily injury claims settled by periodic payment orders (PPOs) or structured settlements, especially in the UK, which are reserved for on a discounted basis.

**(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. Claim 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 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 claim 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.

As noted in section (b)(ii) above, an area of judgement is the impact of a European Court of Justice ruling in March 2011 on gender equality for the pricing of insurance products. At 31 December 2011, the impact of the ruling on existing general business provisions was not considered to be material *(2010: not applicable)*.

The following explicit assumptions are made which could materially impact the level of booked net reserves:

***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, legal fees and the life expectancy of potential sufferers.

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 £250 million greater than the best estimate, or £115 million lower than the best estimate. These scenarios do not, however, constitute an upper or lower bound on these liabilities.

## A8 – Insurance liabilities continued

***Interest rates used to discount latent claim liabilities***

The discount rates used in determining our latent claim liabilities 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 latent 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 2011, it is estimated that a 1% fall in the discount rates used would increase net claim reserves by approximately £85 million, excluding the offsetting effect on asset values as assets are not hypothecated across classes of business. The impact of a 1% fall in interest rates across all assets and liabilities of our general insurance and health businesses is shown in note A17(h).

***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. The Ogden Tables contain a discount rate that is set by the Lord Chancellor and that is applied when calculating the present value of loss of earnings for claims settlement purposes. The Ogden discount rate is currently under review by the Lord Chancellor. The timing of the conclusion of this review is unclear and it is still uncertain whether or by how much the rate will change. However an allowance has been included in provisions for a reduction in the Ogden discount rates. A reduction in the Ogden discount rates will increase lump sum payments to UK bodily injury claimants.

**(iv) Movements**

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

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **12,263** | 12,696 |
| Impact of changes in assumptions | **149** | 26 |
| Claim losses and expenses incurred in the current year | **6,520** | 6,908 |
| Decrease in estimated claim losses and expenses incurred in prior years | **(140)** | (358) |
| Exceptional strengthening of general insurance latent claims provisions | **45** | 10 |
| Incurred claims losses and expenses | **6,574** | 6,586 |
| Less: | | |
| Payments made on claims incurred in the current year | **(3,393)** | (3,641) |
| Payments made on claims incurred in prior years | **(3,514)** | (3,803) |
| Recoveries on claim payments | **313** | 271 |
| Claims payments made in the year, net of recoveries | **(6,594)** | (7,173) |
| Unwind of discounting | **47** | 64 |
| Other movements in the claims provisions | **(12)** | (18) |
| Change in claims reserve recognised as an expense | **15** | (541) |
| Effect of portfolio transfers, acquisitions and disposals | **—** | 4 |
| Deconsolidation of Delta Lloyd | **(1,445)** | — |
| Foreign exchange rate movements | **(87)** | 102 |
| Other movements | **(1)** | 2 |
| **Carrying amount at 31 December** | **10,745** | 12,263 |

### (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 2002 to 2011. 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 2002, by the end of 2011 £5,871 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 £6,250 million was re-estimated to be £6,016 million at 31 December 2011.

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

## A8 – Insurance liabilities continued

The Group aims to maintain strong reserves in respect of its general insurance and health business in order to protect against adverse future claims experience and development. 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. However, in order to maintain overall reserve adequacy, the Group establishes strong reserves in respect of the current accident year (2011) where the development of claims is less mature and there is much greater uncertainty attaching to the ultimate cost of claims. Releases from prior accident year reserves are also due to an improvement in the estimated cost of claims.

Key elements of the £56 million release from prior accident year general insurance and health net provisions during 2011 were:

- £78 million strengthening from the UK, including Group reinsurance business, mainly due to unfavourable development on commercial motor, commercial liability and December 2010 freeze claims.
- £42 million release from Europe mainly due to favourable development of personal and commercial motor claims in Ireland and France.
- £92 million release from Canada mainly due to favourable experience on motor, following the legislative changes in Ontario, and commercial liability.

The difference between this £56 million release and the small net strengthening of £36 million set out in Note 3 is due to a small strengthening of prior year reserves in respect of Delta Lloyd during the period to 6th May 2011, which is more than offset by prior year releases to the current accident year in order to maintain overall reserve adequacy.

Key elements of the release from prior accident year general insurance and health net provisions during 2010 were:

- £101 million from the UK, including Group reinsurance business, mainly due to an improved view of Group reinsurance liabilities, and favourable development on personal property claims, and commercial property and commercial liability large claims.
- £167 million from Europe mainly due to favourable development of personal and commercial property.
- £44 million from Canada mainly due to favourable experience on motor and commercial liability.

**(ii) Gross figures**

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

| Accident year | All prior years £m | 2002 £m | 2003 £m | 2004 £m | 2005 £m | 2006 £m | 2007 £m | 2008 £m | 2009 £m | 2010 £m | 2011 £m | **Total £m** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross cumulative claim payments | | | | | | | | | | | | |
| At end of accident year | | (2,952) | (2,819) | (2,971) | (3,345) | (3,653) | (4,393) | (4,915) | (3,780) | (3,502) | (3,420) | |
| One year later | | (4,486) | (4,190) | (4,561) | (5,011) | (5,525) | (6,676) | (7,350) | (5,464) | (5,466) | | |
| Two years later | | (4,921) | (4,613) | (4,981) | (5,449) | (5,971) | (7,191) | (7,828) | (6,102) | | | |
| Three years later | | (5,233) | (4,972) | (5,263) | (5,784) | (6,272) | (7,513) | (8,304) | | | | |
| Four years later | | (5,466) | (5,258) | (5,448) | (6,001) | (6,531) | (7,836) | | | | | |
| Five years later | | (5,618) | (5,409) | (5,617) | (6,156) | (6,736) | | | | | | |
| Six years later | | (5,715) | (5,527) | (5,725) | (6,311) | | | | | | | |
| Seven years later | | (5,767) | (5,594) | (5,792) | | | | | | | | |
| Eight years later | | (5,814) | (5,660) | | | | | | | | | |
| Nine years later | | (5,871) | | | | | | | | | | |
| Estimate of gross ultimate claims | | | | | | | | | | | | |
| At end of accident year | | 6,250 | 6,385 | 6,891 | 7,106 | 7,533 | 8,530 | 9,508 | 7,364 | 6,911 | 6,428 | |
| One year later | | 6,372 | 6,172 | 6,557 | 6,938 | 7,318 | 8,468 | 9,322 | 7,297 | 7,006 | | |
| Two years later | | 6,287 | 6,124 | 6,371 | 6,813 | 7,243 | 8,430 | 9,277 | 7,281 | | | |
| Three years later | | 6,257 | 6,036 | 6,178 | 6,679 | 7,130 | 8,438 | 9,272 | | | | |
| Four years later | | 6,205 | 5,932 | 6,008 | 6,603 | 7,149 | 8,409 | | | | | |
| Five years later | | 6,122 | 5,853 | 6,003 | 6,605 | 7,167 | | | | | | |
| Six years later | | 6,056 | 5,813 | 5,953 | 6,591 | | | | | | | |
| Seven years later | | 6,044 | 5,792 | 5,933 | | | | | | | | |
| Eight years later | | 6,035 | 5,798 | | | | | | | | | |
| Nine years later | | 6,016 | | | | | | | | | | |
| Estimate of gross ultimate claims | | 6,016 | 5,798 | 5,933 | 6,591 | 7,167 | 8,409 | 9,272 | 7,281 | 7,006 | 6,428 | |
| Cumulative payments | | (5,871) | (5,660) | (5,792) | (6,311) | (6,736) | (7,836) | (8,304) | (6,102) | (5,466) | (3,420) | |
| | 2,807 | 145 | 138 | 141 | 280 | 431 | 573 | 968 | 1,179 | 1,540 | 3,008 | **11,210** |
| Effect of discounting | (578) | (2) | (24) | (1) | (34) | (24) | (6) | (6) | — | — | — | **(675)** |
| Present value | 2,229 | 143 | 114 | 140 | 246 | 407 | 567 | 962 | 1,179 | 1,540 | 3,008 | **10,535** |
| Cumulative effect of foreign exchange movements | — | 17 | 19 | 27 | 39 | 70 | 58 | (11) | — | (24) | — | **195** |
| Effect of acquisitions | — | — | 2 | 1 | 1 | 4 | 7 | — | — | — | — | **15** |
| Present value recognised in the statement of financial position | **2,229** | **160** | **135** | **168** | **286** | **481** | **632** | **951** | **1,179** | **1,516** | **3,008** | **10,745** |

## A8 – Insurance liabilities continued

**(iii) Net of reinsurance**

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

| Accident year | All prior years £m | 2002 £m | 2003 £m | 2004 £m | 2005 £m | 2006 £m | 2007 £m | 2008 £m | 2009 £m | 2010 £m | 2011 £m | **Total £m** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Net cumulative claim payments | | | | | | | | | | | | |
| At end of accident year | | (2,913) | (2,819) | (2,870) | (3,281) | (3,612) | (4,317) | (4,808) | (3,650) | (3,386) | (3,300) | |
| One year later | | (4,369) | (4,158) | (4,378) | (4,925) | (5,442) | (6,542) | (7,165) | (5,286) | (5,242) | | |
| Two years later | | (4,779) | (4,565) | (4,712) | (5,344) | (5,881) | (7,052) | (7,638) | (5,885) | | | |
| Three years later | | (5,064) | (4,924) | (4,986) | (5,671) | (6,181) | (7,356) | (8,094) | | | | |
| Four years later | | (5,297) | (5,180) | (5,163) | (5,892) | (6,434) | (7,664) | | | | | |
| Five years later | | (5,424) | (5,325) | (5,327) | (6,039) | (6,625) | | | | | | |
| Six years later | | (5,508) | (5,442) | (5,430) | (6,188) | | | | | | | |
| Seven years later | | (5,552) | (5,502) | (5,491) | | | | | | | | |
| Eight years later | | (5,598) | (5,567) | | | | | | | | | |
| Nine years later | | (5,648) | | | | | | | | | | |
| Estimate of net ultimate claims | | | | | | | | | | | | |
| At end of accident year | | 6,037 | 6,218 | 6,602 | 6,982 | 7,430 | 8,363 | 9,262 | 7,115 | 6,650 | 6,202 | |
| One year later | | 6,038 | 6,093 | 6,266 | 6,818 | 7,197 | 8,302 | 9,104 | 7,067 | 6,751 | | |
| Two years later | | 5,997 | 6,037 | 6,082 | 6,688 | 7,104 | 8,244 | 9,028 | 7,036 | | | |
| Three years later | | 5,973 | 5,942 | 5,882 | 6,544 | 6,996 | 8,249 | 9,007 | | | | |
| Four years later | | 5,912 | 5,851 | 5,709 | 6,476 | 6,980 | 8,210 | | | | | |
| Five years later | | 5,855 | 5,772 | 5,699 | 6,448 | 6,992 | | | | | | |
| Six years later | | 5,786 | 5,683 | 5,639 | 6,397 | | | | | | | |
| Seven years later | | 5,754 | 5,663 | 5,624 | | | | | | | | |
| Eight years later | | 5,742 | 5,667 | | | | | | | | | |
| Nine years later | | 5,737 | | | | | | | | | | |
| Estimate of net ultimate claims | | 5,737 | 5,667 | 5,624 | 6,397 | 6,992 | 8,210 | 9,007 | 7,036 | 6,751 | 6,202 | |
| Cumulative payments | | (5,648) | (5,567) | (5,491) | (6,188) | (6,625) | (7,664) | (8,094) | (5,885) | (5,242) | (3,300) | |
| | 1,563 | 89 | 100 | 133 | 209 | 367 | 546 | 913 | 1,151 | 1,509 | 2,902 | **9,482** |
| Effect of discounting | (317) | — | (4) | — | 11 | 2 | 4 | 2 | — | — | — | **(302)** |
| Present value | 1,246 | 89 | 96 | 133 | 220 | 369 | 550 | 915 | 1,151 | 1,509 | 2,902 | **9,180** |
| Cumulative effect of foreign exchange movements | — | 15 | 18 | 26 | 37 | 68 | 56 | (11) | 2 | (22) | — | **189** |
| Effect of acquisitions | — | 4 | 1 | 1 | 1 | — | — | — | — | — | — | **7** |
| Present value recognised in the statement of financial position | **1,246** | **108** | **115** | **160** | **258** | **437** | **606** | **904** | **1,153** | **1,487** | **2,902** | **9,376** |

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 2002. The undiscounted claim provisions for continuing operations, net of reinsurance, in respect of this business at 31 December 2011 were £929 million *(2010: £896 million)*. The movement in the year reflects exceptional strengthening of provisions by £35 million in the UK *(2010: £10 million in respect of several specific discontinued commercial liability risks written in Canada a significant number of years ago)*, other strengthening of £23 million *(2010: £68 million)*, claim payments, 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:

| | **2011 £m** | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **4,855** | 4,781 |
| Premiums written during the year | **10,364** | 10,469 |
| Less: Premiums earned during the year | **(10,099)** | (10,424) |
| Change in UPR recognised as income | **265** | 45 |
| Gross portfolio transfers and acquisitions | **(161)** | (14) |
| Deconsolidation of Delta Lloyd | **(424)** | — |
| Foreign exchange rate movements | **(52)** | 43 |
| **Carrying amount at 31 December** | **4,483** | 4,855 |

## A9 – Liability for investment contracts

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

### (a) Carrying amount

The liability for investment contracts at 31 December comprised:

| | 2011 £m | 2010 £m |
|---|---|---|
| **Long-term business** | | |
| Participating contracts | **64,985** | 69,482 |
| Non-participating contracts at fair value | **43,990** | 46,124 |
| Non-participating contracts at amortised cost | **1,669** | 2,181 |
| | **45,659** | 48,305 |
| **Total** | **110,644** | 117,787 |

### (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 as described in note A8. 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 has deferred consideration of participating contracts to Phase II of its insurance contracts project.

For participating business, the discretionary participation feature is recognised separately from the guaranteed element and is classified as a liability, referred to as unallocated distributable 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.

Of the non-participating investment contracts measured at fair value, £42,434 million in 2011 are unit linked in structure and the fair value liability is equal to the unit reserve plus additional non-unit reserves if required on a fair value basis. These contracts are 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 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.

In the US, funding agreements consist of one to ten year fixed rate contracts. These contracts may not be cancelled by the holders unless there is a default under the agreement, but may, subject to a call premium, be terminated by Aviva at any time. Aviva issued no new funding agreements in 2011. The weighted average interest rates for fixed-rate and floating-rate funding agreements as at 31 December 2011 were 4.766% and 0.503% respectively. Funding agreements issued before 2008 are measured at fair value equal to the present value of contractual cash flows and, for business issued since 2008, are measured at amortised cost. Most funding agreements are fully collateralised and therefore their fair values are not adjusted for own credit risk. Funding agreements carried at fair value total £0.92 billion and are classified as 'Level 2' in the fair value hierarchy.

There is a small volume of annuity certain business for which the liability is measured at amortised cost using the effective interest method.

The fair value of contract liabilities measured at amortised cost is not materially different from the amortised cost liability.

## A9 – Liability for investment contracts continued

### (c) Movements in the year

The following movements have occurred in the year:

**(i) Participating investment contracts**

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **69,482** | 66,559 |
| Provisions in respect of new business | **3,433** | 6,169 |
| Expected change in existing business provisions | **(2,195)** | (2,400) |
| Variance between actual and expected experience | **(2,708)** | 845 |
| Impact of operating assumption changes | **(72)** | 36 |
| Impact of economic assumption changes | **631** | 240 |
| Other movements | **211** | (65) |
| Change in liability recognised as an expense | **(700)** | 4,825 |
| Foreign exchange rate movements | **(1,284)** | (1,918) |
| Deconsolidation of Delta Lloyd | **(2,523)** | — |
| Other movements | **10** | 16 |
| **Carrying amount at 31 December** | **64,985** | 69,482 |

The variance between actual and expected experience of £2.7 billion was primarily driven by unfavourable movements in investment markets in 2011, which had a direct or indirect impact on liability values. Equity markets fell and credit spreads on corporate bonds widened, reducing the value of assets supporting the participating investment liabilities. 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. Minor variances arise from differences between actual and expected experience for persistency, mortality and other demographic factors.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of participating investment contract liabilities. The impact of economic assumption changes of £0.6 billion relates mainly to the impact of lower risk-free interest rates on UK with-profits business. 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

**(ii) Non-participating investment contracts**

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **48,305** | 43,456 |
| Provisions in respect of new business | **3,863** | 4,096 |
| Expected change in existing business provisions | **(2,558)** | (2,145) |
| Variance between actual and expected experience | **(2,796)** | 1,276 |
| Impact of operating assumption changes | **1** | 20 |
| Impact of economic assumption changes | **7** | 3 |
| Other movements | **(123)** | 53 |
| Change in liability | **(1,606)** | 3,303 |
| Effect of portfolio transfers, acquisitions and disposals | **—** | 1,903 |
| Deconsolidation of Delta Lloyd | **(832)** | — |
| Foreign exchange rate movements | **(206)** | (357) |
| Other movements | **(2)** | — |
| **Carrying amount at 31 December** | **45,659** | 48,305 |

The variance between actual and expected experience of £2.8 billion was primarily driven by unfavourable movements in investment markets in 2011, which had a direct or indirect impact on liability values. Falling equity markets reduced the value of unit linked investment contracts, which comprise the vast majority of the non-participating investment contract liabilities. For unit-linked investment contracts, movements in asset values are offset by corresponding changes in liabilities, limiting the net impact on profit. Minor variances arise from differences between actual and expected experience for persistency, mortality and other demographic factors.

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of non-participating investment contract liabilities.

## A10 – 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:

| | 2011 £m | 2010 £m |
|---|---|---|
| **Long-term business** | | |
| Insurance contracts | **3,747** | 3,650 |
| Participating investment contracts | **—** | 2 |
| Non-participating investment contracts | **1,626** | 1,463 |
| Outstanding claims provisions | **125** | 104 |
| | **5,498** | 5,219 |
| **General insurance and health** | | |
| Outstanding claims provisions | **974** | 1,113 |
| Provisions for claims incurred but not reported | **395** | 445 |
| | **1,369** | 1,558 |
| Provision for unearned premiums | **245** | 307 |
| | **1,614** | 1,865 |
| **Total** | **7,112** | 7,084 |

Of the above total, £5,086 million *(2010: £4,675 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 asset during the year:

#### (i) In respect of long-term business provisions

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **5,115** | 5,557 |
| Asset in respect of new business | **187** | 358 |
| Expected change in existing business asset | **7** | (208) |
| Variance between actual and expected experience | **290** | 81 |
| Impact of operating assumption changes | **(9)** | (443) |
| Impact of economic assumption changes | **433** | (25) |
| Other movements | **(260)** | (318) |
| Change in asset | **648** | (555) |
| Effect of portfolio transfers, acquisitions and disposals | **(2)** | 174 |
| Deconsolidation of Delta Lloyd | **(375)** | — |
| Foreign exchange rate movements | **(13)** | (61) |
| **Carrying amount at 31 December** | **5,373** | 5,115 |

The impact of assumption changes in the above analysis shows the resulting movement in the carrying value of reinsurance assets. The increase in the reinsurance asset from economic assumption changes mainly relates to the impact of a reduction in valuation interest rate assumptions in the UK and Ireland, with a corresponding increase made to 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 on profit.

## A10 – Reinsurance assets continued

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

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **1,558** | 1,643 |
| Impact of changes in assumptions | **87** | 17 |
| Reinsurers' share of claim losses and expenses | | |
| Incurred in current year | **247** | 265 |
| Incurred in prior years | **(84)** | (46) |
| Exceptional strengthening of general insurance latent claims provisions | **10** | — |
| Reinsurers' share of incurred claim losses and expenses | **173** | 219 |
| Less: | | |
| Reinsurance recoveries received on claims | | |
| Incurred in current year | **(138)** | (125) |
| Incurred in prior years | **(196)** | (282) |
| Reinsurance recoveries received in the year | **(334)** | (407) |
| Unwind of discounting | **19** | 23 |
| Other movements | **(1)** | — |
| Change in reinsurance asset recognised as income | **(56)** | (148) |
| Effect of portfolio transfers, acquisitions and disposals | **28** | 34 |
| Deconsolidation of Delta Lloyd | **(153)** | — |
| Foreign exchange rate movements | **(2)** | 28 |
| Other movements | **(6)** | 1 |
| **Carrying amount at 31 December** | **1,369** | 1,558 |

### (iii) Reinsurers' share of the provision for UPR

| | 2011 £m | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **307** | 332 |
| Premiums ceded to reinsurers in the year | **650** | 770 |
| Less: Reinsurers' share of premiums earned during the year | **(678)** | (800) |
| Change in reinsurance asset recognised as income | **(28)** | (30) |
| Reinsurers' share of portfolio transfers and acquisitions | **—** | 4 |
| Deconsolidation of Delta Lloyd | **(30)** | — |
| Foreign exchange rate movements | **(4)** | (2) |
| Other movements | **—** | 3 |
| **Carrying amount at 31 December** | **245** | 307 |

## A11 – 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 2010 to 2011, affecting the profit recognised for the year with an equivalent effect on liabilities. This note analyses the effect of the changes. This disclosure only allows for the impact on liabilities and related assets, such as reinsurance, deferred acquisition costs and AVIF, and does not allow for offsetting movements in the value of backing financial assets.

| | **Effect on profit 2011 £m** | Effect on profit 2010 £m |
|---|---|---|
| **Assumptions** | | |
| **Long-term insurance business** | | |
| Interest rates | **(2,403)** | (796) |
| Expenses | **5** | (1) |
| Persistency rates | **(4)** | 2 |
| Mortality for assurance contracts | **35** | 71 |
| Mortality for annuity contracts | **(21)** | (637) |
| Tax and other assumptions | **99** | 167 |
| **Investment contracts** | | |
| Interest rates | **(82)** | 1 |
| Expenses | **—** | 1 |
| Persistency rates | **—** | (21) |
| Tax and other assumptions | **28** | (3) |
| **General insurance and health business** | | |
| Change in loss ratio assumptions | **5** | (4) |
| Change in discount rate assumptions | **(90)** | (61) |
| Change in expense ratio and other assumptions | **22** | 38 |
| **Total** | **(2,406)** | (1,243) |

The impact of interest rates for long-term business relates primarily to the UK and Netherlands driven by the reduction in valuation interest rates. This had the effect of increasing liabilities and hence a negative impact on profit. The overall impact on profit also depends on movements in the value of assets backing the liabilities, which is not included in this disclosure.

## A12 – 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. This note shows the movements in this surplus during the year.

The following movements have occurred in the year:

| | **2011 £m** | 2010 £m |
|---|---|---|
| **Carrying amount at 1 January** | **3,428** | 3,866 |
| Change in participating contract assets | **(3,016)** | (444) |
| Change in participating contract liabilities | **244** | 169 |
| Effect of special bonus to with-profit policyholders | **—** | (58) |
| Other movements | **70** | 4 |
| Change in liability recognised as an expense | **(2,702)** | (329) |
| Effect of portfolio transfers, acquisitions and disposals | **—** | (3) |
| Deconsolidation of Delta Lloyd | **(144)** | — |
| Foreign exchange rate movements | **60** | (61) |
| Other movements | **8** | (45) |
| **Carrying amount at 31 December** | **650** | 3,428 |

In Italy, the UDS balance was £1,449 million negative at 31 December 2011 *(2010: £420 million negative)*. In France and Spain, certain participating funds had negative UDS balances at 31 December 2011, although in aggregate the UDS balances for each of these business units was positive *(2010: Spain £15 million negative)*.

Negative UDS balances result from an accounting mismatch between participating assets carried at market value and participating liabilities measured using local practice. The negative balances were tested for recoverability using embedded value methodology and in line with local accounting practice. The negative balances are considered to be recoverable from margins in the existing participating business liabilities.

Losses of £17 million in Italy and £49 million in Spain were incurred for negative UDS considered irrecoverable *(2010: Italy £111 million, Spain £22 million).*

## A12 – Unallocated divisible surplus continued

In Italy the method for estimation of the recoverable negative UDS balance was changed in 2011, which is an alternative acceptable method under local accounting practice. The estimation basis uses a real-world embedded value method. In 2010 the recoverability test used a market-consistent embedded value method, with the reference rates based on the swap yield curve for a AA-rated bank with no liquidity premium. Using a market-consistent embedded value method in 2011 with reference rates based on swaps with no liquidity premium would reduce the negative UDS balance to £61 million. The IFRS profit before tax would reduce by £1,445 million and total comprehensive income would reduce by £425 million net of tax and non-controlling interests. It is impracticable to determine the effect of the change in estimate for future periods.

Alternatively, using reference rates with allowance for a government spread premium based on the 'ECB AAA and Other' curve would reduce the negative UDS balance to £715 million. The IFRS profit before tax would reduce by £765 million and total comprehensive income would reduce by £225 million net of tax and non-controlling interests.

In Spain no change was made to the estimation basis that uses a market-consistent embedded value method.

## A13 – Borrowings

Our borrowings are either core structural borrowings or operational borrowings. This note shows the carrying values and contractual maturity amounts of each type, and explains their main features and movements during the year.

### (a) Movements during the year

Movements in borrowings during the year were:

| | | | 2011 |
|---|---|---|---|
| | **Core structural £m** | **Operational £m** | **Total £m** |
| New borrowings drawn down, including commercial paper, net of expenses | **3,853** | **1,042** | **4,895** |
| Repayment of borrowings, including commercial paper | **(3,848)** | **(1,283)** | **(5,131)** |
| Net cash inflow/(outflow) | **5** | **(241)** | **(236)** |
| Foreign exchange rate movements | **9** | **193** | **202** |
| Borrowings acquired/(loans repaid) for non-cash consideration | **—** | **34** | **34** |
| Fair value movements | **—** | **8** | **8** |
| Amortisation of discounts and other non-cash items | **3** | **—** | **3** |
| Deconsolidation of Delta Lloyd | **(816)** | **(5,683)** | **(6,499)** |
| Movements in debt held by Group companies* | **(12)** | **1** | **(11)** |
| Movements in the year | **(811)** | **(5,688)** | **(6,499)** |
| Balance at 1 January | **6,066** | **8,883** | **14,949** |
| **Balance at 31 December** | **5,255** | **3,195** | **8,450** |

Movements in borrowings during the previous year were:

| | | | 2010 |
|---|---|---|---|
| | Core structural £m | Operational £m | Total £m |
| New borrowings drawn down, including commercial paper, net of expenses | 2,921 | 726 | 3,647 |
| Repayment of borrowings, including commercial paper | (2,274) | (613) | (2,887) |
| Net cash inflow | 647 | 113 | 760 |
| Foreign exchange rate movements | (77) | (801) | (878) |
| Borrowings acquired/(loans repaid) for non-cash consideration | — | (4) | (4) |
| Fair value movements | — | 59 | 59 |
| Amortisation of discounts and other non-cash items | 1 | — | 1 |
| Movements in debt held by Group companies* | 6 | 5 | 11 |
| Movements in the year | 577 | (628) | (51) |
| Balance at 1 January | 5,489 | 9,511 | 15,000 |
| **Balance at 31 December** | 6,066 | 8,883 | 14,949 |

* Certain subsidiary companies have purchased issued subordinates 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 2010 and 2011 on securitised mortgage loan notes designated as fair value through profit or loss were attributable to changes in market conditions.

## A14 – Pensions obligations

### (a) Carrying amounts

| | 2011 £m | 2010 £m |
|---|---|---|
| Deficits in the main staff pension schemes | **406** | 527 |
| Other obligations to main staff pension schemes – insurance policies issued by Group companies * | **—** | 1,445 |
| Total IAS 19 obligations to main staff pension schemes | **406** | 1,972 |
| Deficits in other staff pension schemes | **86** | 129 |
| Total IAS 19 obligations to staff pension schemes | **492** | 2,101 |
| Restructuring provisions | **106** | 152 |
| Other provisions | **398** | 690 |
| **Total** | **996** | 2,943 |
| Less: Amounts classified as held for sale | **(4)** | — |
| | **992** | 2,943 |

* The 2010 comparatives include insurance policies in respect of Delta Lloyd which were non-transferable under the requirements of IAS 19 and so were treated as other obligations to staff pension schemes within provisions above. Delta Lloyd ceased to be a subsidiary on 6 May 2011.

### (b) Movements in the scheme deficits and surpluses

Movements in the pension schemes' surpluses and deficits comprise:

| | | | | | 2011 |
|---|---|---|---|---|---|
| | Scheme assets £m | Scheme liabilities £m | Pension scheme net surplus/ (deficit) £m | Adjust for Group insurance policies £m | IAS 19 pensions net surplus/ (deficit) £m |
| **Net deficits in the schemes at 1 January** | **11,416** | **(11,419)** | **(3)** | **(1,445)** | **(1,448)** |
| Employer contributions | **452** | **—** | **452** | **(66)** | **386** |
| Employee contributions | **12** | **(12)** | **—** | **(9)** | **(9)** |
| Benefits paid | **(356)** | **356** | **—** | **15** | **15** |
| Current and past service cost | **—** | **(58)** | **(58)** | **—** | **(58)** |
| Credit/(charge) to finance costs | **465** | **(565)** | **(100)** | **(13)** | **(113)** |
| Actuarial gains/(losses) | **1,347** | **(356)** | **991** | **16** | **1,007** |
| Disposals | **(23)** | **30** | **7** | **—** | **7** |
| Deconsolidation of Delta Lloyd | **(1,589)** | **1,558** | **(31)** | **1,582** | **1,551** |
| Exchange rate movements on foreign plans | **67** | **(61)** | **6** | **(80)** | **(74)** |
| **Net surplus in the schemes at 31 December** | **11,791** | **(10,527)** | **1,264** | **—** | **1,264** |

| | | | | | 2010 |
|---|---|---|---|---|---|
| | Scheme assets £m | Scheme liabilities £m | Pension scheme net deficit £m | Adjust for Group insurance policies £m | IAS 19 pensions net deficit £m |
| **Deficits in the schemes at 1 January** | 10,105 | (11,812) | (1,707) | (1,351) | (3,058) |
| Employer contributions | 579 | — | 579 | (34) | 545 |
| Employee contributions | 15 | (15) | — | (9) | (9) |
| Benefits paid | (385) | 385 | — | 47 | 47 |
| Current and past service cost | — | (170) | (170) | — | (170) |
| Gains/(losses) on curtailments | (1) | 348 | 347 | — | 347 |
| Credit/(charge) to finance costs | 522 | (652) | (130) | (65) | (195) |
| Actuarial gains/(losses) | 623 | 456 | 1,079 | (80) | 999 |
| Transfers | 1 | 2 | 3 | (1) | 2 |
| Exchange rate movements on foreign plans | (43) | 39 | (4) | 48 | 44 |
| **Net Ddeficits in the schemes at 31 December** | 11,416 | (11,419) | (3) | (1,445) | (1,448) |

The fall in the pension schemes' net deficits during 2011 is mainly attributable to increases in investment values and additional employer contributions, partly offset by changes in actuarial assumptions.

## A14 – Pensions obligations continued

**(c) Pension expense**

As noted above, plan assets in the UK and Dutch schemes include insurance policies with other Group companies. To avoid double-counting of investment income on scheme assets and the assets backing the underlying policies, adjustments have been made to the former as shown in the tables below.

The total pension expense for these schemes comprises:

***Recognised in the income statement***

| | 2011 £m | 2010 £m |
|---|---|---|
| **Continuing operations** | | |
| Current service cost | **(51)** | (126) |
| Past service cost | **—** | (10) |
| Gains on curtailments | **—** | 347 |
| Total pension (cost)/credit from continuing operations | **(51)** | 211 |
| Total pension cost from discontinued operations | **(7)** | (34) |
| Total pension (cost)/credit charged to net operating expenses | **(58)** | 177 |
| Expected return on scheme assets | **452** | 457 |
| Interest charge on scheme liabilities | **(539)** | (584) |
| Charge to finance costs from continuing operations | **(87)** | (127) |
| Charge to finance costs from discontinued operations | **(26)** | (68) |
| Total charge to finance costs | **(113)** | (195) |
| **Total (charge)/credit to income arising from continuing operations** | **(138)** | 84 |
| **Total charge to income arising from discontinued operations** | **(33)** | (102) |
| **Total charge to income** | **(171)** | (18) |

The gains on curtailments in 2010 principally arose from closure of the UK schemes to future accrual.

***Recognised in the statement of comprehensive income***

| | 2011 £m | 2010 £m |
|---|---|---|
| **Continuing operations** | | |
| Expected return on scheme assets | **(452)** | (457) |
| Actual return on these assets | **1,815** | 1,001 |
| Actuarial gains on scheme assets | **1,363** | 544 |
| Experience (losses)/gains arising on scheme liabilities | **(46)** | 382 |
| Changes in assumptions underlying the present value of the scheme liabilities | **(321)** | 152 |
| **Actuarial gains from continuing operations** | **996** | 1,078 |
| **Actuarial gains/(losses) from discontinued operations** | **11** | (79) |
| **Total actuarial gains recognised in other comprehensive income** | **1,007** | 999 |
| | | |
| Attributable to equity shareholders of Aviva plc | **1,002** | 1,033 |
| Attributable to non-controlling interests | **5** | (34) |
| | **1,007** | 999 |

The loss arising from changes in assumptions in 2011 primarily reflects the impact of lower discount rates for liabilities across all but the Irish schemes.

The cumulative amount of actuarial gains and losses on the pension schemes recognised in other comprehensive income since 1 January 2004 (the date of transition to IFRS) is a loss of £224 million at 31 December 2011 *(2010: cumulative loss of £1,231 million).*

## A15 – Cash and cash equivalents

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

| | 2011 £m | 2010 £m |
|---|---|---|
| Cash at bank and in hand | **8,854** | 9,740 |
| Cash equivalents | **14,215** | 15,715 |
| | **23,069** | 25,455 |
| Bank overdrafts | **(668)** | (760) |
| | **22,401** | 24,695 |

## A16 – 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

| | 2011 | | | | 2010 | | | |
|---|---|---|---|---|---|---|---|---|
| | **Income earned in period £m** | **Expenses incurred in period £m** | **Payable at period end £m** | **Receivable at period end £m** | Income earned in year £m | Expenses incurred in year £m | Payable at year end £m | Receivable at year end £m |
| Associates | **—** | **(3)** | **(49)** | **—** | 47 | — | — | — |
| Joint ventures | **23** | **—** | **—** | **125** | 18 | — | — | 375 |
| Employee pension schemes | **13** | **—** | **—** | **9** | 10 | — | — | 2 |
| | **36** | **(3)** | **(49)** | **134** | 75 | — | — | 377 |

Transactions with joint ventures in the UK relate to the property management undertakings. At 31 December 2011, our interest in these joint ventures comprises a mix of equity and loans, together with the provision of administration services and financial management to many of them. Our UK life insurance companies earn interest on loans advanced to these entities. Our fund management companies also charge fees to these joint ventures for administration services and for arranging external finance.

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.

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.

Transactions with joint ventures in Asia relate to life business in India, Malaysia, Korea, Taiwan, China and Vietnam.

## A17 – Risk management

This note sets out the major risks our businesses 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 requirements.

### (a) Risk management framework

The risk management framework (RMF) 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 modelling, roles and responsibilities, risk policies and procedures and risk governance and oversight. Additional information on the key elements of the RMF is included in the risk and capital management section of the performance review. The Group's approach to risk management ensures that significant existing or emerging risks are actively identified, measured, managed, monitored and reported on a continuous basis.

For the purposes of risk identification and measurement, risks are usually grouped by risk type: credit, market, liquidity, general insurance, life insurance and operational risk. Risk falling within these types may affect a number of key metrics including those relating to balance sheet strength, liquidity and profit. They may also affect the performance of the products that we deliver to our customers and the service to our customers and distributors, which can be categorised as risks to our brand and reputation. Additional information on the group's risks is included in the risk section of the Performance review.

To promote a consistent and rigorous approach to risk management across all our businesses and locations in which we operate, we have a set of formal risk policies and business standards. These risk policies and business standards set out our appetite for different risk types and provide risk management and control requirements for the group's worldwide operations.

## A17 – Risk management continued

A regular top-down key risk identification and assessment process is carried out in the risk function at group level based on group and regional chief risk officer and functional risk director input. This includes the consideration of emerging risks and is supported by deeper thematic reviews and is replicated at regional and 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 risk 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. Board oversight of risk and risk management across the Group is maintained on a regular basis through its Risk Committee. The Board has overall responsibility for determining risk appetite, which is an expression of the risk it is willing to take. The Group's position against risk appetite is monitored and reported to the Board on a regular basis.

The risk governance framework allocates responsibility for the oversight of risk management to a number of committees at group centre, with the Asset Liability Committee (ALCO) providing a key focus on business and financial risks and the Operational Risk Committee (ORC) providing a key focus on operational risks. The group-level committees are in turn supported by similar governance structures in the regions.

**Risk management in relation to Delta Lloyd**

During 2011 Aviva has completed a partial disposal of its equity holding in Delta Lloyd. At 31 December 2010 Aviva held a controlling interest of 58% in Delta Lloyd's issued equity, and as a result and in accordance with IFRS, consolidated 100% of Delta Lloyd assets and liabilities. As a result of the partial disposal of Delta Lloyd on 6 May 2011 Aviva's share of Delta Lloyd's voting rights has fallen below 50% and so Delta Lloyd has been deconsolidated. Aviva has retained a 41.9% associate interest. Aviva continues to actively monitor the quality of Delta Lloyd's balance sheet and risk profile through:

- Membership of the Supervisory Board with access to Board papers and its committees;
- Delta Lloyd's submission of financial data to meet the group external reporting requirements;
- Delta Lloyd's submission of information to meet the group's regulatory commitments; and
- Reviewing of the quarterly risk profile (ORSA report) as approved by the Delta Lloyd Executive Board.

To enable Aviva to satisfy its ongoing financial reporting, audit and other legal and regulatory requirements, including Aviva's risk management and control procedures, Delta Lloyd will continue to provide to Aviva the relevant information to satisfy its legal, regulatory requirements in line with the Strategic Investment Agreement .This includes other certifications as required in connection with Aviva's UK listing. Aviva is entitled to nominate, and propose replacements, for two Supervisory Board members.

### (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 arises as a consequence of asset investments made to achieve the returns required to satisfy policyholder liabilities and to provide enhanced long-term risk-adjusted returns to shareholders. Aviva is exposed to third party credit quality changes through a range of other activities including reinsurance. Credit risk is an area where 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.

## A17 – Risk management continued

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. Credit risk categories include spread risk, default risk and rating migration risk:

- Spread risk arises from changes in level or volatility of third party credit spreads over risk-free interest rates, that can be caused by credit concerns (improving or worsening) on the issuer, or from market factors, such as risk appetite and liquidity within the market;
- Default risk is the risk that a counterparty is unable or unwilling to meet its financial obligations when they fall due, and includes delays in repayments, restructuring of repayments/interest schedule and bankruptcy;
- Rating migration risk is the risk that a change in external credit rating of a counterparty adversely impacts Aviva;

Our credit risks arise principally through exposures to debt security investments, structured asset investments, derivative counterparties, mortgage lending and reinsurance counterparties.

The group manages its credit risk at business unit, regional and group levels. All business units and regions are required to implement local 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.

Management of credit risk is effected through six core elements:

- The setting up of an overall credit risk appetite by the Board Risk Committee, which controls the total credit risk to which the group is exposed.
- The maintenance of and adherence to an effective governance structure. This includes clear guidance, scope and frameworks for all aspects of the management of the credit to ensure accountability and clarity including clear delegations of authority and a group wide credit risk policy and associated business standards.
- The accurate and timely reporting of detailed exposure information, and their aggregation by counterparty, exposure types, sectors, geography and ratings.
- The implementation of a sophisticated capital charge-based credit limit framework that considers and quantifies the key specific attributes of each exposure (e.g. seniority, maturity, etc) and provides a counterparty level aggregation methodology covering all exposures to a counterparty. This is then managed against centrally set limits. Gross exposure limits are also set to ensure that any unexpected jump to default risks are appropriately restricted.. Additional limit and controls are applied for structured assets and reinsurance counterparty exposures.
- Additional committee and risk function oversight is provided on all credit risk related matters. This includes regular consideration and review of our key counterparties, systemic factors such as sector and geographic concentrations, monitoring and addressing key credit themes and news that emerge in the markets. The Credit Approvals Committee provides a forum to ensure that all key recommendations are considered, and decisions implemented throughout the group. The regional and group ALM and risk functions ensure that qualitative aspects of risk management are considered and evaluated to provide further oversight and balance to the quantitative aspects.
- Risk mitigation techniques are used where and when deemed appropriate. These are utilised where possible to remove residual unwanted risks, as well as to bring or keep exposure limits within appetite, and include methods such as collateralisation and the purchase of credit protection such as credit default index swaps. Collateral held either takes the form of cash, or other financial assets. Where a financial asset is recognised in the statement of financial position at fair value, that value reflects the credit enhancement as a result of the relevant collateral received.

## A17 – Risk management continued

A detailed breakdown of the group's current credit exposure by credit quality is shown below.

### 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, for financial assets with external credit ratings, of the group. Not rated assets capture assets not rated by external ratings agencies.

| | Credit rating | | | | | | |
|---|---|---|---|---|---|---|---|
| **At 31 December 2011** | **AAA** | **AA** | **A** | **BBB** | **Speculative grade** | **Not rated** | **Carrying value in the statement of financial position £m** |
| Debt securities | **32.4%** | **13.2%** | **29.9%** | **16.3%** | **2.8%** | **5.4%** | **153,252** |
| Reinsurance assets | **0.0%** | **70.1%** | **23.2%** | **0.0%** | **0.4%** | **6.3%** | **7,112** |
| Other investments | **0.2%** | **0.8%** | **1.4%** | **2.3%** | **0.4%** | **94.9%** | **30,160** |
| Loans | **0.9%** | **1.3%** | **1.2%** | **0.2%** | **0.8%** | **95.6%** | **28,116** |

| | Credit rating | | | | | | |
|---|---|---|---|---|---|---|---|
| At 31 December 2010 | AAA | AA | A | BBB | Speculative grade | Not rated | Carrying value in the statement of financial position £m |
| Debt securities | 36.3% | 18.1% | 22.7% | 15.8% | 2.5% | 4.6% | 167,482 |
| Reinsurance assets | 0.2% | 58.8% | 25.3% | 1.5% | 0.1% | 14.1% | 7,084 |
| Other investments | 0.2% | 1.1% | 1.4% | 0.4% | 0.1% | 96.8% | 36,730 |
| Loans | 3.8% | 5.8% | 2.2% | 0.4% | 0.7% | 87.1% | 43,074 |

The carrying amount of assets included in the statement of financial position represents the maximum credit exposure.
The impact of collateral held on the net credit exposure is shown below.

| | **2011** | | | 2010 | | |
|---|---|---|---|---|---|---|
| **At 31 December 2011** | **Carrying value in the statement of financial position £m** | **Collateral held £m** | **Net credit exposure £m** | Carrying value in the statement of financial position £m | Collateral held £m | Net credit exposure £m |
| Debt securities | **153,252** | **(15,594)** | **137,658** | 167,482 | (15,383) | 152,099 |
| Reinsurance assets | **7,112** | **(443)** | **6,669** | 7,084 | (434) | 6,650 |
| Other investments | **30,160** | **(4,989)** | **25,171** | 36,730 | (3,704) | 33,026 |
| Loans | **28,116** | **(5,825)** | **22,291** | 43,074 | (4,669) | 38,405 |

### Financial exposures to peripheral European countries

Included in our debt securities and other financial assets, are exposures to peripheral European countries. Gross of non-controlling interests, our direct shareholder assets exposure to the governments (and local authorities and agencies) of Greece, Ireland, Portugal, Italy and Spain has reduced since FY 2010 see D3.4.5. We continue to monitor closely the situation in the eurozone and have had additional restrictions on further investment in place since late 2009 as well as taking actions to reduce exposure to higher risk assets.

## A17 – Risk management continued

**Other investments**

Other investments (including assets of operations, classified as held for sale £217 million) include:

- £27,260 million of unit trusts and other investment vehicles. The underlying credit ratings of these assets are not reflected in this analysis.
- Derivative financial instruments of £1,498 million, representing positions to mitigate the impact of adverse market movements.
- Other assets of £1,619 million, includes deposits with credit institutions and minority holdings in property management undertakings.

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; and
- Mortgage loans collateralised by property assets.

**Unit trusts and other investment vehicles**

The credit quality of the underlying debt securities within these vehicles is managed by the safeguards built into the investment mandates for these funds. We rely on our understanding that the trusts and their asset managers are only approved if they satisfy certain selection criteria (including due diligence in the form of a questionnaire and/or research by dedicated teams). In addition, the asset managers are mandated to make investments in line with the funds' risk profiles as marketed to prospective customers and policyholders. Accordingly, as part of reviewing the asset quality of unit trusts and other investment vehicles, we monitor the assets within the funds and their performance to ensure they remain in line with the respective investment mandates for these funds.

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 market risk appetite.

**Loans**

The majority of the group loans portfolio is unrated. However, we use the following metrics to internally monitor our exposure:

- Property collateralisation (i.e. loan to value);
- Interest and debt service cover; and
- Diversity of the tenant base.

Policy loans are loans and advances made to policyholders, and are collateralised by the underlying policies. As such, we believe such collateralisation minimises our risk.

**Credit concentration risk**

The long-term businesses and general insurance businesses are generally not individually exposed to significant concentrations of credit risk due to the regulations, applicable in most markets, limiting investments in individual assets and asset classes supplemented by the group credit policy , associated business standards and the credit limits framework. In cases where the business is particularly exposed to credit risk (e.g. in respect of defaults on mortgages matching annuity liabilities) this risk is translated into a more conservative discount rate used to value the liabilities, creating a greater capital requirement. The impact of aggregation of credit risk is monitored as described above. With the exception of government bonds the largest aggregated counterparty exposure is approximately 1.2% of the Group's total shareholder assets.

## A17 – Risk management continued

### 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 Credit Approvals Committee has a monitoring role over this risk.

The Group's largest reinsurance counterparty is Swiss Reinsurance Company Ltd (including subsidiaries). At 31 December 2011, the reinsurance asset recoverable, including debtor balances, from Swiss Reinsurance Company Ltd was £1,314 million.

### Securities finance

The Group has significant securities financing operations within the UK and smaller operations overseas. The risks within this business are mitigated by over-collateralisation and minimum counterparty credit quality requirements which are designed to result in minimal residual risk. The Group operates strict standards around collateral management, margin calls and controls.

### Derivative credit exposures

The Group is exposed to counterparty credit risk through derivative trades. This risk is mitigated through collateralising almost all trades (the exception being certain FX trades where it has historically been the market norm not to collateralise). The Group operates strict standards around collateral management and controls including the requirement that all 'Over the Counter' derivatives are supported by credit support annexes and ISDAs or their local equivalents unless otherwise agreed with the Group ALM team. Counterparites must have a minimum credit rating from rating agencies (S&P, Moody's and Fitch) and the collateral process must meet certain minimum standards as set out by Group guidelines. Residual exposures are captured within the Group's credit management framework. Many of the largest shareholder notional positions are exchange traded, rather than over the counter (OTC), with the added protection that provides (i.e. mitigated significantly through the protection offered by the exchange) and is controlled by the Group's local asset management operations.

### Unit-linked business

As discussed previously, in unit-linked business the policyholder bears the market risk and credit risk, on investment assets in the unit funds, and the shareholders' exposure to credit risk is limited to the extent that their income arises from asset management charges based on the value of assets in the fund.

### Impairment of financial assets

The following table provides information regarding the carrying value of financial assets that have been impaired and the ageing of financial assets that are past due but not impaired.

| | | Financial assets that are past due but not impaired | | | | | |
|---|---|---|---|---|---|---|---|
| **At 31 December 2011** | **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 in the statement of financial position £m** |
| Debt securities | **152,988** | **—** | **—** | **—** | **—** | **264** | **153,252** |
| Reinsurance assets | **7,112** | **—** | **—** | **—** | **—** | **—** | **7,112** |
| Other investments | **30,152** | **—** | **—** | **—** | **—** | **8** | **30,160** |
| Loans | **27,582** | **6** | **—** | **—** | **—** | **528** | **28,116** |
| Receivables and other financial assets | **7,650** | **134** | **148** | **2** | **3** | **—** | **7,937** |

| | | Financial assets that are past due but not impaired | | | | | |
|---|---|---|---|---|---|---|---|
| At 31 December 2010 | 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 in the statement of financial position £m |
| Debt securities | 167,334 | — | 3 | 3 | 28 | 114 | 167,482 |
| Reinsurance assets | 7,084 | — | — | — | — | — | 7,084 |
| Other investments | 36,671 | 19 | 6 | 15 | 8 | 11 | 36,730 |
| Loans | 42,045 | 326 | 26 | 11 | 7 | 659 | 43,074 |
| Receivables and other financial assets | 7,983 | 209 | 36 | 39 | 10 | 18 | 8,295 |

Credit investment criteria are set locally within overall credit limits prescribed by the Group Credit Approvals Committee and within the framework of the Group credit policy. The credit quality of financial assets is managed at the local business unit level. 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 collateral from the counterparty.

There were no material financial assets that would have been past due or impaired had the terms not been renegotiated.

## A17 – Risk management continued

### (c) Market risk

Market risk is the risk of adverse financial impact due to changes in fair values or future cash flows of financial instruments from fluctuations in interest rates, foreign currency exchange rates, property and commodity 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.

The Group has established a policy on market risk which sets out the principles that businesses are expected to adopt in respect of management of the key market risks to which the Group is exposed. The Group monitors adherence to this market risk policy and regularly reviews how business units are managing these risks locally, through the Assets Committee and ultimately the Asset Liability Committee (ALCO). For each of the major components of market risk, described in more detail below, the Group has put in place additional processes and procedures, described in internal business standards, to set out how each risk should be managed and monitored, and the approach to setting an appropriate risk appetite.

The management of market risk is undertaken in businesses, regions and at Group level. Businesses manage market risks locally using the Group market risk framework and within local regulatory constraints. The ALM function is responsible for managing market risk at Group level.

The Group market risk policy sets out the minimum principles and framework for matching liabilities with appropriate assets, the approaches to be taken when liabilities cannot be matched and the monitoring processes that are required. The Group has criteria for matching assets and liabilities for all classes of business to minimise the impact of mismatches between the value of assets and the liabilities due to market movements. The local regulatory environment for each business will also set the conditions under which assets and liabilities are to be matched.

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. In unit-linked business, the policyholder bears the investment risk on the assets held in the unit-linked funds, as the policy benefits are directly linked to the value of the assets in the fund.

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.

**Equity price risk**

The Group is subject to equity price risk due to daily changes in the market values of its equity securities portfolio. The Group's shareholders are exposed to the following sources of equity risk:

- Direct equity shareholdings in shareholder funds and the Group defined benefit pension funds.
- The indirect impact from changes in the value of equities held in policyholders' funds from which management charges or a share of performance are taken; and
- Its interest in the free estate of long-term with-profits funds.

We continue to limit our direct equity exposure in line with our risk preferences for equity risk. The reduction of the shareholding in Delta Lloyd has decreased the group's IFRS balance sheet risks and, in particular, has led to a fall in equity exposures. The sale of the RAC business has also reduced our strategic equity exposure and our extended equity hedging programme during 2011 has further reduced our equity exposures. At a business unit level, equity price risk is actively managed in order to mitigate anticipated unfavourable market movements where this lies outside the risk appetite of either the company in respect of shareholder assets or the fund in respect of policyholder assets concerned. In addition investment limits and local asset admissibility 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. At 31 December 2011 the Group's shareholder funds held £3 billion notional of equity hedges, with up to 12 months to maturity with an average strike of 89% of the prevailing market levels on 31 December 2011.

The Assets Committee actively monitors the Group's equity exposures relative to risk appetite.

Sensitivity to changes in equity prices is given in section (h) below.

## A17 – Risk management continued

**Property price risk**

The Group is subject to property price risk due to holdings of investment properties in a variety of locations worldwide and through investments in mortgages and mortgage backed securities. Investment in property is managed at regional and business level, and will be subject to local regulations on asset admissibility, liquidity requirements and the expectations of policyholders as well as overall risk appetite. The Assets Committee also monitors the Group's property exposure, relative to risk appetite

As at 31 December 2011, 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 (h) below.

**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 participation 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.

Interest rate risk is managed by the ALM function and monitored and managed at Group level by the Assets Committee, and the Asset Liability Committee. Exposure to interest rate risk is monitored through several measures that include value-at-risk analysis, position limits, risk modelling (stress and scenario tests), asset and liability matching using measures such as duration. The Group has a general preference for minimising interest rate risk where practical and has also set a quantitative group level interest rate risk appetite. The impact of exposure to sustained low interest rates is regularly monitored.

The Group manages this risk by adopting close asset liability matching criteria, to minimise the impact of mismatches between the value of assets and liabilities from interest rate movements. Interest rate risk is also managed using a variety of derivative instruments, including futures, options, swaps, caps and floors, in order to provide a degree of hedging against unfavourable market movements in interest rates inherent in the assets backing technical liabilities.

Sensitivity to changes in interest rates is given in section (h) below. Further information on borrowings is included in note A13.

**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-profit contract liabilities or are hedged. For this reason, no sensitivity analysis is given for these holdings.

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 half 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 euro, sterling and US 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.

The Group's foreign exchange standard requires that each of our subsidiaries should aim to maintain sufficient assets in its local currency to meet local currency liabilities and to report any material mismatches. Therefore, capital held by the Group's business units should generally be able to support local business activities regardless of foreign currency movements. However, such 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. The Group's approach is to manage these exposures by aligning the deployment of regulatory capital by currency with the Group's regulatory capital requirements by currency. Limits are set to control the extent to which the deployment of capital is not aligned fully with the Group's regulatory capital requirement for each major currency. Currency borrowings and derivatives are used to manage exposures within the limits that have been set.

## A17 – Risk management continued

At 31 December 2011, the Group's total equity deployment by currency was:

| | Sterling £m | Euro £m | US$ £m | Other £m | Total £m |
|---|---|---|---|---|---|
| **Capital 31 December 2011** | **3,427** | **6,442** | **3,237** | **2,257** | **15,363** |
| Capital 31 December 2010 | 3,301 | 9,288 | 2,712 | 2,424 | 17,725 |

A 10% change in sterling to euro/US$ 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/ US$ rate £m | 10% decrease in sterling/ US$ rate £m |
|---|---|---|---|---|
| **Net assets at 31 December 2011** | **(524)** | **632** | **(323)** | **323** |
| Net assets at 31 December 2010 | (899) | 833 | (271) | 271 |

The 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 movements in exchange rates therefore have no impact on profit. Net assets are stated after taking account of the effect of currency hedging activities.

**Derivatives risk**

Derivatives are used by a number of the businesses, within policy guidelines agreed by the Board of directors, as set out in the group policy on derivatives use. Activity is overseen by the Derivatives Approvals Committee, which monitors implementation of the policy, exposure levels and approves large or complex transactions proposed by businesses. Derivatives are primarily used for efficient investment management, risk hedging purposes or to structure specific retail savings products. Derivative transactions are covered by either cash or corresponding assets and liabilities. Speculative activity is prohibited, unless prior approval has been obtained from the Derivatives Approvals Committee. As noted above, over-the-counter derivative contracts are entered into only with approved counterparties and using ISDA documentation and credit support annexes (or equivalent) unless otherwise agreed by the Group ALM function. Adherence to the collateral requirements as set out in the relevant internal business standards thereby reduces the risk of credit loss.

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.

**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 economic capital model and in scenario analysis.

### (d) Liquidity risk

At Group level, there is a liquidity risk appetite which requires that sufficient liquid resources be maintained to cover net outflows in a stress scenario. The Group and Company have a strong liquidity position (£1.5 billion of financial assets held at group) and through the application of a Group liquidity risk policy and business standard seek to maintain sufficient financial resources to meet their obligations as they fall due. In addition to this strong liquidity position, the Group and company maintain significant undrawn committed borrowing facilities (£2.1 billion) from a range of leading international banks to further mitigate this risk. The Group has also implemented a liquidity risk policy and framework to ensure that businesses within the Group also maintain sufficient liquidity to withstand adverse scenarios.

**Maturity analyses**

The following tables show the maturities of our insurance and investment contract liabilities, and of the financial and reinsurance assets 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 2011 and 2010 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 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. We expect surrenders, transfers and maturities to occur over many years, and the tables reflect the expected cash flows for non-linked investment contracts. However, contractually, the total liability for non-linked investment contracts of £59,690 million *(2010: £63,197 million)* would be shown in the 'within 1 year' column below. Unit-linked contracts are repayable or transferable on demand and are therefore shown in the 'within 1 year' column.

## A17 – Risk management continued

| At 31 December 2011 | 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 | **120,164** | **9,949** | **36,636** | **47,037** | **26,542** |
| Investment contracts – non-linked | **59,690** | **5,984** | **18,975** | **25,044** | **9,687** |
| Linked business | **65,994** | **65,994** | **—** | **—** | **—** |
| General insurance and health | **15,241** | **5,645** | **5,967** | **2,913** | **716** |
| Total contract liabilities | **261,089** | **87,572** | **61,578** | **74,994** | **36,945** |

| At 31 December 2010 | 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 | 132,400 | 12,025 | 42,609 | 50,206 | 27,560 |
| Investment contracts – non-linked | 63,197 | 3,254 | 13,970 | 26,901 | 19,072 |
| Linked business | 82,769 | 82,769 | — | — | — |
| General insurance and health | 17,121 | 7,222 | 6,453 | 2,872 | 574 |
| Total contract liabilities | 295,487 | 105,270 | 63,032 | 79,979 | 47,206 |

***(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.

| At 31 December 2011 | Total £m | On demand or within 1 year £m | 1-5 years £m | Over 5 years £m | No fixed term (perpetual) £m |
|---|---|---|---|---|---|
| Debt securities | **153,252** | **18,698** | **39,079** | **95,460** | **15** |
| Equity securities | **32,646** | **—** | **—** | **—** | **32,646** |
| Other investments | **30,160** | **21,007** | **1,192** | **1,016** | **6,945** |
| Loans | **28,116** | **6,490** | **2,800** | **18,825** | **1** |
| Cash and cash equivalents | **23,043** | **23,043** | **—** | **—** | **—** |
| | **267,217** | **69,238** | **43,071** | **115,301** | **39,607** |

| At 31 December 2010 | Total £m | On demand or within 1 year £m | 1-5 years £m | Over 5 years £m | No fixed term (perpetual) £m |
|---|---|---|---|---|---|
| Debt securities | 167,482 | 20,996 | 46,182 | 100,133 | 171 |
| Equity securities | 49,076 | — | — | — | 49,076 |
| Other investments | 36,730 | 32,625 | 1,713 | 956 | 1,436 |
| Loans | 43,074 | 7,492 | 5,339 | 30,240 | 3 |
| Cash and cash equivalents | 25,455 | 25,455 | — | — | — |
| | 321,817 | 86,568 | 53,234 | 131,329 | 50,686 |

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) Insurance risk

**(i) Life insurance risk**

***Types of risk***

Life insurance risk in the Group arises through its exposure to mortality and morbidity insurance and exposure to worse than anticipated operating experience on factors such as persistency levels and management and administration expenses.

***Risk management framework***

The Group has developed a life insurance risk policy and associated business standards covering various aspects of life insurance risk management. Individual life insurance risks are managed at a business unit level but are also monitored at group level.

The Group Insurance Committee monitors the application of the risk policy in each business, and receives management information on life insurance risks including experience data, analysis of change and economic capital consumption.

## A17 – Risk management continued

The committee considers all areas of life insurance risk, but in particular has a remit to monitor mortality, longevity, morbidity, persistency, product development and pricing, unit pricing and expenses.

The committee also considers the reinsurance coverage across the life businesses. It confirms that guidance and procedures are in place for each of the major components of life insurance risk, and that the businesses mitigate against any life insurance risk outside local appetite, within the parameters for the overall group risk appetite.

The committee has also developed guidance for business units on management of a number of areas of life insurance risk to ensure best practice is shared throughout the group and common standards are adopted.

***Management of life insurance risks***

The risk profile of our life insurance risks, primarily persistency, longevity, mortality and expense risk, has remained stable during 2011. 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 strong volumes of life protection business, and to utilise reinsurance to reduce exposure to potential losses. More generally, life insurance risks are believed to benefit from a significant diversification against other risks in the portfolio. The individual life insurance risks are managed as follows:

- Mortality and morbidity risks are mitigated by use of reinsurance. The Group allows business units to select reinsurers, from those approved by the Group, based on local factors, but assesses the overall programme to manage group-wide risk exposures and monitor that the aggregation of risk ceded to individual reinsurers is within appetite for credit risk.
- Longevity risk and internal experience analysis are carefully 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 the capital implications to manage the impact on the group-wide exposure and the capital funding that businesses may require as a consequence. 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, 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 retention of policies which may otherwise lapse. The Group Insurance Committee has developed guidelines on persistency management.
- Product design and pricing risk arises from poorly designed or inadequately priced products and can lead to both financial loss for and reputation damage to the Group. Business standards have been developed to support the businesses through the complete cycle of the product development process, financial analysis and pricing, and through the review of existing products.
- Expense risk is primarily managed by the business units through the assessment of business unit profitability and frequent monitoring of expense levels.

In addition to economic capital modelling, sensitivity testing is used to measure the capital required and volatility in earnings due to exposure to life insurance risks, typically through MCEV reporting (examples of which are contained elsewhere in this report). This assessment is made at both business unit level and at group level where the impact of aggregation of similar risks can be measured and is supplemented by scenario analysis. This enables the group to determine whether action is required to reduce risk, or whether that risk is within the overall risk appetite.

***Embedded derivatives***

The Group has exposure to a variety of embedded derivatives in its long-term savings business due to product features offering 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 economic capital model and MCEV reporting and managed as part of the asset liability framework.

**(ii) 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;
- Inaccurate pricing of risks or inappropriate underwriting of risks when underwritten;
- Inadequate reinsurance protection or other risk transfer techniques; and
- Inadequate reserves.

## A17 – Risk management continued

The majority of the general insurance business underwritten by the Group is of a short tail nature such as motor, household and commercial property insurances. The Group's underwriting strategy and appetite is agreed by the Executive Committee and communicated via specific policy statements and guidelines. Like life insurance risk, general insurance risk is managed primarily at business unit level with oversight at a group level, through the Group Insurance Committee.

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 through the risk management framework. Additionally, the economic 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. All general insurance business units undertake a quarterly review of their insurance risks, the output from which is a key input into the economic capital assessments.

The Group Insurance Committee monitors and develops the management of insurance risk in the general insurance business units, and assesses the aggregate risk exposure. It is responsible for the development and review of the Group policies and business standards for underwriting, claims, reinsurance and reserving that form part of the risk management framework.

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 Group has pioneered various developments, such as the Aviva UK Digital Flood Map to effectively manage exposures arising from specific perils. Where appropriate such projects are employed throughout the business units to promote the adoption of best practice as standard.

***General insurance claims reserving***

Actuarial claims reserving is conducted by local actuaries in the various general insurance business units according to the General Insurance Reserving policy/ business standard. The Group Insurance Committee monitors and maintains the general insurance reserving policy/ business standard, and conducts quarterly reviews of the Group's general insurance claims provisions, and their adequacy. The reviews include peer reviews of the business unit's own conclusions as well as independent analysis to confirm the reasonableness of the local reviews.

The adequacy of the Group's general insurance claims provisions is ultimately overseen by the Group Insurance Committee. A number of business units also have periodic external reviews by local consultant actuaries (often as part of the local regulatory requirement).

***Reinsurance strategy***

The purchase of reinsurance is governed by the reinsurance standards for both life and general insurance recently introduced by the Group. The standards set out the Group's minimum requirements required to achieve a consistent approach to the assessment, management, retention and placement of reinsurance across the Group. 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. Reinsurance purchases must be in line with the objectives set out in the Group reinsurance business standards. The basis of these purchases is underpinned by analysis of economic capital, economic gain, earnings volatility, liquidity, retained risk exposure profile 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 will analyse the natural catastrophe exposure using external probabilistic catastrophe models widely used by the rest of the (re)insurance industry. The catastrophe accumulations and loss probabilities based on the Group's specific portfolios of business are reviewed internally to ensure the losses from individual territories, or from our peak exposure zone Northern Europe, are within acceptable limits.

Processes are in place to manage catastrophe risk in individual business units and at a Group level. The Group cedes much of its worldwide catastrophe risk to third-party reinsurers but retains a pooled element for its own account gaining diversification benefit. The total Group potential loss from its most concentrated catastrophe exposure zone (Northern Europe excluding Delta Lloyd) is approximately £280 million, for a one in ten year annual loss scenario, compared to approximately £490 million when measured on a one in a hundred year annual loss scenario.

In our 2009 and 2010 Report & Accounts we reported our participation in a share of a reinsurer's US property catastrophe portfolio. Under this arrangement we assume exposure from Hiscox plc that does not correlate with the Group's other general insurance exposures and therefore provides an opportunity to diversify the general insurance portfolio. For the 2011 underwriting year the modelled loss from a one in ten year annual loss scenario was £40 million compared to approximately £100 million when measured on a one in a hundred year annual loss scenario. The arrangement has been renewed for the 2012 underwriting year based on a similar level of participation.

### (f) Operational risk

**Types of operational risk**

Operational risk is the risk of loss, arising from inadequate or failed internal processes, or from people and systems, or from external events. Operational risks include business protection, information technology, people, legal and regulatory compliance risks.

**Operational risk management**

We process a large number of complex transactions across numerous and diverse products, and are highly dependent on the proper functioning of information technology and communications systems. We are partially reliant on the operational processing performance of our outsourced partners including certain servicing and IT functions. The long-term nature of our business means that accurate records have to be maintained for significant periods. Significant resources are devoted to maintaining efficient and effective operations within our framework of corporate responsibility, policies, business standards and business ethics code.

## A17 – Risk management continued

Our businesses are primarily responsible for identifying and managing operational risks in line with minimum standards of control set out in our policies and business standards. Each operational risk is assessed by considering the potential impact and the probability of the event occurring.

Business management teams 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 level 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 from these occurrences.

The Operational Risk Committee (ORC) oversees the Group's aggregate operational risk exposure on behalf of the Group Executive Committee. It makes recommendations on the risk appetite that the Group can work within for operational risk, assesses and monitors overall operational risk exposures, identifying any concentrations of operational risk across the Group, and in particular verifies that mitigating action plans are implemented.

### (g) Brand and reputation risk

Brand and reputation risk is the risk of loss of franchise value due to damage to our brand or our reputation with customers, distributors, investors and regulators. Our success and results are, to a certain extent, dependent on the strength of our global Aviva brand and reputation. While we as a group are well recognised, we are vulnerable to adverse market and customer perception. We operate in an industry where integrity, customer trust and confidence are paramount. 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, amongst others, 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 the customer's expectations for the product change.

One of the FSA's strategic objectives is to help customers get a fair deal through its 'treating customers fairly' principle. Examples of 'treating customers fairly' include: products and services targeted to meet customers' needs and which perform in line with what customers have been led to expect; clear information (and advice where relevant); good service; and making sure there are no unfair barriers that prevent customers from getting access to their money, changing products or making a successful insurance claim. The FSA regularly checks that 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 successfully the perception of our brands and reputation, it could cause existing customers or agents to withdraw from our business and potential customers or agents to be reluctant or elect not to do business with us. This would adversely impact our business and results of operations.

### (h) Risk and capital management

**Sensitivity test analysis**

The Group uses a number of sensitivity test-based risk management tools 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 all of 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.

For long-term business in particular, sensitivities of MCEV performance indicators to changes in both economic and non-economic experience are continually used to manage the business and to inform the decision making process. More information on MCEV sensitivities can be found in the presentation of results on an MCEV basis in the supplementary section of this report.

**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 for both IFRS reporting and reporting under MCEV methodology.

For participating funds, a negative unallocated divisible surplus (UDS) may be held, subject to recoverability from margins in the participating business liabilities, with any irrecoverable amount charged to net income. The amount of negative UDS that is recoverable is sensitive to movements in risk-free interest rates and credit spreads on the participating fixed interest assets. The increase in interest rate sensitivities for participating investment contracts between 2010 and 2011 primarily reflects the widening of credit spreads on bonds in Italy. An increase in interest rates would increase the amount of irrecoverable UDS that is charged to net income, while a reduction in interest rates would allow the reversal of losses incurred in previous periods.

**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.

## A17 – Risk management continued

**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. |
| 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 (life insurance only) | The impact of a reduction in mortality rates for annuity contracts by 5%. |
| Gross loss ratios (non-life 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 2011**
***Impact on profit before tax (£m)***

| | **Interest rates +1%** | **Interest rates -1%** | **Equity/ property +10%** | **Equity/ property -10%** | **Expenses +10%** | **Assurance mortality +5%** | **Annuitant mortality -5%** |
|---|---|---|---|---|---|---|---|
| Insurance participating | **(45)** | **(155)** | **5** | **(95)** | **(45)** | **(10)** | **(50)** |
| Insurance non-participating | **(135)** | **85** | **55** | **(45)** | **(75)** | **(60)** | **(470)** |
| Investment participating | **(35)** | **40** | **50** | **(75)** | **(10)** | **—** | **—** |
| Investment non-participating | **(15)** | **15** | **15** | **(15)** | **(20)** | **—** | **—** |
| Assets backing life shareholders’ funds | **135** | **(15)** | **35** | **(35)** | **—** | **—** | **—** |
| **Total excluding Delta Lloyd** | **(95)** | **(30)** | **160** | **(265)** | **(150)** | **(70)** | **(520)** |

***Impact before tax on shareholders’ equity (£m)***

| | **Interest rates +1%** | **Interest rates -1%** | **Equity/ property +10%** | **Equity/ property -10%** | **Expenses +10%** | **Assurance mortality +5%** | **Annuitant mortality -5%** |
|---|---|---|---|---|---|---|---|
| Insurance participating | **(80)** | **(115)** | **5** | **(95)** | **(45)** | **(10)** | **(50)** |
| Insurance non-participating | **(500)** | **455** | **55** | **(45)** | **(75)** | **(60)** | **(470)** |
| Investment participating | **(35)** | **40** | **50** | **(75)** | **(10)** | **—** | **—** |
| Investment non-participating | **(110)** | **25** | **15** | **(15)** | **(20)** | **—** | **—** |
| Assets backing life shareholders’ funds | **35** | **85** | **40** | **(40)** | **—** | **—** | **—** |
| **Total excluding Delta Lloyd** | **(690)** | **490** | **165** | **(270)** | **(150)** | **(70)** | **(520)** |

**Sensitivities as at 31 December 2010**
***Impact on profit before tax (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Assurance mortality +5% | Annuitant mortality -5% |
|---|---|---|---|---|---|---|---|
| Insurance participating | (35) | (155) | 45 | (105) | (30) | (10) | (45) |
| Insurance non-participating | (210) | 225 | 45 | (40) | (10) | (45) | (305) |
| Investment participating | (20) | 15 | 15 | (55) | — | — | — |
| Investment non-participating | (10) | 10 | 10 | (10) | (5) | — | — |
| Assets backing life shareholders’ funds | 30 | (35) | 15 | (10) | — | — | — |
| **Total excluding Delta Lloyd** | (245) | 60 | 130 | (220) | (45) | (55) | (350) |

***Impact before tax on shareholders’ equity (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Assurance mortality +5% | Annuitant mortality -5% |
|---|---|---|---|---|---|---|---|
| Insurance participating | (60) | (125) | 40 | (100) | (30) | (10) | (45) |
| Insurance non-participating | (575) | 635 | 45 | (40) | (10) | (45) | (305) |
| Investment participating | (20) | 15 | 15 | (55) | — | — | — |
| Investment non-participating | (90) | 100 | 10 | (10) | (5) | — | — |
| Assets backing life shareholders’ funds | (75) | 70 | 20 | (15) | — | — | — |
| **Total excluding Delta Lloyd** | (820) | 695 | 130 | (220) | (45) | (55) | (350) |

## A17 – Risk management continued

The different impacts of the economic sensitivities on profit and shareholders' equity arise from classification of certain assets as AFS in some business units, for which movements in unrealised gains or losses would be taken directly to shareholders' equity.

The sensitivities to economic movements relate mainly to business in the UK and the US for continuing operations, and the Netherlands for discontinued operations. In general, a fall in market interest rates has a beneficial impact on non-participating business and shareholders' funds, due to the increase in market value of fixed interest securities and the relative durations of assets and liabilities; similarly a rise in interest rates has a negative impact. In the US, most debt securities are classified as AFS, which limits the overall sensitivity of IFRS profit to interest rate movements. The mortality sensitivities relate primarily to the UK.

Changes in sensitivities between 2010 and 2011 reflect movements in market interest rates, portfolio growth, changes to asset mix and the relative durations of assets and liabilities and asset liability management actions.

The impact on the Group's results from sensitivity to these assumptions can also be found in the MCEV sensitivities included in the alternative method of reporting long-term business profits section.

**General insurance and health business**
**Sensitivities as at 31 December 2011**
***Impact on profit before tax (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| **Gross of reinsurance excluding Delta Lloyd** | **(205)** | **180** | **50** | **(55)** | **(130)** | **(300)** |
| **Net of reinsurance excluding Delta Lloyd** | **(275)** | **275** | **50** | **(55)** | **(130)** | **(290)** |

***Impact before tax on shareholders' equity (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| **Gross of reinsurance excluding Delta Lloyd** | **(205)** | **180** | **50** | **(55)** | **(30)** | **(300)** |
| **Net of reinsurance excluding Delta Lloyd** | **(275)** | **275** | **50** | **(55)** | **(30)** | **(290)** |

**Sensitivities as at 31 December 2010**
***Impact on profit before tax (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| Gross of reinsurance excluding Delta Lloyd | (235) | 220 | 45 | (50) | (110) | (285) |
| Net of reinsurance excluding Delta Lloyd | (290) | 285 | 45 | (50) | (110) | (280) |

***Impact before tax on shareholders' equity (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| Gross of reinsurance excluding Delta Lloyd | (235) | 220 | 45 | (50) | (30) | (285) |
| Net of reinsurance excluding Delta Lloyd | (290) | 285 | 45 | (50) | (30) | (280) |

For general insurance, the impact of the expense sensitivity on profit also includes the increase in ongoing administration expenses, in addition to the increase in the claims handling expense provision.

**Fund management and non-insurance business**
**Sensitivities as at 31 December 2011**
***Impact on profit before tax (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| **Total excluding Delta Lloyd** | **(10)** | **10** | **(40)** | **75** |

***Impact before tax on shareholders' equity (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| **Total excluding Delta Lloyd** | **(10)** | **10** | **(40)** | **75** |

## A17 – Risk management continued

**Sensitivities as at 31 December 2010**

***Impact on profit before tax (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| Total excluding Delta Lloyd | (15) | 15 | (5) | 55 |

***Impact before tax on shareholders' equity (£m)***

| | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| Total excluding Delta Lloyd | (15) | 15 | — | 50 |

**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.

## A18 – Analysis of general insurance

### (i) United Kingdom (excluding Aviva Re and agencies in run-off)

| | Net written premium 2011 £m | Net written premium 2010 £m | Underwriting result 2011 £m | Underwriting result 2010 £m | Combined operating ratio 2011 % | Combined operating ratio 2010 % |
|---|---|---|---|---|---|---|
| **Personal** | | | | | | |
| Motor | **1,387** | 1,195 | **58** | (46) | **96%** | 103% |
| Homeowner | **797** | 809 | **87** | 12 | **89%** | 100% |
| Other | **510** | 419 | **39** | 66 | **93%** | 89% |
| | **2,694** | 2,423 | **184** | 32 | **91%** | 97% |
| **Commercial** | | | | | | |
| Motor | **618** | 545 | **(76)** | 10 | **113%** | 98% |
| Property | **640** | 638 | **11** | 20 | **99%** | 99% |
| Other | **419** | 440 | **(9)** | 44 | **102%** | 90% |
| | **1,677** | 1,623 | **(74)** | 74 | **105%** | 96% |
| **Total** | **4,371** | 4,046 | **110** | 106 | **96%** | 96% |

### (ii) France

| | Net written premium 2011 £m | Net written premium 2010 £m | Underwriting result 2011 £m | Underwriting result 2010 £m | Combined operating ratio 2011 % | Combined operating ratio 2010 % |
|---|---|---|---|---|---|---|
| Motor | **347** | 318 | **(14)** | (14) | **104%** | 104% |
| Property and other | **442** | 416 | **84** | 15 | **80%** | 96% |
| **Total** | **789** | 734 | **70** | 1 | **90%** | 99% |

### (iii) Ireland

| | Net written premium 2011 £m | Net written premium 2010 £m | Underwriting result 2011 £m | Underwriting result 2010 £m | Combined operating ratio 2011 % | Combined operating ratio 2010 % |
|---|---|---|---|---|---|---|
| Motor | **179** | 200 | **14** | (32) | **93%** | 117% |
| Property and other | **188** | 197 | **(19)** | 15 | **111%** | 92% |
| **Total** | **367** | 397 | **(5)** | (17) | **102%** | 105% |

### (iv) Canada

| | Net written premium 2011 £m | Net written premium 2010 £m | Underwriting result 2011 £m | Underwriting result 2010 £m | Combined operating ratio 2011 % | Combined operating ratio 2010 % |
|---|---|---|---|---|---|---|
| Motor | **1,130** | 1,055 | **89** | 29 | **92%** | 98% |
| Property | **701** | 654 | **(14)** | (3) | **102%** | 101% |
| Liability | **204** | 201 | **9** | 18 | **96%** | 92% |
| Other | **48** | 48 | **13** | 16 | **67%** | 62% |
| **Total** | **2,083** | 1,958 | **97** | 60 | **95%** | 97% |

## A19 – Funds under management

| | Life and related businesses £m | General business and other £m | 2011 Total £m | 2010 Total £m |
|---|---|---|---|---|
| **Total IFRS assets included in the consolidated statement of financial position** | **282,286** | **30,090** | **312,376** | 370,107 |
| Less: third party funds included within consolidated IFRS assets | **—** | **(11,814)** | **(11,814)** | (9,999) |
| | **282,286** | **18,276** | **300,562** | 360,108 |
| Third party funds under management | | | **67,557** | 75,491 |
| | | | **368,119** | 435,599 |
| Non-managed assets | | | **(31,558)** | (33,348) |
| **Funds under management** | | | **336,561** | 402,251 |
| Delta Lloyd | | | — | (62,362) |
| **Funds under management (excluding Delta Lloyd)** | | | **336,561** | 339,889 |

## A20 – Operational cost base

The Aviva operating cost base is calculated from reported IFRS expenses as set out in the table below:

| | 2011 £m | 2010 £m |
|---|---|---|
| Other expenses (as reported) | **3,297** | 2,573 |
| Less: Non-operating items included above (amortisation and impairments) | **(911)** | (258) |
| Add: Claims handling costs[1] | **539** | 600 |
| Non-commission acquisition costs[2] | **1,192** | 1,137 |
| Operating cost base from continuing operations | **4,117** | 4,052 |
| Operating cost base from discontinued operations | **362** | 943 |
| **Operating cost base** | **4,479** | 4,995 |

1 As reported within Claims and benefits paid of £26,934 million *(2010: £24,918 million)*.
2 As reported within Fee and commissions expense of £4,554 million *(2010: £5,433 million)*.

During 2011, the operating cost base from continuing operations increased by 2% to £4,117 million *(FY10: £4,052 million)*. The like-for-like cost base presented below is adjusted for the impact of foreign exchange, businesses acquired and disposed of during the year, the impact of European levies, Solvency II costs and elimination of one-off restructuring and integration spend in both years. On a like-for-like basis the cost base remained broadly flat at £3,779 million compared with a 31 December 2010 like-for-like cost base of £3,778 million.

### Movement in operating cost base

| | £m |
|---|---|
| Total operating cost base 2010 | **4,995** |
| Delta Lloyd costs for 2010[1] | **(943)** |
| Total operating cost base from continuing operations 2010 | **4,052** |
| Less: restructuring and integration for 2010 | **(223)** |
| European levies[2] | **(66)** |
| Impact of acquisitions and disposals[3] | **4** |
| Foreign exchange | **11** |
| **2010 like-for-like operating cost base** | **3,778** |
| Inflation[4] | **116** |
| UK Life | **(1)** |
| UK General Insurance | **(63)** |
| Europe | **(21)** |
| Other businesses (including Group centre) | **(30)** |
| **2011 like-for-like operating cost base** | **3,779** |
| Restructuring and integration 2011 | **262** |
| European levies[2] | **76** |
| Total operating cost base from continuing operations 2011 | **4,117** |
| Delta Lloyd costs from 1 January 2011 to 6 May 2011[1] | **362** |
| **Total operating cost base 2011** | **4,479** |

1 Delta Lloyd associate status effective from 7 May 2011 onwards.
2 Levies and sales taxes charged to European Businesses.
3 Impact of acquisitions and disposals – restatement of the 2010 cost base for the impact of acquisitions and disposals in both 2010 and 2011 to achieve a cost base on a like-for-like basis.
4 Inflation – Notional level of Inflation that would have impacted the operating cost base during the period. This is calculated at an individual country level, and applied to operating expenditure i.e. excluding restructuring and integration costs (but including adjustments for acquisitions and disposals). The overall weighted average is calculated at 3.1%.

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# New business

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# New business

## B1 – Geographical analysis of life, pension and investment sales

| | 2011 £m | 2010 £m | % Growth Sterling | % Growth Local[2] currency |
|---|---|---|---|---|
| **Life and pensions business – Present value of new business premiums[1]** | | | | |
| **United Kingdom[5]** | **11,315** | 10,298 | 10% | 10% |
| France | **4,047** | 4,918 | (18)% | (19)% |
| Ireland | **917** | 938 | (2)% | (4)% |
| Italy | **2,993** | 4,456 | (33)% | (34)% |
| Poland | **487** | 603 | (19)% | (18)% |
| Spain | **1,926** | 2,084 | (8)% | (9)% |
| Other Europe | **521** | 538 | (3)% | 2% |
| **Aviva Europe** | **10,891** | 13,537 | (20)% | (21)% |
| **North America** | **3,932** | 4,728 | (17)% | (14)% |
| China | **366** | 436 | (16)% | (17)% |
| Hong Kong | **154** | 169 | (9)% | (6)% |
| India | **94** | 96 | (2)% | 3% |
| Singapore | **538** | 345 | 56% | 49% |
| South Korea | **481** | 405 | 19% | 18% |
| Other Asia | **149** | 166 | (10)% | (12)% |
| **Asia Pacific** | **1,782** | 1,617 | 10% | 9% |
| **Total life and pensions – continuing operations** | **27,920** | 30,180 | (7)% | (8)% |
| **Total life and pensions – discontinued operations[4]** | **1,085** | 3,178 | (66)% | (66)% |
| **Total life and pensions** | **29,005** | 33,358 | (13)% | (13)% |
| **Investment sales[3]** | | | | |
| **United Kingdom** | **1,689** | 1,548 | 9% | 9% |
| **Europe (Aviva Investors)** | **1,346** | 1,350 | — | (2)% |
| Asia (Aviva Investors) | **237** | 266 | (11)% | (18)% |
| Asia | **201** | 223 | (10)% | (13)% |
| **Asia Pacific** | **438** | 489 | (10)% | (16)% |
| **Total investment sales – continuing operations** | **3,473** | 3,387 | 3% | 1% |
| **Total investment sales – discontinued operations[4]** | **170** | 615 | (72)% | (73)% |
| **Total investment sales** | **3,643** | 4,002 | (9)% | (10)% |
| **Total long-term savings sales – continuing operations** | **31,393** | 33,567 | (6)% | (7)% |
| **Total long-term savings sales – discontinued operations[4]** | **1,255** | 3,793 | (67)% | (67)% |
| **Total long-term savings sales** | **32,648** | 37,360 | (13)% | (13)% |

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 Local currency growth rates are calculated based on constant rates of exchange.
3 Investment sales are calculated as new single premiums plus the annualised value of new regular premiums.
4 Current period discontinued operations represent the result of Delta Lloyd up to 6 May 2011 only.
5 United Kingdom life and pensions business includes £67 million (*2010: £261 million*) relating to Aviva Investors Pooled Pension business.

## B2 – Product analysis of life and pension sales

| | Present value of new business premiums[1] | | | |
|---|---|---|---|---|
| | | | % Growth | |
| | 2011 £m | 2010 £m | Sterling | Local[2] currency |
| **Life and pensions business** | | | | |
| Pensions | **5,340** | 4,062 | 31% | 31% |
| Annuities | **3,832** | 3,170 | 21% | 21% |
| Bonds | **801** | 1,686 | (52)% | (52)% |
| Protection | **1,025** | 944 | 9% | 9% |
| Equity release | **317** | 436 | (27)% | (27)% |
| **United Kingdom** | **11,315** | 10,298 | 10% | 10% |
| Pensions | **1,183** | 1,598 | (26)% | (26)% |
| Savings | **8,645** | 10,899 | (21)% | (22)% |
| Annuities | **119** | 87 | 37% | 34% |
| Protection | **944** | 953 | (1)% | (2)% |
| **Aviva Europe** | **10,891** | 13,537 | (20)% | (21)% |
| Life | **1,093** | 999 | 9% | 13% |
| Annuities | **2,839** | 3,729 | (24)% | (21)% |
| **North America** | **3,932** | 4,728 | (17)% | (14)% |
| **Asia Pacific** | **1,782** | 1,617 | 10% | 9% |
| **Total life and pensions sales – continuing operations** | **27,920** | 30,180 | (7)% | (8)% |
| **Total life and pensions sales – discontinued operations[3]** | **1,085** | 3,178 | (66)% | (66)% |
| **Total life and pensions sales** | **29,005** | 33,358 | (13)% | (13)% |

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 Local currency growth rates are calculated based on constant rates of exchange.
3 Current period discontinued operations represent the result of Delta Lloyd up to 6 May 2011 only.

## B3 – Trend analysis of PVNBP – cumulative

| | 1Q10 YTD £m | 2Q10 YTD £m | 3Q10 YTD £m | 4Q10 YTD £m | 1Q11 YTD £m | 2Q11 YTD £m | 3Q11 YTD £m | 4Q11 YTD £m |
|---|---|---|---|---|---|---|---|---|
| **Life and pensions business – Present value of new business premiums**[1] | | | | | | | | |
| Pensions | 941 | 2,061 | 3,028 | 4,062 | 1,124 | 2,742 | 4,006 | 5,340 |
| Annuities | 877 | 1,603 | 2,291 | 3,170 | 785 | 1,610 | 2,434 | 3,832 |
| Bonds | 412 | 828 | 1,277 | 1,686 | 271 | 466 | 638 | 801 |
| Protection | 231 | 507 | 737 | 944 | 250 | 490 | 749 | 1,025 |
| Equity release | 96 | 195 | 298 | 436 | 83 | 160 | 234 | 317 |
| **United Kingdom** | **2,557** | **5,194** | **7,631** | **10,298** | **2,513** | **5,468** | **8,061** | **11,315** |
| France | 1,550 | 2,827 | 3,869 | 4,918 | 1,271 | 2,345 | 3,224 | 4,047 |
| Ireland | 247 | 476 | 680 | 938 | 280 | 553 | 757 | 917 |
| Italy | 1,567 | 3,052 | 3,793 | 4,456 | 874 | 1,778 | 2,517 | 2,993 |
| Poland | 206 | 319 | 469 | 603 | 149 | 305 | 403 | 487 |
| Spain | 590 | 1,060 | 1,447 | 2,084 | 524 | 1,015 | 1,425 | 1,926 |
| Other Europe | 125 | 258 | 382 | 538 | 151 | 293 | 422 | 521 |
| **Aviva Europe** | **4,285** | **7,992** | **10,640** | **13,537** | **3,249** | **6,289** | **8,748** | **10,891** |
| **North America** | **997** | **2,334** | **3,668** | **4,728** | **786** | **1,658** | **2,796** | **3,932** |
| **Asia Pacific** | **409** | **794** | **1,153** | **1,617** | **426** | **902** | **1,343** | **1,782** |
| **Total life and pensions** | **8,248** | **16,314** | **23,092** | **30,180** | **6,974** | **14,317** | **20,948** | **27,920** |
| **Investment sales**[2] | **870** | **1,797** | **2,556** | **3,387** | **869** | **1,830** | **2,682** | **3,473** |
| **Total long-term saving sales – continuing operations** | **9,118** | **18,111** | **25,648** | **33,567** | **7,843** | **16,147** | **23,630** | **31,393** |
| **Total long-term saving sales – discontinued operations**[3] | **1,056** | **2,127** | **2,945** | **3,793** | **921** | **1,255** | **1,255** | **1,255** |
| **Total long-term saving sales** | **10,174** | **20,238** | **28,593** | **37,360** | **8,764** | **17,402** | **24,885** | **32,648** |

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 Investment sales are calculated as new single premiums plus the annualised value of new regular premiums.
3 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## B4 – Trend analysis of PVNBP – discrete

| | 1Q10 £m | 2Q10 £m | 3Q10 £m | 4Q10 £m | 1Q11 £m | 2Q11 £m | 3Q11 £m | 4Q11 £m | % Growth on 3Q11 Sterling |
|---|---|---|---|---|---|---|---|---|---|
| **Life and pensions business – Present value of new business premiums**[1] | | | | | | | | | |
| Pensions | 941 | 1,120 | 967 | 1,034 | 1,124 | 1,618 | 1,264 | 1,334 | **6%** |
| Annuities | 877 | 726 | 688 | 879 | 785 | 825 | 824 | 1,398 | **70%** |
| Bonds | 412 | 416 | 449 | 409 | 271 | 195 | 172 | 163 | **(5)%** |
| Protection | 231 | 276 | 230 | 207 | 250 | 240 | 259 | 276 | **7%** |
| Equity release | 96 | 99 | 103 | 138 | 83 | 77 | 74 | 83 | **12%** |
| **United Kingdom** | **2,557** | **2,637** | **2,437** | **2,667** | **2,513** | **2,955** | **2,593** | **3,254** | **25%** |
| France | 1,550 | 1,277 | 1,042 | 1,049 | 1,271 | 1,074 | 879 | 823 | **(6)%** |
| Ireland | 247 | 229 | 204 | 258 | 280 | 273 | 204 | 160 | **(22)%** |
| Italy | 1,567 | 1,485 | 741 | 663 | 874 | 904 | 739 | 476 | **(36)%** |
| Poland | 206 | 113 | 150 | 134 | 149 | 156 | 98 | 84 | **(14)%** |
| Spain | 590 | 470 | 387 | 637 | 524 | 491 | 410 | 501 | **22%** |
| Other Europe | 125 | 133 | 124 | 156 | 151 | 142 | 129 | 99 | **(23)%** |
| **Aviva Europe** | **4,285** | **3,707** | **2,648** | **2,897** | **3,249** | **3,040** | **2,459** | **2,143** | **(13)%** |
| **North America** | **997** | **1,337** | **1,334** | **1,060** | **786** | **872** | **1,138** | **1,136** | **0%** |
| **Asia Pacific** | **409** | **385** | **359** | **464** | **426** | **476** | **441** | **439** | **0%** |
| **Total life and pensions** | **8,248** | **8,066** | **6,778** | **7,088** | **6,974** | **7,343** | **6,631** | **6,972** | **5%** |
| **Investment sales**[2] | **870** | **927** | **759** | **831** | **869** | **961** | **852** | **791** | **(7)%** |
| **Total long-term saving sales – continuing operations** | **9,118** | **8,993** | **7,537** | **7,919** | **7,843** | **8,304** | **7,483** | **7,763** | **4%** |
| **Total long-term saving sales – discontinued operations**[3] | **1,056** | **1,071** | **818** | **848** | **921** | **334** | — | — | **—** |
| **Total long-term saving sales** | **10,174** | **10,064** | **8,355** | **8,767** | **8,764** | **8,638** | **7,483** | **7,763** | **4%** |

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 Investment sales are calculated as new single premiums plus the annualised value of new regular premiums.
3 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## B5 – Geographical analysis of regular and single premiums – life and pensions sales

| | | | | | Regular premiums | | | | | Single premiums | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2011 £m** | **Local currency growth** | **WACF** | **Present value £m** | 2010 £m | Local currency growth | WACF | Present value £m | **2011 £m** | 2010 £m | Local currency growth |
| Pensions | **608** | **40%** | **4.5** | **2,750** | 435 | 15% | 4.7 | 2,053 | **2,590** | 2,009 | 29% |
| Annuities | **—** | **—** | **—** | **—** | — | — | — | — | **3,832** | 3,170 | 21% |
| Bonds | **—** | **—** | **—** | **1** | — | — | — | — | **800** | 1,686 | (53)% |
| Protection | **158** | **10%** | **6.5** | **1,025** | 144 | (5)% | 6.6 | 944 | **—** | — | — |
| Equity release | **—** | **—** | **—** | **—** | — | — | — | — | **317** | 436 | (27)% |
| **United Kingdom** | **766** | **32%** | **4.9** | **3,776** | 579 | 9% | 5.2 | 2,997 | **7,539** | 7,301 | 3% |
| France | **81** | **(11)%** | **6.7** | **540** | 89 | — | 6.3 | 565 | **3,507** | 4,353 | (21)% |
| Ireland | **53** | **(20)%** | **3.9** | **205** | 65 | (13)% | 4.0 | 263 | **712** | 675 | 4% |
| Italy | **58** | **14%** | **5.4** | **316** | 50 | (53)% | 5.4 | 270 | **2,677** | 4,186 | (37)% |
| Poland | **50** | — | **7.3** | **367** | 51 | (32)% | 9.2 | 468 | **120** | 135 | (8)% |
| Spain | **92** | **(17)%** | **5.4** | **501** | 109 | (12)% | 5.9 | 648 | **1,425** | 1,436 | (2)% |
| Other Europe | **87** | **5%** | **4.8** | **414** | 89 | 5% | 4.6 | 412 | **107** | 126 | (11)% |
| **Aviva Europe** | **421** | **(7)%** | **5.6** | **2,343** | 453 | (18)% | 5.8 | 2,626 | **8,548** | 10,911 | (23)% |
| **North America** | **109** | **16%** | **10.0** | **1,088** | 97 | 7% | 10.2 | 993 | **2,844** | 3,735 | (21)% |
| **Asia Pacific** | **295** | **21%** | **4.9** | **1,444** | 240 | 21% | 4.7 | 1,132 | **338** | 485 | (31)% |
| **Total life and pensions – continuing operations** | **1,591** | **16%** | **5.4** | **8,651** | 1,369 | (6)% | 4.7 | 7,748 | **19,269** | 22,432 | (14)% |
| **Total life and pensions – discontinued operations[1]** | **73** | **(58)%** | **9.1** | **663** | 172 | (14)% | 9.3 | 1,591 | **422** | 1,587 | (74)% |
| **Total life and pensions** | **1,664** | **8%** | **5.6** | **9,314** | 1,541 | (6)% | 6.1 | 9,339 | **19,691** | 24,019 | (18)% |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## B6 – Geographical analysis of regular and single premiums – investment sales

| | | | Regular | | | Single | PVNBP |
|---|---|---|---|---|---|---|---|
| | **2011[1] £m** | 2010 £m | Local currency growth | **2011 £m** | 2010 £m | Local currency growth | Local currency growth |
| **Investment sales** | | | | | | | |
| **United Kingdom** | **6** | 72 | (92)% | **1,683** | 1,327 | 27% | 9% |
| **Europe (Aviva Investors)** | **6** | 6 | — | **1,340** | 1,344 | (2)% | (2)% |
| Asia (Aviva Investors) | **—** | — | — | **237** | 266 | (18)% | (18)% |
| Asia | **—** | — | — | **201** | 223 | (14)% | (14)% |
| **Asia Pacific** | **—** | — | — | **438** | 489 | (10)% | (16)% |
| **Total investment sales – continuing operations** | **12** | 78 | (85)% | **3,461** | 3,160 | 8% | 1% |
| **Total investment sales – discontinued operations[1]** | **—** | — | — | **170** | 615 | (73)% | (73)% |
| **Total investment sales** | **12** | 78 | (85)% | **3,631** | 3,775 | (5)% | (10)% |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## B7 – Life and pensions new business – net of tax and non-controlling interest

| Life and pensions (net of tax and non-controlling interest) | Present value of new business premiums 2011 £m | Present value of new business premiums 2010 £m | Value of new business 2011 £m | Value of new business 2010 £m | New business margin 2011 % | New business margin 2010 % |
|---|---|---|---|---|---|---|
| **United Kingdom** | **11,315** | 10,298 | **281** | 254 | **2.5%** | 2.5% |
| France | **3,376** | 4,340 | **79** | 100 | **2.3%** | 2.3% |
| Ireland | **688** | 704 | **(3)** | 1 | **(0.4)%** | 0.1% |
| Italy | **1,336** | 1,965 | **23** | 42 | **1.7%** | 2.1% |
| Poland | **440** | 531 | **34** | 29 | **7.7%** | 5.5% |
| Spain | **1,054** | 1,136 | **28** | 43 | **2.7%** | 3.8% |
| Other Europe | **521** | 538 | **20** | 15 | **3.8%** | 2.8% |
| **Aviva Europe** | **7,415** | 9,214 | **181** | 230 | **2.4%** | 2.5% |
| **North America** | **3,932** | 4,728 | **(85)** | (126) | **(2.2)%** | (2.7)% |
| **Asia Pacific** | **1,756** | 1,598 | **55** | 41 | **3.1%** | 2.6% |
| **Total life and pensions – continuing operations** | **24,418** | 25,838 | **432** | 399 | **1.8%** | 1.5% |
| **Total life and pensions – discontinued operations[1]** | **599** | 1,721 | **—** | (41) | **—** | (2.4)% |
| **Total life and pensions** | **25,017** | 27,559 | **432** | 358 | **1.7%** | 1.3% |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

# Capital management

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# Capital management

## C1 – Capital management objectives and approach

The primary objective of capital management is to optimise the balance between return and risk, whilst maintaining economic and regulatory capital in accordance with risk appetite. Aviva's capital and risk management objectives are closely interlinked, and support the dividend policy and earnings per share growth, whilst also recognising the critical importance of protecting policyholder and other stakeholder interests.

Overall capital risk appetite, which is reviewed and approved by the Aviva board, is set and managed with reference to the requirements of a range of different stakeholders including shareholders, policyholders, regulators and rating agencies. Risk appetite is expressed in relation to a number of key capital and risk measures, and includes an economic capital risk appetite of holding sufficient capital resources to enable the Group to meet its liabilities in extreme adverse scenarios, on an ongoing basis, calibrated consistently with the Group's strategic target of maintaining credit ratings in the AA range.

In managing capital we seek to:

- maintain sufficient, but not excessive, financial strength in accordance with risk appetite, to support new business growth and satisfy the requirements of our regulators and other stakeholders giving both our customers and shareholders assurance of our financial strength;
- optimise our overall debt to equity structure to enhance our returns to shareholders, subject to our capital risk appetite and balancing the requirements of the range of stakeholders;
- retain financial flexibility by maintaining strong liquidity, including significant unutilised committed credit facilities and access to a range of capital markets;
- allocate capital rigorously across the Group, to drive value adding growth through optimizing risk and return; and
- declare dividends on a basis judged prudent, while retaining capital to support future business growth, using dividend cover on an IFRS operating earnings after tax basis[1] in the 1.5 to 2.0 times range as a guide.

In line with these objectives, the capital generated and invested by the Group's businesses is a key management focus. Operating capital generation, which measures net capital generated after taking into account capital invested in new business (before the impact of non-operating items) is a core regulatory capital based management performance metric used across the Group. This is embedded in the Group business planning process and other primary internal performance and management information processes.

Capital is measured and managed on a number of different bases. These are discussed further in the following sections.

### Regulatory capital

Individual regulated subsidiaries measure and report solvency based on applicable local regulations, including in the UK the regulations established by the Financial Services Authority (FSA). These measures are also consolidated under the European Insurance Groups Directive (IGD) to calculate regulatory capital adequacy at an aggregate Group level, where we have a regulatory obligation to have a positive position at all times. This measure represents the excess of the aggregate value of regulatory capital employed in our business over the aggregate minimum solvency requirements imposed by local regulators, excluding the surplus held in the UK and Ireland with-profit life funds. The minimum solvency requirement for our European businesses is based on the Solvency 1 Directive. In broad terms, for EU operations, this is set at 4% and 1% of non-linked and unit-linked life reserves respectively and for our general insurance portfolio of business is the higher of 18% of gross premiums or 26% of gross claims, in both cases adjusted to reflect the level of reinsurance recoveries. For our major non-European businesses (the US and Canada) a risk charge on assets and liabilities approach is used.

### Rating agency capital

Credit ratings are an important indicator of financial strength and support access to debt markets as well as providing assurance to business partners and policyholders over our ability to service contractual obligations. In recognition of this, we have solicited relationships with a number of rating agencies. The agencies generally assign ratings based on an assessment of a range of financial factors (e.g. capital strength, gearing, liquidity and fixed charge cover ratios) and non financial factors (e.g. strategy, competitive position, and quality of management).

Certain rating agencies have proprietary capital models which they use to assess available capital resources against capital requirements as a component in their overall criteria for assigning ratings. Managing our capital and liquidity position in accordance with our target rating levels is a core consideration in all material capital management and capital allocation decisions.

The Group's overall financial strength is reflected in our credit ratings. The Group's rating from Standard and Poors is AA- ("very strong") with a Negative outlook; Aa3 ("excellent") with a Negative outlook from Moody's; and A ("excellent") from A M Best. The outlook on the Group's rating from AM Best is "Under review with Negative Implications". These ratings continue to reflect our strong competitive position, positive strategic management, diversified underlying earnings profile and substantial liquid assets.

[1] The Group's accounting policy for operating profit (also referred to as Group adjusted operating profit) remains consistent with prior periods and is set out on page 44

## C1 – Capital management objectives and approach continued

### Economic capital

We use a risk-based capital model to assess economic capital requirements and to aid in risk and capital management across the Group. The model is based on a framework for identifying the risks to which business units, and the group as a whole, are exposed. Where appropriate, businesses also supplement these with additional risk models and stressed scenarios specific to their own risk profile. When aggregating capital requirements at business unit and group level, we allow for diversification benefits between risks and between businesses, with restrictions to allow for non-fungibility of capital where appropriate. This means that the aggregate capital requirement is less than the sum of capital required to cover all of the individual risks. The capital requirement reflects the cost of mitigating the risk of insolvency to a 99.5% confidence level over a one year time horizon (equivalent to events occurring in 1 out of 200 years) against financial and non-financial tests.

The financial modelling techniques employed in economic capital enhance our practice of risk and capital management. They enable understanding of the impact of the interaction of different risks allowing us to direct risk management activities appropriately. These same techniques are employed to enhance product pricing and capital allocation processes. Unlike more traditional regulatory capital measures, economic capital also recognises the value of longer-term profits emerging from in-force and new business, allowing for consideration of longer-term value emergence as well as shorter-term net worth volatility in our risk and capital management processes. We continue to develop our economic capital modelling capability for all our businesses as part of our development programme to increase the focus on economic capital management and meeting the emerging requirements of the Solvency II framework and external agencies.

### Solvency II

The development of Solvency II continues in 2012 with a view to complete discussions about legislation. The key priority is concluding the discussions on the Omnibus II directive to provide clarity about the implementation date as well as the role of transitional arrangements. Once this is concluded we expect the European Commission to complete the development of the Level 2 implementing measures that will establish the technical requirements governing the practical application of Solvency II. Aviva continues to actively participate in these developments through the key European industry working groups and by engaging with the FSA and HM Treasury to inform the ongoing negotiations in Brussels.

# C2 – Capital performance

## C2i –Capital generation and utilisation

The active management of the generation and utilisation of capital is a primary Group focus, with the balancing of new business investment and shareholder distribution with operating capital generation a key financial priority.

The full-year 2011 result of £2.1 billion reinforces our confidence in the capital generation of the Group. Profits from existing life business remain strong, generating £2.3 billion of capital *(2010: £2.1 billion)*, with a further £0.6 billion *(2010: £0.6 billion)* generated by the general insurance, fund management and non-insurance businesses. Capital invested in new business has reduced to £0.8 billion *(2010: £1.0 billion)*. Investment in life new business was £0.9 billion, a reduction of £0.3 billion compared with full-year 2010. This is mainly a result of actions taken to manage the consumption of capital on writing new life products, in particular managing volumes, product mix and pricing. This reduction is partly offset by a smaller release of capital from non-life business investment of £0.1 billion *(2010: £0.2 billion release).*

| | 2011 £bn | 2010 £bn |
|---|---|---|
| **Operating capital generation:** | | |
| Life in-force profits[1] | **2.3** | 2.1 |
| General insurance, fund management and non-insurance profits | **0.6** | 0.6 |
| **Operating capital generation before investment in new business** | **2.9** | 2.7 |
| Capital invested in new business | **(0.8)** | (1.0) |
| **Operating capital generation after investment in new business** | **2.1** | 1.7 |

1 The life in-force profits in full year 2010 excludes the negative impact of the Delta Lloyd longevity assumption change of £0.2 billion which is included in the MCEV analysis of free surplus generated.
Operating capital generation comprises the following components:
- Operating Free surplus emergence, including release of required capital, for the life in-force business (net of tax and non-controlling interests);
- Operating profits for the general insurance and non-life businesses (net of tax and non-controlling interests).;
- Capital invested in new business. For life business this is the impact of initial and required capital on free surplus. For general insurance business this reflects the movement in required capital, which has been assumed to equal the regulatory minimum multiplied by the local management target level. Where appropriate movements in capital requirements exclude the impact of foreign exchange and other movements deemed to be non-operating in nature.
- Post disposal, all Delta Lloyd capital generation, including life business, has been included within general insurance, fund management and non-insurance profits on an IFRS basis.

As well as financing new business investment, the operating capital generated is used to finance corporate costs, service the Group's debt capital and to finance shareholder dividend distributions. After taking these items into account the net operating capital generation after financing is £1.0 billion.

| | 2011 £bn | 2010 £bn |
|---|---|---|
| **Operating capital generation after investment in new business** | **2.1** | 1.7 |
| Interest, corporate and other costs | **(0.6)** | (0.6) |
| External dividend net of scrip | **(0.5)** | (0.5) |
| **Net operating capital generation after financing** | **1.0** | 0.6 |

## C2 – Capital performance continued

### C2ii –Capital required to write new business, internal rate of return and payback period

As set out in C2i, the Group generates a significant amount of capital each year. This capital generation supports both shareholder distribution and reinvestment in new business. The new business written requires up front capital investment, due to high set-up costs and capital requirements.

The internal rate of return (IRR) is a measure of the shareholder return expected on this capital investment. It is equivalent to the discount rate at which the present value of the post-tax cash flows expected to be earned over the life time of the business written, including allowance for the time value of options and guarantees, is equal to the total invested capital to support the writing of the business. The capital included in the calculation of the IRR is the initial capital required to pay acquisition costs and set up statutory reserves in excess of premiums received ('initial capital'), plus required capital at the same level as for the calculation of the value of new business.

The payback period shows how quickly shareholders can expect the total capital to be repaid. The payback period has been calculated based on undiscounted cash flows and allows for the initial and required capital.

The projected investment returns in both the IRR and payback period calculations assume that equities, properties and bonds earn a return in excess of risk-free consistent with the long-term rate of return assumed in operating earnings.

The internal rates of return on new business written during the period are set out below.

| 2011 | Initial capital £m | Required capital £m | Total invested capital £m | IRR % | Payback period years |
|---|---|---|---|---|---|
| **United Kingdom** | **155** | **187** | **342** | **15%** | **7** |
| France | **45** | **127** | **172** | **11%** | **8** |
| Ireland | **27** | **22** | **49** | **6%** | **12** |
| Italy | **24** | **117** | **141** | **12%** | **6** |
| Poland | **25** | **9** | **34** | **24%** | **4** |
| Spain | **25** | **70** | **95** | **23%** | **4** |
| Other Europe | **40** | **13** | **53** | **16%** | **6** |
| **Aviva Europe** | **186** | **358** | **544** | **14%** | **7** |
| **North America** | **27** | **301** | **328** | **14%** | **5** |
| **Asia Pacific**[1] | **56** | **31** | **87** | **13%** | **12** |
| **Total excluding Delta Lloyd** | **424** | **877** | **1,301** | **14.4%** | **7** |
| Delta Lloyd[2] | **26** | **27** | **53** | **10%** | **10** |
| **Total** | **450** | **904** | **1,354** | **14.3%** | **7** |

1 The Asia Pacific region IRR and payback period excluding Taiwan, which is held for sale, are 14% and 8 years respectively (2010: 11% and 8 years )
2 Current period Delta Lloyd represents the results of Delta Lloyd up to 6 May 2011.

| 2010 | Initial capital £m | Required capital £m | Total invested capital £m | IRR % | Payback period years |
|---|---|---|---|---|---|
| **United Kingdom** | 98 | 198 | 296 | 15% | 7 |
| France | 34 | 202 | 236 | 9% | 9 |
| Ireland | 34 | 17 | 51 | 5% | 11 |
| Italy | 32 | 183 | 215 | 11% | 6 |
| Poland | 16 | 9 | 25 | 25% | 4 |
| Spain | 25 | 80 | 105 | 22% | 4 |
| Other Europe | 41 | 16 | 57 | 14% | 6 |
| **Aviva Europe** | 182 | 507 | 689 | 13% | 7 |
| **North America** | 65 | 366 | 431 | 14% | 4 |
| **Asia Pacific** | 62 | 34 | 96 | 11% | 13 |
| **Total excluding Delta Lloyd** | 407 | 1,105 | 1,512 | 13.3% | 7 |
| Delta Lloyd | 106 | 112 | 218 | 6% | 16 |
| **Total** | 513 | 1,217 | 1,730 | 12.5% | 8 |

The capital invested data above is stated gross of non-controlling interests and valued on a point of sale basis. This differs from the analysis of life and pensions earnings in notes E7 and E12 which is stated net of non-controlling interests, valued on a year-end basis and benefits from the writing of new business in the UK Life RIEESA. The reconciliation is as follows:

| 2011 | £m |
|---|---|
| Total capital invested | **1,354** |
| Non-controlling interests | **(180)** |
| Benefit of RIEESA on new business funding | **(190)** |
| Timing and other differences (point of sale versus year end basis) | **(50)** |
| **New business impact on free surplus (continuing and discontinued operations)** | **934** |

## C2 - Capital performance continued

### C2 iii – Analysis of IFRS return on equity

| | Operating return[1] Before tax £m | Operating return[1] After tax £m | Opening shareholders' funds including non-controlling interests £m | Return on equity % |
|---|---|---|---|---|
| | | | | **2011** |
| Life assurance | **2,123** | **1,583** | **14,856** | **10.7%** |
| General insurance and health | **903** | **657** | **4,747** | **13.8%** |
| Fund management | **99** | **69** | **215** | **32.1%** |
| Other business | **(207)** | **(148)** | **(119)** | **124.4%** |
| Corporate[2] | **(439)** | **(394)** | **(997)** | **39.5%** |
| **Return on total capital employed (excluding Delta Lloyd)** | **2,479** | **1,767** | **18,702** | **9.4%** |
| Delta Lloyd | **352** | **288** | **5,089** | **5.7%** |
| **Return on total capital employed (including Delta Lloyd)** | **2,831** | **2,055** | **23,791** | **8.6%** |
| Subordinated debt | **(302)** | **(222)** | **(4,572)** | **4.9%** |
| External debt | **(26)** | **(19)** | **(1,494)** | **1.3%** |
| **Return on total equity** | **2,503** | **1,814** | **17,725** | **10.2%** |
| Less: Non-controlling interests | | **(223)** | **(3,741)** | **6.0%** |
| Direct capital instrument | | **(43)** | **(990)** | **4.3%** |
| Preference capital | | **(17)** | **(200)** | **8.5%** |
| **Return on equity shareholders' funds** | | **1,531** | **12,794** | **12.0%** |

1 The operating return is based upon Group adjusted operating profit, which is stated before impairment of goodwill, amortisation of intangibles, exceptional items and investment variance.
2 The 'Corporate' loss before tax of £439 million comprises costs of £138 million, net finance charge on the main UK pension scheme of £46 million and interest on internal lending arrangements of £287 million offset by investment return of £32 million.

| | Operating return[1] Before tax £m | Operating return[1] After tax £m | Opening shareholders' funds including non-controlling interests £m | Return on equity % |
|---|---|---|---|---|
| | | | | 2010 |
| Life assurance | 1,988 | 1,485 | 14,685 | 10.1% |
| General insurance and health | 847 | 614 | 4,692 | 13.1% |
| Fund management | 98 | 69 | 263 | 26.2% |
| Other business | (177) | (125) | (647) | 19.3% |
| Corporate[2] | (419) | (322) | (2,385) | 13.5% |
| **Return on total capital employed (excluding Delta Lloyd)** | 2,337 | 1,721 | 16,608 | 10.4% |
| Delta Lloyd | 536 | 437 | 3,967 | 11.0% |
| **Return on total capital employed (including Delta Lloyd)** | 2,873 | 2,158 | 20,575 | 10.5% |
| Subordinated debt | (290) | (209) | (4,637) | 4.5% |
| External debt | (33) | (24) | (852) | 2.8% |
| **Return on total equity** | 2,550 | 1,925 | 15,086 | 12.8% |
| Less: Non-controlling interests | | (332) | (3,540) | 9.4% |
| Direct capital instrument | | (42) | (990) | 4.2% |
| Preference capital | | (17) | (200) | 8.5% |
| **Return on equity shareholders' funds** | | 1,534 | 10,356 | 14.8% |

1 The operating return is based upon Group adjusted operating profit, which is stated before impairment of goodwill, amortisation of intangibles, exceptional items and investment variance.
2 The 'Corporate' loss before tax of £419 million comprises costs of £143 million, net finance charge on the main UK pension scheme of £87 million and interest on internal lending arrangements of £246 million offset by investment return of £57 million.

## C2 Capital performance continued

### C2iv – Analysis of MCEV return on equity

| | Operating return[1] Before tax £m | Operating return[1] After tax £m | Restated Opening shareholders' funds including non-controlling interests £m | 2011 Return on equity % |
|---|---|---|---|---|
| Life assurance | **3,129** | **2,219** | **18,533** | **12.0%** |
| General insurance and health | **903** | **657** | **4,747** | **13.8%** |
| Fund management | **32** | **22** | **215** | **10.2%** |
| Other business | **(204)** | **(144)** | **(119)** | **121.0%** |
| Corporate[2] | **(439)** | **(394)** | **(997)** | **39.5%** |
| **Return on total capital employed (excluding Delta Lloyd)** | **3,421** | **2,360** | **22,379** | **10.5%** |
| Delta Lloyd | **444** | **331** | **3,892** | **8.5%** |
| **Return on total capital employed (including Delta Lloyd)** | **3,865** | **2,691** | **26,271** | **10.2%** |
| Subordinated debt | **(302)** | **(222)** | **(4,572)** | **4.9%** |
| External debt | **(26)** | **(19)** | **(1,494)** | **1.3%** |
| **Return on total equity** | **3,537** | **2,450** | **20,205** | **12.1%** |
| Less: Non-controlling interests | | **(253)** | **(3,977)** | **6.4%** |
| Direct capital instrument | | **(43)** | **(990)** | **4.3%** |
| Preference capital | | **(17)** | **(200)** | **8.5%** |
| **Return on equity shareholders' funds** | | **2,137** | **15,038** | **14.2%** |

1 The operating return is based upon Group adjusted operating profit, which is stated before impairment of goodwill, amortisation of intangibles, exceptional items and investment variance.
2 The 'Corporate' loss before tax of £439 million comprises costs of £138 million, net finance charge on the main UK pension scheme of £46 million and interest on internal lending arrangements of £287 million offset by investment return of £32 million.

| | Operating return[1] Before tax £m | Operating return[1] After tax £m | Restated Opening shareholders' funds including non-controlling interests £m | 2010 Restated Return on equity % |
|---|---|---|---|---|
| Life assurance | 3,496 | 2,462 | 18,221 | 13.5% |
| General insurance and health | 847 | 614 | 4,692 | 13.1% |
| Fund management | 31 | 21 | 263 | 8.0% |
| Other business | (171) | (121) | (647) | 18.7% |
| Corporate[2] | (419) | (322) | (2,385) | 13.5% |
| **Return on total capital employed (excluding Delta Lloyd)** | 3,784 | 2,654 | 20,144 | 13.2% |
| Delta Lloyd | 299 | 216 | 3,918 | 5.5% |
| **Return on total capital employed (including Delta Lloyd)** | 4,083 | 2,870 | 24,062 | 11.9% |
| Subordinated debt | (290) | (209) | (4,637) | 4.5% |
| External debt | (33) | (24) | (852) | 2.8% |
| **Return on total equity** | 3,760 | 2,637 | 18,573 | 14.2% |
| Less:Non-controlling interests | | (426) | (4,279) | 10.0% |
| Direct capital instrument | | (42) | (990) | 4.2% |
| Preference capital | | (17) | (200) | 8.5% |
| **Return on equity shareholders' funds** | | 2,152 | 13,104 | 16.4% |

1 The operating return is based upon Group adjusted operating profit, which is stated before impairment of goodwill, amortisation of intangibles, exceptional items and investment variance.
2 The 'Corporate' loss before tax of £419 million comprises costs of £143 million, net finance charge on the main UK pension scheme of £87 million and interest on internal lending arrangements of £246 million offset by investment return of £57 million.

## C3 Group capital structure

### The table below shows how our capital, on an MCEV basis, is deployed by segment and how that capital is funded

| | 2011 £m | Restated 2010 £m |
|---|---|---|
| Long-term savings | **15,211** | 18,533 |
| General insurance and health | **5,875** | 4,747 |
| Fund management | **218** | 215 |
| Other business | **(1,102)** | (119) |
| Corporate[1] | **(228)** | (997) |
| Delta Lloyd | **776** | 3,892 |
| **Total capital employed** | **20,750** | 26,271 |
| **Financed by** | | |
| Equity shareholders' funds | **12,829** | 15,038 |
| Non-controlling interests | **1,476** | 3,977 |
| Direct capital instrument | **990** | 990 |
| Preference shares | **200** | 200 |
| Subordinated debt | **4,550** | 4,572 |
| External debt | **705** | 1,494 |
| **Total capital employed** | **20,750** | 26,271 |

1 "Corporate" includes centrally held tangible net assets, the staff pension scheme surplus and also reflects internal lending arrangements. These internal lending arrangements, which net out on consolidation, arise in relation to the following:
- Aviva Insurance Limited (AI) acts as both a UK general insurer and as the primary holding company for our foreign subsidiaries. Internal capital management mechanisms in place allocate a portion of the total capital of the company to the UK general insurance operations, giving rise to notional lending between the general insurance and holding company activities. These mechanisms also allow for some of the assets of the general insurance business to be made available for use across the Group.
- Certain subsidiaries, subject to continuing to satisfy stand alone capital and liquidity requirements, loan funds to corporate and holding entities. These loans satisfy arm's-length criteria and all interest payments are made when due.

Total capital employed is financed by a combination of equity shareholders' funds, preference capital, subordinated debt and borrowings.

At 31 December 2011 we had £20.8 billion *(2010: £26.3 billion)* of total capital employed in our trading operations, measured on an MCEV basis. The reduction is primarily driven by the deconsolidation of Delta Lloyd and the impact of financial markets.

In May 2011 we issued £450 million of Lower Tier 2 hybrid capital securities maturing in 2041 which may be called from 2021. In November 2011 we issued a further $400 million of Lower Tier 2 hybrid capital securities maturing in 2041 which may be called from 2016. These instruments are expected to comply for Tier 2 treatment under Solvency 2. The transactions had a positive impact on Group IGD solvency and Economic Capital measures. Also in November 2011 €800 million of Lower Tier 2 hybrid capital securities were redeemed at first call.

Financial leverage, the ratio of external senior and subordinated debt to MCEV capital and reserves, was 36.7% *(2010: 31.9%).* Fixed charge cover, which measures the extent to which external interest costs, including subordinated debt interest and preference dividends, are covered by MCEV operating profit was 8.9 times (*2010: 9.4 times*).

At 31 December 2011 the market value of our external debt, subordinated debt, preference shares (including both Aviva plc preference shares of £200 million and General Accident plc preference shares, within non-controlling interest, of £250 million), and direct capital instrument was £5,782 million (*2010: £7,279 million*), with a weighted average cost, post tax, of 6.6% (*2010: 4.5%*). The Group Weighted Average Cost of Capital (WACC) is 7.1% (*2010: 7.8%*) and has been calculated by reference to the cost of equity and the cost of debt at the relevant date. The cost of equity at 31 December 2011 was 7.4% (*2010: 9.9%*) based on a risk free rate of 2.0% (*2010: 3.4%*), an equity risk premium of 4.0% (*2010: 4.0%*) and a market beta of 1.3 (*2010: 1.6*).

## C3 – Group capital structure continued

### Shareholders' funds, including non-controlling interest:

| | 2011 Closing shareholders' funds | | | 2010 Closing shareholders' funds | | |
|---|---|---|---|---|---|---|
| | IFRS net asset £m | Internally generated AVIF £m | Total Equity £m | IFRS net asset £m | Restated Internally generated AVIF £m | Restated Total Equity £m |
| **Life assurance** | | | | | | |
| **United Kingdom** | **4,821** | **1,433** | **6,254** | 4,651 | 1,760 | 6,411 |
| France | **1,825** | **1,091** | **2,916** | 1,700 | 1,490 | 3,190 |
| Ireland | **704** | **365** | **1,069** | 1,171 | 78 | 1,249 |
| Italy | **1,266** | **(1,405)** | **(139)** | 1,256 | 238 | 1,494 |
| Poland | **263** | **1,063** | **1,326** | 279 | 1,002 | 1,281 |
| Spain | **1,160** | **384** | **1,544** | 1,291 | 467 | 1,758 |
| Other Europe | **333** | **(78)** | **255** | 251 | 135 | 386 |
| **Aviva Europe** | **5,551** | **1,420** | **6,971** | 5,948 | 3,410 | 9,358 |
| **North America** | **3,842** | **(2,779)** | **1,063** | 3,500 | (1,640) | 1,860 |
| **Asia Pacific** | **865** | **58** | **923** | 757 | 147 | 904 |
| | **15,079** | **132** | **15,211** | 14,856 | 3,677 | 18,533 |
| **General insurance and health** | | | | | | |
| **United Kingdom** | **3,670** | **—** | **3,670** | 2,560 | — | 2,560 |
| France | **480** | **—** | **480** | 434 | — | 434 |
| Ireland | **408** | **—** | **408** | 387 | — | 387 |
| Other Europe | **234** | **—** | **234** | 300 | — | 300 |
| **Aviva Europe** | **1,122** | **—** | **1,122** | 1,121 | — | 1,121 |
| **North America** | **1,034** | **—** | **1,034** | 1,021 | — | 1,021 |
| **Asia Pacific** | **49** | **—** | **49** | 45 | — | 45 |
| | **5,875** | **—** | **5,875** | 4,747 | — | 4,747 |
| Fund management | **218** | **—** | **218** | 215 | — | 215 |
| Other business | **(1,102)** | **—** | **(1,102)** | (119) | — | (119) |
| Corporate | **(228)** | **—** | **(228)** | (997) | — | (997) |
| **Total capital employed (excluding Delta Lloyd)** | **19,842** | **132** | **19,974** | 18,702 | 3,677 | 22,379 |
| Delta Lloyd | **776** | **—** | **776** | 5,089 | (1,197) | 3,892 |
| **Total capital employed** | **20,618** | **132** | **20,750** | 23,791 | 2,480 | 26,271 |
| Subordinated debt | **(4,550)** | **—** | **(4,550)** | (4,572) | — | (4,572) |
| External debt | **(705)** | **—** | **(705)** | (1,494) | — | (1,494) |
| **Total equity** | **15,363** | **132** | **15,495** | 17,725 | 2,480 | 20,205 |
| Less: | | | | | | |
| Non-controlling interests | | | **(1,476)** | | | (3,977) |
| Direct capital instruments | | | **(990)** | | | (990) |
| Preference capital | | | **(200)** | | | (200) |
| **Equity shareholders' funds** | | | **12,829** | | | 15,038 |

## C4 – Regulatory capital

Individual regulated subsidiaries measure and report solvency based on applicable local regulations, including in the UK the regulations established by the Financial Services Authority (FSA). These measures are also consolidated under the European Insurance Groups Directive (IGD) to calculate regulatory capital adequacy at an aggregate Group level, where we have a regulatory obligation to have a positive position at all times. This measure represents the excess of the aggregate value of regulatory capital employed in our business over the aggregate minimum solvency requirements imposed by local regulators, excluding the surplus held in the UK and Ireland with-profit life funds. The minimum solvency requirement for our European businesses is based on the Solvency 1 Directive. In broad terms, for EU operations, this is set at 4% and 1% of non-linked and unit-linked life reserves respectively and for our general insurance portfolio of business is the higher of 18% of gross premiums or 26% of gross claims, in both cases adjusted to reflect the level of reinsurance recoveries. For our major non-European businesses (the US, and Canada) a risk charge on assets and liabilities approach is used.

Based on individual guidance from the FSA we recognise surpluses of £0.2 billion as at 31 December 2011 in the non-profit funds of our UK Life and pensions businesses which is available for transfer to shareholders.

### Regulatory capital – Group: European Insurance Groups Directive (IGD)

| | **UK life funds £bn** | **Other business £bn** | **Total 2011 £bn** | Total 2010 £bn |
|---|---|---|---|---|
| Insurance Groups Directive (IGD) capital resources | **5.6** | **8.5** | **14.1** | 16.3 |
| Less: capital resource requirement | **(5.6)** | **(6.3)** | **(11.9)** | (12.5) |
| Insurance Group Directive (IGD) excess solvency | **—** | **2.2** | **2.2** | 3.8 |
| Cover over EU minimum (calculated excluding UK life funds) | | | **1.3 times** | 1.6 times |

The EU Insurance Groups Directive (IGD) regulatory capital solvency surplus has decreased by £1.6 billion since 2010 to £2.2 billion. The key movements over the period are set out in the following table:

| | **£bn** |
|---|---|
| IGD solvency surplus at 31 December 2010 | **3.8** |
| Operating profits net of other income and expenses | **1.0** |
| Dividends net of scrip | **(0.5)** |
| Market movements including foreign exchange | **(1.9)** |
| Pension scheme funding | **(0.3)** |
| Impact of Delta Lloyd sell down | **0.1** |
| Impact of RAC sale | **0.2** |
| Restructuring of UK regulated general insurance entities | **0.2** |
| Increase in Capital Resource Requirement | **(0.3)** |
| Other regulatory adjustments | **(0.1)** |
| **Estimated IGD solvency surplus at 31 December 2011** | **2.2** |

Market movements include the impact of equity, credit spread, interest rate and foreign exchange movements net of the effect of hedging instruments.

Updating the IGD solvency surplus for market and other movements to the end of February 2012, (including the benefit of reinsurance transactions in the UK in 2012) the estimated IGD solvency surplus on a pro forma basis increases to £3.3 billion.

## C4 – Regulatory capital continued

### Reconciliation of Group IGD capital resources to FRS 27 capital

The reconciliation below provides analysis of differences between our capital resources and the amounts included in the capital statement made in accordance with FRS 27 and disclosed within our consolidated accounts. The Group Capital Adequacy report is prepared in accordance with the FSA valuation rules and brings in capital in respect of the UK Life valued in accordance with FSA regulatory rules excluding surpluses in with-profit funds. The FRS 27 disclosure brings in the realistic value of UK Life capital resources. As the two bases differ greatly, the reconciliation below is presented by removing the restricted regulatory assets and then replacing them with the unrestricted realistic assets.

| | 2011 £bn |
|---|---|
| Total capital and reserves (IFRS basis) | **15.4** |
| Plus: Other qualifying capital | **4.8** |
| Plus: UK unallocated divisible surplus | **1.7** |
| Less: Goodwill, acquired AVIF and intangible assets | **(4.9)** |
| Less: Adjustments onto a regulatory basis | **(2.9)** |
| **Group Capital Resources on regulatory basis** | **14.1** |
| The Group Capital Resources can be analysed as follows: | |
| Core Tier 1 Capital | **11.2** |
| Innovative Tier 1 Capital | **1.0** |
| Total Tier 1 Capital | **12.2** |
| Upper Tier 2 Capital | **1.7** |
| Lower Tier 2 Capital | **3.6** |
| Group Capital Resources Deductions | **(3.4)** |
| **Group Capital Resources on regulatory basis (Tier 1 and Tier 2 Capital)** | **14.1** |
| Less: UK life restricted regulatory assets | **(6.5)** |
| Add: UK life unrestricted realistic assets | **5.8** |
| Less: Overseas UDS[1] and Shareholders' share of accrued bonus | **(1.1)** |
| **Total FRS 27 capital** | **12.3** |

1 Unallocated divisible surplus for overseas life operations is included gross of minority interest. 2011 includes a negative balance of £1.4 billion in Italy *(2010: £0.4 billion negative).*

# C4 – Regulatory capital continued

## Regulatory capital – UK Life with-profits funds

The available capital of the with-profit funds is represented by the realistic inherited estate. The estate represents the assets of the long-term with-profit funds less the realistic liabilities for non-profit policies within the funds, less asset shares aggregated across the with-profit policies and any additional amounts expected at the valuation date to be paid to in-force policyholders in the future in respect of smoothing costs, guarantees and promises. Realistic balance sheet information is shown below for the three main UK with-profit funds: Old With-Profit Sub Fund (OWPSF), New With-Profit Sub Fund (NWPSF) and With-Profit Sub-Fund (WPSF). These realistic liabilities have been included within the long-term business provision and the liability for insurance and investment contracts on the consolidated IFRS statement of financial position at 31 December 2011 and 31 December 2010.

| | 2011 | | | | | | 2010 |
|---|---|---|---|---|---|---|---|
| | Estimated realistic assets £bn | Realistic liabilities[1] £bn | Estimated realistic inherited estate[2] £bn | Support arrangement[3] £bn | Estimated risk capital margin[5] £bn | Estimated excess £bn | Estimated excess £bn |
| NWPSF | **18.6** | **(18.6)** | **—** | **1.1** | **(0.4)** | **0.7** | 0.8 |
| OWPSF | **3.0** | **(2.7)** | **0.3** | **—** | **(0.1)** | **0.2** | 0.2 |
| WPSF[4] | **19.4** | **(17.8)** | **1.6** | **—** | **(0.6)** | **1.0** | 1.4 |
| **Aggregate** | **41.0** | **(39.1)** | **1.9** | **1.1** | **(1.1)** | **1.9** | 2.4 |

1 These realistic liabilities include the shareholders' share of future bonuses of £0.3 billion *(2010: £0.7 billion)*. Realistic liabilities adjusted to eliminate the shareholders' share of future bonuses are £38.8 billion *(2010: £41.5 billion)*. These realistic liabilities make provision for guarantees, options and promises on a market consistent stochastic basis. The value of the provision included within realistic liabilities is £1.9 billion, £0.3 billion and £3.1 billion for NWPSF, OWPSF and WPSF respectively *(2010: £1.9 billion, £0.3 billion and £3.1 billion)*.
2 Estimated realistic inherited estate at 2010 was £nil, £0.3 billion and £1.8 billion for NWPSF, OWPSF and WPSF respectively.
3 The support arrangement represents the reattributed estate (RIEESA) of £1.1 billion at 31 December 2011 *(2010: £1.2 billion)*.
4 The WPSF fund includes the Provident Mutual (PM) fund which has realistic assets and liabilities of £1.7 billion and therefore does not contribute to the realistic inherited estate.
5 The risk capital margin (RCM) is 2.7 times covered by the inherited estate and support arrangement *(2010: 3.7 times)*.

## Investment mix

The aggregate investment mix of the assets in the three main with-profit funds was:

| | 2011 % | 2010 % |
|---|---|---|
| Equity | **22%** | 26% |
| Property | **17%** | 16% |
| Fixed interest | **54%** | 57% |
| Other | **7%** | 1% |

The equity backing ratios, including property, supporting with-profit asset shares are 71% in NWPSF and OWPSF, and 74% in WPSF.

## C5 – IFRS Sensitivity analysis

The Group uses a number of sensitivity test-based risk management tools to understand the volatility of earnings, the volatility of its capital requirements, and to manage its capital more efficiently. Primarily, MCEV, economic capital, and scenario analysis are used. Sensitivities to economic and operating experience are regularly produced on all of the Group's financial performance measurements to inform the Group's decision making and planning processes, and as part of the framework for identifying and quantifying the risks that each of its business units, and the Group as a whole are exposed to.

For long-term business in particular, sensitivities of MCEV performance indicators to changes in both economic and non-economic experience are continually used to manage the business and to inform the decision making process. More information on MCEV sensitivities can be found in the presentation of results on an MCEV basis in the supplementary section of this report.

### 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 for both IFRS reporting and reporting under MCEV methodology.

### 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.

### 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. |
| 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 (life insurance only) | The impact of a reduction in mortality rates for annuity contracts by 5%. |
| Gross loss ratios (non-life insurance only) | The impact of an increase in gross loss ratios for general insurance and health business by 5%. |

### Long-term businesses

| | | | | | | | 2011 |
|---|---|---|---|---|---|---|---|
| **Impact on profit before tax £m** | **Interest rates +1%** | **Interest rates -1%** | **Equity/ property +10%** | **Equity/ property -10%** | **Expenses +10%** | **Assurance mortality +5%** | **Annuitant mortality -5%** |
| Insurance participating | **(45)** | **(155)** | **5** | **(95)** | **(45)** | **(10)** | **(50)** |
| Insurance non-participating | **(135)** | **85** | **55** | **(45)** | **(75)** | **(60)** | **(470)** |
| Investment participating | **(35)** | **40** | **50** | **(75)** | **(10)** | **—** | **—** |
| Investment non-participating | **(15)** | **15** | **15** | **(15)** | **(20)** | **—** | **—** |
| Assets backing life shareholders' funds | **135** | **(15)** | **35** | **(35)** | **—** | **—** | **—** |
| **Total excluding Delta Lloyd** | **(95)** | **(30)** | **160** | **(265)** | **(150)** | **(70)** | **(520)** |

| | | | | | | | 2011 |
|---|---|---|---|---|---|---|---|
| **Impact on shareholders' equity before tax £m** | **Interest rates +1%** | **Interest rates -1%** | **Equity/ property +10%** | **Equity/ property -10%** | **Expenses +10%** | **Assurance mortality +5%** | **Annuitant mortality -5%** |
| Insurance participating | **(80)** | **(115)** | **5** | **(95)** | **(45)** | **(10)** | **(50)** |
| Insurance non-participating | **(500)** | **455** | **55** | **(45)** | **(75)** | **(60)** | **(470)** |
| Investment participating | **(35)** | **40** | **50** | **(75)** | **(10)** | **—** | **—** |
| Investment non-participating | **(110)** | **25** | **15** | **(15)** | **(20)** | **—** | **—** |
| Assets backing life shareholders' funds | **35** | **85** | **40** | **(40)** | **—** | **—** | **—** |
| **Total excluding Delta Lloyd** | **(690)** | **490** | **165** | **(270)** | **(150)** | **(70)** | **(520)** |

## C5 – IFRS Sensitivity analysis continued

### Long-term businesses

| Impact on profit before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Assurance mortality +5% | Annuitant mortality -5% |
|---|---|---|---|---|---|---|---|
| | | | | | | | 2010 |
| Insurance participating | (35) | (155) | 45 | (105) | (30) | (10) | (45) |
| Insurance non-participating | (210) | 225 | 45 | (40) | (10) | (45) | (305) |
| Investment participating | (20) | 15 | 15 | (55) | — | — | — |
| Investment non-participating | (10) | 10 | 10 | (10) | (5) | — | — |
| Assets backing life shareholders' funds | 30 | (35) | 15 | (10) | — | — | — |
| **Total – continuing operations** | (245) | 60 | 130 | (220) | (45) | (55) | (350) |
| **Discontinued operations** | (60) | 5 | 200 | (200) | (40) | — | (5) |
| **Total** | (305) | 65 | 330 | (420) | (85) | (55) | (355) |

| Impact on shareholders' equity before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Assurance mortality +5% | Annuitant mortality -5% |
|---|---|---|---|---|---|---|---|
| | | | | | | | 2010 |
| Insurance participating | (60) | (125) | 40 | (100) | (30) | (10) | (45) |
| Insurance non-participating | (575) | 635 | 45 | (40) | (10) | (45) | (305) |
| Investment participating | (20) | 15 | 15 | (55) | — | — | — |
| Investment non-participating | (90) | 100 | 10 | (10) | (5) | — | — |
| Assets backing life shareholders' funds | (75) | 70 | 20 | (15) | — | — | — |
| **Total – continuing operations** | (820) | 695 | 130 | (220) | (45) | (55) | (350) |
| **Discontinued operations** | (70) | 25 | 505 | (505) | (40) | — | (5) |
| **Total** | (890) | 720 | 635 | (725) | (85) | (55) | (355) |

The different impacts of the economic sensitivities on profit and shareholders' equity arise from classification of certain assets as AFS in some business units, for which movements in unrealised gains or losses would be taken directly to shareholders' equity.

The sensitivities to economic movements relate mainly to the UK and the US. In general a fall in market interest rates has a beneficial impact on non-participating business and shareholders' funds due to the increase in market value of fixed interest securities; similarly a rise in interest rates has a negative impact. In the US, most debt securities are classified as AFS, which limits the overall sensitivity of IFRS profit to interest rate movements. The mortality sensitivities relate primarily to the UK.

Changes in sensitivities between 2010 and 2011 reflect the deconsolidation of Delta Lloyd on 6 May 2011, as well as movements in market interest rates, portfolio growth, changes to asset mix and relative durations of assets and liabilities and asset liability management actions.

The impact on the Group's results from sensitivity to these assumptions can also be found in the MCEV sensitivities included in the alternative method of reporting long-term business profits section.

## C5 – IFRS Sensitivity analysis continued

### General insurance and health businesses

| Impact on profit before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| | | | | | | 2011 |
| **Gross of reinsurance excluding Delta Lloyd** | **(205)** | **180** | **50** | **(55)** | **(130)** | **(300)** |
| **Net of reinsurance excluding Delta Lloyd** | **(275)** | **275** | **50** | **(55)** | **(130)** | **(290)** |

| Impact on shareholders' equity before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| | | | | | | 2011 |
| **Gross of reinsurance excluding Delta Lloyd** | **(205)** | **180** | **50** | **(55)** | **(30)** | **(300)** |
| **Net of reinsurance excluding Delta Lloyd** | **(275)** | **275** | **50** | **(55)** | **(30)** | **(290)** |

| Impact on profit before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| | | | | | | 2010 |
| Gross of reinsurance – continuing operations | (235) | 220 | 45 | (50) | (110) | (285) |
| Gross of reinsurance – discontinued operations | (70) | 80 | 50 | (50) | (25) | (40) |
| **Total gross of reinsurance** | (305) | 300 | 95 | (100) | (135) | (325) |
| Net of reinsurance – continuing operations | (290) | 285 | 45 | (50) | (110) | (280) |
| Net of reinsurance – discontinued operations | (70) | 80 | 50 | (50) | (25) | (35) |
| **Total net of reinsurance** | (360) | 365 | 95 | (100) | (135) | (315) |

| Impact on shareholders' equity before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% | Expenses +10% | Gross loss ratios +5% |
|---|---|---|---|---|---|---|
| | | | | | | 2010 |
| Gross of reinsurance – continuing operations | (235) | 220 | 45 | (50) | (30) | (285) |
| Gross of reinsurance – discontinued operations | (70) | 80 | 50 | (50) | (5) | (40) |
| **Total gross of reinsurance** | (305) | 300 | 95 | (100) | (35) | (325) |
| Net of reinsurance – continuing operations | (290) | 285 | 45 | (50) | (30) | (280) |
| Net of reinsurance – discontinued operations | (70) | 80 | 50 | (50) | (5) | (35) |
| **Total net of reinsurance** | (360) | 365 | 95 | (100) | (35) | (315) |

For general insurance, 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.

## C5 – IFRS Sensitivity analysis continued

### Fund management and non-insurance businesses

| Impact on profit before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| | | | | 2011 |
| **Total excluding Delta Lloyd** | **(10)** | **10** | **(40)** | **75** |

| Impact on shareholders' equity before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| | | | | 2011 |
| **Total excluding Delta Lloyd** | **(10)** | **10** | **(40)** | **75** |

| Impact on profit before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| | | | | 2010 |
| Continuing operations | (15) | 15 | (5) | 55 |
| Discontinued operations | 20 | (20) | 20 | (20) |
| **Total** | 5 | (5) | 15 | 35 |

| Impact on shareholders' equity before tax £m | Interest rates +1% | Interest rates -1% | Equity/ property +10% | Equity/ property -10% |
|---|---|---|---|---|
| | | | | 2010 |
| Continuing operations | (15) | 15 | — | 50 |
| Discontinued operations | (15) | 25 | 20 | (20) |
| **Total** | (30) | 40 | 20 | 30 |

The sensitivity of the Group's fund management and non-insurance business to movements in equity and property markets includes the impact of hedging instruments held at Group Centre.

## C5 – IFRS Sensitivity analysis continued

### Delta Lloyd

The full-year 2011 sensitivities contained in the above tables exclude any contribution from Delta Lloyd following deconsolidation of this business. The main financial sensitivities in Delta Lloyd are as follows:

***Interest rate risk***

Delta Lloyd Group incurs interest rate risk as the value of its assets and liabilities depend on different yield curves. All fixed income assets and instruments bear an additional risk, as the yields on these assets may develop differently from the yields used for discounting the liabilities.

***Equity risk and property risk***

The Delta Lloyd equity risk is managed by hedging a major part of its equity portfolio. By use of equity options Delta Lloyd Group is protected against the downside risk in the equity portfolio while maintaining upward potential. For property risk Delta Lloyd Group's risk management strategy is focused on retaining a high-quality self-managed portfolio.

***Credit risk***

The Delta Lloyd credit risk is related primarily to government bonds, corporate bonds, mortgages, reinsurance and other loans. Delta Lloyd maintains a diversified fixed-income investment portfolio that is structured to match its insurance liabilities.

***Sensitivity analysis***

The financial risk management strategy aims to minimise the exposure to market fluctuations. The techniques used include selling investments, changing investment portfolio allocation and using derivative financial instruments.

Delta Lloyd’s General Insurance business is subject to underwriting, reserve and catastrophe risks, but manages these risks via its governance, control processes, and the purchase of reinsurance.

### Limitations of sensitivity analysis

The previous 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.

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# Analysis of assets

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# Analysis of assets

## D1 – Total assets – Shareholder/policyholder exposure to risk

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 we manage our investments. In addition, to support this, we also use a variety of hedging and other risk management strategies to diversify away residual mis-match risk that is outside of our risk appetite.

| 2011 | 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 | — | — | **4,662** | **4,662** | **(1)** | **4,661** |
| Interests in joint ventures and associates | **253** | **1,460** | **1,117** | **2,830** | **(12)** | **2,818** |
| Property and equipment | **98** | **132** | **280** | **510** | — | **510** |
| Investment property | **4,168** | **6,384** | **1,086** | **11,638** | — | **11,638** |
| Loans | **917** | **6,471** | **20,728** | **28,116** | — | **28,116** |
| Financial investments | | | | | | |
| Debt securities | **15,295** | **79,450** | **58,600** | **153,345** | **(93)** | **153,252** |
| Equity securities | **20,602** | **10,788** | **1,293** | **32,683** | **(37)** | **32,646** |
| Other investments | **23,233** | **5,078** | **2,066** | **30,377** | **(217)** | **30,160** |
| Reinsurance assets | **1,454** | **684** | **4,975** | **7,113** | **(1)** | **7,112** |
| Deferred tax assets | — | — | **238** | **238** | — | **238** |
| Current tax assets | — | — | **140** | **140** | — | **140** |
| Receivables and other financial assets | **183** | **2,334** | **5,433** | **7,950** | **(13)** | **7,937** |
| Deferred acquisition costs and other assets | **32** | **74** | **6,361** | **6,467** | **(23)** | **6,444** |
| Prepayments and accrued income | **152** | **1,309** | **1,777** | **3,238** | **(3)** | **3,235** |
| Cash and cash equivalents | **3,980** | **10,467** | **8,622** | **23,069** | **(26)** | **23,043** |
| Assets of operations classified as held for sale | — | — | — | — | **426** | **426** |
| **Total** | **70,367** | **124,631** | **117,378** | **312,376** | — | **312,376** |
| **Interest in Delta Lloyd as an associate** | — | — | **776** | **776** | — | **776** |
| **Total (excluding Delta Lloyd as an associate)** | **70,367** | **124,631** | **116,602** | **311,600** | — | **311,600** |
| **Total % (excluding Delta Lloyd as an associate)** | **22.6%** | **40.0%** | **37.4%** | **100.0%** | **0.0%** | **100.0%** |
| 2010 as reported | 85,462 | 136,787 | 147,858 | 370,107 | — | 370,107 |
| Delta Lloyd | 10,947 | 8,815 | 39,501 | 59,263 | — | 59,263 |
| 2010 Total (excluding Delta Lloyd) | 74,515 | 127,972 | 108,357 | 310,844 | — | 310,844 |
| 2010 Total % (excluding Delta Lloyd) | 24.0% | 41.2% | 34.8% | 100.0% | — | 100.0% |

As at 31 December 2011, 37.4% of our total asset base was shareholder assets, 40.0% participating assets where Aviva shareholders have partial exposure, and 22.6% policyholder assets where Aviva shareholders have no exposure. Of the total assets, investment property, loans and financial investments comprised £255.8 billion, compared to £254.6 billion at 31 December 2010 (excluding Delta Lloyd).

During 2011 Aviva have completed a partial disposal of their equity holding in Delta Lloyd.

At 31 December 2010 Aviva held a controlling interest of 58% in Delta Lloyd's issued equity, and as a result and in accordance with IFRS, consolidated 100% of Delta Lloyd's assets and liabilities. At 31 December 2011 Aviva held 42% of Delta Lloyd's issued equity and is no longer considered to have control of Delta Lloyd. The Group therefore no longer consolidates Delta Lloyd's assets and liabilities as at 31 December 2011. In place of 100% of Delta Lloyd's assets, there is a substantial asset shown as a 'Share in joint ventures and associates' which represents Aviva's equity share of Delta Lloyd. As a result, a direct comparison of the 31 December 2010 and 31 December 2011 balance sheets for asset quality purposes would be distorted by the effect of this deconsolidation. Throughout the disclosure, therefore, Delta Lloyd have been excluded for the purposes of the 31 December 2010 balance sheet to allow a proper comparison.

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

| Total assets | Fair value £m | Amortised cost £m | Equity accounted/ tax assets[1] £m | Total £m |
|---|---|---|---|---|
| | | | | 2011 |
| Goodwill and acquired value of in-force business and intangible assets | — | 4,662 | — | 4,662 |
| Interests in joint ventures and associates (excluding Delta Lloyd as an associate) | — | — | 2,054 | 2,054 |
| Property and equipment | 214 | 296 | — | 510 |
| Investment property | 11,638 | — | — | 11,638 |
| Loans | 18,486 | 9,630 | — | 28,116 |
| Financial investments | | | | |
| Debt securities | 153,345 | — | — | 153,345 |
| Equity securities | 32,683 | — | — | 32,683 |
| Other investments | 30,377 | — | — | 30,377 |
| Reinsurance assets | — | 7,113 | — | 7,113 |
| Deferred tax assets | — | — | 238 | 238 |
| Current tax assets | — | — | 140 | 140 |
| Receivables and other financial assets | — | 7,950 | — | 7,950 |
| Deferred acquisition costs and other assets | — | 6,467 | — | 6,467 |
| Prepayments and accrued income | — | 3,238 | — | 3,238 |
| Cash and cash equivalents | 23,069 | — | — | 23,069 |
| **Total (excluding Delta Lloyd as an associate)** | **269,812** | **39,356** | **2,432** | **311,600** |
| **Total % (excluding Delta Lloyd as an associate)** | **86.6%** | **12.6%** | **0.8%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 270,973 | 37,171 | 2,700 | 310,844 |
| 2010 Total % (excluding Delta Lloyd) | 87.2% | 11.9% | 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 within the analysis of the Group's assets.

| Total assets – Policyholder assets 2011 | 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 (excluding Delta Lloyd as an associate) | — | — | 253 | 253 |
| Property and equipment | 32 | 66 | — | 98 |
| Investment property | 4,168 | — | — | 4,168 |
| Loans | — | 917 | — | 917 |
| Financial investments | | | | |
| Debt securities | 15,295 | — | — | 15,295 |
| Equity securities | 20,602 | — | — | 20,602 |
| Other investments | 23,233 | — | — | 23,233 |
| Reinsurance assets | — | 1,454 | — | 1,454 |
| Deferred tax assets | — | — | — | — |
| Current tax assets | — | — | — | — |
| Receivables and other financial assets | — | 183 | — | 183 |
| Deferred acquisition costs and other assets | — | 32 | — | 32 |
| Prepayments and accrued income | — | 152 | — | 152 |
| Cash and cash equivalents | 3,980 | — | — | 3,980 |
| **Total (excluding Delta Lloyd as an associate)** | **67,310** | **2,804** | **253** | **70,367** |
| **Total % (excluding Delta Lloyd as an associate)** | **95.6%** | **4.0%** | **0.4%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 72,280 | 1,644 | 591 | 74,515 |
| 2010 Total % (excluding Delta Lloyd) | 97.0% | 2.2% | 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 within the analysis of the Group's assets.

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

| Total assets – Participating fund assets 2011 | 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 (excluding Delta Lloyd as an associate) | — | — | **1,460** | **1,460** |
| Property and equipment | **22** | **110** | — | **132** |
| Investment property | **6,384** | — | — | **6,384** |
| Loans | **1,098** | **5,373** | — | **6,471** |
| Financial investments | | | | |
| Debt securities | **79,450** | — | — | **79,450** |
| Equity securities | **10,788** | — | — | **10,788** |
| Other investments | **5,078** | — | — | **5,078** |
| Reinsurance assets | — | **684** | — | **684** |
| Deferred tax assets | — | — | — | — |
| Current tax assets | — | — | — | — |
| Receivables and other financial assets | — | **2,334** | — | **2,334** |
| Deferred acquisition costs and other assets | — | **74** | — | **74** |
| Prepayments and accrued income | — | **1,309** | — | **1,309** |
| Cash and cash equivalents | **10,467** | — | — | **10,467** |
| **Total (excluding Delta Lloyd as an associate)** | **113,287** | **9,884** | **1,460** | **124,631** |
| **Total % (excluding Delta Lloyd as an associate)** | **90.9%** | **7.9%** | **1.2%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 118,517 | 8,936 | 519 | 127,972 |
| 2010 Total % (excluding Delta Lloyd) | 92.6% | 7.0% | 0.4% | 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 within the analysis of the Group's assets.

| Total assets – Shareholder assets 2011 | 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 | — | **4,662** | — | **4,662** |
| Interests in joint ventures and associates (excluding Delta Lloyd as an associate) | — | — | **341** | **341** |
| Property and equipment | **160** | **120** | — | **280** |
| Investment property | **1,086** | — | — | **1,086** |
| Loans | **17,388** | **3,340** | — | **20,728** |
| Financial investments | | | | |
| Debt securities | **58,600** | — | — | **58,600** |
| Equity securities | **1,293** | — | — | **1,293** |
| Other investments | **2,066** | — | — | **2,066** |
| Reinsurance assets | — | **4,975** | — | **4,975** |
| Deferred tax assets | — | — | **238** | **238** |
| Current tax assets | — | — | **140** | **140** |
| Receivables and other financial assets | — | **5,433** | — | **5,433** |
| Deferred acquisition costs and other assets | — | **6,361** | — | **6,361** |
| Prepayments and accrued income | — | **1,777** | — | **1,777** |
| Cash and cash equivalents | **8,622** | — | — | **8,622** |
| **Total (excluding Delta Lloyd as an associate)** | **89,215** | **26,668** | **719** | **116,602** |
| **Total % (excluding Delta Lloyd as an associate)** | **76.5%** | **22.9%** | **0.6%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 80,176 | 26,591 | 1,590 | 108,357 |
| 2010 Total % (excluding Delta Lloyd) | 74.0% | 24.5% | 1.5% | 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 within the analysis of the Group's assets.

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

### Financial instruments (including derivatives and loans)

The Group classifies its investments as either financial assets at fair value through profit or loss (FV) or financial assets available for sale (AFS). The classification depends on the purpose for which the investments were acquired, and is determined by local management at initial recognition. The FV category has two subcategories – those that meet the definition as being held for trading and those the Group chooses to designate as FV (referred to in this section as 'other than trading').

In general, the FV category is used as, in most cases, our investment or risk management strategy is to manage our financial investments on a fair value basis. All securities in the FV category are classified as other than trading, except for non-hedge derivatives and a small amount of debt and equity securities, bought with the intention to resell in the short term, which are classified as trading. The AFS category is used where the relevant long-term business liability (including shareholders' funds) is passively managed.

Loans are carried at amortised cost, except for certain mortgage loans, where we have 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. We believe this presentation provides more relevant information and eliminates any accounting mismatch that would otherwise arise from using different measurement bases for these four items.

### 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' in accordance with the valuation inputs and consistent with IFRS7 *Financial Instruments: Disclosures.*

- 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 assumptions the business unit considers that market participants would use in pricing the asset. Examples are certain private equity investments and private placements.

Fair values sourced from internal models are Level 2 only if substantially all the inputs are market observable. Otherwise fair values sourced from internal models are classified as Level 3.

| | Fair value hierarchy | | | | | | |
|---|---|---|---|---|---|---|---|
| **Total assets 2011** | **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 properties | **—** | **11,638** | **—** | **11,638** | **—** | **—** | **11,638** |
| Loans | **—** | **18,486** | **—** | **18,486** | **9,630** | **—** | **28,116** |
| Debt securities | **103,183** | **42,222** | **7,940** | **153,345** | **—** | **(93)** | **153,252** |
| Equity securities | **31,556** | **644** | **483** | **32,683** | **—** | **(37)** | **32,646** |
| Other investments (including derivatives) | **21,902** | **5,530** | **2,945** | **30,377** | **—** | **(217)** | **30,160** |
| **Total** | **156,641** | **78,520** | **11,368** | **246,529** | **9,630** | **(347)** | **255,812** |
| **Total %** | **61.2%** | **30.7%** | **4.4%** | **96.3%** | **3.8%** | **(0.1)%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 163,302 | 71,153 | 11,830 | 246,285 | 8,352 | — | 254,637 |
| 2010 Total % (excluding Delta Lloyd) | 64.1% | 28.0% | 4.6% | 96.7% | 3.3% | — | 100.0% |

At 31 December 2011, there has been a slight decrease to 61.2% *(31 December 2010: 64.1%)* in the proportion of total financial investments, loans and investment properties classified as Level 1 in the fair value hierarchy, whereas Level 2 have increased slightly to 30.7% (*31 December 2010: 28.0%*). Level 3 (fair valued using models with significant unobservable market parameters) financial investments, loans and investment properties have remained stable at 4.3% *(31 December 2010: 4.6%).*

# D3 – Analysis of asset quality

## D3.1 – Goodwill, acquired value of in-force business and intangible assets

The Group's goodwill, acquired value of in-force business and the majority of other intangible assets have arisen from the Group's business combinations. These business combinations include several bancassurance arrangements, which have resulted in £639 million of the total £2,640 million of goodwill and £729 million of the total £2,021 million of other intangible assets. These balances primarily represent the value of bancassurance distribution agreements acquired in these business combinations and are before the deduction of goodwill and other intangibles held for sale.

## D3.2 – Investment property

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | 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 | **—** | **11,552** | **—** | **11,552** | — | 10,936 | — | 10,936 |
| Vacant investment property/held for capital appreciation | **—** | **86** | **—** | **86** | — | 85 | — | 85 |
| **Total** | **—** | **11,638** | **—** | **11,638** | — | 11,021 | — | 11,021 |
| **Total %** | **—** | **100.0%** | **—** | **100.0%** | — | 100.0% | — | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | 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 | **—** | **4,164** | **—** | **4,164** | — | 4,015 | — | 4,015 |
| Vacant investment property/held for capital appreciation | **—** | **4** | **—** | **4** | — | — | — | — |
| **Total** | **—** | **4,168** | **—** | **4,168** | — | 4,015 | — | 4,015 |
| **Total %** | **—** | **100.0%** | **—** | **100.0%** | — | 100.0% | — | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | 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 | **—** | **6,312** | **—** | **6,312** | — | 6,436 | — | 6,436 |
| Vacant investment property/held for capital appreciation | **—** | **72** | **—** | **72** | — | 71 | — | 71 |
| **Total** | **—** | **6,384** | **—** | **6,384** | — | 6,507 | — | 6,507 |
| **Total %** | **—** | **100.0%** | **—** | **100.0%** | — | 100.0% | — | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | 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 | **—** | **1,076** | **—** | **1,076** | — | 485 | — | 485 |
| Vacant investment property/held for capital appreciation | **—** | **10** | **—** | **10** | — | 14 | — | 14 |
| **Total** | **—** | **1,086** | **—** | **1,086** | — | 499 | — | 499 |
| **Total %** | **—** | **100.0%** | **—** | **100.0%** | — | 100.0% | — | 100.0% |

91% *(31 December 2010: 96%)* of investment properties by value are held in unit-linked or participating funds. Shareholder exposure to investment properties is principally through investments in Property Limited Partnerships (PLPs). Depending on the Group's interest in these PLPs its investments are classified as either interest in joint ventures, unit trusts or consolidated as a subsidiary, in which case the underlying investment properties held by the PLP are included on the balance sheet. The increase in shareholder exposure to investment properties is a result of the consolidation of more PLPs at 31 December 2011 compared to 2010 and is partially offset by a reduction in shareholder exposure to PLPs classified as joint ventures.

Investment properties are stated at their market values as assessed by qualified external valuers or by local qualified staff of the Group in overseas operations, all with recent relevant experience. Values are calculated using a discounted cash flow approach and are based on current rental income plus anticipated uplifts at the next rent review, assuming no future growth in rental income. This uplift and the discount rate are derived from rates implied by recent market transactions on similar properties. The basis of valuation therefore naturally falls to be classified as Level 2. Valuations are typically undertaken on a quarterly (and in some cases monthly) basis.

99.3% *(31 December 2010: 99.2%)* of investment properties by value are leased to third parties under operating leases, with the remainder either being vacant or held for capital appreciation.

## D3 – Analysis of asset quality continued

### D3.3 – 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; and
- Other loans, which include loans and advances to customers of our banking business, and 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 revised 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. Due to the illiquid nature of these assets, where fair value accounting is applied, it is done so on a Level 2 basis.

| Loans – Total assets 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Policy loans | **36** | **954** | **440** | **38** | **1,468** |
| Loans and advances to banks | **4,988** | **—** | **—** | **—** | **4,988** |
| Mortgage loans | **18,761** | **3** | **2,624** | **—** | **21,388** |
| Other loans | **174** | **12** | **84** | **2** | **272** |
| **Total** | **23,959** | **969** | **3,148** | **40** | **28,116** |
| **Total %** | **85.3%** | **3.4%** | **11.2%** | **0.1%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 20,407 | 977 | 2,529 | 40 | 23,953 |
| 2010 Total % (excluding Delta Lloyd) | 85.2% | 4.1% | 10.5% | 0.2% | 100.0% |

| Loans – Total policyholder assets 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Policy loans | **—** | **—** | **—** | **—** | **—** |
| Loans and advances to banks | **917** | **—** | **—** | **—** | **917** |
| Mortgage loans | **—** | **—** | **—** | **—** | **—** |
| Other loans | **—** | **—** | **—** | **—** | **—** |
| **Total** | **917** | **—** | **—** | **—** | **917** |
| **Total %** | **100.0%** | **0.0%** | **0.0%** | **0.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | — | — | — | — | — |
| 2010 Total % (excluding Delta Lloyd) | — | — | — | — | — |

| Loans – Total participating fund assets 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Policy loans | **29** | **942** | **207** | **1** | **1,179** |
| Loans and advances to banks | **4,071** | **—** | **—** | **—** | **4,071** |
| Mortgage loans | **1,093** | **3** | **117** | **—** | **1,213** |
| Other loans | **—** | **8** | **—** | **—** | **8** |
| **Total** | **5,193** | **953** | **324** | **1** | **6,471** |
| **Total %** | **80.3%** | **14.7%** | **5.0%** | **0.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 4,508 | 959 | 273 | — | 5,740 |
| 2010 Total % (excluding Delta Lloyd) | 78.5% | 16.7% | 4.8% | 0.0% | 100.0% |

| Loans – Total shareholder assets 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Policy loans | **7** | **12** | **233** | **37** | **289** |
| Loans and advances to banks | **—** | **—** | **—** | **—** | **—** |
| Mortgage loans | **17,668** | **—** | **2,507** | **—** | **20,175** |
| Other loans | **174** | **4** | **84** | **2** | **264** |
| **Total** | **17,849** | **16** | **2,824** | **39** | **20,728** |
| **Total %** | **86.1%** | **0.1%** | **13.6%** | **0.2%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 15,899 | 18% | 2,256 | 40 | 18,213 |
| 2010 Total % (excluding Delta Lloyd) | 87.3% | 0.1% | 12.4% | 0.2% | 100.0% |

## D3 – Analysis of asset quality continued

### D3.3 – Loans continued

The value of the Group's loan portfolio (including Policyholder, Participating Fund and Shareholder assets), at 31 December 2011 stood at £28.1 billion *(31 December 2010 (excluding Delta Lloyd): £24.0 billion)*, an increase of £4.1 billion.

The total shareholder exposure to loans increased to £20.7 billion *(31 December 2010 (excluding Delta Lloyd): £18.2 billion)*, and represented 73.7% of the total loan portfolio, with the remaining 26.3% split between participating funds *(£6.5 billion )* and policyholders assets (£0.9 billion).

**Mortgage loans – Shareholder assets**

| 2011 | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Total £m |
|---|---|---|---|---|---|
| Non-securitised mortgage loans | | | | | |
| – Residential (Equity release) | **2,678** | **—** | **—** | **—** | **2,678** |
| – Commercial | **9,121** | **—** | **2,507** | **—** | **11,628** |
| – Healthcare | **3,715** | **—** | **—** | **—** | **3,715** |
| | **15,514** | **—** | **2,507** | **—** | **18,021** |
| Securitised mortgage loans | **2,154** | **—** | **—** | **—** | **2,154** |
| **Total** | **17,668** | | **2,507** | **—** | **20,175** |
| 2010 Total (excluding Delta Lloyd) | 14,918 | 1 | 1,943 | — | 16,862 |

Of the Group's total loan portfolio (including Policyholder, Participating Fund and Shareholder assets), 76% *(31 December 2010 (excluding Delta Lloyd): 74%)* is invested in mortgage loans. The Group's mortgage loan portfolio spans several business units, primarily in the UK and USA, and across various sectors, including residential loans, commercial loans and government supported healthcare loans. Aviva shareholders are exposed predominantly to mortgage loans (accounting for 97.3% of total Shareholder asset loans). This section focuses on explaining the residual shareholder risk within these exposures.

Mortgage loan assets are divided into type of loan (residential, equity release, commercial, healthcare and securitised) and the regions in which they are held (predominantly United Kingdom and the United States). Each loan type and region has its own unique characteristic and composition.

**UK Residential**

The UK non-securitised residential mortgage portfolio has a total current value of £2.7 billion (*31 December 2010: £2.0 billion*). The increase from 2010 to 2011 is primarily due to £0.4 billion of new loans and accrued interest and £0.3 billion of fair value gains. These mortgages are all in the form of equity release, whereby homeowners mortgage their property to release cash equity. Due to the low relative levels of equity released in each property, they predominantly have a Loan to Value ("LTV") of below 70%, and the average LTV across the portfolio is approximately 26.5% *(31 December 2010: 26%).*

## D3 – Analysis of asset quality continued

### D3.3 – Loans continued

***Non-securitised mortgage loans – Commercial***

Gross exposure by loan to value and arrears

*United Kingdom – shareholder assets*

| 2011 | >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 | 527 | 1,787 | 1,764 | 398 | 911 | 988 | 225 | 1,091 | 533 | 479 | 8,703 |
| 0 – 3 months | 37 | — | — | 20 | 94 | 24 | — | — | — | — | 175 |
| 3 – 6 months | — | — | — | — | — | 74 | — | — | — | — | 74 |
| 6 – 12 months | 7 | — | — | 7 | — | 36 | — | 1 | — | — | 51 |
| > 12 months | — | — | — | — | — | 118 | — | — | — | — | 118 |
| **Total** | 571 | 1,787 | 1,764 | 425 | 1,005 | 1,240 | 225 | 1,092 | 533 | 479 | 9,121 |

Of the total £10.3 billion (gross of provisions) of UK non-securitised commercial mortgage loans, held in both the shareholder and participating funds, £9.9 billion are held by our UK Life business to back annuity liabilities, and are stated on a fair value basis. The loan exposures for our UK Life business are calculated on a discounted cash flow basis, and include a risk adjustment through the use of Credit Risk Adjusted Value ("CRAV") methods. Aviva UK General Insurance hold the remaining £402 million of loans which are stated on an amortised cost basis and are subject to impairment review, using a fair value methodology calibrated to the UK Life approach, adjusted for specific portfolio characteristics.

Loan service collection ratios, a key indicator of mortgage portfolio performance, remained high during the period. 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, remained relatively stable at 1.32x (*31 December 2010 1.33x*) due to low levels of material tenant defaults. Mortgage LTV's increased during the year to 103% as a result of falling gilt yields increasing loan value (property values increased a modest c1.2% on average during 2011).

All loans in arrears have been assessed for impairment. Of the £418 million *(31 December 2010: £246 million)* value of loans in arrears included within our shareholder assets, the interest and capital amount in arrears is only £20.3 million. The valuation allowance (including supplementary provisions) made in the UK for corporate bonds and commercial mortgages carried at fair value equates to 60bps and 92bps respectively at 31 December 2011 *(31 December 2010: 63bps and 105bps respectively*). This is equivalent to a valuation allowance of £1.6 billion *(31 December 2010: £1.3 billion)* over the remaining term of the UK Life corporate bond and commercial mortgage portfolio which maintains a strong buffer against potential future losses. The increase is driven by changes in the long term valuation allowance for both commercial mortgages and corporate bonds which has increased in line with the growth in the underlying asset portfolio.

In addition, we hold £83.9 million *(31 December 2010: £60 million)* of impairment provisions in our UK General Insurance mortgage portfolio, which is carried at amortised cost. This is after a £30 million write-off in respect to Southern Cross and £6.5million for Superview.

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 other 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.

## D3 – Analysis of asset quality continued

### D3.3 – Loans continued

**UK Primary Healthcare & PFI**

Of the £12.8 billion (*31 December 2010: £11.0 billion*) UK non-securitised commercial and healthcare mortgage loans in the Shareholders Fund, £3.7 billion (*31 December 2010: £2.8 billion*) relates to Primary Healthcare & PFI businesses and is secured against General Practitioner premises, other primary health related premises or schools leased to Government bodies. 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 103%, 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 low risk and uncorrelated with the strength of the UK or global economy.

***Non-securitised mortgage loans – Commercial***

Gross exposure by loan to value and arrears

*North America – shareholder assets*

| 2011 | >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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Neither past due nor impaired | 9 | 8 | 2 | 4 | 14 | 28 | 29 | 203 | 458 | 1,729 | 2,484 |
| 0 – 3 months | 6 | — | — | — | — | — | — | — | — | — | 6 |
| 3 – 6 months | — | — | — | — | — | — | — | — | — | — | — |
| 6 – 12 months | — | — | — | — | — | — | — | — | — | — | — |
| > 12 months | — | — | — | — | 17 | — | — | — | — | — | 17 |
| **Total** | 15 | 8 | 2 | 4 | 31 | 28 | 29 | 203 | 458 | 1,729 | 2,507 |
| **Total %** | 0.6% | 0.3% | 0.1% | 0.2% | 1.2% | 1.1% | 1.2% | 8.1% | 18.3% | 68.9% | 100.0% |

Aviva USA currently holds £2.5 billion *(31 December 2010: £1.9 billion)* of commercial mortgages under shareholder assets. These mortgages continue to perform well, reflecting:

- Low underwriting LTVs (shall not exceed 80% at the time of issuance), and consequently a portfolio with an average LTV of 64% *(31 December 2010: 65%)*;
- A highly diversified portfolio, with strong volumes in many states with more stable economies and related real estate values; and
- Strong LIC ratios, with 96% of the loans having an LIC above 1.4x, and 2% with LIC below 1.0x.

As at 31 December 2011, the actual amount of interest payment in arrears was £1.2million.

**Securitised mortgage loans**

Of the total securitised residential mortgages (£2.2 billion), approximately £256 million of securities are still held by Aviva. The remaining securities have been sold to third parties, and therefore present little credit risk to Aviva. Securitised residential mortgages held are predominantly issued through vehicles in the UK.

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments

| Total assets | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | 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 | **147,537** | **12,395** | **(6,587)** | **153,345** | 145,418 | 7,104 | (3,671) | 148,851 |
| Equity securities | **33,055** | **3,637** | **(4,009)** | **32,683** | 32,077 | 5,431 | (2,038) | 35,470 |
| Other investments | **30,362** | **553** | **(538)** | **30,377** | 33,225 | 2,733 | (618) | 35,340 |
| **Total** | **210,954** | **16,585** | **(11,134)** | **216,405** | 210,720 | 15,268 | (6,327) | 219,661 |

The table above is a summary of the cost/amortised cost, gross unrealised gains and losses and fair value of financial investments.

Aviva holds large quantities 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 or unit linked 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 and the staff pension schemes, where the holdings are designed to maximise long-term returns with an acceptable level of risk. The vast majority of equity investments are valued at quoted market prices.

### D3.4.1 – Debt securities

| Debt securities – Total | Fair value hierarchy | | | 2011 |
|---|---|---|---|---|
| | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| UK Government | **18,138** | **124** | **—** | **18,262** |
| Non-UK Government | **36,389** | **4,274** | **911** | **41,574** |
| Europe | **33,222** | **656** | **745** | **34,623** |
| North America | **906** | **3,468** | **7** | **4,381** |
| Asia Pacific & Other | **2,261** | **150** | **159** | **2,570** |
| Corporate bonds – Public utilities | **5,700** | **3,284** | **31** | **9,015** |
| Corporate convertible bonds | **294** | **120** | **21** | **435** |
| Other corporate bonds | **39,174** | **28,497** | **6,922** | **74,593** |
| Other | **3,488** | **5,923** | **55** | **9,466** |
| **Total** | **103,183** | **42,222** | **7,940** | **153,345** |
| **Total %** | **67.3%** | **27.5%** | **5.2%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 98,908 | 41,236 | 8,707 | 148,851 |
| 2010 Total % (excluding Delta Lloyd) | 66.5% | 27.7% | 5.8% | 100.0% |

| Debt securities – Policyholder assets | Fair value hierarchy | | | 2011 |
|---|---|---|---|---|
| | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| UK Government | **4,660** | **—** | **—** | **4,660** |
| Non-UK Government | **2,187** | **36** | **19** | **2,242** |
| Europe | **1,641** | **34** | **—** | **1,675** |
| North America | **147** | **—** | **—** | **147** |
| Asia Pacific & Other | **399** | **2** | **19** | **420** |
| Corporate bonds – Public utilities | **355** | **—** | **2** | **357** |
| Corporate convertible bonds | **5** | **—** | **—** | **5** |
| Other corporate bonds | **4,815** | **2,470** | **60** | **7,345** |
| Other | **470** | **211** | **5** | **686** |
| **Total** | **12,492** | **2,717** | **86** | **15,295** |
| **Total %** | **81.6%** | **17.8%** | **0.6%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 10,939 | 3,146 | 120 | 14,205 |
| 2010 Total % (excluding Delta Lloyd) | 77.1% | 22.1% | 0.8% | 100.0% |

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.1 – Debt securities continued

| | | | | 2011 |
|---|---|---|---|---|
| | Fair value hierarchy | | | |
| Debt securities – Participating fund assets | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| UK Government | **10,878** | **9** | **—** | **10,887** |
| Non-UK Government | **27,612** | **444** | **733** | **28,789** |
| Europe | **25,837** | **385** | **733** | **26,955** |
| North America | **223** | **38** | **—** | **261** |
| Asia Pacific & Other | **1,552** | **21** | **—** | **1,573** |
| Corporate bonds – Public utilities | **2,650** | **244** | **14** | **2,908** |
| Corporate convertible bonds | **283** | **—** | **20** | **303** |
| Other corporate bonds | **24,801** | **2,792** | **6,526** | **34,119** |
| Other | **1,429** | **1,015** | **—** | **2,444** |
| **Total** | **67,653** | **4,504** | **7,293** | **79,450** |
| **Total %** | **85.2%** | **5.7%** | **9.1%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 66,929 | 5,805 | 7,742 | 80,476 |
| 2010 Total % (excluding Delta Lloyd) | 83.2% | 7.2% | 9.6% | 100.0% |

| | | | | 2011 |
|---|---|---|---|---|
| | Fair value hierarchy | | | |
| Debt securities – Shareholder assets | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| UK Government | **2,600** | **115** | **—** | **2,715** |
| Non-UK Government | **6,590** | **3,794** | **159** | **10,543** |
| Europe | **5,744** | **237** | **12** | **5,993** |
| North America | **536** | **3,430** | **7** | **3,973** |
| Asia Pacific & Other | **310** | **127** | **140** | **577** |
| Corporate bonds – Public utilities | **2,695** | **3,040** | **15** | **5,750** |
| Corporate convertible bonds | **6** | **120** | **1** | **127** |
| Other corporate bonds | **9,558** | **23,235** | **336** | **33,129** |
| Other | **1,589** | **4,697** | **50** | **6,336** |
| **Total** | **23,038** | **35,001** | **561** | **58,600** |
| **Total %** | **39.3%** | **59.7%** | **1.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 21,040 | 32,285 | 845 | 54,170 |
| 2010 Total % (excluding Delta Lloyd) | 38.8% | 59.6% | 1.6% | 100.0% |

Only 1.0% *(31 December 2010: 1.6%)* of shareholder 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.

39% *(31 December 2010: 39%)* of shareholder exposure to debt securities is based on quoted prices in an active market and are therefore classified as Fair Value Level 1. The majority of the debt instruments held by our North American businesses are valued by independent pricing firms in accordance with usual market practice in that region and consistent with other companies operating in the region are classified as Level 2 in the Fair Value hierarchy. Excluding our North American businesses, the proportion of shareholder debt securities classified as Level 1 in the Fair Value hierarchy would be 84% *(31 December 2010: 83%)*.

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.1 – Debt securities continued

| Debt securities – Total 2011 | External ratings AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Non-rated £m | Total £m |
|---|---|---|---|---|---|---|---|
| **Government** | | | | | | | |
| UK Government | **18,077** | **21** | **—** | **—** | **—** | **146** | **18,244** |
| UK local authorities | **1** | **—** | **—** | **—** | **—** | **17** | **18** |
| Non-UK Government | **20,462** | **7,094** | **11,908** | **1,370** | **581** | **159** | **41,574** |
| | **38,540** | **7,115** | **11,908** | **1,370** | **581** | **322** | **59,836** |
| **Corporate** | | | | | | | |
| Public utilities | **96** | **802** | **5,128** | **2,528** | **132** | **329** | **9,015** |
| Convertibles and bonds with warrants | **6** | **—** | **57** | **342** | **26** | **4** | **435** |
| Other corporate bonds | **6,857** | **11,192** | **26,963** | **19,312** | **2,669** | **7,600** | **74,593** |
| | **6,959** | **11,994** | **32,148** | **22,182** | **2,827** | **7,933** | **84,043** |
| **Certificates of deposits** | **—** | **208** | **566** | **947** | **199** | **2** | **1,922** |
| **Structured** | | | | | | | |
| RMBS[1] non-agency ALT A[2] | **5** | **4** | **—** | **21** | **130** | **—** | **160** |
| RMBS[1] non-agency prime | **285** | **22** | **8** | **—** | **44** | **—** | **359** |
| RMBS[1] agency | **1,378** | **—** | **—** | **—** | **—** | **—** | **1,378** |
| | **1,668** | **26** | **8** | **21** | **174** | **—** | **1,897** |
| CMBS[3] | **1,501** | **208** | **442** | **138** | **204** | **1** | **2,494** |
| ABS[4] | **775** | **200** | **311** | **82** | **101** | **24** | **1,493** |
| CDO (including CLO)[5] | **—** | **—** | **—** | **—** | **51** | **—** | **51** |
| ABCP[6] | **—** | **40** | **—** | **—** | **—** | **—** | **40** |
| | **2,276** | **448** | **753** | **220** | **356** | **25** | **4,078** |
| Wrapped credit | **—** | **292** | **127** | **131** | **51** | **66** | **667** |
| Other | **316** | **84** | **309** | **117** | **64** | **12** | **902** |
| **Total** | **49,759** | **20,167** | **45,819** | **24,988** | **4,252** | **8,360** | **153,345** |
| **Total %** | **32.3%** | **13.2%** | **29.9%** | **16.3%** | **2.8%** | **5.5%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 49,659 | 28,043 | 35,344 | 24,993 | 3,996 | 6,815 | 148,850 |
| 2010 Total % (excluding Delta Lloyd) | 33.4% | 18.8% | 23.7% | 16.8% | 2.7% | 4.6% | 100.0% |

1. RMBS - Residential Mortgage Backed Security.
2. ALT A - Alternative A – paper.
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.

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.1 – Debt securities continued

| Debt securities – Policyholder assets 2011 | External ratings AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Non-rated £m | Total £m |
|---|---|---|---|---|---|---|---|
| **Government** | | | | | | | |
| UK Government | **4,659** | **—** | **—** | **—** | **—** | **—** | **4,659** |
| UK local authorities | **1** | **—** | **—** | **—** | **—** | **—** | **1** |
| Non-UK Government | **838** | **159** | **870** | **202** | **126** | **47** | **2,242** |
| | **5,498** | **159** | **870** | **202** | **126** | **47** | **6,902** |
| **Corporate** | | | | | | | |
| Public utilities | **—** | **43** | **181** | **94** | **21** | **18** | **357** |
| Convertibles and bonds with warrants | **—** | **—** | **—** | **1** | **—** | **4** | **5** |
| Other corporate bonds | **693** | **767** | **2,575** | **2,641** | **171** | **498** | **7,345** |
| | **693** | **810** | **2,756** | **2,736** | **192** | **520** | **7,707** |
| **Certificates of deposits** | **—** | **129** | **229** | **161** | **48** | **2** | **569** |
| **Structured** | | | | | | | |
| RMBS non-agency ALT A | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| RMBS non-agency prime | **1** | **—** | **3** | **—** | **—** | **—** | **4** |
| RMBS agency | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **1** | **—** | **3** | **—** | **—** | **—** | **4** |
| CMBS | **10** | **3** | **—** | **—** | **—** | **—** | **13** |
| ABS | **6** | **7** | **49** | **—** | **3** | — | **65** |
| CDO (including CLO) | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| ABCP | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **16** | **10** | **49** | **—** | **3** | **—** | **78** |
| Wrapped credit | **—** | **24** | **1** | **2** | **2** | **2** | **31** |
| Other | **—** | **—** | **4** | **—** | **—** | **—** | **4** |
| **Total** | **6,208** | **1,132** | **3,912** | **3,101** | **371** | **571** | **15,295** |
| **Total %** | **40.6%** | **7.4%** | **25.6%** | **20.3%** | **2.4%** | **3.7%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 4,689 | 1,733 | 3,910 | 3,369 | 340 | 165 | 14,206 |
| 2010 Total % (excluding Delta Lloyd) | 33.0% | 12.2% | 27.5% | 23.7% | 2.4% | 1.2% | 100.0% |

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.1 – Debt securities continued

| Debt securities – Participating fund assets 2011 | AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Non-rated £m | Total £m |
|---|---|---|---|---|---|---|---|
| | External ratings | | | | | | |
| **Government** | | | | | | | |
| UK Government | **10,876** | **—** | **—** | **—** | **—** | **11** | **10,887** |
| UK local authorities | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| Non-UK Government | **13,997** | **4,539** | **9,067** | **903** | **242** | **41** | **28,789** |
| | **24,873** | **4,539** | **9,067** | **903** | **242** | **52** | **39,676** |
| **Corporate** | | | | | | | |
| Public utilities | **71** | **203** | **1,887** | **663** | **31** | **53** | **2,908** |
| Convertibles and bonds with warrants | **—** | **—** | **21** | **256** | **26** | **—** | **303** |
| Other corporate bonds | **4,957** | **6,245** | **12,456** | **7,108** | **1,022** | **2,331** | **34,119** |
| | **5,028** | **6,448** | **14,364** | **8,027** | **1,079** | **2,384** | **37,330** |
| **Certificates of deposits** | **—** | **25** | **193** | **690** | **50** | **—** | **958** |
| **Structured** | | | | | | | |
| RMBS non-agency ALT A | **—** | **—** | **—** | **—** | **5** | **—** | **5** |
| RMBS non-agency prime | **140** | **—** | **5** | **—** | **—** | **—** | **145** |
| RMBS agency | **41** | **—** | **—** | **—** | **—** | **—** | **41** |
| | **181** | **—** | **5** | **—** | **5** | **—** | **191** |
| CMBS | **151** | **27** | **26** | **12** | **8** | **—** | **224** |
| ABS | **72** | **35** | **104** | **28** | **28** | **—** | **267** |
| CDO (including CLO) | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| ABCP | **—** | **—** | **—** | **—** | **—** | **—** | **—** |
| | **223** | **62** | **130** | **40** | **36** | **—** | **491** |
| Wrapped credit | **—** | **71** | **16** | **39** | **6** | **6** | **138** |
| Other | **235** | **59** | **229** | **87** | **47** | **9** | **666** |
| **Total** | **30,540** | **11,204** | **24,004** | **9,786** | **1,465** | **2,451** | **79,450** |
| **Total %** | **38.4%** | **14.1%** | **30.2%** | **12.3%** | **1.8%** | **3.2%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 31,690 | 18,198 | 16,638 | 10,688 | 1,510 | 1,750 | 80,474 |
| 2010 Total % (excluding Delta Lloyd) | 39.4% | 22.6% | 20.6% | 13.3% | 1.9% | 2.2% | 100.0% |

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.1 – Debt securities continued

| Debt securities – Shareholder assets 2011 | AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Non-rated £m | Total £m |
|---|---|---|---|---|---|---|---|
| | External ratings | | | | | | |
| **Government** | | | | | | | |
| UK Government | **2,542** | **21** | **—** | **—** | **—** | **135** | **2,698** |
| UK local authorities | **—** | **—** | **—** | **—** | **—** | **17** | **17** |
| Non-UK Government | **5,627** | **2,396** | **1,971** | **265** | **213** | **71** | **10,543** |
| | **8,169** | **2,417** | **1,971** | **265** | **213** | **223** | **13,258** |
| **Corporate** | | | | | | | |
| Public utilities | **25** | **556** | **3,060** | **1,771** | **80** | **258** | **5,750** |
| Convertibles and bonds with warrants | **6** | **—** | **36** | **85** | **—** | **—** | **127** |
| Other corporate bonds | **1,207** | **4,180** | **11,932** | **9,563** | **1,476** | **4,771** | **33,129** |
| | **1,238** | **4,736** | **15,028** | **11,419** | **1,556** | **5,029** | **39,006** |
| **Certificates of deposits** | **—** | **54** | **144** | **96** | **101** | **—** | **395** |
| **Structured** | | | | | | | |
| RMBS non-agency ALT A | **5** | **4** | **—** | **21** | **125** | **—** | **155** |
| RMBS non-agency prime | **144** | **22** | **—** | **—** | **44** | **—** | **210** |
| RMBS agency | **1,337** | **—** | **—** | **—** | **—** | **—** | **1,337** |
| | **1,486** | **26** | **—** | **21** | **169** | **—** | **1,702** |
| CMBS | **1,340** | **178** | **416** | **126** | **196** | **1** | **2,257** |
| ABS | **697** | **158** | **158** | **54** | **70** | **24** | **1,161** |
| CDO (including CLO) | **—** | **—** | **—** | **—** | **51** | **—** | **51** |
| ABCP | **—** | **40** | **—** | **—** | **—** | **—** | **40** |
| | **2,037** | **376** | **574** | **180** | **317** | **25** | **3,509** |
| Wrapped credit | **—** | **197** | **110** | **90** | **43** | **58** | **498** |
| Other | **81** | **25** | **76** | **30** | **17** | **3** | **232** |
| **Total** | **13,011** | **7,831** | **17,903** | **12,101** | **2,416** | **5,338** | **58,600** |
| **Total %** | **22.2%** | **13.4%** | **30.6%** | **20.7%** | **4.1%** | **9.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 13,280 | 8,112 | 14,796 | 10,936 | 2,146 | 4,900 | 54,170 |
| 2010 Total % (excluding Delta Lloyd) | 24.5% | 15.0% | 27.3% | 20.2% | 4.0% | 9.0% | 100.0% |

The overall quality of the book remains strong, despite the continuing downgrade activity by the major rating agencies during the year. 23% of shareholder exposure to debt securities is in Government holdings *(31 December 2010 excluding Delta Lloyd: 23%)*. Our corporate debt securities portfolio represents 67% *(31 December 2010 excluding Delta Lloyd: 65%)* of total shareholder debt securities.

The majority of non-rated corporate bonds are held by our businesses in the US and UK.

At 31 December 2011, the proportion of our shareholder debt securities that are investment grade remained stable at 87% *(31 December 2010 excluding Delta Lloyd: 87%)*. The remaining 13% of shareholder debt securities that do not have an external rating of BBB or higher can be split as follows:

- 4% are debt securities that are rated as below investment grade
- 5% are US private placements which are not rated by the major ratings agencies, but are rated as an average equivalent of A by the Securities Valuation Office of the National Association of Insurance Commissioners (NAIC), a US national regulatory agency
- 4% are not rated by the major rating agencies or the NAIC

Of the securities not rated by an external agency or NAIC most are allocated an internal rating using a methodology largely consistent with that adopted by an external ratings agency, and are considered to be of investment grade credit quality; these include £2.4 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.

## D3 – Analysis of asset quality continued

### D3.4 – Financial investments continued

The majority of the Residential Mortgage-Backed Securities (RMBS) are US investments and over 71% of this exposure is backed by one of the US Government Sponsored Entities (GSEs) including Fannie Mae and Freddie Mac which, under the conservatorship arrangements implemented in September 2008, have an implicit guarantee, although they are not expressly backed by the full faith and credit of the US Government.

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

Asset backed securities (ABS) are held primarily by our US business. 92% of the Group's shareholder holdings in ABS are investment grade. ABS that either have a rating below BBB or are not rated represent less than 0.2% of shareholder exposure to debt securities.

#### D3.4.2 – Equity securities

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | Fair value hierarchy | | | | Fair value hierarchy | | | |
| **Equity securities – Total** | **Level 1 £m** | **Level 2 £m** | **Level 3 £m** | **Total £m** | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| Public utilities | **4,132** | **—** | **1** | **4,133** | 4,045 | — | — | 4,045 |
| Banks, trusts and insurance companies | **5,763** | **99** | **403** | **6,265** | 5,223 | 316 | 364 | 5,903 |
| Industrial miscellaneous and all other | **21,605** | **174** | **79** | **21,858** | 25,150 | 24 | 86 | 25,260 |
| Non-redeemable preferred shares | **56** | **371** | **—** | **427** | 61 | 196 | 4 | 261 |
| **Total** | **31,556** | **644** | **483** | **32,683** | 34,479 | 536 | 454 | 35,469 |
| **Total %** | **96.6%** | **2.0%** | **1.4%** | **100.0%** | 97.2% | 1.5% | 1.3% | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | Fair value hierarchy | | | | Fair value hierarchy | | | |
| **Equity securities – Policyholder assets** | **Level 1 £m** | **Level 2 £m** | **Level 3 £m** | **Total £m** | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| Public utilities | **2,728** | **—** | **—** | **2,728** | 2,689 | — | — | 2,689 |
| Banks, trusts and insurance companies | **3,386** | **—** | **—** | **3,386** | 3,464 | 238 | 3 | 3,705 |
| Industrial miscellaneous and all other | **14,282** | **166** | **7** | **14,455** | 16,151 | 20 | 6 | 16,177 |
| Non-redeemable preferred shares | **33** | **—** | **—** | **33** | 19 | — | — | 19 |
| **Total** | **20,429** | **166** | **7** | **20,602** | 22,323 | 258 | 9 | 22,590 |
| **Total %** | **99.2%** | **0.8%** | **—** | **100.0%** | 98.8% | 1.2% | — | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | Fair value hierarchy | | | | Fair value hierarchy | | | |
| **Equity securities – 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 |
| Public utilities | **1,368** | **—** | **—** | **1,368** | 1,334 | — | — | 1,334 |
| Banks, trusts and insurance companies | **2,211** | **—** | **70** | **2,281** | 1,558 | — | 9 | 1,567 |
| Industrial miscellaneous and all other | **7,048** | **6** | **62** | **7,116** | 8,752 | 2 | 71 | 8,825 |
| Non-redeemable preferred shares | **23** | **—** | **—** | **23** | 40 | — | — | 40 |
| **Total** | **10,650** | **6** | **132** | **10,788** | 11,684 | 2 | 80 | 11,766 |
| **Total %** | **98.7%** | **0.1%** | **1.2%** | **100.0%** | 99.3% | — | 0.7% | 100.0% |

| | 2011 | | | | 2010 Excluding Delta Lloyd | | | |
|---|---|---|---|---|---|---|---|---|
| | Fair value hierarchy | | | | Fair value hierarchy | | | |
| **Equity securities – Shareholder assets** | **Level 1 £m** | **Level 2 £m** | **Level 3 £m** | **Total £m** | Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
| Public utilities | **36** | **—** | **1** | **37** | 22 | — | — | 22 |
| Banks, trusts and insurance companies | **166** | **99** | **333** | **598** | 201 | 78 | 352 | 631 |
| Industrial miscellaneous and all other | **275** | **2** | **10** | **287** | 247 | 2 | 9 | 258 |
| Non-redeemable preferred shares | **—** | **371** | **—** | **371** | 2 | 196 | 4 | 202 |
| **Total** | **477** | **472** | **344** | **1,293** | 472 | 276 | 365 | 1,113 |
| **Total %** | **36.9%** | **36.5%** | **26.6%** | **100.0%** | 42.4% | 24.8% | 32.8% | 100.0% |

37% *(31 December 2010: 42%)* of our shareholder exposure to equity securities is based on quoted prices in an active market and as such is classified as Level 1. The increase in absolute amount and relative proportion of Level 2 shareholder equities is principally a result of an increase of £176 million in non-redeemable preference shares held by our Canadian business unit, following a strategic decision to further invest in this asset class. As a result, Level 2 shareholder equities as a proportion of total shareholder equities have increased from 25% in 2010 to 37% at 31 December 2011.

Shareholder investments include our strategic holdings in UniCredit and other Italian banks of £439 million (£288 million net of non-controlling interest share).

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.3 – Other investments

| Other investments – Total | 2011 Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | 2011 Total £m | 2010 Excluding Delta Lloyd Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
|---|---|---|---|---|---|---|---|---|
| Unit trusts and other investment vehicles | **20,690** | **3,774** | **2,796** | **27,260** | 29,015 | 983 | 2,522 | 32,520 |
| Derivative financial instruments | **343** | **1,139** | **16** | **1,498** | 115 | 1,050 | 10 | 1,175 |
| Deposits with credit institutions | **403** | **—** | **24** | **427** | 228 | 11 | 28 | 267 |
| Minority holdings in property management undertakings | **—** | **617** | **—** | **617** | — | 664 | — | 664 |
| Other | **466** | **—** | **109** | **575** | 558 | 48 | 108 | 714 |
| **Total** | **21,902** | **5,530** | **2,945** | **30,377** | 29,916 | 2,756 | 2,668 | 35,340 |
| **Total %** | **72.1%** | **18.2%** | **9.7%** | **100.0%** | 84.7% | 7.8% | 7.5% | 100.0% |

| Other investments – Policyholder assets | 2011 Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | 2011 Total £m | 2010 Excluding Delta Lloyd Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
|---|---|---|---|---|---|---|---|---|
| Unit trusts and other investment vehicles | **19,299** | **3,188** | **59** | **22,546** | 25,661 | 379 | — | 26,040 |
| Derivative financial instruments | **16** | **31** | **2** | **49** | 13 | 61 | — | 74 |
| Deposits with credit institutions | **158** | **—** | **—** | **158** | 28 | — | — | 28 |
| Minority holdings in property management undertakings | **—** | **22** | **—** | **22** | — | 11 | — | 11 |
| Other | **458** | **—** | **—** | **458** | 547 | — | — | 547 |
| **Total** | **19,931** | **3,241** | **61** | **23,233** | 26,249 | 451 | — | 26,700 |
| **Total %** | **85.8%** | **13.9%** | **0.3%** | **100.0%** | 98.3% | 1.7% | — | 100.0% |

| Other investments – Participating fund assets | 2011 Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | 2011 Total £m | 2010 Excluding Delta Lloyd Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
|---|---|---|---|---|---|---|---|---|
| Unit trusts and other investment vehicles | **1,250** | **486** | **2,284** | **4,020** | 3,079 | 402 | 2,260 | 5,741 |
| Derivative financial instruments | **74** | **288** | **—** | **362** | 35 | 90 | — | 125 |
| Deposits with credit institutions | **61** | **—** | **—** | **61** | 39 | — | — | 39 |
| Minority holdings in property management undertakings | **—** | **579** | **—** | **579** | — | 593 | — | 593 |
| Other | **—** | **—** | **56** | **56** | 2 | 46 | 57 | 105 |
| **Total** | **1,385** | **1,353** | **2,340** | **5,078** | 3,155 | 1,131 | 2,317 | 6,603 |
| **Total %** | **27.3%** | **26.6%** | **46.1%** | **100.0%** | 47.8% | 17.1% | 35.1% | 100.0% |

| Other investments – Shareholder assets | 2011 Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | 2011 Total £m | 2010 Excluding Delta Lloyd Fair value hierarchy Level 1 £m | Level 2 £m | Level 3 £m | Total £m |
|---|---|---|---|---|---|---|---|---|
| Unit trusts and other investment vehicles | **141** | **100** | **453** | **694** | 275 | 202 | 262 | 739 |
| Derivative financial instruments | **253** | **820** | **14** | **1,087** | 67 | 899 | 10 | 976 |
| Deposits with credit institutions | **184** | **—** | **24** | **208** | 161 | 11 | 28 | 200 |
| Minority holdings in property management undertakings | **—** | **16** | **—** | **16** | — | 60 | — | 60 |
| Other | **8** | **—** | **53** | **61** | 9 | 2 | 51 | 62 |
| **Total** | **586** | **936** | **544** | **2,066** | 512 | 1,174 | 351 | 2,037 |
| **Total %** | **28.4%** | **45.3%** | **26.3%** | **100.0%** | 25.1% | 57.7% | 17.2% | 100.0% |

In total 74% *(31 December 2010: 83%)* of shareholder other investments, are classified as Level 1 or 2 in the fair value hierarchy. The unit trusts and other investment vehicles invest in a variety of assets with the majority of the value being invested in Property and Equity securities with a smaller portion being invested in Debt Securities. The increase in Level 3 shareholder Other investments is primarily due to an additional investment in hedge funds of £193 million made by the US business.

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.4 – Available for sale investments – Impairments and duration and amount of unrealised losses

The total impairment expense for 2011 for AFS debt securities was £19 million *(31 December 2010: £78 million)* less reversals of £nil (2010:£2 million).

Total unrealised losses at 31 December 2011 on AFS debt securities and other investments were £229 million *(31 December 2010: £252 million)* and £10 million *(31 December 2010: £nil)*, respectively. The continuous period for which these AFS classified securities have been in an unrealised loss position is disclosed below:

| 2011<br>Excluding Delta Lloyd | 0 – 6 months<br>Fair value[1]<br>£m | 0 – 6 months<br>Gross unrealised<br>£m | 7 – 12 months<br>Fair value[1]<br>£m | 7 – 12 months<br>Gross unrealised<br>£m | More than 12 months<br>Fair value[1]<br>£m | More than 12 months<br>Gross unrealised<br>£m | Total<br>Fair value[1]<br>£m | Total<br>Gross unrealised<br>£m |
|---|---|---|---|---|---|---|---|---|
| Less than 20% loss position: | | | | | | | | |
| Debt securities | 1,781 | (52) | 353 | (23) | 540 | (33) | 2,674 | (108) |
| Equity securities | — | — | — | — | 2 | — | 2 | — |
| Other investments | 50 | (2) | 150 | (8) | 8 | — | 208 | (10) |
| | 1,831 | (54) | 503 | (31) | 550 | (33) | 2,884 | (118) |
| 20%-50% loss position: | | | | | | | | |
| Debt securities | 14 | (7) | 15 | (5) | 168 | (76) | 197 | (88) |
| Equity securities | — | — | — | — | — | — | — | — |
| Other investments | — | — | — | — | — | — | — | — |
| | 14 | (7) | 15 | (5) | 168 | (76) | 197 | (88) |
| Greater than 50% loss position: | | | | | | | | |
| Debt securities | 1 | (2) | 1 | (2) | 16 | (29) | 18 | (33) |
| Equity securities | — | — | — | — | — | — | — | — |
| Other investments | — | — | — | — | — | — | — | — |
| | 1 | (2) | 1 | (2) | 16 | (29) | 18 | (33) |
| Total | | | | | | | | |
| Debt securities | 1,796 | (61) | 369 | (30) | 724 | (138) | 2,889 | (229) |
| Equity securities | — | — | — | — | 2 | — | 2 | — |
| Other investments | 50 | (2) | 150 | (8) | 8 | — | 208 | (10) |
| | 1,846 | (63) | 519 | (38) | 734 | (138) | 3,099 | (239) |

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

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.4 – Available for sale investments – Impairments and duration and amount of unrealised losses continued

| 2010<br>Excluding Delta Lloyd | 0 – 6 months<br>Fair value[1]<br>£m | <br>Gross unrealised<br>£m | 7 – 12 months<br>Fair value[1]<br>£m | <br>Gross unrealised<br>£m | More than 12 months<br>Fair value[1]<br>£m | <br>Gross unrealised<br>£m | Total<br>Fair value[1]<br>£m | <br>Gross unrealised<br>£m |
|---|---|---|---|---|---|---|---|---|
| Less than 20% loss position: | | | | | | | | |
| Debt securities | 4,157 | (134) | 71 | (4) | 917 | (57) | 5,145 | (195) |
| Equity securities | — | — | — | — | — | — | — | — |
| Other investments | 69 | — | — | — | — | — | 69 | — |
| | 4,226 | (134) | 71 | (4) | 917 | (57) | 5,214 | (195) |
| 20%-50% loss position: | | | | | | | | |
| Debt securities | 18 | (7) | — | — | 39 | (18) | 57 | (25) |
| Equity securities | 2 | (1) | — | — | — | — | 2 | (1) |
| Other investments | — | — | — | — | — | — | — | — |
| | 20 | (8) | — | — | 39 | (18) | 59 | (26) |
| Greater than 50% loss position: | | | | | | | | |
| Debt securities | 2 | (5) | — | — | 10 | (27) | 12 | (32) |
| Equity securities | — | — | — | — | — | — | — | — |
| Other investments | — | — | — | — | — | — | — | — |
| | 2 | (5) | — | — | 10 | (27) | 12 | (32) |
| Total | | | | | | | | |
| Debt securities | 4,177 | (146) | 71 | (4) | 966 | (102) | 5,214 | (252) |
| Equity securities | 2 | (1) | — | — | — | — | 2 | (1) |
| Other investments | 69 | — | — | — | — | — | 69 | — |
| | 4,248 | (147) | 71 | (4) | 966 | (102) | 5,285 | (253) |

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

We have not recognised an impairment charge in respect of unrealised losses as we believe the decline in fair value of these securities relative to their amortised cost to be temporary.

At 31 December 2011, 98% of the AFS debt securities were held by our US business. In respect of debt securities in an unrealised loss position, we have the intent to hold these securities for a sufficient period to recover their value in full and the ability to hold them to maturity, as they are held to match long-term policyholder liabilities of the same or longer duration. In the US the decrease in unrealised losses experienced during 2011, reflects a decrease in the US government treasury yield curve, partially offset by widening credit spreads. In addition, a continued reversal of unrealised losses would be expected as bonds purchased at historically low credit spreads pre-financial crisis approach maturity. Where factors specific to an issuer have resulted in an unrealised loss we have considered whether the security is impaired and recognised an impairment charge where necessary.

Of the total AFS debt security impairment expense for 2011, £19 million relates to our US business, of which £12 million relates to Alt-A securities and £6 million to commercial mortgage backed securities, that are not yet in default but showed continued deterioration in market values, NAIC rating downgrades or defaults on more junior tranches which are considered indicators of impairment.

# D3 – Analysis of asset quality continued

## D3.4 – Financial investments continued

### D3.4.5 – Exposures to peripheral European countries

As with other disclosures in the analysis of assets section, all current and comparative figures stated below exclude Delta Lloyd.

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 balance sheet and profit and loss statement already reflect any reduction in value between the date of purchase and the balance sheet date. The significant majority of these holdings is 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 assets exposure to the governments (and local authorities and agencies) of Greece, Ireland, Portugal, Italy and Spain has reduced since 2010 and is detailed below. 86% *(FY10: 80%)* of our shareholder asset exposure to Greece, Ireland, Italy, Portugal and Spain arises from investment exposure in businesses domiciled in the respective countries.

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

| 2011 | Participating fund assets £billion | Shareholder assets £billion | Total £billion |
|---|---|---|---|
| Greece | — | — | — |
| Ireland | **0.3** | **0.2** | **0.5** |
| Portugal | **0.2** | — | **0.2** |
| Italy | **5.6** | **0.8** | **6.4** |
| Spain | **0.8** | **0.3** | **1.1** |
| **Total Greece, Ireland, Portugal, Italy and Spain** | **6.9** | **1.3** | **8.2** |
| FY10 Greece, Ireland, Portugal, Italy and Spain | 6.2 | 1.6 | 7.8 |

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

| 2011 | Participating fund assets £billion | Shareholder assets £billion | Total £billion |
|---|---|---|---|
| Greece | — | — | — |
| Ireland | **0.4** | **0.2** | **0.6** |
| Portugal | **0.2** | — | **0.2** |
| Italy | **9.7** | **1.1** | **10.8** |
| Spain | **1.0** | **0.6** | **1.6** |
| **Total Greece, Ireland, Portugal, Italy and Spain** | **11.3** | **1.9** | **13.2** |
| FY10 Greece, Ireland, Portugal, Italy and Spain | 11.3 | 2.0 | 13.3 |

## D3 – Analysis of asset quality continued

### D3.4.6 -Exposure to worldwide banks debt and equity securities

*Direct shareholder exposures to worldwide banks – debt and equity securities (net of non-controlling interests, excluding policyholder assets)*

| | Debt securities | | | | | | | | | Equity securities | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Senior debt | | | Subordinated debt | | | | | | | | |
| Shareholder assets – debt and equity securities | Covered/ secured £bn | Senior unsecured £bn | Total senior debt £bn | Lower tier2 £bn | Upper tier 2 £bn | Tier1 £bn | Untiered £bn | Total subordinated debt £bn | Total £bn | Preferred shares £bn | Ordinary shares £bn | Total equity securities £bn |
| Austria | — | — | — | — | — | — | — | — | — | — | — | — |
| Belgium | — | — | — | — | — | — | — | — | — | — | — | — |
| Finland | — | — | — | — | — | — | — | — | — | — | — | — |
| France | 0.1 | 0.1 | 0.2 | 0.1 | — | — | — | 0.1 | 0.3 | — | — | — |
| Germany | — | 0.1 | 0.1 | 0.1 | — | — | — | 0.1 | 0.2 | — | — | — |
| Ireland | — | — | — | — | — | — | — | — | — | — | — | — |
| Italy | — | 0.1 | 0.1 | — | — | — | — | — | 0.1 | — | 0.3 | 0.3 |
| Netherlands | — | 0.3 | 0.3 | 0.1 | — | — | — | 0.1 | 0.4 | — | — | — |
| Portugal | — | — | — | — | — | — | — | — | — | — | — | — |
| Spain | 0.5 | 0.1 | 0.6 | 0.2 | — | — | — | 0.2 | 0.8 | — | — | — |
| United Kingdom | 0.2 | 0.4 | 0.6 | 0.4 | — | 0.1 | — | 0.5 | 1.1 | — | — | — |
| United States | — | 1.1 | 1.1 | 0.4 | — | 0.1 | 0.4 | 0.9 | 2.0 | — | 0.1 | 0.1 |
| Other | — | 0.7 | 0.7 | 0.1 | 0.1 | 0.1 | — | 0.3 | 1.0 | 0.2 | — | 0.2 |
| **Total** | **0.8** | **2.9** | **3.7** | **1.4** | **0.1** | **0.3** | **0.4** | **2.2** | **5.9** | **0.2** | **0.4** | **0.6** |

Net of non-controlling interests, our direct shareholder assets exposure to worldwide bank debt securities and equities is £6.5 billion. The majority of our holding (57%) is in senior debt (covered, secured and senior unsecured). The primary exposures are to United States (32%) and United Kingdom (17%) banks. Our holdings include strategic holdings in Unicredit and other Italian banks of £288 million.

*Participating funds assets exposure to worldwide banks – debt and equity securities (net of non-controlling interests, excluding policyholder assets)*

| | Debt securities | | | | | | | | | Equity securities | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Senior debt | | | Subordinated debt | | | | | | | | |
| Participating funds assets – debt and equity securities | Covered/ secured £bn | Senior unsecured £bn | Total senior debt £bn | Lower tier2 £bn | Upper tier2 £bn | Tier1 £bn | Untiered £bn | Total subordinated debt £bn | Total £bn | Preferred shares £bn | Ordinary shares £bn | Total equity securities £bn |
| Austria | — | 0.2 | 0.2 | — | — | — | — | — | 0.2 | — | — | — |
| Belgium | — | — | — | — | — | — | — | — | — | — | — | — |
| France | 1.7 | 1.7 | 3.4 | — | 0.6 | 0.2 | — | 0.8 | 4.2 | — | — | — |
| Germany | — | 0.6 | 0.6 | 0.1 | 0.3 | — | — | 0.4 | 1.0 | — | — | — |
| Greece | — | — | — | — | — | — | — | — | — | — | — | — |
| Ireland | — | — | — | — | — | — | — | — | — | — | — | — |
| Italy | 0.1 | 0.2 | 0.3 | — | 0.1 | — | — | 0.1 | 0.4 | — | — | — |
| Netherlands | 0.1 | 1.4 | 1.5 | — | 0.2 | — | — | 0.2 | 1.7 | — | — | — |
| Portugal | — | 0.1 | 0.1 | — | — | — | — | — | 0.1 | — | — | — |
| Spain | 0.7 | 0.2 | 0.9 | 0.1 | 0.2 | — | — | 0.3 | 1.2 | — | — | — |
| United Kingdom | 0.2 | 0.6 | 0.8 | 0.4 | 0.6 | 0.1 | — | 1.1 | 1.9 | 0.1 | 0.4 | 0.5 |
| United States | — | 0.9 | 0.9 | 0.1 | — | — | — | 0.1 | 1.0 | — | — | — |
| Other | 0.1 | 1.8 | 1.9 | 0.4 | 0.1 | 0.1 | — | 0.6 | 2.5 | — | 0.4 | 0.4 |
| **Total** | **2.9** | **7.7** | **10.6** | **1.1** | **2.1** | **0.4** | **0.0** | **3.6** | **14.2** | **0.1** | **0.8** | **0.9** |

Net of non-controlling interests, the participating fund exposures to worldwide banks debt securities and equities is £15.1 billion. The majority of the exposure (70%) is in senior debt (covered, secured and senior unsecured). Participating funds are the most exposed to France (28%) and United Kingdom (16%) banks. 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.

## D3 – Analysis of asset quality continued

*Direct shareholder exposures to worldwide banks - debt and equity securities (gross of non-controlling interests, excluding policyholder assets)*

| | Debt securities | | | | | | | | | Equity securities | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Senior debt | | | Subordinated debt | | | | | | | | |
| Shareholder assets – debt and equity securities | Covered/ secured £bn | Senior unsecured £bn | Total senior debt £bn | Lower tier2 £bn | Upper tier2 £bn | Tier1 £bn | Untiered £bn | Total subordinated debt £bn | Total £bn | Preferred shares £bn | Ordinary shares £bn | Total equity securities £bn |
| Austria | — | — | — | — | — | — | — | — | — | — | — | — |
| Belgium | — | — | — | — | — | — | — | — | — | — | — | — |
| Finland | — | — | — | — | — | — | — | — | — | — | — | — |
| France | 0.1 | 0.1 | 0.2 | 0.1 | — | — | — | 0.1 | 0.3 | — | — | — |
| Germany | — | 0.1 | 0.1 | 0.1 | — | — | — | 0.1 | 0.2 | — | — | — |
| Ireland | 0.1 | — | 0.1 | — | — | — | — | — | 0.1 | — | — | — |
| Italy | — | 0.2 | 0.2 | — | — | — | — | — | 0.2 | — | 0.4 | 0.4 |
| Netherlands | — | 0.4 | 0.4 | 0.1 | — | 0.1 | — | 0.2 | 0.6 | — | — | — |
| Portugal | — | — | — | — | — | — | — | — | — | — | — | — |
| Spain | 0.8 | 0.1 | 0.9 | 0.2 | — | — | — | 0.2 | 1.1 | — | 0.1 | 0.1 |
| United Kingdom | 0.2 | 0.4 | 0.6 | 0.5 | — | — | — | 0.5 | 1.1 | — | — | — |
| United States | — | 1.1 | 1.1 | 0.4 | — | 0.1 | 0.4 | 0.9 | 2.0 | — | 0.1 | 0.1 |
| Other | — | 0.7 | 0.7 | 0.1 | 0.1 | 0.1 | — | 0.3 | 1.0 | 0.2 | — | 0.2 |
| **Total** | **1.2** | **3.1** | **4.3** | **1.5** | **0.1** | **0.3** | **0.4** | **2.3** | **6.6** | **0.2** | **0.6** | **0.8** |

Gross of non-controlling interests, our direct shareholder assets exposure to worldwide banks debt securities and equities is £7.4 billion. The majority of our holding (58%) is in senior debt (covered, secured and senior unsecured). The primary exposures are to United States (28%), Spain (16%) and United Kingdom (15%) banks. Our holdings include strategic holdings in Unicredit and other Italian banks of £439 million.

*Participating funds assets exposure to worldwide banks - debt and equity securities (gross of non-controlling interests, excluding policyholder assets)*

| | Debt securities | | | | | | | | | Equity securities | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Senior debt | | | Subordinated debt | | | | | | | | |
| Participating funds assets – debt and equity securities | Covered/ secured £bn | Senior unsecured £bn | Total senior debt £bn | Lower tier2 £bn | Upper tier2 £bn | Tier1 £bn | Untiered £bn | Total subordinated debt £bn | Total £bn | Preferred shares £bn | Ordinary shares £bn | Total equity securities £bn |
| Austria | — | 0.2 | 0.2 | — | — | — | — | — | 0.2 | — | — | — |
| Belgium | — | 0.1 | 0.1 | — | — | — | — | — | 0.1 | — | — | — |
| France | 1.9 | 1.8 | 3.7 | — | 0.7 | 0.2 | — | 0.9 | 4.6 | — | — | — |
| Germany | — | 0.6 | 0.6 | 0.1 | 0.3 | — | — | 0.4 | 1.0 | — | — | — |
| Greece | — | — | — | — | — | — | — | — | — | — | — | — |
| Ireland | — | — | — | — | — | — | — | — | — | — | — | — |
| Italy | 0.1 | 0.4 | 0.5 | — | 0.1 | — | — | 0.1 | 0.6 | — | — | — |
| Netherlands | 0.2 | 1.4 | 1.6 | 0.1 | 0.2 | — | — | 0.3 | 1.9 | — | — | — |
| Portugal | — | 0.1 | 0.1 | — | — | — | — | — | 0.1 | — | — | — |
| Spain | 1.0 | 0.3 | 1.3 | 0.1 | 0.2 | — | — | 0.3 | 1.6 | — | — | — |
| United Kingdom | 0.2 | 0.7 | 0.9 | 0.5 | 0.6 | 0.1 | — | 1.2 | 2.1 | 0.1 | 0.4 | 0.5 |
| United States | — | 0.9 | 0.9 | 0.1 | — | — | — | 0.1 | 1.0 | — | 0.1 | 0.1 |
| Other | 0.1 | 2.0 | 2.1 | 0.4 | 0.1 | 0.1 | — | 0.6 | 2.7 | — | 0.4 | 0.4 |
| **Total** | **3.5** | **8.5** | **12.0** | **1.3** | **2.2** | **0.4** | **0.0** | **3.9** | **15.9** | **0.1** | **0.9** | **1.0** |

Gross of non-controlling interests, the participating fund exposures to worldwide banks debt securities and equities is £16.9 billion. The majority of the exposure (71%) is in senior debt (covered, secured and senior unsecured). Participating funds are the most exposed to France (27%) and United Kingdom (15%) banks. 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.

## D3 – Analysis of asset quality continued

### D3.4.7 - Non UK Government Debt Securities (gross of non-controlling interests)

The following is a summary of non UK government debt by issuer as at 31 December 2011 analysed by policyholder, participating and shareholder funds.

| | | | | 31 December 2011 |
|---|---|---|---|---|
| Non UK Government Debt Securities[1] | Policyholder £m | Participating £m | Shareholder £m | Total £m |
| Austria | **28** | **512** | **58** | **598** |
| Belgium | **30** | **1,029** | **176** | **1,235** |
| France | **215** | **7,529** | **1,634** | **9,378** |
| Germany | **239** | **1,751** | **792** | **2,782** |
| Greece | **—** | **46** | **2** | **48** |
| Ireland | **33** | **378** | **216** | **627** |
| Italy | **273** | **9,670** | **1,056** | **10,999** |
| Netherlands | **63** | **1,284** | **136** | **1,483** |
| Poland | **509** | **720** | **329** | **1,558** |
| Portugal | **—** | **204** | **8** | **212** |
| Spain | **46** | **1,046** | **639** | **1,731** |
| European Supranational debt | **114** | **2,376** | **856** | **3,346** |
| Other European countries | **125** | **410** | **91** | **626** |
| **Europe** | **1,675** | **26,955** | **5,993** | **34,623** |
| Canada | **18** | **195** | **2,342** | **2,555** |
| United States | **129** | **66** | **1,631** | **1,826** |
| **North America** | **147** | **261** | **3,973** | **4,381** |
| Singapore | **8** | **309** | **211** | **528** |
| Sri Lanka | **21** | **2** | **139** | **162** |
| Other | **391** | **1,262** | **227** | **1,880** |
| **Asia Pacific and other** | **420** | **1,573** | **577** | **2,570** |
| **Total** | **2,242** | **28,789** | **10,543** | **41,574** |

1. As a result of the partial disposal of Aviva's stake in Delta Lloyd, from 6 May 2011 the Group has ceased to consolidate the results and net assets of the Delta Lloyd Group. Throughout the disclosure, therefore, Delta Lloyd has been excluded for the purposes of the 31 December 2010 to allow for a proper comparison, unless otherwise noted.

At 31 December 2011, the Group's total government (non-UK) debt securities stood at £41.6 billion *(FY10: £38.7 billion, excluding Delta Lloyd),* an increase of £2.9 billion. The significant majority of these holdings are within our participating funds where our 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 £10.5 billion *(FY10: £10.2 billion).* The primary exposures, relative to total shareholder (non-UK) government debt exposure, are to French (15.5%) and Italian (10.0%) (non-UK) government debt securities. Our combined exposure to Greek, Portuguese and Irish debt is £0.2 billion *(FY10: £0.5 billion),* a decrease of £0.3 billion.

The participating funds exposure to (non-UK) government debt amounts to £28.8 billion (*FY10: £26.2 billion*), an increase of £2.6 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 (26.2%), Italy (33.6%), Belgium (3.6%), Spain (3.6%), Germany (6.1%) and Netherlands (4.5%).

## D3 – Analysis of asset quality continued

| Non UK Government Debt Securities | 31 December 2010 Policyholder £m | Participating £m | Shareholder £m | Total £m |
|---|---|---|---|---|
| Austria | 35 | 551 | 36 | 622 |
| Belgium | 35 | 299 | 60 | 394 |
| France | 249 | 6,965 | 1,496 | 8,710 |
| Germany | 286 | 1,564 | 960 | 2,810 |
| Greece | 2 | 109 | 4 | 115 |
| Ireland | 48 | 530 | 455 | 1,033 |
| Italy | 344 | 9,415 | 1,148 | 10,907 |
| Netherlands | 58 | 804 | 88 | 950 |
| Poland | 522 | 839 | 343 | 1,704 |
| Portugal | 2 | 355 | 11 | 368 |
| Spain | 54 | 868 | 367 | 1,289 |
| European Supranational debt | 93 | 2,257 | 706 | 3,056 |
| Other European countries | 72 | 222 | 40 | 334 |
| **Europe** | 1,800 | 24,778 | 5,714 | 32,292 |
| Canada | 11 | 189 | 2,243 | 2,443 |
| United States | 116 | 30 | 1,649 | 1,795 |
| **North America** | 127 | 219 | 3,892 | 4,238 |
| Singapore | 6 | 350 | 141 | 497 |
| Sri Lanka | 11 | — | 108 | 119 |
| Other | 279 | 888 | 365 | 1,532 |
| **Asia Pacific and other** | 296 | 1,238 | 614 | 2,148 |
| Total (excluding Delta Lloyd) | 2,223 | 26,235 | 10,220 | 38,678 |
| Delta Lloyd | 1,292 | 3,744 | 6,806 | 11,842 |
| Total | 3,515 | 29,979 | 17,026 | 50,520 |

# D3 – Analysis of asset quality continued

## D3.5 – 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 the following approach:

- If available, Standard & Poor's rating;
- If the counterparty is not rated by Standard & Poor's, the AM Best rating is used;
- In the absence of a rating from either Standard & Poor's or AM Best, assets have been classified as non-rated.

| | | Financial assets that are past due but not impaired | | | | | |
|---|---|---|---|---|---|---|---|
| Arrears 2011 | 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 | Total £m |
| Policyholder assets | **1,454** | **—** | **—** | **—** | **—** | **—** | **1,454** |
| Participating fund assets | **684** | **—** | **—** | **—** | **—** | **—** | **684** |
| Shareholder assets | **4,974** | **—** | **—** | **—** | **—** | **—** | **4,974** |
| **Total** | **7,112** | **—** | **—** | **—** | **—** | **—** | **7,112** |
| **Total %** | **100.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **0.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 6,567 | — | — | — | — | — | 6,567 |
| 2010 Total % (excluding Delta Lloyd) | 100.0% | — | — | — | — | — | 100.0% |

| | | | | | Rating | | |
|---|---|---|---|---|---|---|---|
| Ratings 2011 | AAA £m | AA £m | A £m | BBB £m | Less than BBB £m | Non-rated £m | Total £m |
| Policyholder assets | **—** | **634** | **799** | **—** | **—** | **21** | **1,454** |
| Participating fund assets | **—** | **595** | **21** | **—** | **—** | **68** | **684** |
| Shareholder assets | **2** | **3,754** | **830** | **—** | **27** | **361** | **4,974** |
| **Total** | **2** | **4,983** | **1,650** | **—** | **27** | **450** | **7,112** |
| **Total %** | **0.0%** | **70.1%** | **23.2%** | **0.0%** | **0.4%** | **6.3%** | **100.0%** |
| 2010 Total (including Delta Lloyd) | 14 | 4,139 | 1,786 | 109 | 10 | 1,026 | 7,084 |
| 2010 Total % (including Delta Lloyd) | 0.2% | 58.4% | 25.3% | 1.5% | 0.1% | 14.5% | 100.0.% |

The main driver of the decrease in AAA rated exposures is the downgrade of Caisse Centrale de Reassurance by S&P during 2011. Movement from A to AA rated exposures is driven by the upgrade of Swiss Re by S&P during 2011. The total exposure to non-rated reinsurance entities decreased by £576 million from 2010 (including Delta Lloyd) to 2011.

## D3.6 – Receivables and other financial assets

| | | Financial assets that are past due but not impaired | | | | | |
|---|---|---|---|---|---|---|---|
| Arrears 2011 | 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 | Total £m |
| Policyholder assets | **175** | **8** | **—** | **—** | **—** | **—** | **183** |
| Participating fund assets | **2,334** | **—** | **—** | **—** | **—** | **—** | **2,334** |
| Shareholder assets | **5,154** | **126** | **148** | **2** | **3** | **—** | **5,433** |
| **Total** | **7,663** | **134** | **148** | **2** | **3** | **—** | **7,950** |
| **Total %** | **96.4%** | **1.7%** | **1.9%** | **0.0%** | **0.0%** | **0.0%** | **100.0%** |
| 2010 Total (excluding Delta Lloyd) | 7,179 | 39 | 17 | 29 | 10 | — | 7,274 |
| 2010 Total % (excluding Delta Lloyd) | 98.8% | 0.5% | 0.2% | 0.4% | 0.1% | 0.0% | 100.0% |

## D3 – Analysis of asset quality continued

### D3.6 – Receivables and other financial assets continued

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 Approvals Committee, and within the framework of the Group Credit Risk Policy.

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.

The Group reviews the carrying value of its receivables 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.

### D3.7 – 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 date of issue.

## D4 – Pension fund assets

In addition to the assets recognised directly on the Group's balance sheet outlined in the disclosures above, the Group is also exposed to the 'Plan 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.

Plan assets include insurance policies of £163 million in the UK scheme. The 2010 comparatives exclude insurance policies in the Dutch scheme which were considered non-transferable under the requirements of IAS 19 and so were excluded as assets of the relevant scheme in this table. Delta Lloyd ceased to be a subsidiary on 6 May 2011.

| | | | | | **2011** | | | | | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| | **United Kingdom £m** | **Delta Lloyd £m** | **Ireland £m** | **Canada £m** | **Total £m** | United Kingdom £m | Delta Lloyd £m | Ireland £m | Canada £m | Total £m |
| Equities | **735** | **—** | **46** | **76** | **857** | 2,435 | — | 50 | 54 | 2,539 |
| Bonds | **8,663** | **—** | **233** | **129** | **9,025** | 5,533 | — | 202 | 150 | 5,885 |
| Property | **657** | **—** | **13** | **—** | **670** | 558 | — | 17 | — | 575 |
| Other | **1,135** | **—** | **90** | **14** | **1,239** | 835 | 7 | 118 | 12 | 972 |
| Total | **11,190** | **—** | **382** | **219** | **11,791** | 9,361 | 7 | 387 | 216 | 9,971 |

### 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, each scheme's assets are invested in a diversified portfolio, consisting primarily of equity and debt securities. These reflect the current long-term asset allocation ranges chosen, having regard to the structure of liabilities within the schemes.

#### Main UK scheme

Both the Group and the trustees regularly review the asset/liability management of the main UK scheme. It is fully understood that, whilst the current asset mix is designed to produce appropriate long-term returns, this introduces a material risk of volatility in the scheme's surplus or deficit of assets compared with its liabilities.

The principal asset risks to which the scheme is exposed are:

- Equity market risk – the effect of equity market falls on the value of plan assets.
- Inflation risk – the effect of inflation rising faster than expected on the value of the plan liabilities.
- Interest rate risk – falling interest rates leading to an increase in liabilities significantly exceeding the increase in the value of assets.

There is also an exposure to currency risk where assets are not denominated in the same currency as the liabilities. The majority of this exposure has been removed by the use of hedging instruments.

In 2011, there has been a further reduction in the proportion of assets invested in equities, thereby mitigating the equity risk above. In addition, the trustees have taken further measures to partially mitigate inflation and interest rate risks.

#### 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.

## D5 – Available funds

To ensure access to liquidity as and when needed, the Group maintains over £2.1 billion of undrawn committed central borrowing facilities with various highly rated banks, £0.75 billion of which is allocated to support the credit rating of Aviva plc's £2 billion commercial paper programme. The expiry profile of the undrawn committed central borrowing facilities is as follows:

| | £m |
|---|---|
| Expiring in one year | **955** |
| Expiring beyond one year | **1,160** |
| **Total** | **2,115** |

## 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-profit 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).

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# MCEV Supplement

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## Condensed consolidated income statement – MCEV basis

For the year ended 31 December 2011

| | 2011 £m | | | Restated 2010 £m | | |
|---|---|---|---|---|---|---|
| | Continuing operations | Discontinued operations | Total | Continuing operations | Discontinued operations | Total |
| **Operating profit before tax attributable to shareholders' profits** | | | | | | |
| United Kingdom | **1,193** | **—** | **1,193** | 1,085 | — | 1,085 |
| Europe | **1,617** | **270** | **1,887** | 2,013 | 83 | 2,096 |
| North America | **241** | **—** | **241** | 289 | — | 289 |
| Asia Pacific | **78** | **—** | **78** | 109 | — | 109 |
| Long-term business | **3,129** | **270** | **3,399** | 3,496 | 83 | 3,579 |
| General insurance and health | **935** | **1** | **936** | 904 | 146 | 1,050 |
| Fund management[1] | **32** | **9** | **41** | 31 | 94 | 125 |
| Other operations and regional costs[2] | **(204)** | **7** | **(197)** | (171) | (24) | (195) |
| **Regional Operating Profit** | **3,892** | **287** | **4,179** | 4,260 | 299 | 4,559 |
| Corporate centre | **(138)** | **—** | **(138)** | (143) | — | (143) |
| Group debt costs and other interest | **(657)** | **(4)** | **(661)** | (644) | (12) | (656) |
| **Operating profit before tax attributable to shareholders' profits (excluding Delta Lloyd as an associate)** | **3,097** | **283** | **3,380** | 3,473 | 287 | 3,760 |
| **Share of operating profit (before tax) of Delta Lloyd as an associate** | **157** | **—** | **157** | — | — | — |
| **Operating profit before tax attributable to shareholders' profits** | **3,254** | **283** | **3,537** | 3,473 | 287 | 3,760 |
| Adjusted for the following: | | | | | | |
| Economic variances on long-term business | **(6,541)** | **(316)** | **(6,857)** | (450) | (71) | (521) |
| Short-term fluctuation in return on investments on non-long term business | **(266)** | **(60)** | **(326)** | (199) | (44) | (243) |
| Economic assumption changes on general insurance and health business | **(90)** | **—** | **(90)** | (61) | — | (61) |
| Impairment of goodwill | **(392)** | **—** | **(392)** | (23) | (1) | (24) |
| Amortisation and impairment of intangibles | **(266)** | **(5)** | **(271)** | (173) | (14) | (187) |
| Profit on the disposal of subsidiaries and associates | **565** | **159** | **724** | 163 | (4) | 159 |
| Integration and restructuring costs | **(212)** | **—** | **(212)** | (294) | (18) | (312) |
| Exceptional items | **(57)** | **—** | **(57)** | (303) | (125) | (428) |
| **Non-operating items before tax (excluding Delta Lloyd as an associate)** | **(7,259)** | **(222)** | **(7,481)** | (1,340) | (277) | (1,617) |
| Share of Delta Lloyd's non-operating items (before tax) as an associate | **10** | **—** | **10** | — | — | — |
| **Non-operating items before tax** | **(7,249)** | **(222)** | **(7,471)** | (1,340) | (277) | (1,617) |
| Share of Delta Lloyd's tax expense, as an associate | **(34)** | **—** | **(34)** | — | — | — |
| **(Loss)/profit before tax attributable to shareholders profits** | **(4,029)** | **61** | **(3,968)** | 2,133 | 10 | 2,143 |
| Tax on operating profit | **(974)** | **(74)** | **(1,048)** | (1,044) | (79) | (1,123) |
| Tax on other activities | **2,217** | **98** | **2,315** | 372 | 82 | 454 |
| | **1,243** | **24** | **1,267** | (672) | 3 | (669) |
| (Loss)/profit for the year | **(2,786)** | **85** | **(2,701)** | 1,461 | 13 | 1,474 |

1 Excludes the proportion of the results of Aviva Investors fund management businesses and other fund management operations within the Group that arises from the provision of fund management services to our life businesses. These results are included within the life MCEV operating earnings consistent with the MCEV methodology.
2 Excludes the proportion of the results of subsidiaries providing services to the Life business. These results are included within the life MCEV operating earnings consistent with the MCEV methodology.

## Earnings per share – MCEV basis

| Earnings per share | | | 2011 | | | Restated 2010 |
|---|---|---|---|---|---|---|
| | **Continuing operations** | **Discontinued operations** | **Total** | Continuing operations | Discontinued operations | Total |
| **Operating earnings per share on an MCEV basis after tax, attributable to ordinary shareholders of Aviva plc** | | | | | | |
| Basic (pence per share) | **71.3p** | **3.8p** | **75.1p** | 74.5p | 2.8p | 77.3p |
| Diluted (pence per share) | **70.0p** | **3.8p** | **73.8p** | 73.2p | 2.8p | 76.0p |
| **Earnings after tax on an MCEV basis, attributable to ordinary shareholders of Aviva plc** | | | | | | |
| Basic (pence per share) | **(67.3p)** | **4.0p** | **(63.3p)** | 48.4p | 1.0p | 49.4p |
| Diluted (pence per share) | **(67.3p)** | **3.9p** | **(63.3p)** | 47.6p | 1.0p | 48.6p |

The effect of future share awards and options in the loss from continuing operations and total is anti-dilutive, therefore the diluted earnings per share has been maintained at (67.3) pence and (63.3) pence respectively.

Total MCEV operating profit before shareholder tax was £3,537 million *(2010: £3,760 million)*, a decrease of 6%. Within this total the long-term business operating profit before shareholder tax was £3,399 million *(2010: £3,579 million)*, a decrease of 5%.

## Condensed consolidated statement of comprehensive income – MCEV basis

For the year ended 31 December 2011

| | 2011 £m | Restated 2010 £m |
|---|---|---|
| **(Loss)/profit for the year from continuing operations** | **(2,786)** | 1,461 |
| **Profit for the year from discontinued operations** | **85** | 13 |
| **(Loss)/profit from the period** | **(2,701)** | 1,474 |
| **Other comprehensive income from continuing operations** | | |
| Fair value losses on AFS securities, owner-occupied properties and hedging instruments | **(9)** | — |
| Actuarial gains on pension schemes | **996** | 1,078 |
| Actuarial losses on pension schemes transferred to unallocated divisible surplus and other movements | **(22)** | (18) |
| Share of other comprehensive income of joint ventures and associates | **(141)** | — |
| Foreign exchange rate movements | **(461)** | (57) |
| Aggregate tax effect – shareholder tax | **(160)** | 37 |
| **Other comprehensive income, net of tax from continuing operations** | **203** | 1,040 |
| **Other comprehensive income/(expense), net of tax from discontinued operations** | **131** | (198) |
| **Other comprehensive income, net of tax** | **334** | 842 |
| **Total comprehensive (expense)/income for the year from continuing operations** | **(2,583)** | 2,501 |
| **Total comprehensive income/(expense) for the year from discontinued operations** | **216** | (185) |
| **Total comprehensive (expense)/income for the year** | **(2,367)** | 2,316 |
| Attributable to: | | |
| Equity shareholders of Aviva plc | **(1,419)** | 2,445 |
| Non-controlling interests | **(948)** | (129) |
| | **(2,367)** | 2,316 |

## Condensed consolidated statement of changes in equity – MCEV basis

For the year ended 31 December 2011

| | 2011 £m | Restated 2010 £m |
|---|---|---|
| **Balance at 1 January** | **20,205** | 18,573 |
| Total comprehensive (expense)/income for the year | **(2,367)** | 2,316 |
| Dividends and appropriations | **(813)** | (757) |
| Shares issued in lieu of dividends | **307** | 209 |
| Capital contributions from minority shareholders | **68** | 42 |
| Movements in ordinary shareholder equity following deconsolidation of Delta Lloyd | **(316)** | — |
| Movements in non-controlling interests following deconsolidation of Delta Lloyd | **(1,484)** | — |
| Minority share of dividends declared in the year | **(126)** | (187) |
| Recycling of reserves to income statement on disposal of subsidiary | **(3)** | — |
| Non-controlling interest in acquired subsidiaries | **—** | 3 |
| Changes in non-controlling interest in existing subsidiaries | **(11)** | (38) |
| Shares acquired by employee trusts | **(29)** | (14) |
| Reserves credit for equity compensation plans | **48** | 41 |
| Aggregate tax effect – shareholder tax | **16** | 17 |
| **Total equity** | **15,495** | 20,205 |
| Non-controlling interests | **(1,476)** | (3,977) |
| **Balance at 31 December** | **14,019** | 16,228 |

## Condensed consolidated statement of financial position – MCEV basis

As at 31 December 2011

| | 2011 £m | Restated 2010 £m |
|---|---|---|
| **Assets** | | |
| Goodwill | **2,640** | 3,391 |
| Acquired value of in-force business and intangible assets | **2,021** | 2,806 |
| Additional value of in-force long-term business[1] | **132** | 2,480 |
| Interests in, and loans to, joint ventures | **1,700** | 1,994 |
| Interests in, and loans to, associates | **1,118** | 643 |
| Property and equipment | **510** | 750 |
| Investment property | **11,638** | 13,064 |
| Loans | **28,116** | 43,074 |
| Financial investments | **216,058** | 253,288 |
| Reinsurance assets | **7,112** | 7,084 |
| Deferred tax assets | **238** | 288 |
| Current tax assets | **140** | 198 |
| Receivables | **7,937** | 8,295 |
| Deferred acquisition costs and other assets | **6,444** | 6,072 |
| Prepayments and accrued income | **3,235** | 3,691 |
| Cash and cash equivalents | **23,043** | 25,455 |
| Assets of operations classified as held for sale | **426** | 14 |
| **Total assets** | **312,508** | 372,587 |
| **Equity** | | |
| Ordinary share capital | **726** | 705 |
| Capital reserves | **4,444** | 4,465 |
| Other reserves | **1,262** | 2,069 |
| Shares held by employee trusts | **(43)** | (32) |
| Retained earnings | **5,954** | 5,411 |
| Additional retained earnings on an MCEV basis[1] | **486** | 2,420 |
| **Equity attributable to ordinary shareholders of Aviva plc** | **12,829** | 15,038 |
| Preference share capital and direct capital instruments | **1,190** | 1,190 |
| Non-controlling interests[1] | **1,476** | 3,977 |
| **Total equity** | **15,495** | 20,205 |
| **Liabilities** | | |
| Gross insurance liabilities | **150,101** | 177,700 |
| Gross liabilities for investment contracts | **110,644** | 117,787 |
| Unallocated divisible surplus | **650** | 3,428 |
| Net asset value attributable to unit holders | **10,352** | 9,032 |
| Provisions | **992** | 2,943 |
| Deferred tax liabilities | **1,171** | 1,758 |
| Current tax liabilities | **232** | 314 |
| Borrowings | **8,450** | 14,949 |
| Payables and other financial liabilities | **11,230** | 20,292 |
| Other liabilities | **2,828** | 4,179 |
| Liabilities of operations classified as held for sale | **363** | — |
| **Total liabilities** | **297,013** | 352,382 |
| **Total equity and liabilities** | **312,508** | 372,587 |

The summarised consolidated statement of financial position presented above is unaltered from the corresponding IFRS summarised consolidated statement of financial position with the exception of the following:

1 Adding the excess of the Life MCEV, including non-controlling interests, over the corresponding Life IFRS net assets represented as the additional value of in-force long-term business; corresponding item within equity represented by the additional retained profit on an MCEV basis; and, corresponding adjustments to non-controlling interests.

## Reconciliation of shareholders' equity on IFRS and MCEV bases

For the year ended 31 December 2011

| 2011<br>£m | IFRS<br>£m | Adjustment<br>£m | MCEV<br>£m |
|---|---|---|---|
| Ordinary share capital | **726** | **—** | **726** |
| Capital reserves | **4,444** | **—** | **4,444** |
| Other reserves | **1,562** | **(300)** | **1,262** |
| Shares held by employee trusts | **(43)** | **—** | **(43)** |
| Retained earnings | **5,954** | **—** | **5,954** |
| Additional retained earnings on an MCEV basis | **—** | **486** | **486** |
| **Equity attributable to ordinary shareholders of Aviva plc** | **12,643** | **186** | **12,829** |
| Preference share capital | **200** | **—** | **200** |
| Direct capital instruments | **990** | **—** | **990** |
| Non-controlling interests | **1,530** | **(54)** | **1,476** |
| **Total equity** | **15,363** | **132** | **15,495** |

| 2010<br>£m | IFRS<br>£m | Adjustment<br>£m | Restated<br>MCEV<br>£m |
|---|---|---|---|
| Ordinary share capital | 705 | — | 705 |
| Capital reserves | 4,465 | — | 4,465 |
| Other reserves | 2,245 | (176) | 2,069 |
| Shares held by employee trusts | (32) | — | (32) |
| Retained earnings | 5,411 | — | 5,411 |
| Additional retained earnings on an MCEV basis | — | 2,420 | 2,420 |
| **Equity attributable to ordinary shareholders of Aviva plc** | 12,794 | 2,244 | 15,038 |
| Preference share capital | 200 | — | 200 |
| Direct capital instruments | 990 | — | 990 |
| Non-controlling interests | 3,741 | 236 | 3,977 |
| **Total equity** | 17,725 | 2,480 | 20,205 |

## Reconciliation of IFRS total equity to MCEV net worth

For the year ended 31 December 2011

| | 2011<br>£m | Restated<br>2010<br>£m |
|---|---|---|
| **Net assets on a statutory IFRS net basis** | **15,363** | 17,725 |
| Adjusting for general business and other net assets on a statutory IFRS net basis | **301** | 1,331 |
| **Life and related businesses net assets on a statutory IFRS net basis** | **15,664** | 19,056 |
| Goodwill and other intangibles | **(2,117)** | (2,356) |
| Acquired value of in-force business | **(960)** | (1,447) |
| Adjustment for share of joint ventures and associates | **(7)** | (120) |
| Adjustment for assets to regulatory value net of tax | **(1,880)** | (890) |
| Adjustment for DAC and DIR net of tax | **(2,622)** | (2,839) |
| Adjustment for differences in technical provisions | **2,904** | 1,303 |
| Other accounting and tax differences | **(507)** | (505) |
| **MCEV net worth** | **10,475** | 12,202 |
| MCEV value of in-force[1] | **2,619** | 6,805 |
| **MCEV[2]** | **13,094** | 19,007 |

1 Comprises PVFP of £5,847 million (31 December 2010: £9,952 million), FC of £(642) million (31 December 2010: £(884) million), CNHR of £(1,046) million (31 December 2010: £(1,070) million), and TVOG of £(1,540) million (31 December 2010: £(1,193) million).
2 Comprises embedded value of £12,274 million (31 December 2010: £15,874 million) and non-controlling interest in long-term business assets of £820 million (31 December 2010: £3,133 million).

Movements in the reconciling items during the period arise mainly from the deconsolidation of Delta Lloyd on 6$^{th}$ May and consequent removal of Delta Lloyd life business from covered business.

The adjustment for assets to regulatory value and differences in technical provisions relates mainly to the US, reflecting differences between the IFRS and local solvency reserving basis. The DAC and DIR adjustment relates mainly to the UK and US.

## Group MCEV analysis of earnings

| 2011 £m | Covered business[1] £m A | Non-covered but related to life business[2] £m B | Total life business[3] £m A+B | Non-covered relating to non-life £m C | Total non-covered business £m B+C | Total £m A+B+C |
|---|---|---|---|---|---|---|
| Opening group MCEV | **15,874** | **2,339** | **18,213** | **(1,985)** | **354** | **16,228** |
| Operating MCEV earnings | **2,193** | **—** | **2,193** | **4** | **4** | **2,197** |
| Non-operating MCEV earnings | **(3,530)** | **(218)** | **(3,748)** | **(189)** | **(407)** | **(3,937)** |
| **Total MCEV earnings** | **(1,337)** | **(218)** | **(1,555)** | **(185)** | **(403)** | **(1,740)** |
| Other movements in IFRS net equity | **—** | **412** | **412** | **270** | **682** | **682** |
| Capital and dividend flows | **(493)** | **—** | **(493)** | **(297)** | **(297)** | **(790)** |
| Foreign exchange variances | **(251)** | **(30)** | **(281)** | **(80)** | **(110)** | **(361)** |
| Acquired/divested businesses | **(1,519)** | **30** | **(1,489)** | **1,489** | **1,519** | **—** |
| **Closing group MCEV** | **12,274** | **2,533** | **14,807** | **(788)** | **1,745** | **14,019** |
| Preference share capital and direct capital instruments | | | | | | **(1,190)** |
| **Equity attributable to ordinary shareholders of Aviva plc on an MCEV basis** | | | | | | **12,829** |

1 Covered business represents the business that the MCEV calculations cover, as detailed in the Basis of preparation note. The embedded value is presented net of non-controlling interests and tax.
2 Non-covered but related to life business represents the adjustments to the MCEV, including goodwill, to calculate the long-term business net assets on an MCEV basis. An analysis of net assets on an MCEV basis gross of non-controlling interests is provided in E6.
3 Net assets for the total life businesses on an MCEV basis presented net of non-controlling interests.

| Restated 2010 £m | Covered business[1] £m A | Non-covered but related to life business[2] £m B | Total life business[3] £m A+B | Non-covered relating to non-life £m C | Total non-covered business £m B+C | Total £m A+B+C |
|---|---|---|---|---|---|---|
| Opening group MCEV | 15,070 | 2,055 | 17,125 | (2,831) | (776) | 14,294 |
| Operating MCEV earnings | 2,199 | — | 2,199 | 12 | 12 | 2,211 |
| Non-operating MCEV earnings | (633) | (63) | (696) | (79) | (142) | (775) |
| **Total MCEV earnings** | 1,566 | (63) | 1,503 | (67) | (130) | 1,436 |
| Other movements in IFRS net equity | — | 525 | 525 | 536 | 1,061 | 1,061 |
| Capital and dividend flows | (1,020) | — | (1,020) | 509 | 509 | (511) |
| Foreign exchange variances | (167) | 2 | (165) | 113 | 115 | (52) |
| Acquired/divested businesses | 425 | (180) | 245 | (245) | (425) | — |
| **Closing group MCEV** | 15,874 | 2,339 | 18,213 | (1,985) | 354 | 16,228 |
| Preference share capital and direct capital instruments | | | | | | (1,190) |
| **Equity attributable to ordinary shareholders of Aviva plc on an MCEV basis** | | | | | | 15,038 |

## E1 – Basis of preparation

The condensed consolidated income statement and condensed consolidated statement of financial position on pages 156 to 157 present the Group's results and financial position for the life and related businesses on the Market Consistent Embedded Value (MCEV) basis and for its non-covered businesses on the International Financial Reporting Standards (IFRS) basis. The MCEV methodology adopted is in accordance with the MCEV Principles published by the CFO Forum in October 2009.

The directors consider that the MCEV methodology gives useful insight into the drivers of financial performance of the Group's life and related businesses. This basis values future cash flows from assets consistently with market prices, including more explicit allowance for the impact of uncertainty in future investment returns and other risks. Embedded value is also consistent with the way pricing is assessed and the business is managed.

The results for 2011 and 2010 have been audited by our auditors, Ernst & Young LLP. Their report in respect of 2011 can be found on page 360 in the Report and Accounts.

### Covered business

The MCEV calculations cover the following lines of business: life insurance, long-term health and accident insurance, savings, pensions and annuity business written by our life insurance subsidiaries, including managed pension fund business and our share of certain life and related business written in our associated undertakings and joint ventures, as well as the equity release business written in the UK.

Covered business includes the Group's share of our joint ventures including our associated undertakings in India, China, Turkey, Malaysia, Taiwan and South Korea. In addition, the results of group companies providing significant administration, fund management and other services and of Group holding companies have been included to the extent that they relate to covered business. Together these businesses are referred to as 'Life and related businesses'.

Aviva's associate holding of Delta Lloyd is not included within covered business as MCEV is not used to manage Delta Lloyd. For 'Group' MCEV reporting, which includes general insurance and other non-covered business, Delta Lloyd is included on an IFRS basis.

### New business premiums

New business premiums include:

- premiums arising from the sale of new contracts during the period;
- non-contractual additional premiums; and
- expected renewals on new contracts and expected future contractual alterations to new contracts.

The Group's definition of new business under MCEV includes contracts that meet the definition of 'non-participating investment' contracts under IFRS.

For products sold to individuals, premiums are considered to represent new business where a new contract has been signed, or where underwriting has been performed. Renewal premiums include contractual renewals, non-contractual variations that are reasonably predictable and recurrent single premiums that are pre-defined and reasonably predictable.

For Group products, new business includes new contracts and increases to aggregate premiums under existing contracts. Renewal premiums are based on the level of premium received during the reporting period and allow for premiums expected to be received beyond the expiry of any guaranteed premium rates.

### Life and pensions operating earnings

For life and pensions operating earnings, Aviva uses normalised investment returns. The use of asset risk premia reflects management's long-term expectations of asset returns in excess of the swap yield from investing in different asset classes.

The normalised investment return on equities and property has been calculated by reference to the ten year swap rate in the relevant currency plus an appropriate risk premium. The expected return on bonds has been calculated by reference to the swap rate consistent with the duration of the backing assets in the relevant currency plus an appropriate risk margin (expected return is equivalent to the gross redemption yield less an allowance for defaults).

The expected existing business contribution (in excess of reference rate) is calculated using the implied discount rate (IDR), which itself is based on the normalised investment returns. The methodology applies the IDR to the Value of In Force (VIF) and Required Capital (RC) components of the MCEV and adds to this the total expected return for Free Surplus (FS) to derive the total expected return, in a manner consistent with that previously used under European Embedded Value reporting. This total is presented as the expected existing business contribution (reference rate), expected existing business contribution (in excess of reference rate) and expected return on shareholders' net worth (grossed up for tax for pre-tax presentation), with only the excess contribution being impacted by the change. The change to expected returns has no impact on total return or on the closing balance sheet.

## E1 – Basis of preparation continued

### MCEV methodology

**Overview**

Under the MCEV methodology, profit is recognised as it is earned over the life of products defined within covered business. The total profit recognised over the lifetime of a policy is the same as under the IFRS basis of reporting, but the timing of recognition is different.

**Calculation of the embedded value**

The shareholders' interest in the life and related businesses is represented by the embedded value. The embedded value is the total of the net worth of the life and related businesses and the value of in-force covered business. Calculations are performed separately for each business and are based on the cash flows of that business, after allowing for both external and intra-group reinsurance. Where one life business has an interest in another, the net worth of that business excludes the interest in the dependent company.

The embedded value is calculated on an after-tax basis applying current legislation and practice together with future known changes. Where gross results are presented, these have been calculated by grossing up post-tax results at the full rate of corporation tax for each country based on opening period tax rates, apart from the UK, where a 26% tax rate was used for 2011 for grossing up.

**Net worth**

The net worth is the market value of the shareholders' funds and the shareholders' interest in the surplus held in the non-profit component of the long-term business funds, determined on a statutory solvency basis and adjusted to add back any non-admissible assets, and consists of the required capital and free surplus.

Required capital is the market value of assets attributed to the covered business over and above that required to back liabilities for covered business, for which distribution to shareholders is restricted. Required capital is reported net of implicit items permitted on a local regulatory basis to cover minimum solvency margins which are assessed at a local entity level. The level of required capital for each business unit is generally set equal to the higher of:

- The level of capital at which the local regulator is empowered to take action;
- The capital requirement of the business unit under the Group's economic capital requirements; and
- The target capital level of the business unit.

For Aviva US, the required capital is set at 325% of the NAIC Company Action Level in line with management targets and target credit ratings.

This methodology reflects the level of capital considered by the directors to be appropriate to manage the business, and includes any additional shareholder funds not available for distribution, such as the reattributed inherited estate in the UK. The same definition of required capital is used for both existing and new business.

The free surplus is the market value of any assets allocated to, but not required to support, the in-force covered business at the valuation date. The level of required capital across the business units expressed as a percentage of the EU minimum solvency margin (or equivalent) can be found in E14.

**Value of in-force covered business (VIF)**

The value of in-force covered business consists of the following components:

- present value of future profits;
- time value of financial options and guarantees;
- frictional costs of required capital; and
- cost of residual non-hedgeable risks.

**Present value of future profits (PVFP)**

The PVFP is the present value of the distributable profits to shareholders arising from the in-force covered business projected on a best estimate basis.

Distributable profits generally arise when they are released following actuarial valuations. These valuations are carried out in accordance with any local statutory requirements designed to ensure and demonstrate solvency in long-term business funds. Future distributable profits will depend on experience in a number of areas such as investment return, discontinuance rates, mortality, administration costs, as well as management and policyholder actions. Releases to shareholders arising in future years from the in-force covered business and associated required capital can be projected using assumptions of future experience.

Future profits are projected using best estimate non-economic assumptions and market consistent economic assumptions. In principle, each cash flow is discounted at a rate that appropriately reflects the riskiness of that cash flow, so higher risk cash flows are discounted at higher rates. In practice, the PVFP is calculated using the 'certainty equivalent' approach, under which the reference rate is used for both the investment return and the discount rate. This approach ensures that asset cash flows are valued consistently with the market prices of assets without options and guarantees. Further information on the risk-free rates is given in note E14.

The PVFP includes the capitalised value of profits and losses arising from subsidiary companies providing administration, investment management and other services to the extent that they relate to covered business. This is referred to as the 'look through' into service company expenses. In addition, expenses arising in holding companies that relate directly to acquiring or maintaining covered business have been allowed for. Where external companies provide services to the life and related businesses, their charges have been allowed for in the underlying projected cost base.

## E1 – Basis of preparation continued

**Time value of financial options and guarantees (TVOG)**

The PVFP calculation is based on a single (base) economic scenario; however, a single scenario cannot appropriately allow for the effect of certain product features. If an option or guarantee affects shareholder cash flows in the base scenario, the impact is included in the PVFP and is referred to as the intrinsic value of the option guarantee; however, future investment returns are uncertain and the actual impact on shareholder profits may be higher or lower. The value of in-force business needs to be adjusted for the impact of the range of potential future outcomes. Stochastic modelling techniques can be used to assess the impact of potential future outcomes, and the difference between the intrinsic value and the total stochastic value is referred to as the time value of the option or guarantee.

Stochastic modelling typically involves projecting the future cash flows of the business under thousands of economic scenarios that are representative of the possible future outcomes for market variables such as interest rates and equity returns. Under a market consistent approach, the economic scenarios generated reflect the market's tendency towards risk aversion. Allowance is made, where appropriate, for the effect of management and/or policyholder actions in different economic conditions on future assumptions such as asset mix, bonus rates and surrender rates.

Stochastic models are calibrated to market yield curves and volatility levels at the valuation date. Tests are performed to confirm that the scenarios used produce results that replicate the market price of traded instruments.

Where evidence exists that persistency rates are linked to economic scenarios, dynamic lapse assumptions are set that vary depending on the individual scenarios. This cost is included in the TVOG. Dynamic lapses are modelled for parts of the UK, US and French businesses. Asymmetries in non-economic assumptions that are linked to economic scenarios, but that have insufficient evidence for credible dynamic assumptions, are allowed for within mean best estimate assumptions.

**Frictional costs of required capital**

The additional costs to a shareholder of holding the assets backing required capital within an insurance company rather than directly in the market are called frictional costs. They are explicitly deducted from the PVFP. The additional costs allowed for are the taxation costs and any additional investment expenses on the assets backing the required capital. The level of required capital has been set out above in the net worth section.

Frictional costs are calculated by projecting forwards the future levels of required capital. Tax on investment return and investment expenses are payable on the assets backing required capital, up until the point that they are released to shareholders.

**Cost of residual non-hedgeable risks (CNHR)**

The cost of residual non-hedgeable risks (CNHR) covers risks not already allowed for in the time value of options and guarantees or the PVFP. The allowance includes the impact of both non-hedgeable financial and non-financial risks. The most significant risk not included in the PVFP or TVOG is operational risk.

Asymmetric risks allowed for in the TVOG or PVFP are described earlier in the basis of preparation. No allowance has been made within the cost of non-hedgeable risk for symmetrical risks as these are diversifiable by investors.

**US capital solutions**

Credit has been taken within the US embedded value, and value of new business, for the anticipated reduction in capital requirements based on management's intention to enact transactions which allow recognition of additional assets that can be held against certain reserves, reducing shareholder capital requirements. By the end of 2011 transactions have been enacted for business written from 2006 to 2011.

**US new business tax**

US new business has been valued on a basis with tax applied at the full corporation rate and consequential movements in the value of the Deferred Tax Asset included as a variance within existing business operating return.

**Participating business**

Future regular bonuses on participating business are projected in a manner consistent with current bonus rates and expected future market-consistent returns on assets deemed to back the policies.

For with-profit funds in the UK and Ireland, for the purpose of recognising the value of the estate, it is assumed that terminal bonuses are increased to exhaust all of the assets in the fund over the future lifetime of the in-force with-profit policies. However, under stochastic modelling there may be some extreme economic scenarios when the total assets in the Group's with-profit funds are not sufficient to pay all policyholder claims. The average additional shareholder cost arising from this shortfall has been included in the TVOG.

For profit-sharing business in continental Europe, where policy benefits and shareholder value depend on the timing of realising gains, the apportionment of unrealised gains between policyholders and shareholders reflect contractual requirements as well as existing practice. Under certain economic scenarios where additional shareholder injections are required to meet policyholder payments, the average additional cost has been included in the TVOG.

## E1 – Basis of preparation continued

The embedded value of the US spread-based products anticipates the application of management discretion allowed for contractually within the policies, subject to contractual guarantees. This includes the ability to change the crediting rates and indexed strategies available within the policy. Consideration is taken of the economic environment assumed in future projections and returns in excess of the reference rate are not assumed. Anticipated market and policyholder reaction to management action has been considered.

**Consolidation adjustments**

The effect of transactions between Group life companies such as loans and reinsurance arrangements have been included in the results split by territory in a consistent manner. No elimination is required on consolidation.

As the MCEV methodology incorporates the impact of profits and losses arising from subsidiary companies providing administration, investment management and other services to the Group's life companies, the equivalent profits and losses have been removed from the relevant segment (non-insurance or fund management) and are instead included within the results of life and related businesses. In addition, the underlying basis of calculation for these profits has changed from the IFRS basis to the MCEV basis.

The capitalised value of the future profits and losses from such service companies are included in the embedded value and value of new business calculations for the relevant business, but the net assets (representing historical profits and other amounts) remain under non-insurance or fund management. In order to reconcile the profits arising in the financial period within each segment with the assets on the opening and closing statement of financial positions, a transfer of IFRS profits from life and related business to the appropriate segment is deemed to occur. An equivalent approach has been adopted for expenses within our holding companies. The assessments of goodwill, intangibles and pension schemes relating to life insurance business utilise the IFRS measurement basis.

**Exchange rates**

The Group's principal overseas operations during the period were located within the Eurozone and the US.

The results and cash flows of these operations have been translated at the average rates for that period and the assets and liabilities have been translated at the period end rates. Please refer to note A2 on page 44 of the IFRS financial statements.

**Restatement**

The 2010 opening and closing embedded values have been restated for the US, primarily reflecting modelling corrections to the valuation of certain life contracts and an overstatement of asset income identified in 2011. The resulting impact of the restatement was that the opening 2010 embedded value increased by £12 million and the closing 2010 embedded value reduced by £257 million, with no impact on operating profit.

**Impact of Delta Lloyd disposal**

On 6 May 2011, the Group sold 25 million shares in Delta Lloyd N.V. ("Delta Lloyd") (the Group's Dutch long-term insurance, general insurance and fund management subsidiary), reducing our holding to approximately 43% of Delta Lloyd's ordinary share capital.

In line with IFRS, up to the date of partial disposal, Delta Lloyd has been presented as a discontinued operation. Following the partial disposal, when Delta Lloyd became an associate of Aviva, Delta Lloyd has been removed from covered business as it is not managed by either Aviva or Delta Lloyd on an MCEV basis. The impact on MCEV as at 6 May 2011 is a reduction of £1,519 million.

## E2 – Geographical analysis of life MCEV operating earnings

**2011**

| Gross of tax and non-controlling interest | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|
| Value of new business | **380** | **369** | **(131)** | **71** | **689** | **1** | **690** |
| Earnings from existing business: | | | | | | | |
| – expected returns at the reference rate | **214** | **274** | **62** | **16** | **566** | **19** | **585** |
| – expected returns in excess of the reference rate | **340** | **334** | **515** | **10** | **1,199** | **109** | **1,308** |
| – expected returns | **554** | **608** | **577** | **26** | **1,765** | **128** | **1,893** |
| – experience variances | **116** | **41** | **(98)** | **(13)** | **46** | **3** | **49** |
| – operating assumption changes | **(11)** | **178** | **(115)** | **(11)** | **41** | **99** | **140** |
| Expected return on shareholders' net worth | **147** | **184** | **64** | **16** | **411** | **41** | **452** |
| Other operating variances | **7** | **237** | **(56)** | **(11)** | **177** | **(2)** | **175** |
| **Operating earnings before tax** | **1,193** | **1,617** | **241** | **78** | **3,129** | **270** | **3,399** |

2010

| Gross of tax and non-controlling interest | United Kingdom £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|
| Value of new business | 354 | 504 | (194) | 52 | 716 | (92) | 624 |
| Earnings from existing business: | | | | | | | |
| – expected returns at the reference rate | 169 | 244 | 20 | 20 | 453 | 49 | 502 |
| – expected returns in excess of the reference rate | 425 | 357 | 401 | 25 | 1,208 | 181 | 1,389 |
| – expected returns | 594 | 601 | 421 | 45 | 1,661 | 230 | 1,891 |
| – experience variances | (20) | 147 | (7) | (28) | 92 | (16) | 76 |
| – operating assumption changes | (18) | 338 | (146) | 13 | 187 | (320) | (133) |
| Expected return on shareholders' net worth | 179 | 152 | 82 | 12 | 425 | 124 | 549 |
| Other operating variances | (4) | 271 | 133 | 15 | 415 | 157 | 572 |
| Operating earnings before tax | 1,085 | 2,013 | 289 | 109 | 3,496 | 83 | 3,579 |

### United Kingdom

**MCEV operating earnings** were 10% higher at £1,193 million *(2010: £1,085 million)* mainly due to increases in the value of new business and experience variances, partly offset by lower expected return.

**Value of new business** grew 7% to £380 million *(2010: £354 million)* due to our focus on value maximisation through active management of our new business mix, robust cost control and pricing discipline.

**Total expected return** decreased by 9% to £701 million *(2010: £773 million)* as a result of a lower opening implied discount rate, albeit on a higher embedded value.

**Experience variances** of £116 million *(2010: £20 million adverse)* primarily reflect benefits from the Part VII transfer of the former RBS JV business, partly offset by £30 million adverse project expenditures due to increased level of regulatory change.

**Assumption changes** were £11 million adverse *(2010: £18 million adverse*) reflecting the strengthening of mortality and morbidity rates.

### Aviva Europe

**MCEV operating earnings** decreased 20% to £1,617 million *(2010: £2,013 million)* as operating variances and assumption changes were less favourable than in the prior period. Additionally, our lower new business volumes, as a result of our focus on value over volume, have led to a corresponding decline in the value of new business.

**Value of new business** was 27% lower at £369 million *(2010: £504 million)* following lower sales in Spain and management action to reduce sales of profit-sharing products in Italy and, to a lesser extent, in France.

**Total expected return** increased by 5% to £792 million *(2010: £753 million)* due to increased yields on shareholders' net worth.

**Experience variances** were favourable at £41 million *(2010: £147 million)* following positive mortality and other experience across the region, partly offset by adverse expenses in France and Ireland and lapse experience in Ireland.

**Assumption changes** on existing business were favourable at £178 million *(2010: £338 million*) primarily reflecting positive impact of changes to mortality and lapse assumptions in France and changes to assumed expense levels and management actions in relation to product charges in Poland, offset by adverse impacts of lapse and expense changes in Ireland, Italy, Spain and Other Europe.

**Other operating variances** were positive at £237 million *(2010: £271 million)*. These largely arose in France and relate to modelling refinements of £324 million, offset by adverse modelling refinements in Italy of £110 million.

## E2 – Geographical analysis of life MCEV operating earnings continued

**North America**

**MCEV operating earnings** decreased 17% to £241 million *(2010: £289 million)* as higher expected return and improved value of new business were more than offset by adverse experience, operating assumption changes and other operating variances.

**Value of new business** of negative £131 million *(2010: £194 million negative)* reflects the continuing adverse economic environment with low risk free rates. The year on year improvement results from product actions, together with assumption and modelling changes, that more than offset adverse economic movements.

**Total expected return** increased by 27% to £641 million *(2010: £503 million)* reflecting a higher implied discount rate.

**Operating experience and assumption changes** on existing business were £213 million adverse *(2010: £153 million adverse)* reflecting adverse expense and mortality experience, the strengthening of future expense assumptions and revisions to policyholder behaviour and annuity spread assumptions.

**Other operating variances** were £56 million adverse *(2010: £133 million favourable),* primarily reflecting the marginal impact of new business on the value of deferred tax losses.

**Asia Pacific**

**MCEV operating earnings** were 28% lower at £78 million *(2010: £109 million)* as the higher value of new business was more than offset by lower expected return and adverse impacts of existing business.

**Value of new business** was 37% higher at £71 million *(2010: £52 million)*, reflecting improved scale efficiencies, product mix and volumes.

**Total expected return** decreased by 26% to £42 million *(2010: £57 million),* as a result of lower implied discount rates.

**Operating experience variances, other operating variances and assumption changes** on existing business were adverse £35 million *(2010: nil),* primarily reflecting adverse lapse experience and assumption strengthening.

## E2 – Geographical analysis of life MCEV operating earnings continued

| Gross of tax and non-controlling interests 2011 | UK £m | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Other Europe £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business | 380 | 142 | (4) | 75 | 45 | 86 | 25 | 369 | (131) | 71 | 689 | 1 | 690 |
| Earnings from existing business | | | | | | | | | | | | | |
| – expected existing business contribution (reference rate) | 214 | 113 | 14 | 23 | 72 | 34 | 18 | 274 | 62 | 16 | 566 | 19 | 585 |
| – expected existing business contribution (in excess of reference rate) | 340 | 140 | 26 | 72 | 20 | 72 | 4 | 334 | 515 | 10 | 1,199 | 109 | 1,308 |
| Experience variances | | | | | | | | | | | | | |
| – maintenance expense[1] | 2 | (14) | (8) | (7) | 6 | 2 | 2 | (19) | (46) | — | (63) | (1) | (64) |
| – project and other related expenses[1] | (30) | (15) | (1) | — | — | (1) | (1) | (18) | (16) | (4) | (68) | 4 | (64) |
| – mortality/morbidity[2] | 2 | 33 | 2 | 11 | 12 | (5) | 2 | 55 | (28) | 7 | 36 | (8) | 28 |
| – lapses[3] | (11) | 9 | (12) | 2 | 4 | — | (5) | (2) | 5 | (14) | (22) | (1) | (23) |
| – other[4] | 153 | 13 | (4) | 7 | 9 | — | — | 25 | (13) | (2) | 163 | 9 | 172 |
| | 116 | 26 | (23) | 13 | 31 | (4) | (2) | 41 | (98) | (13) | 46 | 3 | 49 |
| Operating assumption changes: | | | | | | | | | | | | | |
| – maintenance expense[5] | 63 | 11 | (65) | (28) | 51 | (4) | (2) | (37) | (54) | 19 | (9) | 100 | 91 |
| – project and other related expenses[5] | (65) | (4) | — | — | — | — | — | (4) | — | — | (69) | — | (69) |
| – mortality/morbidity[6] | (18) | 163 | — | — | 22 | (16) | 6 | 175 | — | (6) | 151 | (1) | 150 |
| – lapses[7] | (1) | 107 | (57) | (5) | 37 | (65) | (30) | (13) | (136) | (24) | (174) | — | (174) |
| – other[8] | 10 | (33) | — | (28) | 117 | — | 1 | 57 | 75 | — | 142 | — | 142 |
| | (11) | 244 | (122) | (61) | 227 | (85) | (25) | 178 | (115) | (11) | 41 | 99 | 140 |
| Expected return on shareholders' net worth | 147 | 60 | 30 | 47 | 10 | 32 | 5 | 184 | 64 | 16 | 411 | 41 | 452 |
| Other operating variances[9] | 7 | 352 | (12) | (95) | 5 | 2 | (15) | 237 | (56) | (11) | 177 | (2) | 175 |
| **Earnings before tax and non-controlling interests** | **1,193** | **1,077** | **(91)** | **74** | **410** | **137** | **10** | **1,617** | **241** | **78** | **3,129** | **270** | **3,399** |

1 Adverse expense experience occurred across a number of businesses.
2 Mortality experience continues to be better than the assumption set across a number of our businesses, most notably in France. Adverse experience reflects normal volatility in mortality and increased retention limits in the US.
3 Persistency experience continues to be somewhat volatile across our businesses. Asia reflects an accumulation of small adverse experience across businesses.
4 Other experience includes tax benefits from the transfer of former RBS joint venture business into the long-term fund in the UK.
5 Maintenance and project expense assumptions have been revised in many regions with a broadly neutral impact on continuing business and a benefit from restructuring in Delta Lloyd.
6 Mortality assumptions have been updated in France reflecting experience.
7 Persistency assumptions have been updated in a number of businesses reflecting lower expected lapses in France (AFER), increases due to the economic environment in Ireland and Spain, and, in the US, revisions to dynamic policyholder lapse behaviour.
8 Other operating assumption changes in Poland relate to a change to assumed management actions in relation to product charges, and, in the US, revisions to policyholder utilisation of rider benefits offset by revisions to annuity spread assumptions.
9 Other operating variances relate to modelling changes and the release of a modelling provision in France, and modelling refinements in Italy, and, in the US, the marginal impact of new business on the value of deferred tax losses, with cost of capital transactions and model refinements broadly offsetting.

## E2 – Geographical analysis of life MCEV operating earnings continued

| Gross of tax and non-controlling interests 2010 | UK £m | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Other Europe £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business | 354 | 175 | 1 | 142 | 40 | 128 | 18 | 504 | (194) | 52 | 716 | (92) | 624 |
| Earnings from existing business | | | | | | | | | | | | | |
| – expected existing business contribution (reference rate) | 169 | 98 | 12 | 13 | 74 | 34 | 13 | 244 | 20 | 20 | 453 | 49 | 502 |
| – expected existing business contribution (in excess of reference rate) | 425 | 183 | 30 | 34 | 25 | 76 | 9 | 357 | 401 | 25 | 1,208 | 181 | 1,389 |
| Experience variances | | | | | | | | | | | | | |
| – maintenance expense[1] | 12 | (25) | 6 | (11) | 5 | (1) | 5 | (21) | (16) | (2) | (27) | (21) | (48) |
| – project and other related expenses[1] | (8) | (5) | (2) | — | — | (2) | (5) | (14) | (18) | (3) | (43) | (4) | (47) |
| – mortality/morbidity[2] | 23 | 27 | 3 | (4) | 13 | 2 | 3 | 44 | (7) | 9 | 69 | 13 | 82 |
| – lapses[3] | (29) | 27 | (10) | 18 | (1) | (11) | (11) | 12 | (3) | (27) | (47) | 5 | (42) |
| – other[4] | (18) | 93 | (4) | 12 | 14 | 3 | 8 | 126 | 37 | (5) | 140 | (9) | 131 |
| | (20) | 117 | (7) | 15 | 31 | (9) | — | 147 | (7) | (28) | 92 | (16) | 76 |
| Operating assumption changes: | | | | | | | | | | | | | |
| – maintenance expense[5] | 83 | 31 | (3) | (11) | 140 | 132 | — | 289 | (88) | 8 | 292 | 220 | 512 |
| – project and other\related expenses[5] | (92) | — | — | — | — | — | — | — | — | — | (92) | (6) | (98) |
| – mortality/morbidity[6] | 2 | 57 | 7 | 1 | 7 | (2) | — | 70 | (64) | 17 | 25 | (470) | (445) |
| – lapses[7] | (3) | (12) | (17) | 39 | 13 | (49) | (7) | (33) | 6 | (12) | (42) | (52) | (94) |
| – other | (8) | 4 | — | (2) | 8 | — | 2 | 12 | — | — | 4 | (12) | (8) |
| | (18) | 80 | (13) | 27 | 168 | 81 | (5) | 338 | (146) | 13 | 187 | (320) | (133) |
| Expected return on shareholders' net worth | 179 | 47 | 20 | 50 | 9 | 18 | 8 | 152 | 82 | 12 | 425 | 124 | 549 |
| Other operating variances[8] | (4) | 271 | (6) | (15) | 30 | (9) | — | 271 | 133 | 15 | 415 | 157 | 572 |
| **Earnings before tax and non-controlling interests** | 1,085 | 971 | 37 | 266 | 377 | 319 | 43 | 2,013 | 289 | 109 | 3,496 | 83 | 3,579 |

1 Adverse expense experience occurred across a number of businesses.
2 Mortality experience continues to be better than the assumption set across a number of our businesses, most notably in France and the UK Annuity business.
3 Persistency experience remains volatile across most of our businesses, in part reflecting the wider economic circumstances. In France, persistency experience reflects a release of the short-term provision.
4 Other experience includes, in France, the benefit from policyholders switching to unit-linked funds, and, in the USA favourable spread experience.
5 Favourable maintenance expense assumptions reflect the benefit of the shared service centre in Spain, together with the release of margins in Spain, related to bancassurance joint venture governance costs, and Poland. In the UK, the expense assumptions include a reallocation of provisions in the service company, better reflecting the expected future allocation of costs. In the USA, the adverse impact reflects a revised allocation of costs between ongoing and one-off. In Delta Lloyd, favourable expense assumptions relate to planned expense saving following restructuring activities.
6 Delta Lloyd has updated mortality assumptions to reflect recently published tables, which include a significantly increased allowance for mortality improvements. In France and the USA, mortality assumptions have been updated reflecting experience.
7 Persistency assumptions have been updated in a number of businesses.
8 Other operating variances for France relate to modelling changes, particularly relating to the time value of options and guarantees, and the benefit of reducing minimum guarantee rates. In Delta Lloyd, modelling changes include impacts related to commercial mortgages partly offset by changes to group pensions business. In the US, other operating variances related to the benefit of an AXXX capital solution together with modelling refinements on our asset portfolio.

## E2 – Geographical analysis of life MCEV operating earnings continued

| Net of tax and non-controlling interests 2011 | UK £m | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Other Europe £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business | **281** | **79** | **(3)** | **23** | **34** | **28** | **20** | **181** | **(85)** | **55** | **432** | **—** | **432** |
| Earnings from existing business | | | | | | | | | | | | | |
| – expected existing business contribution (reference rate) | **158** | **71** | **9** | **7** | **51** | **13** | **16** | **167** | **40** | **12** | **377** | **7** | **384** |
| – expected existing business contribution (in excess of reference rate) | **252** | **84** | **17** | **22** | **15** | **26** | **4** | **168** | **334** | **7** | **761** | **41** | **802** |
| Experience variances | | | | | | | | | | | | | |
| – maintenance expense[1] | **2** | **(9)** | **(6)** | **(4)** | **4** | **1** | **2** | **(12)** | **(30)** | **—** | **(40)** | **—** | **(40)** |
| – project and other related expenses[1] | **(22)** | **(10)** | **—** | **—** | **—** | **(1)** | **(1)** | **(12)** | **(11)** | **(3)** | **(48)** | **2** | **(46)** |
| – mortality/morbidity[2] | **1** | **21** | **1** | **4** | **8** | **(2)** | **1** | **33** | **(18)** | **6** | **22** | **(4)** | **18** |
| – lapses[3] | **(7)** | **8** | **(8)** | **—** | **3** | **(3)** | **(4)** | **(4)** | **3** | **(11)** | **(19)** | **—** | **(19)** |
| – other[4] | **113** | **6** | **(2)** | **2** | **7** | **—** | **—** | **13** | **(9)** | **(2)** | **115** | **4** | **119** |
| | **87** | **16** | **(15)** | **2** | **22** | **(5)** | **(2)** | **18** | **(65)** | **(10)** | **30** | **2** | **32** |
| Operating assumption changes: | | | | | | | | | | | | | |
| – maintenance expense[5] | **47** | **7** | **(45)** | **(10)** | **36** | **(2)** | **(2)** | **(16)** | **(35)** | **14** | **10** | **43** | **53** |
| – project and other related expenses[5] | **(49)** | **(2)** | **—** | **—** | **—** | **—** | **—** | **(2)** | **—** | **—** | **(51)** | **—** | **(51)** |
| – mortality/morbidity[6] | **(14)** | **101** | **—** | **—** | **16** | **(5)** | **5** | **117** | **—** | **(6)** | **97** | **(1)** | **96** |
| – lapses[7] | **—** | **73** | **(38)** | **(1)** | **26** | **(23)** | **(25)** | **12** | **(88)** | **(18)** | **(94)** | **—** | **(94)** |
| – other[8] | **7** | **(21)** | **—** | **(8)** | **84** | **—** | **1** | **56** | **49** | **—** | **112** | **—** | **112** |
| | **(9)** | **158** | **(83)** | **(19)** | **162** | **(30)** | **(21)** | **167** | **(74)** | **(10)** | **74** | **42** | **116** |
| Expected return on shareholders' net worth | **109** | **36** | **20** | **16** | **7** | **13** | **3** | **95** | **42** | **12** | **258** | **17** | **275** |
| Other operating variances[9] | **6** | **237** | **(9)** | **(29)** | **4** | **1** | **(12)** | **192** | **(36)** | **(7)** | **155** | **(3)** | **152** |
| **Earnings after tax and non-controlling interests** | **884** | **681** | **(64)** | **22** | **295** | **46** | **8** | **988** | **156** | **59** | **2,087** | **106** | **2,193** |

1 Adverse expense experience occurred across a number of businesses.
2 Mortality experience continues to be better than the assumption set across a number of our businesses, most notably in France. Adverse experience reflects normal volatility in mortality and increased retention limits in the US.
3 Persistency experience continues to be somewhat volatile across our businesses. Asia reflects an accumulation of small adverse experience across businesses.
4 Other experience includes tax benefits from the transfer of former RBS joint venture business into the long-term fund in the UK.
5 Maintenance and project expense assumptions have been revised in many regions with a broadly neutral impact on continuing business and a benefit from restructuring in Delta Lloyd.
6 Mortality assumptions have been updated in France reflecting experience.
7 Persistency assumptions have been updated in a number of businesses reflecting lower expected lapses in France (AFER), increases due to the economic environment in Ireland and Spain, and, in the US, revisions to dynamic policyholder lapse behaviour.
8 Other operating assumption changes in Poland relate to a change to assumed management actions in relation to product charges, and, in the US, revisions to policyholder utilisation of rider benefits offset by revisions to annuity spread assumptions.
9 Other operating variances relate to modelling changes and the release of a modelling provision in France, and modelling refinements in Italy, and, in the US, the marginal impact of new business on the value of deferred tax losses, with cost of capital transactions and model refinements broadly offsetting.

## E2 – Geographical analysis of life MCEV operating earnings continued

| Net of tax and non-controlling interests 2010 | UK £m | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Other Europe £m | Aviva Europe £m | North America £m | Asia Pacific £m | Continuing operations £m | Discontinued operations £m | Total £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business | 254 | 100 | 1 | 42 | 29 | 43 | 15 | 230 | (126) | 41 | 399 | (41) | 358 |
| Earnings from existing business | | | | | | | | | | | | | |
| – expected existing business contribution (reference rate) | 122 | 61 | 8 | 4 | 53 | 13 | 11 | 150 | 13 | 14 | 299 | 19 | 318 |
| – expected existing business contribution (in excess of reference rate) | 306 | 115 | 19 | 11 | 18 | 27 | 7 | 197 | 261 | 20 | 784 | 68 | 852 |
| Experience variances | | | | | | | | | | | | | |
| – maintenance expense[1] | 8 | (16) | 5 | (6) | 3 | (3) | 4 | (13) | (10) | (1) | (16) | (9) | (25) |
| – project and other related expenses[1] | (6) | (3) | (1) | — | — | (2) | (4) | (10) | (12) | (3) | (31) | (1) | (32) |
| – mortality/morbidity[2] | 17 | 15 | 2 | (2) | 10 | — | 2 | 27 | (5) | 7 | 46 | 3 | 49 |
| – lapses[3] | (21) | 19 | (7) | 6 | — | (6) | (9) | 3 | (2) | (22) | (42) | — | (42) |
| – other[4] | (12) | 62 | (3) | 3 | 10 | 2 | 6 | 80 | 24 | (4) | 88 | (3) | 85 |
| | (14) | 77 | (4) | 1 | 23 | (9) | (1) | 87 | (5) | (23) | 45 | (10) | 35 |
| Operating assumption changes: | | | | | | | | | | | | | |
| – maintenance expense[5] | 57 | 21 | (2) | (8) | 97 | 83 | — | 191 | (57) | 8 | 199 | 89 | 288 |
| – project and other related expenses | (65) | — | — | — | — | — | — | — | — | — | (65) | (3) | (68) |
| – mortality/morbidity[6] | 1 | 38 | 5 | 1 | 4 | — | — | 48 | (42) | 13 | 20 | (198) | (178) |
| – lapses[7] | (2) | (8) | (12) | 10 | 10 | (17) | (6) | (23) | 4 | (9) | (30) | (21) | (51) |
| – other | (6) | 3 | — | — | 6 | — | 1 | 10 | — | — | 4 | (5) | (1) |
| | (15) | 54 | (9) | 3 | 117 | 66 | (5) | 226 | (95) | 12 | 128 | (138) | (10) |
| Expected return on shareholders' net worth | 129 | 27 | 14 | 17 | 6 | 7 | 6 | 77 | 53 | 9 | 268 | 50 | 318 |
| Other operating variances[8] | (4) | 162 | (4) | (2) | 20 | (4) | — | 172 | 87 | 9 | 264 | 64 | 328 |
| **Earnings after tax and non-controlling interests** | 778 | 596 | 25 | 76 | 266 | 143 | 33 | 1,139 | 188 | 82 | 2,187 | 12 | 2,199 |

1 Adverse expense experience occurred across a number of businesses.
2 Mortality experience continues to be better than the assumption set across a number of our businesses, most notably in France and the UK Annuity business.
3 Persistency experience remains volatile across most of our businesses, in part reflecting the wider economic circumstances. In France, persistency experience reflects a release of the short-term provision.
4 Other experience includes, in France, the benefit from policyholders switching to unit linked funds, and, in the USA favourable spread experience.
5 Favourable maintenance expense assumptions reflect the benefit of the shared service centre in Spain, together with the release of margins in Spain, related to bancassurance joint venture governance costs, and Poland. In the UK, the expense assumptions include a reallocation of provisions in the service company, better reflecting the expected future allocation of costs. In the USA, the adverse impact reflects a revised allocation of costs between ongoing and one-off. In Delta Lloyd, favourable expense assumptions relate to planned expense saving following restructuring activities.
6 Delta Lloyd has updated mortality assumptions to reflect recently published tables, which include a significantly increased allowance for mortality improvements. In France and the USA, mortality assumptions have been updated reflecting experience.
7 Persistency assumptions have been updated in a number of businesses.
8 Other operating variances for France relate to modelling changes, particularly relating to the time value of options and guarantees, and the benefit of reducing minimum guarantee rates. In Delta Lloyd, modelling changes include impacts related to commercial mortgages partly offset by changes to group pensions business. In the US, other operating variances related to the benefit of an AXXX capital solution together with modelling refinements on our asset portfolio.

## E3 – Geographical analysis of fund management operating earnings

The summarised consolidated income statement – MCEV basis includes earnings from the Group's fund management operations as analysed below. This excludes the proportion of the results of Aviva Investors fund management businesses and other fund management operations within the Group that arise from the provision of fund management services to our Life businesses. These results are included within the Life MCEV operating earnings.

| | 2011 £m | 2010 £m |
|---|---|---|
| United Kingdom | **14** | 28 |
| Europe | **12** | 10 |
| North America | **—** | (8) |
| Asia Pacific | **(5)** | — |
| **Aviva Investors** | **21** | 30 |
| United Kingdom | **11** | 3 |
| Aviva Europe | **—** | — |
| Asia Pacific | **—** | (2) |
| **Total – continuing operations** | **32** | 31 |
| **Total – discontinued operations** | **9** | 94 |
| **Total** | **41** | 125 |

## E4 – Analysis of other operations and regional costs

Where subsidiaries provide services to our life business, that proportion has been excluded. These results are included within the Life MCEV operating return.

| | 2011 | | | 2010 | | |
|---|---|---|---|---|---|---|
| | Regional costs £m | Other operations £m | Total £m | Regional costs £m | Other operations £m | Total £m |
| United Kingdom | **—** | **(61)** | **(61)** | — | (21) | (21) |
| Aviva Europe | **(57)** | **(38)** | **(95)** | (55) | (43) | (98) |
| North America | **(15)** | **(3)** | **(18)** | (26) | 6 | (20) |
| Asia Pacific | **(30)** | **—** | **(30)** | (32) | — | (32) |
| **Total – continuing operations** | **(102)** | **(102)** | **(204)** | (113) | (58) | (171) |
| **Total – discontinued operations** | **—** | **7** | **7** | — | (24) | (24) |
| **Total** | **(102)** | **(95)** | **(197)** | (113) | (82) | (195) |

## E5 – Exceptional items and integration and restructuring costs

Exceptional Items of £(57) million *(2010: £(428) million)* were mainly due to a £22 million provision for compensation scheme costs for the leveraged property fund in Ireland, as well as a £35 million expense for the discounted cost of strengthening latent claims provisions in the UK.

For full year 2010, exceptional items were mainly due to a change in the cost of capital charge for the Cost of Non-Hedgeable Risk, from 2.5% to 3.3% p.a. with total impact of £(365) million, the impact of reducing state contributions to Pillar II Pension funds in Poland, following the announcement to change legislation on 1 April 2011 of £(280) million, and the recognition by Delta Lloyd of £(59) million costs in relation to unit-linked insurance compensation scheme and compensation costs in defined contribution pension schemes, partly offset by a £286 million benefit from the closure of the final salary section of the UK staff pension scheme to future accruals.

Integration and restructuring costs incurred in the year amounted to £212 million *(FY10: £312 million)*. This includes costs associated with preparing the businesses for Solvency II implementation of £88 million, expenditure relating to the Quantum Leap project in Europe of £51 million, and other restructuring exercises across the Group of £91 million partly offset by benefits of regulatory changes of £20 million.

## E6 – Segmentation of condensed consolidated statement of financial position

| | 2011 Life and related businesses £m | 2011 General business and other £m | 2011 Group £m | Restated 2010 Life and related businesses £m | Restated 2010 General business and other £m | Restated 2010 Group £m |
|---|---|---|---|---|---|---|
| **Total assets before acquired value of in-force long-term business** | **281,471** | **30,090** | **311,561** | 323,476 | 45,378 | 368,854 |
| Acquired additional value of in-force long-term business | **815** | **—** | **815** | 1,253 | — | 1,253 |
| **Total assets included in the IFRS statement of financial position** | **282,286** | **30,090** | **312,376** | 324,729 | 45,378 | 370,107 |
| Liabilities of the long-term business | **(266,622)** | **—** | **(266,622)** | (305,673) | — | (305,673) |
| Liabilities of the general insurance and other businesses | **—** | **(30,391)** | **(30,391)** | — | (46,709) | (46,709) |
| **Net assets on a statutory IFRS basis** | **15,664** | **(301)** | **15,363** | 19,056 | (1,331) | 17,725 |
| Additional value of in-force long-term business[1] | **132** | **—** | **132** | 2,480 | — | 2,480 |
| **Net assets on an MCEV basis[2]** | **15,796** | **(301)** | **15,495** | 21,536 | (1,331) | 20,205 |
| Equity capital, capital reserves, shares held by employee trusts and other reserves | | | **6,389** | | | 7,207 |
| IFRS basis retained earnings | | | **5,954** | | | 5,411 |
| Additional MCEV basis retained earnings | | | **486** | | | 2,420 |
| **Equity attributable to ordinary shareholders of Aviva plc on an MCEV basis** | | | **12,829** | | | 15,038 |
| Preference share capital and direct capital instruments | | | **1,190** | | | 1,190 |
| Non-controlling interests | | | **1,476** | | | 3,977 |
| **MCEV basis total equity** | | | **15,495** | | | 20,205 |

1 The analysis between the Group's and non-controlling interests' share of the additional value of in-force long-term business is as follows:

| | 2011 £m | Restated 2010 £m | Movement in year £m |
|---|---|---|---|
| Group's share included in shareholders' funds | **486** | 2,420 | (1,934) |
| Non-controlling interests' share | **(54)** | 236 | (289) |
| Movements in AFS securities | **(300)** | (176) | (125) |
| Additional value of in-force long-term business | **132** | 2,480 | (2,348) |

2 Analysis of net assets on an MCEV basis is made up as follows:

| | 2011 £m | Restated 2010 £m |
|---|---|---|
| Embedded value | **12,274** | 15,874 |
| Non-controlling interests | **820** | 3,133 |
| | **13,094** | 19,007 |
| Goodwill and intangible assets allocated to long-term business[3] | **2,117** | 2,356 |
| Notional allocation of IAS19 pension fund surplus/(deficit) to long-term business[4] | **585** | 173 |
| Long-term business net assets on an MCEV basis | **15,796** | 21,536 |

3 Goodwill and intangible assets includes amounts related to associated undertakings and joint ventures.

4 The value of the Aviva Staff Pension Scheme surplus has been notionally allocated between segments, based on current funding and the Life proportion has been included within the long-term business net assets on an MCEV basis. The pension fund surplus notionally allocated to long-term business is net of the agreed funding borne by the UK with-profit funds.

## E7 – Analysis of life and pension earnings

The following table provides an analysis of the movement in embedded value for covered business. The analysis is shown separately for free surplus, required capital and the value of in-force covered business, and includes amounts transferred between these categories. All figures are shown net of tax and non-controlling interests.

| | Continuing operations | | | | Discontinued operations | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Net of tax and non-controlling interests 2011** | **Free surplus £m** | **Required capital[1] £m** | **VIF £m** | **Total MCEV £m** | **Free surplus £m** | **Required capital[1] £m** | **VIF £m** | **Total MCEV £m** | **Total MCEV £m** |
| **Opening Group MCEV** | **1,247** | **7,398** | **5,733** | **14,378** | **356** | **944** | **196** | **1,496** | **15,874** |
| New business value | **(905)** | **559** | **778** | **432** | **(29)** | **14** | **15** | **—** | **432** |
| Expected existing business contribution (reference rate) | **—** | **—** | **377** | **377** | **—** | **—** | **7** | **7** | **384** |
| Expected existing business contribution (in excess of reference rate) | **—** | **—** | **761** | **761** | **—** | **—** | **41** | **41** | **802** |
| Transfers from VIF and required capital to the free surplus | **1,822** | **(583)** | **(1,239)** | **—** | **85** | **(25)** | **(60)** | **—** | **—** |
| Experience variances | **45** | **161** | **(176)** | **30** | **2** | **—** | **—** | **2** | **32** |
| Assumption changes | **96** | **(92)** | **70** | **74** | **—** | **—** | **42** | **42** | **116** |
| Expected return on shareholders' net worth | **91** | **167** | **—** | **258** | **5** | **12** | **—** | **17** | **275** |
| Other operating variances | **118** | **15** | **22** | **155** | **(2)** | **3** | **(4)** | **(3)** | **152** |
| Operating MCEV earnings | **1,267** | **227** | **593** | **2,087** | **61** | **4** | **41** | **106** | **2,193** |
| Economic variances | **(704)** | **452** | **(3,132)** | **(3,384)** | **212** | **(83)** | **(255)** | **(126)** | **(3,510)** |
| Other non-operating variances[2] | **(51)** | **(18)** | **49** | **(20)** | **—** | **—** | **—** | **—** | **(20)** |
| **Total MCEV earnings** | **512** | **661** | **(2,490)** | **(1,317)** | **273** | **(79)** | **(214)** | **(20)** | **(1,337)** |
| Capital and dividend flows[3,4] | **(398)** | **—** | **(92)** | **(490)** | **(3)** | **—** | **—** | **(3)** | **(493)** |
| Foreign exchange variances | **(17)** | **(94)** | **(186)** | **(297)** | **16** | **28** | **2** | **46** | **(251)** |
| Acquired/divested business | **—** | **—** | **—** | **—** | **(642)** | **(893)** | **16** | **(1,519)** | **(1,519)** |
| **Closing MCEV** | **1,344** | **7,965** | **2,965** | **12,274** | **—** | **—** | **—** | **—** | **12,274** |

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margins.
2 Other non-operating variances are described under Exceptional items in note E5.
3 Included within capital and dividend flows is the transfer to Life and related businesses from other segments consisting of service company profits and losses during the reported period that have emerged from the value of in-force. Since the 'look through' into service companies includes only future profits and losses, these amounts must be eliminated from the closing embedded value.
4 As a result of the January 2012 announced disposal of the Czech, Hungarian, and Romanian businesses, the VIF movement reflects the write-down of this business to the IFRS carrying value.

Divested business is the removal of Delta Lloyd from covered business subsequent to the reduction of our holding to 42%.

| | Continuing operations | | | | Discontinued operations | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| Restated Net of tax and non-controlling interests 2010 | Free surplus £m | Required capital[1] £m | VIF £m | Total MCEV £m | Free surplus £m | Required capital[1] £m | VIF £m | Total MCEV £m | Total MCEV £m |
| **Opening Group MCEV** | 1,799 | 6,451 | 5,232 | 13,482 | 368 | 1,095 | 125 | 1,588 | 15,070 |
| New business value | (1,136) | 846 | 689 | 399 | (114) | 55 | 18 | (41) | 358 |
| Expected existing business contribution (reference rate) | — | — | 299 | 299 | — | — | 19 | 19 | 318 |
| Expected existing business contribution (in excess of reference rate) | — | — | 784 | 784 | — | — | 68 | 68 | 852 |
| Transfers from VIF and required capital to the free surplus | 1,594 | (509) | (1,085) | — | 217 | (78) | (139) | — | — |
| Experience variances | 114 | 86 | (155) | 45 | (7) | (10) | 7 | (10) | 35 |
| Assumption changes | 22 | 18 | 88 | 128 | (169) | (39) | 70 | (138) | (10) |
| Expected return on shareholders' net worth | 111 | 157 | — | 268 | 15 | 35 | — | 50 | 318 |
| Other operating variances | 55 | (2) | 211 | 264 | (8) | 9 | 63 | 64 | 328 |
| Operating MCEV earnings | 760 | 596 | 831 | 2,187 | (66) | (28) | 106 | 12 | 2,199 |
| Economic variances | (218) | 175 | (43) | (86) | 43 | (72) | (1) | (30) | (116) |
| Other non-operating variances[2] | (39) | — | (429) | (468) | (20) | — | (29) | (49) | (517) |
| **Total MCEV earnings** | 503 | 771 | 359 | 1,633 | (43) | (100) | 76 | (67) | 1,566 |
| Capital and dividend flows[3] | (1,068) | — | — | (1,068) | 48 | — | — | 48 | (1,020) |
| Foreign exchange variances | (14) | (26) | (71) | (111) | (13) | (39) | (4) | (56) | (167) |
| Acquired/divested business | 27 | 202 | 213 | 442 | (4) | (12) | (1) | (17) | 425 |
| **Closing MCEV** | 1,247 | 7,398 | 5,733 | 14,378 | 356 | 944 | 196 | 1,496 | 15,874 |

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margins.
2 Other non-operating variances relate to increase in CNHR charge from 2.5% to 3.3% p.a., legislation changes to Poland Pensions, costs for Solvency II implementation and other restructuring and unit-linked insurance compensation scheme and compensation costs in Delta Lloyd.
3 Included within capital and dividend flows is the transfer to Life and related businesses from other segments consisting of service company profits and losses during the reported period that have emerged from the value of in-force. Since the "look through" into service companies includes only future profits and losses, these amounts must be eliminated from the closing embedded value.

## E8 – Life MCEV operating earnings

The table below presents the life and pensions MCEV earnings broken down into constituent parts. The life and pensions MCEV operating earnings comprise: the value of new business written during the year; the earnings from existing business including other operating variances; and the expected investment return on the shareholders' net worth.

These components are calculated using economic assumptions as at the start of the year (in-force business) or start of the quarter (new business) and operating (demographic and expenses) assumptions as at the end of the year.

| | **2011 £m** | Restated 2010 £m |
|---|---|---|
| Value of new business | **689** | 716 |
| Earnings from existing business | | |
| – expected returns at the reference rate | **566** | 453 |
| – expected returns in excess of the reference rate | **1,199** | 1,208 |
| – expected returns | **1,765** | 1,661 |
| – experience variances | **46** | 92 |
| – operating assumption changes | **41** | 187 |
| Other operating variance | **177** | 415 |
| Expected return on shareholders' net worth | **411** | 425 |
| **Life and Pensions operating earnings before tax** | **3,129** | 3,496 |
| Economic variances | **(6,541)** | (450) |
| Other non-operating variances | **(32)** | (686) |
| **Life and Pensions earnings before tax** | **(3,444)** | 2,360 |
| Tax on operating earnings | **(908)** | (1,035) |
| Tax on other activities | **2,098** | 296 |
| **Life and Pensions earnings after tax – continuing operations** | **(2,254)** | 1,621 |
| **Life and Pensions earnings after tax – discontinued operations** | **(33)** | (83) |
| **Total Life and Pensions earnings after tax** | **(2,287)** | 1,538 |

There were no separate development costs reported in these years.

Other non-operating variances are described under Exceptional items in note E5.

The table above presents a summarised breakdown of the life and pensions MCEV earnings on a gross of non-controlling interests basis and gross of tax with tax shown separately. The Group favours the gross presentation for consistency with the IFRS results. The table below compares the key items on the different bases as the subsequent analysis is provided predominantly on a net of tax and non-controlling interests basis as preferred by the CFO Forum Principles.

### Key indicators

| | **2011** | | Restated 2010 | |
|---|---|---|---|---|
| | **Net of non-controlling interests and tax £m** | **Gross of non-controlling interests and tax £m** | Net of non-controlling interests and tax £m | Gross of non-controlling interests and tax £m |
| Value of new business – continuing operations | **432** | **689** | 399 | 716 |
| Value of new business – discontinued operations | **—** | **1** | (41) | (92) |
| Total value of new business | **432** | **690** | 358 | 624 |
| Life and pensions operating return – continuing operations | **2,087** | **3,129** | 2,187 | 3,496 |
| Life and pensions operating return – discontinued operations | **106** | **270** | 12 | 83 |
| Life and pensions operating return | **2,193** | **3,399** | 2,199 | 3,579 |
| Life and pensions earnings – continuing operations | **(1,317)** | **(3,444)** | 1,633 | 2,360 |
| Life and pensions earnings – discontinued operations | **(20)** | **(46)** | (67) | (113) |
| Life and pensions earnings | **(1,337)** | **(3,490)** | 1,566 | 2,247 |

## E9 – Present value of life new business premiums

The tables below set out the present value of new business premiums (PVNBP) written by the life and related businesses, gross of tax and non-controlling interests. The PVNBP calculation is equal to total single premium sales received in the period plus the discounted value of regular premiums expected to be received over the term of the new contracts, and is expressed at the point of sale.

The premium volumes and projection assumptions used to calculate the present value of regular premiums for each product are the same as those used to calculate the value of new business, so the components of the new business margin are on a consistent basis.

The weighted average capitalisation factor (WACF) is the multiple of the annualised regular premium which gives the present value at point of sale of the regular premiums.

| Gross of non-controlling interests 2011 | Regular premiums £m | WACF | Present value of regular premiums £m | Single premiums £m | Present value of new business premiums £m |
|---|---|---|---|---|---|
| **United Kingdom** | **766** | **4.9** | **3,776** | **7,539** | **11,315** |
| France | **81** | **6.7** | **540** | **3,507** | **4,047** |
| Ireland | **53** | **3.9** | **205** | **712** | **917** |
| Italy | **58** | **5.4** | **316** | **2,677** | **2,993** |
| Poland | **50** | **7.3** | **367** | **120** | **487** |
| Spain | **92** | **5.4** | **501** | **1,425** | **1,926** |
| Other Europe | **87** | **4.8** | **414** | **107** | **521** |
| **Aviva Europe** | **421** | **5.6** | **2,343** | **8,548** | **10,891** |
| **North America** | **109** | **10.0** | **1,088** | **2,844** | **3,932** |
| **Asia Pacific** | **295** | **4.9** | **1,444** | **338** | **1,782** |
| **Total life and pensions – continuing operations** | **1,591** | **5.4** | **8,651** | **19,269** | **27,920** |
| **Total life and pensions – discontinued operations[1]** | **73** | **9.1** | **663** | **422** | **1,085** |
| **Total life and pensions** | **1,664** | **5.6** | **9,314** | **19,691** | **29,005** |

1 Current period discontinued represent the results of Delta Lloyd up to 6 May 2011 only.

| Gross of non-controlling interests 2010 | Regular premiums £m | WACF | Present value of regular premiums £m | Single premiums £m | Present value of new business premiums £m |
|---|---|---|---|---|---|
| **United Kingdom** | 579 | 5.2 | 2,997 | 7,301 | 10,298 |
| France | 89 | 6.3 | 565 | 4,353 | 4,918 |
| Ireland | 65 | 4.0 | 263 | 675 | 938 |
| Italy | 50 | 5.4 | 270 | 4,186 | 4,456 |
| Poland | 51 | 9.2 | 468 | 135 | 603 |
| Spain | 109 | 5.9 | 648 | 1,436 | 2,084 |
| Other Europe | 89 | 4.6 | 412 | 126 | 538 |
| **Aviva Europe** | 453 | 5.8 | 2,626 | 10,911 | 13,537 |
| **North America** | 97 | 10.2 | 993 | 3,735 | 4,728 |
| **Asia Pacific** | 240 | 4.7 | 1,132 | 485 | 1,617 |
| **Total life and pensions – continuing operations** | 1,369 | 5.7 | 7,748 | 22,432 | 30,180 |
| **Total life and pensions – discontinued operations** | 172 | 9.3 | 1,591 | 1,587 | 3,178 |
| **Total life and pensions** | 1,541 | 6.1 | 9,339 | 24,019 | 33,358 |

In Poland, the decrease in the WACF reflects the lower proportion of new pension business written following legislative changes making this business less attractive. This business had a high WACF, reflecting the long duration of the business combined with premiums increasing each year.

Overview IFRS New business Capital management Analysis of assets MCEV

## E10 – Geographical analysis of value of new business

The tables below set out the present value of new business premiums (PVNBP) written by the life and related businesses, the value of the new business and the resulting margin, firstly gross and then net of tax and non-controlling interests. The value generated by new business written during the period is the present value of the projected stream of after-tax distributable profit from that business, including expected profit between point of sale and the valuation date. The value of new business has been calculated using economic assumptions 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 operating assumptions are consistent with those used to determine the embedded value. The value of new business is shown after the effect of the frictional costs of holding required capital, and after the effect of the costs of residual non-hedgeable risks on the same basis as for the in-force covered business.

| Life and pensions (gross of tax and non-controlling interest) | Present value of new business premiums | | Value of new business | | New business margin | |
|---|---|---|---|---|---|---|
| | **2011 £m** | 2010 £m | **2011 £m** | 2010 £m | **2011 %** | 2010 % |
| **United Kingdom** | **11,315** | 10,298 | **380** | 354 | **3.4%** | 3.4% |
| France | **4,047** | 4,918 | **142** | 175 | **3.5%** | 3.6% |
| Ireland | **917** | 938 | **(4)** | 1 | **(0.4)%** | 0.1% |
| Italy | **2,993** | 4,456 | **75** | 142 | **2.5%** | 3.2% |
| Poland | **487** | 603 | **45** | 40 | **9.2%** | 6.6% |
| Spain | **1,926** | 2,084 | **86** | 128 | **4.5%** | 6.1% |
| Other Europe | **521** | 538 | **25** | 18 | **4.8%** | 3.3% |
| **Aviva Europe** | **10,891** | 13,537 | **369** | 504 | **3.4%** | 3.7% |
| **North America** | **3,932** | 4,728 | **(131)** | (194) | **(3.3)%** | (4.1)% |
| **Asia Pacific** | **1,782** | 1,617 | **71** | 52 | **4.0%** | 3.2% |
| **Total life and pensions – continued operations** | **27,920** | 30,180 | **689** | 716 | **2.5%** | 2.4% |
| **Total life and pensions – discontinued operations[1]** | **1,085** | 3,178 | **1** | (92) | **0.1%** | (2.9)% |
| **Total life and pensions** | **29,005** | 33,358 | **690** | 624 | **2.4%** | 1.9% |

| Life and pensions (net of tax and non-controlling interest) | Present value of new business premiums | | Value of new business | | New business margin | |
|---|---|---|---|---|---|---|
| | **2011 £m** | 2010 £m | **2011 £m** | 2010 £m | **2011 %** | 2010 % |
| **United Kingdom** | **11,315** | 10,298 | **281** | 254 | **2.5%** | 2.5% |
| France | **3,376** | 4,340 | **79** | 100 | **2.3%** | 2.3% |
| Ireland | **688** | 704 | **(3)** | 1 | **(0.4)%** | 0.1% |
| Italy | **1,336** | 1,965 | **23** | 42 | **1.7%** | 2.1% |
| Poland | **440** | 531 | **34** | 29 | **7.7%** | 5.5% |
| Spain | **1,054** | 1,136 | **28** | 43 | **2.7%** | 3.8% |
| Other Europe | **521** | 538 | **20** | 15 | **3.8%** | 2.8% |
| **Aviva Europe** | **7,415** | 9,214 | **181** | 230 | **2.4%** | 2.5% |
| **North America** | **3,932** | 4,728 | **(85)** | (126) | **(2.2)%** | (2.7)% |
| **Asia Pacific** | **1,756** | 1,598 | **55** | 41 | **3.1%** | 2.6% |
| **Total life and pensions – continued operations** | **24,418** | 25,838 | **432** | 399 | **1.8%** | 1.5% |
| **Total life and pensions – discontinued operations[1]** | **599** | 1,721 | **—** | (41) | **—** | (2.4)% |
| **Total life and pensions** | **25,017** | 27,559 | **432** | 358 | **1.7%** | 1.3% |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## E11 – Post-tax internal rate of return and payback period on life and pensions new business

The new business written requires up-front capital investment due to high set-up costs and capital requirements. The internal rate of return (IRR) is a measure of the shareholder return expected on this capital investment. It is equivalent to the discount rate at which the present value of the post-tax cash flows expected to be earned over the lifetime of the business written, including allowance for the time value of options and guarantees, is equal to the total invested capital to support the writing of the business. The capital included in the calculation of the IRR is the initial capital required to pay acquisition costs and set up statutory reserves in excess of premiums received (initial capital), plus required capital at the same level as for the calculation of the value of new business.

The payback period shows how quickly shareholders can expect the total capital to be repaid. The payback period has been calculated based on undiscounted cash flows and allows for the initial and required capital.

The projected investment returns in both the IRR and payback period calculations assume that equities, properties and bonds earn a return in excess of risk-free consistent with the long-term rate of return assumed in operating earnings.

The IRR on life and pensions new business for the Group (excluding Delta Lloyd) was 14.4% *(2010: 13.3%).*

| **Gross of non-controlling interests 31 December 2011** | **Internal rate of return %** | **Initial capital £m** | **Required capital £m** | **Total invested capital £m** | **Payback period years** |
|---|---|---|---|---|---|
| **United Kingdom** | **15%** | **155** | **187** | **342** | **7** |
| France | **11%** | **45** | **127** | **172** | **8** |
| Ireland | **6%** | **27** | **22** | **49** | **12** |
| Italy | **12%** | **24** | **117** | **141** | **6** |
| Poland | **24%** | **25** | **9** | **34** | **4** |
| Spain | **23%** | **25** | **70** | **95** | **4** |
| Other Europe | **16%** | **40** | **13** | **53** | **6** |
| **Aviva Europe** | **14%** | **186** | **358** | **544** | **7** |
| **North America** | **14%** | **27** | **301** | **328** | **5** |
| **Asia Pacific[1]** | **13%** | **56** | **31** | **87** | **12** |
| **Total – excluding Delta Lloyd** | **14.4%** | **424** | **877** | **1,301** | **7** |
| **Total – Delta Lloyd[2]** | **10%** | **26** | **27** | **53** | **10** |
| **Total** | **14.3%** | **450** | **904** | **1,354** | **7** |

| Gross of non-controlling interests 31 December 2010 | Internal rate of return % | Initial capital £m | Required capital £m | Total invested capital £m | Payback period years |
|---|---|---|---|---|---|
| **United Kingdom** | 15% | 98 | 198 | 296 | 7 |
| France | 9% | 34 | 202 | 236 | 9 |
| Ireland | 5% | 34 | 17 | 51 | 11 |
| Italy | 11% | 32 | 183 | 215 | 6 |
| Poland | 25% | 16 | 9 | 25 | 4 |
| Spain | 22% | 25 | 80 | 105 | 4 |
| Other Europe | 14% | 41 | 16 | 57 | 6 |
| **Aviva Europe** | 13% | 182 | 507 | 689 | 7 |
| **North America** | 14% | 65 | 366 | 431 | 4 |
| **Asia Pacific** | 11% | 62 | 34 | 96 | 13 |
| **Total – excluding Delta Lloyd** | 13.3% | 407 | 1,105 | 1,512 | 7 |
| **Total – Delta Lloyd** | 6% | 106 | 112 | 218 | 16 |
| **Total** | 12.5% | 513 | 1,217 | 1,730 | 8 |

1 The Asia Pacific region IRR and payback period excluding Taiwan, which is held for sale, are 14% and 8 years respectively. *(2010: 11% and 8 years).*
2 Current period represents the results of Delta Lloyd up to 6 May 2011 only.

## E12 – Free surplus emergence

| Net of tax and non-controlling interests 2011 | Existing business | | | | | New business | | | Total business |
|---|---|---|---|---|---|---|---|---|---|
| | Transfer from VIF to net worth £m | Return on net worth £m | Impact of experience variances and assumption changes on net worth £m | Release of required capital to free surplus £m | Total existing business surplus generation £m | Impact on net worth £m | Reduction in free surplus from required capital £m | Total new business surplus generation £m | Total free surplus generation £m |
| United Kingdom | **364** | **109** | **247** | **(86)** | **634** | **(101)** | **10** | **(91)** | **543** |
| Aviva Europe | **539** | **95** | **(37)** | **225** | **822** | **(152)** | **(233)** | **(385)** | **437** |
| North America | **270** | **42** | **119** | **203** | **634** | **(42)** | **(305)** | **(347)** | **287** |
| Asia Pacific | **66** | **12** | **14** | **(10)** | **82** | **(51)** | **(31)** | **(82)** | **—** |
| **Total – continuing operations** | **1,239** | **258** | **343** | **332** | **2,172** | **(346)** | **(559)** | **(905)** | **1,267** |
| **Total – discontinued operations** | **60** | **17** | **3** | **10** | **90** | **(15)** | **(14)** | **(29)** | **61** |
| **Total** | **1,299** | **275** | **346** | **342** | **2,262** | **(361)** | **(573)** | **(934)** | **1,328** |

| Net of tax and non-controlling interests 2010 | Existing business | | | | | New business | | | Total business |
|---|---|---|---|---|---|---|---|---|---|
| | Transfer from VIF to net worth £m | Return on net worth £m | Impact of experience variances and assumption changes on net worth £m | Release of required capital to free surplus £m | Total existing business surplus generation £m | Impact on net worth £m | Reduction in free surplus from required capital £m | Total new business surplus generation £m | Total free surplus generation £m |
| United Kingdom | 345 | 129 | 208 | (183) | 499 | (43) | (95) | (138) | 361 |
| Aviva Europe | 478 | 77 | 146 | 126 | 827 | (149) | (342) | (491) | 336 |
| North America | 210 | 53 | (56) | 292 | 499 | (41) | (375) | (416) | 83 |
| Asia Pacific | 52 | 9 | (5) | 15 | 71 | (57) | (34) | (91) | (20) |
| **Total – continuing operations** | 1,085 | 268 | 293 | 250 | 1,896 | (290) | (846) | (1,136) | 760 |
| **Total – discontinued operations** | 139 | 50 | (224) | 83 | 48 | (59) | (55) | (114) | (66) |
| **Total** | 1,224 | 318 | 69 | 333 | 1,944 | (349) | (901) | (1,250) | 694 |

## E13 – Maturity profile of business

### (a) Total in-force business

To show the profile of the VIF emergence, the value of VIF in the statements of financial position has been split into five-year tranches depending on the date when the profit is expected to emerge.

| Net of non-controlling interest 2011 £m | 0-5 | 6-10 | 11-15 | 16-20 | 20+ | Total |
|---|---|---|---|---|---|---|
| United Kingdom | **189** | **729** | **585** | **258** | **571** | **2,332** |
| Aviva Europe | **306** | **468** | **379** | **222** | **320** | **1,695** |
| North America | **60** | **(624)** | **(335)** | **(144)** | **(319)** | **(1,362)** |
| Asia Pacific | **188** | **126** | **47** | **14** | **(75)** | **300** |
| **Total** | **743** | **699** | **676** | **350** | **497** | **2,965** |

| Restated Net of non-controlling interest 2010 £m | 0-5 | 6-10 | 11-15 | 16-20 | 20+ | Total |
|---|---|---|---|---|---|---|
| United Kingdom | 153 | 766 | 538 | 287 | 553 | 2,297 |
| Aviva Europe | 1,361 | 801 | 481 | 294 | 351 | 3,288 |
| North America | (117) | (47) | 8 | (4) | (17) | (177) |
| Asia Pacific | 181 | 92 | 34 | 15 | 3 | 325 |
| **Total – excluding Delta Lloyd** | 1,578 | 1,612 | 1,061 | 592 | 890 | 5,733 |
| **Total – Delta Lloyd** | 234 | 50 | 26 | (80) | (34) | 196 |
| **Total** | 1,812 | 1,662 | 1,087 | 512 | 856 | 5,929 |

## E13– Maturity profile of business continued

### (b) New business

To show the profile of the VIF emergence, the value of new business has been split into five-year tranches depending on the date when the profit is expected to emerge.

| **Net of non-controlling interests 2011 £m** | **0-5** | **6-10** | **11-15** | **16-20** | **20+** | **Total** |
|---|---|---|---|---|---|---|
| United Kingdom | **93** | **58** | **34** | **25** | **173** | **383** |
| Aviva Europe | **161** | **75** | **41** | **22** | **34** | **333** |
| North America | **43** | **(94)** | **28** | **7** | **(27)** | **(43)** |
| Asia Pacific | **51** | **29** | **14** | **8** | **3** | **105** |
| **Total – continuing operations** | **348** | **68** | **117** | **62** | **183** | **778** |
| **Total – discontinued operations[1]** | **(8)** | **11** | **10** | **(1)** | **3** | **15** |
| **Total** | **340** | **79** | **127** | **61** | **186** | **793** |

| Net of non-controlling interests 2010 £m | 0-5 | 6-10 | 11-15 | 16-20 | 20+ | Total |
|---|---|---|---|---|---|---|
| United Kingdom | 78 | 42 | 22 | 13 | 143 | 298 |
| Aviva Europe | 178 | 87 | 53 | 24 | 36 | 378 |
| North America | (26) | (85) | 10 | 22 | (6) | (85) |
| Asia Pacific | 57 | 22 | 11 | 5 | 3 | 98 |
| **Total – continuing operations** | 287 | 66 | 96 | 64 | 176 | 689 |
| **Total – discontinued operations[1]** | (1) | 9 | 9 | 5 | (4) | 18 |
| **Total** | 286 | 75 | 105 | 69 | 172 | 707 |

1 Current period discontinued operations represent the results of Delta Lloyd up to 6 May 2011 only.

## E14– Segmental analysis of life and related business embedded value

| **Net of non-controlling interests 2011** | **Free surplus £m** | **Required capital[1] £m** | **VIF £m** | **Total MCEV £m** |
|---|---|---|---|---|
| **United Kingdom** | **1,054** | **2,868** | **2,332** | **6,254** |
| France[2] | **(145)** | **2,048** | **800** | **2,703** |
| Ireland | **60** | **343** | **400** | **803** |
| Italy[3] | **8** | **499** | **(658)** | **(151)** |
| Poland | **131** | **102** | **929** | **1,162** |
| Spain | **118** | **227** | **105** | **450** |
| Other Europe | **31** | **33** | **119** | **183** |
| **Aviva Europe** | **203** | **3,252** | **1,695** | **5,150** |
| **North America[2,4]** | **(11)** | **1,575** | **(1,362)** | **202** |
| **Asia Pacific** | **98** | **270** | **300** | **668** |
| **Total** | **1,344** | **7,965** | **2,965** | **12,274** |

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margins.
2 France and Aviva USA have a positive surplus on a statutory basis.
3 Negative MCEV in Italy results from widening of spreads on sovereign debt over the year
4 Aviva USA's holding company debt amounting to £736 million at 31 December 2011 has been included within non-covered business.

| Restated Net of non-controlling interests 2010 | Free surplus £m | Required capital[1] £m | VIF £m | Total MCEV £m |
|---|---|---|---|---|
| **United Kingdom** | 1,139 | 2,934 | 2,297 | 6,370 |
| France[2] | (243) | 1,737 | 1,446 | 2,940 |
| Ireland | 47 | 336 | 444 | 827 |
| Italy | 202 | 313 | 82 | 597 |
| Poland | 129 | 114 | 876 | 1,119 |
| Spain | 81 | 266 | 207 | 554 |
| Other Europe | 43 | 45 | 233 | 321 |
| **Aviva Europe** | 259 | 2,811 | 3,288 | 6,358 |
| **North America[2,3]** | (286) | 1,437 | (177) | 974 |
| **Asia Pacific** | 135 | 216 | 325 | 676 |
| **Total – excluding Delta Lloyd** | 1,247 | 7,398 | 5,733 | 14,378 |
| **Total – Delta Lloyd** | 356 | 944 | 196 | 1,496 |
| **Total** | 1,603 | 8,342 | 5,929 | 15,874 |

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margins.
2 France and Aviva USA have a positive surplus on a statutory basis.
3 Aviva USA's holding company debt amounting to £765 million at 31 December 2010 has been included within non-covered business.

## E14– Segmental analysis of life and related business embedded value continued

The required capital across our life businesses varies between 100% and 325% of EU minimum or equivalent. The weighted average level of required capital for our life business, excluding Delta Lloyd, expressed as a percentage of the EU minimum (or equivalent) solvency margin has increased to 135% (2010: 130%). These levels of required capital are used in the calculation of the Group's embedded value to evaluate the cost of locked in capital. At 31 December 2011 the aggregate regulatory requirements based on the EU minimum test amounted to £5.9 billion (2010: £6.0 billion). At this date, the actual net worth held in our long-term business, excluding Delta Lloyd, was £9.3 billion (2010: £8.6 billion) which represents 158% (2010: 144%) of these minimum requirements.

## E15 – Risk allowance within present value of in-force (VIF)

Within the VIF in the tables, there are additional allowances for risks not included within the basic present value of future profits calculation.

| **Net of non-controlling interests 2011** | **PVFP £m** | **Frictional costs £m** | **Non-hedgeable risks £m** | **Time value of financial options and guarantees £m** | **VIF £m** |
|---|---|---|---|---|---|
| **United Kingdom** | **2,990** | **(241)** | **(390)** | **(27)** | **2,332** |
| France | **1,721** | **(147)** | **(182)** | **(592)** | **800** |
| Ireland | **439** | **(14)** | **(22)** | **(3)** | **400** |
| Italy | **(550)** | **(3)** | **(20)** | **(85)** | **(658)** |
| Poland | **1,088** | **(11)** | **(145)** | **(3)** | **929** |
| Spain | **176** | **(12)** | **(45)** | **(14)** | **105** |
| Other Europe | **130** | **(2)** | **(7)** | **(2)** | **119** |
| **Aviva Europe** | **3,004** | **(189)** | **(421)** | **(699)** | **1,695** |
| **North America** | **(513)** | **(160)** | **(67)** | **(622)** | **(1,362)** |
| **Asia Pacific** | **455** | **(26)** | **(67)** | **(62)** | **300** |
| **Total** | **5,936** | **(616)** | **(945)** | **(1,410)** | **2,965** |

The Time Value of Options and Guarantees (excluding Delta Lloyd) has increased by £621 million to £1,410 million, reflecting adverse impacts from economic movements over the year; in particular, significant increases in swaption volatility and decreases in risk-free rates.

The allowance for Non-hedgeable risks (excluding Delta Lloyd) increased by £124 million to £945 million, primarily due to lower reference rates. The charge for CNHR remains unchanged at 3.3%.

| Restated Net of non-controlling interests 2010 | PVFP £m | Frictional costs £m | Non-hedgeable risks £m | Time value of financial options and guarantees £m | VIF £m |
|---|---|---|---|---|---|
| **United Kingdom** | 2,938 | (291) | (322) | (28) | 2,297 |
| France | 2,051 | (123) | (170) | (312) | 1,446 |
| Ireland | 476 | (9) | (23) | — | 444 |
| Italy | 156 | (19) | (11) | (44) | 82 |
| Poland | 1,013 | (14) | (118) | (5) | 876 |
| Spain | 281 | (18) | (41) | (15) | 207 |
| Other Europe | 247 | (3) | (9) | (2) | 233 |
| **Aviva Europe** | 4,224 | (186) | (372) | (378) | 3,288 |
| **North America** | 379 | (136) | (69) | (351) | (177) |
| **Asia Pacific** | 441 | (26) | (58) | (32) | 325 |
| **Total – excluding Delta Lloyd** | 7,982 | (639) | (821) | (789) | 5,733 |
| **Total – Delta Lloyd** | 580 | (107) | (85) | (192) | 196 |
| **Total** | 8,562 | (746) | (906) | (981) | 5,929 |

## E16 – Implied discount rates (IDR)

In the valuation of a block of business, the IDR is the rate of discount such that a traditional embedded value calculation for the covered business equates to the MCEV.

The cash flows projected are the expected future cash flows including expected investment cash flows from equities, bonds and properties earning a risk premium in excess of risk free, statutory reserves and required capital. The risk premiums used are consistent with those used in the expected existing business contribution within operating earnings. As the risk premiums are positive, a discount rate higher than risk-free is required to give a value equal to the market-consistent embedded value.

Average derived risk discount rates are shown below for the embedded value.

| | **2011**<br>**%** | Restated<br>2010<br>% |
|---|---|---|
| **United Kingdom** | **9.3%** | 8.4% |
| France | **7.9%** | 6.7% |
| Ireland | **4.1%** | 4.4% |
| Italy[1] | **n/a** | 7.3% |
| Poland | **6.5%** | 7.3% |
| Spain | **15.0%** | 9.6% |
| Other Europe | **6.7%** | 8.0% |
| **Aviva Europe** | **n/a** | 6.9% |
| **North America[1]** | **n/a** | 34.2% |
| **Asia Pacific** | **5.2%** | 5.9% |
| **Total** | **n/a** | 9.8% |

1. Where there is significant difference in projected real world and risk neutral profits and the value of the in force business plus required capital is negative or close to zero, the IDR is not well defined and consequently IDR is not meaningful.

## E17– Summary of non-controlling interest in life and related businesses' MCEV results

| 2011 | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Aviva Europe £m | Asia Pacific £m | Delta Lloyd £m | Total £m | Shareholder interest £m | Group £m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business after tax | **15** | **(1)** | **27** | **4** | **32** | **77** | **1** | **—** | **78** | **432** | **510** |
| Life MCEV operating (loss)/earnings after tax | **25** | **(10)** | **28** | **37** | **49** | **129** | **3** | **94** | **226** | **2,193** | **2,419** |
| Life MCEV (loss)/earnings after tax | **(16)** | **(29)** | **(928)** | **41** | **(8)** | **(940)** | **3** | **(13)** | **(950)** | **(1,337)** | **(2,287)** |
| Closing covered businesses' embedded value | **214** | **266** | **(244)** | **158** | **405** | **799** | **21** | **—** | **820** | **12,274** | **13,094** |

| Restated 2010 | France £m | Ireland £m | Italy £m | Poland £m | Spain £m | Aviva Europe £m | Asia Pacific £m | Delta Lloyd £m | Total £m | Shareholder interest £m | Group £m |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Value of new business after tax | 15 | (1) | 54 | 4 | 47 | 119 | — | (26) | 93 | 358 | 451 |
| Life MCEV operating earnings after tax | 41 | 6 | 104 | 40 | 81 | 272 | 3 | 49 | 324 | 2,199 | 2,523 |
| Life MCEV (loss)/earnings after tax | 47 | (11) | (26) | 2 | (29) | (17) | 6 | (17) | (28) | 1,566 | 1,538 |
| Closing covered businesses' embedded value | 250 | 268 | 630 | 153 | 489 | 1,790 | 19 | 1,324 | 3,133 | 15,874 | 19,007 |

There are no non-controlling interests in the UK or North America.

## E18 – Principal assumptions

### (a) Economic assumptions – Deterministic calculations

Economic assumptions are derived actively, based on market yields on risk-free fixed interest assets at the end of each reporting period.

In setting the risk-free rate we have, wherever possible, used the mid-price swap yield curve for an AA-rated bank. The curve is extrapolated if necessary to get rates suitable to the liabilities. For markets in which there is no reliable swap yield curve the relevant government bond yields are used. For certain business, swap rates are adjusted for a 'liquidity premium' in deriving the risk-free rates, and these adjustments are shown below the reference rate table.

Required capital is shown as a multiple of the EU statutory minimum solvency margin or equivalent.

The principal economic assumptions used are as follows:

**Reference rate (spot, swap rates) and expense inflation**

| | United Kingdom | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Reference rate | | | |
| 1 year | **1.2%** | 1.0% | 1.2% |
| 5 years | **1.6%** | 2.7% | 3.5% |
| 10 years | **2.3%** | 3.7% | 4.3% |
| 15 years | **2.8%** | 4.1% | 4.6% |
| 20 years | **3.0%** | 4.2% | 4.6% |
| Expense inflation | **2.8%** | 3.3% | 3.3% |

| | Delta Lloyd | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Reference rate | | | |
| 1 year | **n/a** | 1.3% | 1.3% |
| 5 years | **n/a** | 2.6% | 2.9% |
| 10 years | **n/a** | 3.4% | 3.7% |
| 15 years | **n/a** | 3.8% | 4.1% |
| 20 years | **n/a** | 3.8% | 4.2% |
| Expense inflation | **n/a** | 2.0% | 2.4% |

| | Eurozone (excluding Delta Lloyd) | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Reference rate | | | |
| 1 year | **1.4%** | 1.3% | 1.3% |
| 5 years | **1.7%** | 2.5% | 2.8% |
| 10 years | **2.4%** | 3.4% | 3.7% |
| 15 years | **2.8%** | 3.8% | 4.1% |
| 20 years | **2.8%** | 3.8% | 4.2% |
| Expense inflation | **1.9%** | 2.1% | 2.5% |

## E18 – Principal assumptions continued

| | Poland | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Reference rate | | | |
| 1 year | **4.9%** | 4.4% | 4.5% |
| 5 years | **4.8%** | 5.5% | 5.8% |
| 10 years | **5.0%** | 5.7% | 5.8% |
| 15 years | **4.7%** | 5.4% | 5.7% |
| 20 years | **4.3%** | 5.1% | 5.5% |
| Expense inflation | **2.9%** | 3.0% | 3.0% |

| | United States | | |
|---|---|---|---|
| | **2011** | 2010 | 2009 |
| Reference rate | | | |
| 1 year | **0.7%** | 0.4% | 0.7% |
| 5 years | **1.2%** | 2.2% | 3.1% |
| 10 years | **2.1%** | 3.5% | 4.2% |
| 15 years | **2.5%** | 4.0% | 4.6% |
| 20 years | **2.6%** | 4.2% | 4.8% |
| Expense inflation | **2.0%** | 3.0% | 3.0% |

For service companies, expense inflation relates to the underlying expenses rather than the fees charged to the life company.

The following adjustments are made to the swap rate for immediate annuity type contracts and for all contracts for Aviva USA. The risk-free rate is taken as the swap yield curve for the currency of the liability, adjusted as follows:

| | New business | | | | | | | | Embedded value | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **4Q 2011** | **3Q 2011** | **Q2 2011** | **Q1 2011** | 4Q 2010 | 3Q 2010 | 2Q 2010 | 1Q 2010 | **2011** | 2010 |
| UK Immediate annuities | **1.27%** | **1.20%** | **1.00%** | **1.14%** | 1.09% | 0.87% | 0.75% | 0.80% | **1.30%** | 1.09% |
| UK bulk purchase annuities | **1.36%** | **1.38%** | **0.65%** | **0.72%** | 0.72% | 0.69% | 0.70% | 0.75% | **1.30%** | 1.09% |
| France | **n/a** | **n/a** | **n/a** | **n/a** | n/a | n/a | n/a | n/a | **1.18%** | 0.36% |
| Spain | **0.96%** | **0.33%** | **0.31%** | **0.36%** | 0.15% | 0.12% | 0.20% | 0.15% | **0.88%** | 0.36% |
| Delta Lloyd | **n/a** | **n/a** | **0.31%** | **0.36%** | 0.38% | 0.39% | 0.34% | 0.43% | **n/a** | 0.36% |
| US immediate annuities | **1.28%** | **0.59%** | **0.57%** | **0.66%** | 0.76% | 0.85% | 0.65% | 0.65% | **1.33%** | 0.66% |
| US deferred annuities and all other contracts | **1.09%** | **0.51%** | **0.49%** | **0.56%** | 0.64% | 0.70% | 0.55% | 0.55% | **1.13%** | 0.56% |

For Delta Lloyd, the adjustment shown is applied to immediate annuity type contracts. For participating contracts, 75% of this value is used and for all other contracts, 50% of this value is used. This methodology is consistent with QIS 5 Solvency II requirements.

The approach to estimating the market level of liquidity premium in corporate bond assets is consistent with the formula structure proposed by CFO/CRO Forum working party.

The formula is:

UK/Europe: 50% of (iBoxx Corporate bond spread – 40bp)
USA: 60% of (iBoxx Corporate bond spread – 40bp)

Adjustments are made where liabilities are not fully backed by assets earning a liquidity premium and for contracts that are exposed to some lapse risk. There has been no change to the types of contracts to which a liquidity premium is applied.

**Risk premium – used for operating profit, Implied Discount Rates (IDR), Internal Rates of Return (IRR) and payback period**

For life and pensions operating earnings, Aviva uses normalised investment returns. The normalised investment returns are expressed as a swap rate based on the typical duration of the assets held plus an asset risk premium. More detail is given in note E1 – Basis of preparation.

The use of asset risk premia only impacts operating earnings as expected returns reflect management's long-term expectations of asset returns in excess of the reference rate from investing in different asset classes. This assumption does not impact the embedded value or value of new business as asset risk premia are not recognised until earned. The asset risk premia set out in the table below are added to the ten year swap rate to calculate expected returns.

## E18– Principal assumptions continued

| | All territories 2011 | 2010 | 2009 |
|---|---|---|---|
| Equity risk premium | **3.5%** | 3.5% | 3.5% |
| Property risk premium | **2.0%** | 2.0% | 2.0% |

Future returns on fixed interest investments are calculated from prospective yields less an adjustment for credit risk.

**Required capital and tax**

| | Tax rates[5] | | | Required capital (% EU minimum or equivalent) | |
|---|---|---|---|---|---|
| | **2011** | 2010 | 2009 | **2011** | 2010 |
| United Kingdom[1] | **25.0%** | 27.0% | 28.0% | **100%/200%** | 100%/110%/200% |
| France | **34.4%** | 34.4% | 34.4% | **107.5%** | 107.5% |
| Ireland[2] | **12.5%** | 12.5% | 12.5% | **174%/180%** | 175%/250% |
| Italy[3] | **34.3%** | 32.4% | 32.4% | **195%** | 111%/165% |
| Poland | **19.0%** | 19.0% | 19.0% | **125.5%** | 125.5% |
| Spain[4] | **30.0%** | 30.0% | 30.0% | **122%-130%/156%** | 130% – 134%/175% |
| Delta Lloyd | **n/a** | 25.0% | 25.5% | **n/a** | 120% |
| United States | **35.0%** | 35.0% | 0.0% | **325%** | 325% |

1 The required capital in the United Kingdom under MCEV is 100% for unit-linked and other non-participating business and annuity business with 200% for BPA business. In addition, the reattribution of the inherited estate has led to additional capital being locked in to support the with-profit business, and this has been included within required capital.
2 Required capital in Ireland under MCEV is 174% for bancassurance and 180% for retail business.
3 This is the aggregate required capital level in Italy. The required capital as a percentage of EU minimum has increased due to the current economic environment.
4 Required capital in Spain is 156% of the EU minimum for Aviva Vida y Pensiones and 122% – 130% for bancassurance companies.
5 Current tax legislation and rates have been assumed to continue unaltered except where changes in future tax rates have been substantively enacted as at the valuation date.

A reduction in the UK corporation tax rate from 28% to 26% was substantively enacted in March 2011 and is effective from 1 April 2011. A further reduction from 26% to 25% was substantively enacted in July 2011 and will be effective from 1 April 2012. The effect of the 25% rate has been reflected in the Group's MCEV net assets as at 31 December 2011. In addition, the Government announced its intention to further reduce the UK corporation tax rate to 24% from 1 April 2013 and to 23% from 1 April 2014. The benefit to the Group's MCEV net assets from the further 2% reduction in the rate from 25% to 23% is estimated at approximately £100 million in total.

Considerable changes to the regime for taxing UK life insurance companies will be made with effect from 1 January 2013. Draft legislation on this was included in the draft 2012 Finance Bill published on 6 December 2011, and consultation on the changes and the draft legislation has continued since then. Based on the draft legislation published in December 2011 and the continued consultation, it is not expected that these changes will have a material impact on the Group's MCEV net assets.

**Other economic assumptions**

Required capital relating to with-profit business is generally assumed to be covered by the surplus within the with-profit funds and no effect has been attributed to shareholders. Where the fund is insufficient and additional shareholder support is required, this is included within required capital, including the RIEESA in the UK. Bonus rates on participating business have been set at levels consistent with the economic assumptions. The distribution of profit between policyholders and shareholders within the with-profit funds assumes that the shareholder interest in conventional with-profit business in the UK and Ireland continues at the current rate of one-ninth of the cost of bonus.

### (b) Economic assumptions – Stochastic calculations

The calculation of time value of options and guarantees allows for expected management and policyholder actions in response to varying future investment conditions. The management actions modelled include changes to asset mix, bonus rates and rates of interest and other guarantees granted to policyholders. Modelled policyholder actions are described under 'Other assumptions'.

## E18 – Principal assumptions continued

### Model – Europe (excluding Delta Lloyd) and Asia Pacific

Swap rates are generated by a model, the LIBOR Market Model (LMM),that projects a full swap curve at monthly intervals. Forward rates are assumed to have a log-normal distribution which guarantees non-negative interest rates. The model is calibrated to at-the-money swaptions of a variety of terms and tenors. Swaption volatilities are taken from SuperDerivatives. Tests have been performed to ensure that sufficient scenarios have been used that the result converges to the stochastic value of the business being valued.

The total annual return on equities is calculated as the return on one-year swaps plus an excess return. This excess return is generally modelled using a log-normal model where volatility varies by time horizon. This allows the model to capture the term structure of implied volatilities. The model is calibrated to at-the-money options of a variety of terms. Option volatilities are taken from Markit.

The model also generates property total returns and real yield curves, although these are not significant asset classes for Aviva outside the UK. In the absence of liquid market data, the volatilities of these asset classes are based on historic data.

Assumptions for correlations between asset classes have been set based on historic data.

### Model – North America and United Kingdom

Swap rates are generated by a model, the LIBOR Market Model Plus (LMM+), which projects a full swap curve at monthly intervals. Previously the LMM model was used in the UK to generate scenarios. Forward rates are assumed to have a distribution that lies between the log-normal and normal distributions. Although this no longer guarantees non-negative interest rates, it maintains interest rates within a more plausible range than the standard Libor Market Model, and gives a better fit to certain swaption volatility surfaces. The model is calibrated to volatilities for swaptions for ten year swaps for a range of option terms and strike rates. Swaption volatilities are taken from SuperDerivatives. Tests have been performed to ensure that sufficient scenarios have been used that the result converges to the stochastic value of the business being valued.

The total annual return on equities is calculated as the return on one-year swaps plus an excess return. For the US, this excess return is modelled using a log-normal model where volatility varies by time horizon. This allows the model to capture the term structure of implied volatilities. The model is calibrated to at-the-money options of a variety of terms. For the UK, a two-dimensional model is used to capture the term structure of implied volatilities and the projected in the money position. Option volatilities are taken from Markit.

Assumptions for correlations between asset classes have been set based on historic data.

### Model – Delta Lloyd

The interest rate model used is a short rate G2++ model. The model is calibrated to the QIS5 yield curve and the swaption implied volatilities. Swaption implied volatilities are taken from Bloomberg. The equity model is a Heston model.

Assumptions for correlations between asset classes have been set based on historic data.

### Asset classes

The significant asset classes for UK participating business are equities, property and long-term fixed rate bonds. The most significant assumptions are the distribution of future long-term interest rates (nominal and real) and swaption implied volatilities.

For many businesses, including US, France and Delta Lloyd, the most important assets are fixed rate bonds of various durations.

### Summary statistics

### Swaption implied volatilities

The implied volatility is that determined by Black-Scholes formula to reproduce the market price of the option. The following table sets out the swaption implied volatilities.

| | 2011 Swap length | | | | 2010 Swap length | | | |
|---|---|---|---|---|---|---|---|---|
| Option length | 10 years | 15 years | 20 years | 25 years | 10 years | 15 years | 20 years | 25 years |
| **UK sterling** | | | | | | | | |
| 10 years | **18.0%** | **16.8%** | **16.1%** | **15.6%** | 15.3% | 14.8% | 14.3% | 13.6% |
| 15 years | **16.2%** | **15.4%** | **14.8%** | **14.1%** | 14.1% | 13.6% | 13.1% | 12.3% |
| 20 years | **15.3%** | **14.5%** | **13.8%** | **13.1%** | 13.1% | 12.5% | 12.0% | 11.2% |
| 25 years | **15.4%** | **14.3%** | **13.5%** | **12.8%** | 12.3% | 11.7% | 11.2% | 10.4% |
| **Euro** | | | | | | | | |
| 10 years | **27.3%** | **28.1%** | **28.7%** | **28.4%** | 21.2% | 20.9% | 20.6% | 20.3% |
| 15 years | **31.6%** | **30.9%** | **29.3%** | **28.1%** | 20.7% | 20.1% | 19.5% | 18.8% |
| 20 years | **38.2%** | **32.6%** | **29.2%** | **27.7%** | 19.2% | 18.5% | 17.8% | 16.9% |
| 25 years | **35.0%** | **29.1%** | **26.3%** | **25.2%** | 17.8% | 16.9% | 16.1% | 15.2% |
| **US dollar** | | | | | | | | |
| 10 years | **30.4%** | **29.3%** | **28.4%** | **28.3%** | 24.0% | 23.6% | 22.9% | 22.2% |
| 15 years | **30.1%** | **28.1%** | **27.4%** | **27.7%** | 23.9% | 23.1% | 22.2% | 21.1% |
| 20 years | **27.5%** | **26.5%** | **26.9%** | **27.6%** | 23.0% | 21.9% | 20.6% | 19.4% |
| 25 years | **28.0%** | **27.9%** | **29.5%** | **30.4%** | 21.7% | 20.4% | 19.1% | 17.8% |
| **Delta Lloyd** | | | | | | | | |
| 10 years | **n/a** | **n/a** | **n/a** | **n/a** | 17.8% | 18.1% | 18.8% | 19.8% |
| 15 years | **n/a** | **n/a** | **n/a** | **n/a** | 20.5% | 21.0% | 21.4% | 21.7% |
| 20 years | **n/a** | **n/a** | **n/a** | **n/a** | 25.2% | 25.3% | 24.3% | 23.4% |
| 25 years | **n/a** | **n/a** | **n/a** | **n/a** | 28.5% | 26.4% | 24.0% | 22.5% |

## E18 – Principal assumptions continued

**Equity implied volatilities**

The implied volatility is that determined by the Black-Scholes formula to reproduce the market price of the option. The following table sets out the model equity implied volatilities.

| | 2011 | | | | | | 2010 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Option length | UK | France | Italy | Ireland | Spain | US | UK | France | Italy | Ireland | Spain | US | Delta Lloyd |
| 5 years | **25.8%** | **27.5%** | **31.9%** | **27.5%** | **30.4%** | **28.9%** | 24.5% | 29.0% | 27.5% | 27.7% | 32.4% | 28.8% | 27.2% |
| 10 years | **27.2%** | **27.9%** | **31.5%** | **27.9%** | **30.1%** | **31.0%** | 25.5% | 28.4% | 27.0% | 27.6% | 31.2% | 29.1% | 27.0% |
| 15 years | **27.1%** | **29.4%** | **33.0%** | **29.4%** | **31.6%** | **31.2%** | 26.4% | 29.1% | 26.1% | 28.4% | 30.2% | 29.7% | 26.3% |

**Property implied volatilities**

Best estimate levels of volatility have been used in the absence of meaningful option prices from which implied levels of volatility can be derived.

For the UK, model property implied volatility is 15% for 31 December 2011 *(31 December 2010: 15%)*.

**Demographic assumptions**

Assumed future mortality, morbidity and lapse rates have been derived from an analysis of Aviva's recent operating experience with a view to giving a best estimate of future experience. We have anticipated future changes in experience where that is appropriate, e.g. we have allowed for improvements in future policyholder longevity.

We have set the assumptions based on a best estimate of shareholder outcomes. In particular, where the policyholder behaviour varies with economic experience, we have set assumptions which are dynamic, i.e. vary depending on the economic assumptions. For example, surrender and option take up rate assumptions that vary according to the investment scenario under consideration have been used in the calculation of the time value of options and guarantees, based on our assessment of likely policyholder behaviour in different investment scenarios.

Additionally, where demographic experience is not driven by economic scenarios but is asymmetric on a stand-alone basis, the best estimate assumption considers the weighted-average expected experience, not simply the median or most likely outcome.

Notwithstanding the notification on 15 December 2011 that the bancassurance distribution agreement with Allied Irish Bank was not being renewed, the Aviva Ireland demographic assumptions have been set assuming the business remains open to new business and does not incur diseconomies of scale or other operating impacts.

**Expense assumptions**

Management expenses and operating expenses of holding companies attributed to life and related businesses have been included in the MCEV calculations and split between expenses relating to the acquisition of new business, the maintenance of business in-force and project expenses. Future expense assumptions include an allowance for maintenance expenses and a proportion of recurring project expenses. Certain expenses of an exceptional nature, when they occur, are identified separately and are generally charged as incurred. No future productivity gains have been anticipated.

Where subsidiary companies provide administration, investment management or other services to our life businesses, the value of profits or losses arising from these services have been included in the embedded value and value of new business.

**Non-hedgeable risk**

For the balance sheet and operating profit, a charge of 3.3% has been applied to the group-diversified capital required on a 1-in-200 one-year basis over the remaining lifetime of in-force business.The charge is set so as to give an aggregate allowance that is in excess of the expected operational risk costs arising from the in-force covered business over its remaining lifetime.

The capital levels used are projected to be sufficient to cover non-hedgeable risks at the 99.5% confidence level one-year after the valuation date. The capital is equal to the capital from the ICA results for those risks considered. The capital has been projected as running off over the remaining life of the in-force portfolio in line with the drivers of the capital requirement.

In addition to the operational risk allowance, financial non-hedgeable risks and other product level asymmetries have been allowed for. These allowances are not material as significant financial non-hedgeable risks and product level asymmetries are either modelled explicitly and included in the TVOG or are included in the PVFP through the use of appropriate best estimate assumptions.

## E18 – Principal assumptions continued

### (c) Other assumptions

**Valuation of debt**

Borrowings in the MCEV consolidated statement of financial position are valued on an IFRS basis, consistent with the primary financial statements. At 31 December 2011 the market value of the Group's external debt, subordinated debt, preference shares including General Accident plc preference shares of £250 million (classified as non-controlling interests) and direct capital instrument was £5,782 million *(31 December 2010: £7,279 million)*.

| | 2011 £m | 2010 £m |
|---|---|---|
| **Borrowings per summarised consolidated statement of financial position – MCEV basis** | **8,450** | 14,949 |
| Less: Securitised mortgage funding | **(1,306)** | (6,332) |
| Borrowings excluding non-recourse funding – MCEV basis | **7,144** | 8,617 |
| Less: Operational financing by businesses | **(1,889)** | (2,551) |
| External debt and subordinated debt – MCEV basis | **5,255** | 6,066 |
| Add: Preference shares (including General Accident plc) and direct capital instrument | **1,440** | 1,440 |
| External debt, subordinated debt, preference shares and direct capital instrument – MCEV basis | **6,695** | 7,506 |
| Effect of marking these instruments to market | **(913)** | (227) |
| **Market value of external debt, subordinated debt, preference shares and direct capital instrument** | **5,782** | 7,279 |

**Other**

It has been assumed that there will be no changes to the methods and bases used to calculate the statutory technical provisions and current surrender values, except where driven by varying future investment conditions under stochastic economic scenarios.

## E19 – Sensitivity analysis

### (a) Economic assumptions

The following tables show the sensitivity of the embedded value and the value of new business to:

- 10 basis point increase in the liquidity premium adjustment, where applicable;
- one percentage point increase and decrease 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);
- 10% increase and decrease in market values of equity and property assets;
- 25% increase in equity and swaption volatilities;
- 50 basis point increase and decrease in credit spreads with no change to liquidity premium; and
- decrease in the level of required capital to 100% EU minimum (or equivalent).

In each sensitivity calculation, all other assumptions remain unchanged except where they are directly affected by the revised economic conditions. For example, future bonus rates are automatically adjusted to reflect sensitivity changes to future investment returns. Some of the sensitivity scenarios may have consequential effects on valuation bases, where the basis for certain blocks of business is actively updated to reflect current economic circumstances. Consequential valuation impacts on the sensitivities are allowed for where an active valuation basis is used. Where businesses have a target asset mix, the portfolio is re-balanced after a significant market movement otherwise no re-balancing is assumed.

For new business, the sensitivities reflect the impact of a change immediately after inception of the policy.

In general, the magnitude of the sensitivities will reflect the size of the embedded values, though this will vary as the sensitivities have different impacts on the different components of the embedded value. In addition, other factors can have a material impact, such as the nature of the options and guarantees, as well as the types of investments held.

The credit spread sensitivities assume that the change relates to credit risk and not liquidity risk; in practice, credit spread movements may be partially offset due to changes in liquidity risk.

Sensitivities will also vary according to the current economic assumptions, mainly due to the impact of changes to both the intrinsic cost and time value of options and guarantees. Options and guarantees are the main reason for the asymmetry of the sensitivities where the guarantee impacts to different extents under the different scenarios.

## E19 – Sensitivity analysis continued

### Embedded value

| 2011 Embedded value (net of tax and non-controlling interest) | As reported on page 178 £m | 10bp increase in adjustment to risk-free rates £m | Interest rates 1% increase £m | Interest rates 1% decrease £m | Swaption implied volatilities 25% increase £m |
|---|---|---|---|---|---|
| **United Kingdom** | 6,254 | 205 | (195) | 140 | (5) |
| France | 2,703 | 5 | (55) | (30) | (165) |
| Ireland | 803 | — | (10) | 15 | — |
| Italy | (151) | — | 45 | (145) | — |
| Poland | 1,162 | — | (65) | 70 | — |
| Spain | 450 | 10 | (10) | 5 | — |
| Other Europe | 183 | — | (5) | 10 | — |
| **Aviva Europe** | 5,150 | 15 | (100) | (75) | (165) |
| **North America** | 202 | 270 | 185 | (455) | (185) |
| **Asia Pacific** | 668 | — | 130 | (185) | (10) |
| **Total** | 12,274 | 490 | 20 | (575) | (365) |

| 2011 Embedded value (net of tax and non-controlling interest) | As reported on page 178 £m | Equity/Property Market Values 10% increase £m | Equity/Property Market Values 10% decrease £m | Equity/Property Volatility 25% increase £m | Credit Spread 50bps increase £m | Credit Spread 50bps decrease £m | EU minimum capital or equivalent £m |
|---|---|---|---|---|---|---|---|
| **United Kingdom** | 6,254 | 235 | (320) | (225) | (955) | 1,015 | 5 |
| France | 2,703 | 175 | (185) | (170) | (60) | 215 | 10 |
| Ireland | 803 | 15 | (15) | — | — | — | 5 |
| Italy | (151) | 40 | (40) | — | (15) | 15 | — |
| Poland | 1,162 | 10 | (10) | — | — | — | 5 |
| Spain | 450 | 10 | (10) | (5) | (65) | 50 | 5 |
| Other Europe | 183 | — | — | — | — | — | — |
| **Aviva Europe** | 5,150 | 250 | (260) | (175) | (140) | 280 | 25 |
| **North America** | 202 | 30 | (35) | — | (990) | 985 | 110 |
| **Asia Pacific** | 668 | 20 | (20) | (15) | (20) | 20 | 35 |
| **Total** | 12,274 | 535 | (635) | (415) | (2,105) | 2,300 | 175 |

In line with the CFO Forum Press release on 9 December 2011, a sensitivity to include an allowance for the current sovereign debt market conditions has been performed. The calculated sensitivity uses the ECB AAA and other curve in place of the reference rate for liabilities in Italy and Spain and results in an increase of £0.6 billion to the embedded value of £12.3 billion.

## E19– Sensitivity analysis continued

### New business

| 2011 Value of new business (net of tax and non-controlling interest) | As reported on page 168 £m | 10bp increase in adjustment to risk-free rates £m | Interest rates 1% increase £m | Interest rates 1% decrease £m | Swaption implied volatilities 25% increase £m |
|---|---|---|---|---|---|
| **United Kingdom** | 281 | 33 | (18) | 27 | — |
| France | 79 | — | 7 | (8) | (10) |
| Ireland | (3) | — | 1 | (1) | — |
| Italy | 23 | — | 15 | (25) | — |
| Poland | 34 | — | (3) | 3 | — |
| Spain | 28 | 1 | (1) | (1) | — |
| Other Europe | 20 | — | (1) | 2 | — |
| **Aviva Europe** | 181 | 1 | 18 | (30) | (10) |
| **North America** | (85) | 12 | 55 | (102) | (18) |
| **Asia Pacific** | 55 | — | 18 | (20) | — |
| **Total** | 432 | 46 | 73 | (125) | (28) |

| 2011 Value of new business (net of tax and non-controlling interest) | As reported on page 168 £m | Equity/Property Market Values 10% increase £m | Equity/Property Market Values 10% decrease £m | Equity/Property Volatility 25% increase £m | Credit Spread 50bps increase £m | Credit Spread 50bps decrease £m | EU minimum capital or equivalent £m |
|---|---|---|---|---|---|---|---|
| **United Kingdom** | 281 | — | — | — | (137) | 148 | 2 |
| France | 79 | 3 | (2) | (4) | — | 3 | 1 |
| Ireland | (3) | — | — | — | — | — | — |
| Italy | 23 | — | — | — | — | — | 2 |
| Poland | 34 | — | — | — | — | — | — |
| Spain | 28 | — | — | — | (8) | 6 | — |
| Other Europe | 20 | — | — | — | — | — | — |
| **Aviva Europe** | 181 | 3 | (2) | (4) | (8) | 9 | 3 |
| **North America** | (85) | — | — | — | (56) | 54 | 15 |
| **Asia Pacific** | 55 | — | — | — | — | — | 6 |
| **Total** | 432 | 3 | (2) | (4) | (201) | 211 | 26 |

## E19 – Sensitivity analysis continued

### (b) Non-economic assumptions

The following tables below show the sensitivity of the embedded value and the value of new business to the following changes in non-economic assumptions:

- 10% decrease in maintenance expenses (a 10% sensitivity on a base expense assumption of £10 pa would represent an expense assumption of £9 pa). Where there is a 'look through' into service company expenses the fee charged by the service company is unchanged while the underlying expense decreases;
- 10% decrease in lapse rates (a 10% sensitivity on a base assumption of 5% pa would represent a lapse rate of 4.5% pa); and
- 5% decrease in both mortality and morbidity rates disclosed separately for life assurance and annuity business.

No future management actions are modelled in reaction to the changing non-economic assumptions. In each sensitivity calculation all other assumptions remain unchanged. No changes to valuation bases have been included.

### Embedded value

| 2011<br>Embedded value<br>(net of tax and non-controlling interest) | As reported on page 178<br>£m | 10% decrease in maintenance expenses<br>£m | 10% decrease in lapse rates<br>£m | 5% decrease in mortality/ morbidity rates – life assurance<br>£m | 5% decrease in mortality/ morbidity rates – annuity business<br>£m |
|---|---|---|---|---|---|
| **United Kingdom** | **6,254** | **180** | **30** | **65** | **(375)** |
| France | **2,703** | **45** | **45** | **35** | **(5)** |
| Ireland | **803** | **20** | **10** | **5** | **(5)** |
| Italy | **(151)** | **15** | **(35)** | **5** | **—** |
| Poland | **1,162** | **20** | **50** | **15** | **—** |
| Spain | **450** | **5** | **40** | **15** | **(5)** |
| Other Europe | **183** | **10** | **20** | **5** | **—** |
| **Aviva Europe** | **5,150** | **115** | **130** | **80** | **(15)** |
| **North America** | **202** | **70** | **(120)** | **35** | **(15)** |
| **Asia Pacific** | **668** | **30** | **5** | **20** | **—** |
| **Total** | **12,274** | **395** | **45** | **200** | **(405)** |

### New business

| 2011<br>Value of new business<br>(net of tax and non-controlling interest) | As reported on page 168<br>£m | 10% decrease in maintenance expenses<br>£m | 10% decrease in lapse rates<br>£m | 5% decrease in mortality/ morbidity rates – life assurance<br>£m | 5% decrease in mortality/ morbidity rates – annuity business<br>£m |
|---|---|---|---|---|---|
| **United Kingdom** | **281** | **18** | **11** | **11** | **(34)** |
| France | **79** | **2** | **4** | **1** | **—** |
| Ireland | **(3)** | **1** | **1** | **—** | **—** |
| Italy | **23** | **1** | **1** | **1** | **—** |
| Poland | **34** | **1** | **5** | **2** | **—** |
| Spain | **28** | **1** | **6** | **2** | **—** |
| Other Europe | **20** | **1** | **6** | **1** | **—** |
| **Aviva Europe** | **181** | **7** | **23** | **7** | **—** |
| **North America** | **(85)** | **9** | **(20)** | **6** | **—** |
| **Asia Pacific** | **55** | **6** | **3** | **1** | **—** |
| **Total** | **432** | **40** | **17** | **25** | **(34)** |

# Glossary

## Product definitions

### Annuities
A type of policy that pays out regular amounts of benefit, either immediately and for the remainder of a person's lifetime, or deferred to commence from a future date. Immediate annuities may be purchased for an individual and his or her dependants or on a bulk purchase basis for groups of people. Deferred annuities are accumulation contracts, which may be used to provide benefits in retirement, and may be guaranteed, unit-linked or index-linked.

### Bonds and savings
These are accumulation products with single or regular premiums and unit-linked or guaranteed investment returns. Our product ranges include single premium investment bonds, regular premium savings plans and mortgage endowment products.

### Critical illness cover
Critical illness cover pays out a lump sum if the insured person is diagnosed with a serious illness that meets the plan definition. The cover is often provided in conjunction with other benefits under a protection contract.

### Deferred annuities
An annuity (or pension) due to be paid from a future date or when the policyholder reaches a specified age. A deferred annuity may be funded by a policyholder by payment of a series of regular contributions or by a capital sum (the latter often provided from a pension fund).

### Group pensions
A pension plan that covers a group of people, which is typically purchased by a company and offered to their employees.

### Guaranteed annuities
A policy that pays out a fixed regular amount of benefit for a defined period.

### Income drawdown
The policyholder can transfer money from any pension fund to an income drawdown plan from which they receive an income. The remainder of the pension fund continues to be invested, giving it the potential for growth.

### Index linked annuities
An index linked annuity is a type of deferred annuity whose credited interest is linked to an equity index. It guarantees a minimum interest rate and protects against a loss of principal.

### Investment sales
Comprise retail sales of mutual fund-type products such as unit trusts, individual savings accounts (ISAs) and open ended investment companies (OEICs).

### ISAs
Individual savings accounts – Tax-efficient plans for investing in stocks and shares, cash deposits or life insurance investment funds, subject to certain limits. Introduced in the UK in 1999.

### Monolines
Financial companies specialising in a single line of products such as credit cards, mortgages or home equity loans.

### Mortgage endowment
An insurance contract combining savings and protection elements which is designed to repay the principal of a loan or mortgage.

### Mortgage life insurance
A protection contract designed to pay off the outstanding amount of a mortgage or loan in the event of death of the insured.

### Non profits
Long-term savings and insurance products sold in the UK other than "With profits" (see definition below) products.

### OEIC
An Open Ended Investment Company is a collective investment fund structured as a limited company in which investors can buy and sell shares.

### Pensions
A means of providing income in retirement for an individual and possibly his/her dependants. Our pensions products include personal and group pensions, stakeholder pensions and income drawdown.

### Personal pensions
A pension plan tailored to the individual policyholder, which includes the options to stop, start or change their payments.

### Protection
An insurance contract that protects the policyholder or his/her dependants against financial loss on death or ill-health. Our product ranges include term assurance, mortgage life insurance, flexible whole life and critical illness cover.

### Regular premium
A series of payments are made by the policyholder, typically monthly or annually, for part of or all of the duration of the contract.

### SICAVs
*Société d'investissement à capital variable* (variable capital investment company). This is an open-ended investment fund, structured as a legally independent joint stock company, whose units are issued in the form of shares.

## Product definitions cont.

### Single premium
A single lump sum is paid by the policyholder at commencement of the contract.

### Stakeholder pensions
Low cost and flexible pension plans available in the UK, governed by specific regulations.

### Takaful
Insurance products that observe the rules and regulations of Islamic law.

### Term assurance
A simple form of life insurance, offering cover over a fixed number of years during which a lump sum will be paid out if the life insured dies.

### Unit trusts
A form of open ended collective investment constituted under a trust deed, in which investors can buy and sell units.

### Unit-linked annuities
A unit-linked annuity is a type of deferred annuity which is invested in units of investment funds, whose value depends directly on the market value of assets in those funds.

### Whole life
Whole life insurance is a protection policy that remains in force for the insured's whole life. Traditional whole life contracts have fixed premium payments that typically cannot be missed without lapsing the policy. Flexible whole life contracts allow the policyholder to vary the premium and/or amount of life cover, within certain limits.

### With-profits
A type of long-term savings and insurance product sold in the UK under with profits policies premiums are paid into a separate fund. Policyholders receive a return on their policies through bonuses, which "smooth" the investment return from the assets which premiums are invested in. Bonuses are declared on an annual and terminal basis. Shareholders have a participating interest in the with-profit funds and any declared bonuses. Generally, policyholder and shareholder participation in with-profit funds in the UK is split 90:10.

### Wrap investments
An account in which a broker or fund manager executes investment decisions on behalf of a client in exchange for a single quarterly or annual fee, usually based on the total assets in the account rather than the number of transactions.

## General terms

### Available for sale (AFS)
Securities that have been acquired neither for short-term sale nor to be held to maturity. These are shown at fair value on the statement of financial position and changes in value are taken straight to equity instead of the income statement.

### Association of British Insurers (ABI)
Association of British Insurers – A major trade association for UK insurance companies, established in July 1985.

### Acquired value of in force (AVIF)
An estimate of future profits that will emerge over the remaining term of all existing life and pensions policies for which premiums are being paid or have been paid at the statement of financial position date.

### Bancassurance
An arrangement whereby banks and building societies sell insurance and investment products to their customers on behalf of other financial providers.

### UK Corporate Governance Code
The UK Corporate Governance Code sets out guidance in the form of principles and provisions on how companies should be directed and controlled to follow good governance practice. The Financial Services Authority (FSA) requires companies with a UK Premium listing to disclose, in relation to the UK Corporate Governance Code, how they have applied its principles and whether they have complied with its provisions throughout the accounting year. Where the provisions have not been complied with, companies must provide an explanation for this.

### Deferred acquisition costs (DAC)
The costs directly attributable to the acquisition of new business for insurance and investment contracts may be deferred to the extent that they are expected to be recoverable out of future margins in revenue on these contracts.

### Fair value
The price that a reasonable buyer would be willing to pay and a reasonable seller would be willing to accept for a product on the open market.

### FSA
The UK's Financial Services Authority – Main regulatory body appointed by the government to oversee the financial services industry in the UK. Since December 2001 it has been the single statutory regulator responsible for the savings, insurance and investment business.

## General terms cont.

### Funds under management
Represents all assets actively managed or administered by or on behalf of the Group including those funds managed by third parties.

### Funds under management by Aviva
Represents all assets actively managed or administered by the fund management operations of the Group.

### General insurance
Also known as non-life or property and casualty insurance. Property insurance covers loss or damage through fire, theft, flood, storms and other specified risks. Casualty insurance primarily covers losses arising from accidents that cause injury to other people or damage the property of others.

### Gross written premiums
The total earnings or revenue generated by sales of insurance products, before any reinsurance is taken into account. Not all premiums written will necessarily be treated as income in the current financial year, because some of them could relate to insurance cover for a subsequent period.

### 'Hard' insurance market
A term used to describe the state of the general insurance market. A "hard" insurance market is characterised by high levels of underwriting profits and the ability of insurers to charge high premium rates. Hard insurance markets generally occur when capital is scarce and are the opposite of "soft" insurance markets.

### Independent Financial Advisers (IFAs)
A person or organisation authorised to give advice on financial matters and to sell the products of all financial service providers. In the UK they are legally obliged to offer the product that best suits their clients' needs. Outside the UK IFAs may be referred to by other names.

### IFRS
International Financial Reporting Standards. These are accounting regulations designed to ensure comparable statement of financial position preparation and disclosure, and are the standards that all publicly listed companies in the European Union are required to use.

### Operating profit
From continuing operations on an IFRS basis, stated before tax attributable to shareholders' profits, impairment of goodwill and exceptional items.

### Inherited estate
In the UK, the assets of the long-term with-profit funds less the realistic reserves for non-profit policies written within the with-profit funds, less asset shares aggregated across the with-profit policies and any additional amounts expected at the valuation date to be paid to in-force policyholders in the future in respect of smoothing costs and guarantees.

### Long-term and savings business
Collective term for life insurance, pensions, savings, investments and related business.

### Market Consistent Embedded Value
Aviva's Market Consistent Embedded Value (MCEV) methodology which is in accordance with the MCEV Principles published by the CFO Forum in June 2008 as amended in October 2009.

### Net written premiums
Total gross written premiums for the given period, minus premiums paid over or 'ceded' to reinsurers.

### Net asset value per ordinary share
Net asset value divided by the number of ordinary shares in issue. Net asset value is based on equity shareholders' funds.

### Present value of new business (PVNBP)
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 under Market Consistent Embedded Value (MCEV) principles published by the CFO Forum.

### 'Soft' insurance market
A term used to describe the state of the general insurance market. A "soft" insurance market is characterised by low levels of profitability and market competition driving premium rates lower. Soft insurance markets generally occur when there is excess capital and are the opposite of "hard" insurance markets.

### Turnbull Guidance on Internal Control
The Turnbull Guidance sets out best practice on internal controls for UK listed companies, and provides additional guidance in applying certain sections of the UK Corporate Governance.

## Market Consistent Embedded Value (MCEV) terms

### Asymmetric risk
Risks that will cause shareholder profits to vary where the variation above and below the average are not equal in distribution.

### CFO Forum
The CFO Forum (www.cfoforum.nl) is a high-level group formed by the chief financial officers of major European listed and non-listed insurance companies. Its aim is to discuss issues relating to proposed new accounting regulations for their businesses and how they can create greater transparency for investors.

The forum was created in 2002, the Market Consistent Embedded Value Principles were launched in June 2008. The principles are a further development of the European Embedded Value Principles first launched in May 2004.

### Cost of non-hedgeable risks
This is the cost of undertaking those risks for which a deep and liquid market in which to hedge that risk does not exist. This can include both financial risks and non-financial risks such as mortality, persistency and expense.

### Covered business
The contracts to which the MCEV methodology has been applied.

### EU solvency
The excess of assets over liabilities and the worldwide minimum solvency margins, excluding goodwill and the additional value of in-force long-term business, and excluding the surplus held in the Group's life funds. The Group solvency calculation is determined according to the UK Financial Services Authority application of EU Insurance Groups Directive rules.

### Financial options and guarantees
Features of the covered business conferring potentially valuable guarantees underlying, or options to change, the level or nature of policyholder benefits and exercisable at the discretion of the policyholder, whose potential value is impacted by the behaviour of financial variables.

### Free surplus
The amount of any capital and surplus allocated to, but not required to support, the in-force covered business.

### Frictional costs
The additional taxation and investment costs incurred by shareholders through investing the Required Capital in the Company rather than directly.

### Group MCEV
A measure of the total consolidated value of the Group with covered life business included on an MCEV basis and non-covered business (including pension schemes and goodwill) included on an IFRS basis.

### Gross risk-free yields
Gross of tax yields on risk-free fixed interest investments, generally swap rates under MCEV.

### Implicit items
Amounts allowed by local regulators to be deducted from capital amounts when determining the EU required minimum margin.

### Life business
Subsidiaries selling life and pensions contracts that are classified as covered business under MCEV.

### Life MCEV
The MCEV balance sheet value of covered business as at the reporting date. Excludes non-covered business including pension schemes and goodwill.

### Life MCEV operating earnings
Operating earnings on the MCEV basis relating to the lines of business included in the embedded value calculations. From continuing operations and is stated before tax, impairment of goodwill and exceptional items.

### Life MCEV earnings
Total earnings on the MCEV basis relating to the lines of business included in the embedded value calculations. From continuing operations.

### Look-through basis
Inclusion of the capitalised value of profits and losses arising from subsidiary companies providing administration, investment management and other services to the extent that they relate to covered business.

### Long-term savings
Includes life and pension sales calculated under MCEV and retail investment sales.

### Market consistent
A measurement approach where economic assumptions are such that projected asset cash flows are valued consistently with current market prices for traded assets.

### Net worth
The market value of the shareholders' funds and the shareholders' interest in the surplus held in the non-profit component of the long-term business funds, determined on a statutory solvency basis and adjusted to add back any non-admissible assets, and consists of the required capital and free surplus.

## Market Consistent Embedded Value (MCEV) terms cont.

### New business margin
New business margins are calculated as the value of new business divided by the present value of new business premiums (PVNBP), and expressed as a percentage.

### Present value of new business premiums (PVNBP)
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.

### Required capital
The amount of assets, over and above the value placed on liabilities in respect of covered business, whose distribution to shareholders is restricted.

### Risk-free rate (reference rate in CFO Forum terminology)
The risk-free rate is taken as swaps except for all contracts that contain features similar to immediate annuities and are backed by appropriate assets, including paid up group deferred annuities and all other contracts in the Netherlands, and deferred annuities and all other contracts in the US. The adjusted risk-free rate is taken as swaps plus the additional return available for products and where backing asset portfolios can be held to maturity.

### Service companies
Companies providing administration or fund management services to the covered business.

### Solvency cover
The excess of the regulatory value of total assets over total liabilities, divided by the regulatory value of the required minimum solvency margin.

### Spread business
Contracts where a significant source of shareholder profits is the taking of credit spread risk that is not passed on to policyholders. The most significant spread business in Aviva are immediate annuities and US deferred annuities and life business.

### Statutory basis
The valuation basis and approach used for reporting financial statements to local regulators.

### Stochastic techniques
Techniques that incorporate the potential future variability in assumptions.

### Symmetric risks
Risks that will cause shareholder profits to vary where the variation above and below the average are equal and opposite. Financial theory says that investors do not require compensation for non-market risks that are symmetrical as the risks can be diversified away by investors.

### Time value and intrinsic value
A financial option or guarantee has two elements of value, the time value and intrinsic value. The intrinsic value is the discounted value of the option or guarantee at expiry, assuming that future economic conditions follow best estimate assumptions. The time value is the additional value arising from uncertainty about future economic conditions.

### Value of new business
Is calculated using economic assumptions set at the start of each quarter and the same operating assumptions as those used to determine the embedded values at the end of the reporting period and is stated after the effect of any frictional costs. Unless otherwise stated, it is also quoted net of tax and minority interests.

# Shareholder services

## Shareholder profile as at 31 December 2011

| By category of shareholder | Number of shareholders | % | Number of shares | % |
|---|---|---|---|---|
| Individual | 578,603 | 96.88 | 270,555,684 | 9.11 |
| Banks and nominee companies | 15,563 | 2.61 | 2,662,548,530 | 89.63 |
| Pension fund managers and insurance companies | 241 | 0.04 | 2,357,297 | 0.08 |
| Other corporate bodies | 2,838 | 0.47 | 35,041,075 | 1.18 |
| **Total** | **597,245** | **100** | **2,970,502,586** | **100** |

| By size of shareholding | Number of shareholders | % | Number of shares | % |
|---|---|---|---|---|
| 1–1,000 | 540,772 | 90.54 | 150,357,346 | 5.06 |
| 1,001–5,000 | 50,250 | 8.41 | 95,608,617 | 3.22 |
| 5,001–10,000 | 3,389 | 0.57 | 23,580,910 | 0.79 |
| 10,001–250,000 | 2,209 | 0.37 | 95,497,159 | 3.22 |
| 250,001–500,000 | 167 | 0.03 | 58,280,304 | 1.96 |
| 500,001 and above | 457 | 0.08 | 2,539,341,882 | 85.49 |
| American Depositary Receipts (ADRs) | 1 | 0.00 | 7,836,368+ | 0.26 |
| **Total** | **597,245** | **100** | **2,970,502,586** | **100** |

+The number of registered ordinary shares represented by ADRs. Please note that each Aviva ADR represents two (2) ordinary Aviva shares.

## 2012 financial calendar

| | |
|---|---|
| Annual General Meeting | 3 May 2012 |
| Announcement of first quarter Interim Management Statement | 17 May 2012 |
| Announcement of unaudited half-year results | 9 August 2012 |
| Announcement of third quarter Interim Management Statement | 8 November 2012 |

## 2011 final dividend dates – ordinary shares

| | |
|---|---|
| Ex-dividend date | 21 March 2012 |
| Record date | 23 March 2012 |
| Scrip dividend price setting period | 21, 22, 23, 26, 27 March 2012 |
| Scrip dividend price announcement date | 28 March 2012 |
| Last date for receipt of Scrip elections | 18 April 2012 |
| Dividend payment date * | 17 May 2012 |

* Please note that the ADR local payment date will be approximately five business days after the proposed dividend date for ordinary shares.

## Annual General Meeting (AGM)

- The 2012 Aviva AGM will be held at The Barbican Centre, Silk Street, London EC2Y 8DS, on Thursday, 3 May 2012 at 11am.
- Details of all the resolutions to be considered at the AGM are given in the Notice of AGM, which will be available on the Company's website at www.aviva.com/agm.
- Shareholders can vote:
  - By attending the meeting in person;
  - Electronically at www.aviva.com/agm; or
  - By completing and returning the relevant voting card(s) by post.
- The voting results for the 2012 AGM, including proxy votes and votes withheld, will be accessible on the Company's website at www.aviva.com/agm shortly after the meeting.
- If you are unable to attend the AGM but would like to ask the Board of directors a question regarding the business of the meeting, please submit your question via our website at www.aviva.com/agm or send an email to avivashareholders@aviva.com. We will endeavour to provide a formal response to all questions submitted by shareholders.

### Do you receive duplicate documents?

A number of shareholders still receive duplicate documentation and split dividend payments as a result of having more than one account on the Aviva Register of Members. If you think you fall into this group and would like to combine your accounts, please contact the Company's Registrar, Computershare, on the telephone number listed overleaf.

## Dividends

- Dividends on Aviva ordinary shares are normally paid in May and November; please see the table above for the key dates in respect of the 2011 final dividend.
- Dividends paid on Aviva preference shares are normally paid in March, June, September and December; please visit www.aviva.com/preferenceshares for the latest dividend payment dates.
- Holders of ordinary and preference shares will receive any dividends payable in Sterling and holders of ADRs will receive any dividends payable in US dollars.

### Direct credit of dividend payments:

If you would like to have your cash dividends paid directly into your bank or building society account, please visit www.aviva.com/dividendmandate for more information or contact Computershare on the telephone number listed overleaf.

### Aviva Scrip Dividend Scheme:

If you would like to receive your dividends on ordinary shares in the form of new shares instead of cash, you can choose to join the Aviva Scrip Dividend Scheme. Please contact Computershare on the telephone number listed overleaf to acquire a personalised application form and a copy of the terms and conditions or, alternatively, you may visit www.aviva.com/ecomms for more information on how to make this election online.

## Online Shareholder Services Centre – www.aviva.com/shareholderservices

The online shareholder services centre has been designed to provide useful information for holders of Aviva ordinary shares, preference shares and ADRs, and includes features to allow shareholders to manage their Aviva shareholdings easily and efficiently.

Within the online centre you will be able to find a shareholders' guide, current and historic ordinary share and ADR prices, share dealing information, news, updates and, when available, presentations from Aviva's senior management. You will also be able to download an electronic copy of recent Company reports.

The Shareholders' Guide contains answers to a range of frequently asked questions on holding ordinary shares, preference shares and ADRs in Aviva.

### Manage your holdings online

You can view and manage your shareholding online by visiting www.aviva.com/ecomms. To log in you will require your 11 digit Shareholder Reference Number (SRN), which you will find on your proxy or voting card, latest dividend stationery, or any share certificate issued since 4 July 2011.

Shareholders can elect to receive electronic communications by registering their email address online, or by contacting Computershare directly. Making this election will save on printing and distribution costs and has environmental benefits.

## Aviva Share Price Information

- For ordinary shares and ADRs, please visit www.aviva.com/shareprice
- For preference shares, please visit www.londonstockexchange.com

## ShareGift

If you have a small number of shares which you consider uneconomical to sell, you may wish to consider donating them to ShareGift (Registered Charity: 1052686), a charity that specialises in accepting such unwanted small shareholdings. Donated shares are aggregated and sold, with the proceeds being used to support a wide range of UK registered charities.

You can find out more about ShareGift by visiting www.sharegift.org or by calling them on +44 (0)207 930 3737. If you would like to donate your shares to ShareGift, please contact Computershare.

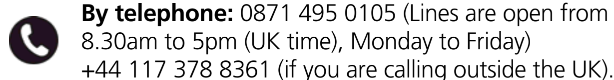
## Contact details

### Ordinary and preference shares – Computershare

Shareholders will be aware that Aviva changed its Registrar from Equiniti Limited to Computershare Investor Services PLC in July 2011.

For any queries regarding your shareholding, or to advise of changes to your personal details, please contact Computershare:

**In writing:** Computershare Investor Services PLC
The Pavilions, Bridgewater Road, Bristol BS99 6ZZ

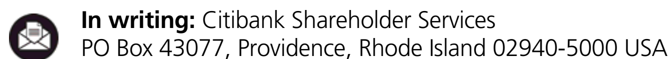


**By telephone:** 0871 495 0105 (Lines are open from 8.30am to 5pm (UK time), Monday to Friday)
+44 117 378 8361 (if you are calling outside the UK).

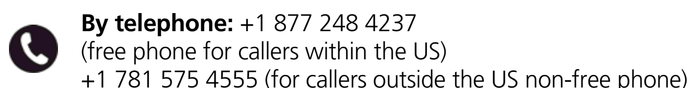
**By email:** avivaSHARES@computershare.co.uk

### American Depositary Receipts (ADRs) – Citibank

Aviva has a sponsored ADR facility administered by Citibank, NA. Any queries regarding Aviva ADRs can be directed to Citibank:



**In writing:** Citibank Shareholder Services
PO Box 43077, Providence, Rhode Island 02940-5000 USA



**By telephone:** +1 877 248 4237
(free phone for callers within the US)
+1 781 575 4555 (for callers outside the US non-free phone)

**By email:** citibank@shareholders-online.com

**Fax enquiries:** +1 201 324 3284

Please visit www.citi.com/dr for further information about Aviva's ADR programme.

### Group Company Secretary

Shareholders may contact the Group Company Secretary as follows:

**In writing:** Kirstine Cooper, Group Company Secretary
St Helen's, 1 Undershaft, London EC3P 3DQ

**By telephone:** + 44 (0) 20 7283 2000

**By email:** aviva.shareholders@aviva.com

## Form 20-F

Aviva is a foreign private issuer in the United States of America and is subject to certain reporting requirements of the Securities Exchange Commission (SEC). Aviva files its Form 20-F with the SEC, copies of which can be found at www.aviva.com/reports.

## Be on your guard – beware of fraudsters!

Shareholders are advised to be very wary of any unsolicited telephone calls or correspondence offering to buy shares at a discount or offering free financial advice or company reports. If you receive any unsolicited calls or advice:

- Make sure you get the correct name of the person and organisation;
- Check that they are properly authorised by the Financial Services Authority (FSA) by visiting www.fsa.gov.uk/register/; and
- If the calls persist, hang up.

For more information please visit the warning to shareholders page at: www.aviva.com/shareholderservices.

## Useful links for shareholders

**Aviva shareholder services centre**
www.aviva.com/shareholderservices

**ADR holders**
www.aviva.com/adr

**Aviva preference shareholders**
www.aviva.com/preferenceshares

**Dividend information for ordinary shares**
www.aviva.com/dividends

**Register for electronic communications**
www.aviva.com/ecomms

**Annual General Meeting information and Electronic Voting†**
www.aviva.com/agm

**Aviva share price**
www.aviva.com/shareprice

† Completed proxy instructions must be submitted to the Company's Registrar, Computershare, as soon as possible, but in any event to arrive by no later than:

- 11am on Tuesday, 1 May 2012 for ordinary shareholders.
- 11am on Monday, 30 April 2012 for members of the Aviva Share Account and participants in the Aviva All Employee Share Ownership Plan.