MCEV financial statements

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The directors submit their Market Consistent Embedded Value (MCEV) financial statements for Aviva plc for the year ended 31 December 2015.

Results

Total MCEV operating profit after tax and non-controlling interests has decreased to £1,739 million *(FY14: £1,916 million)* primarily due to a decrease in long-term business profits to £1,734 million *(FY14: £1,950 million)*. Further details on the MCEV operating results for the long term business can be found in Note F3.

Total MCEV profit for the year (net of tax and non-controlling interests) was £621 million *(FY14: £1,658 million)*. The reduction was driven by adverse investment variances in the life businesses which relate primarily to the UK and Asia, offset partially by positive investment variances in France. In the UK, the adverse impact primarily reflects widening corporate bond spreads on annuity business, partially offset by increases in liquidity premiums. In addition, UK equity market underperformance has reduced expected future unit-linked fund charges and shareholder transfers from with-profits funds. Adverse investment variances in Asia are mainly driven by falling interest rates in China increasing the cost of guarantees. Positive investment variances in France are mainly due to an increase in risk-free rates and falling swaption volatilities resulting in a reduction in the cost of guarantees. Adverse investment variances in the non-life businesses, mainly reflect unfavourable short-term fluctuations in investment values and adverse economic assumption changes which further contributed to the reduction in total MCEV profit over the year.

Equity attributable to ordinary shareholders on an MCEV basis is £21,047 million compared to £15,747 million at 31 December 2014. The increase mainly reflects the profit for the year and the Friends Life acquisition, partially offset by foreign exchange movements, and dividend payments.

Principal Activity

The Company is the holding company of the Aviva plc group of companies (Group) whose principal activities are the provision of long-term insurance and savings, general insurance, accident and health insurance and asset management products and services.

Directors who served during the year

The directors as at the date of this Report and who served during the year are shown below:

Glyn Barker
Patricia Cross
Michael Hawker, AM
Michael Mire
Sir Adrian Montague, CBE
Bob Stein
Tom Stoddard
Scott Wheway
Mark Wilson
Andy Briggs – appointed 29 April 2015
Sir Malcolm Williamson – appointed 29 April 2015
Belén Romana Garcia – appointed 26 June 2015
Claudia Arney – appointed 8 February 2016
Gay Huey Evans – Retired 29 April 2015
John McFarlane – Retired 29 April 2015

Disclosure of information to the auditor

In accordance with section 418 of the Companies Act 2006, the directors in office at the date of approval of this Report confirm that, so far as they are each aware, there is no relevant audit information of which the Company's auditor, PricewaterhouseCoopers LLP (PwC), is unaware and each director has taken all steps that ought to have been taken as a director to be aware of any relevant audit information and to establish that PwC is aware of that information.

Events after the end of the reporting period

On 1 January 2016 a UK subsidiary, Aviva Annuity UK Limited, securitised £4,179 million of equity release mortgages by transferring them to a wholly owned subsidiary, Aviva EFRA 15 UK Ltd. In return, Aviva Annuity UK Limited received £4,154 million of loan notes issued by the company.

On 21 January 2016, Aviva plc announced that its Canadian business Aviva Canada will acquire 100% ownership of RBC General Insurance Company, the existing home and motor insurance business of RBC Insurance, and enter into an exclusive 15 year strategic agreement with RBC Insurance. Aviva will pay £281 million (CAD$581 million) upon completion, subject to customary completion adjustments. The proposed transaction is subject to closing conditions including receipt of required regulatory approvals and is expected to complete in the third quarter of 2016.

On 9 March 2016 the Group agreed to sell its entire 70% stake in its Irish private medical insurance business, Aviva Health Insurance Ireland Limited, to Irish Life Group Limited. The proposed transaction will be subject to customary closing conditions including receipt of required regulatory approvals and is expected to complete in the third quarter of 2016. The subsidiary has been classified as held for sale from 9 March 2016.

Statement of directors' responsibilities in respect of the Market Consistent Embedded Value (MCEV) basis

When compliance with the European Insurance CFO Forum Market Consistent Embedded Value Principles (MCEV Principles), published in October 2009, is stated, those principles require the directors to prepare supplementary information in accordance with the methodology contained in the MCEV Principles and to disclose and explain any non-compliance with the guidance included in the MCEV Principles.

In preparing this supplementary information, the directors have done so in accordance with these MCEV Principles with the exception of stating held for sale operations at their expected fair value, as represented by expected sales proceeds, less cost to sell and have also complied with the guidance as set out in the Basis of Preparation. Specifically the directors have:

- determined assumptions on a realistic basis, having regard to past, current and expected future experience and to relevant external data, and then applied them consistently;
- made estimates that are reasonable and consistent;
- made no allowance for the impact of Solvency II as permitted by the additional guidance issued in October 2015 by the European Insurance CFO Forum; and,
- provided additional disclosures when compliance with the specific requirements of the MCEV Principles is insufficient to enable users to understand the impact of particular transactions, other events and conditions and the Group's financial position and financial performance.

By order of the Board on 9 March 2016.

Mark Wilson	**Thomas D. Stoddard**
Group Chief Executive Officer	**Chief Financial Officer**

Reconciliation of IFRS total equity to Life MCEV

As at 31 December 2015

	2015 £m			2014 £m		
	Life and related businesses[1]	General business and other	Group	Life and related businesses	General business and other	Group
Total assets included in the IFRS statement of financial position	**354,768**	**33,106**	**387,874**	255,478	30,241	285,719
Liabilities of the long-term business	**(337,757)**	**—**	**(337,757)**	(244,186)	—	(244,186)
Liabilities of the general insurance and other businesses	**—**	**(31,885)**	**(31,885)**	—	(29,257)	(29,257)
Total equity on an IFRS basis	**17,011**	**1,221**	**18,232**	11,292	984	12,276
Equity of general insurance and other businesses included in Life MCEV[2]	**136**	**(136)**	**—**	160	(160)	—
Additional value of in-force long-term business	**5,654**	**—**	**5,654**	6,120	—	6,120
Total equity on a MCEV basis	**22,801**	**1,085**	**23,886**	17,572	824	18,396
Notional allocation of IAS 19 pension fund surplus to long-term business[3]	**(659)**			(703)		
Goodwill and intangible assets allocated to long-term business[4]	**(1,494)**			(476)		
Life MCEV (gross of non-controlling interests)	**20,648**			16,393		
Non-controlling interests	**(1,088)**			(1,119)		
Life MCEV (net of non-controlling interests)	**19,560**			15,274		

1 The acquisition of Friends Life in April 2015 increased IFRS and MCEV equity by £5,975 million, of which £1,063 million relates to goodwill and intangible assets allocated to long-term business. Further details can be found in note F1 – Basis of preparation.
2 Refers to the IFRS equity of the UK and Singapore health business and the Aviva Investors and Singapore retail fund management business now included in covered business.
3 The value of the Aviva Staff Pension Scheme surplus has been notionally allocated between segments, based on current funding. Within the long-term business net assets on an MCEV basis, the Life proportion has been included. The pension fund surplus notionally allocated to long-term business is net of the agreed funding borne by the UK with-profits funds.
4 Goodwill and intangible assets includes amounts related to associated undertakings and joint ventures and are after adjustments reflected in the additional value of in-force long-term business above. In 2015, goodwill and intangible assets have been impaired by an additional £4 million compared to IFRS *(FY14: £14 million)*. In aggregate, the goodwill and intangibles on an MCEV basis is £127 million (*FY14: £130 million*) lower than on an IFRS basis, allowing for exchange rate movements. Refer to the next table for goodwill allocated to long-term business on an IFRS basis.

Reconciliation of IFRS total equity to MCEV net worth

As at 31 December 2015

	2015 £m	2014 £m
Net assets on a statutory IFRS net basis[1]	**18,232**	12,276
Adjusting for general business and other net assets on a statutory IFRS net basis	**(1,221)**	(984)
Life and related businesses net assets on a statutory IFRS net basis	**17,011**	11,292
Equity of general insurance and other businesses included in Life MCEV	**136**	160
Goodwill and other intangibles net of tax	**(1,621)**	(606)
Acquired value of in-force business net of tax	**(3,792)**	(92)
Adjustment for share of joint ventures and associates	**(2)**	(9)
Adjustment for assets to regulatory value net of tax	**(730)**	(566)
Adjustment for DAC and DIR net of tax	**(1,365)**	(1,159)
Adjustment for differences in technical provisions	**815**	(47)
Other accounting and tax differences	**1,057**	990
MCEV net worth (gross of non-controlling interests)[1]	**11,509**	9,963
MCEV value of in-force (gross of non-controlling interests)[2]	**9,139**	6,430
MCEV (gross of non-controlling interests)	**20,648**	16,393
Non-controlling interests	**(1,088)**	(1,119)
MCEV (net of non-controlling interests)	**19,560**	15,274

1 The acquisition of Friends Life in April 2015 increased IFRS equity and MCEV net worth by £5,975 million and £984 million respectively. Further details can be found in note F1 – Basis of preparation.
2 Comprises PVFP of £12,091 million *(FY14: £9,248 million)*, FC of £(487) million *(FY14: £(389) million)*, CNHR of £(1,370) million *(FY14: £(970) million)* and TVOG of £(1,095) million *(FY14: £(1,459) million)*, all of which are gross of tax and non-controlling interests.

Group MCEV analysis of earnings

For the year ended 31 December 2015

Net of tax & non-controlling interests 31 December 2015	Covered business[1,4] £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[4,5] £m B+C	Total £m A+B+C
Opening Group MCEV	**15,274**	**1,040**	**16,314**	**325**	**1,365**	**16,639**
Operating MCEV earnings	**1,734**	**—**	**1,734**	**5**	**5**	**1,739**
Non-operating MCEV earnings	**(678)**	**(51)**	**(729)**	**(389)**	**(440)**	**(1,118)**
Total MCEV earnings	**1,056**	**(51)**	**1,005**	**(384)**	**(435)**	**621**
Other movements in IFRS net equity	**—**	**(44)**	**(44)**	**(92)**	**(136)**	**(136)**
Capital and dividend flows	**(1,074)**	**—**	**(1,074)**	**6,591**	**6,591**	**5,517**
Foreign exchange variances	**(329)**	**(18)**	**(347)**	**(124)**	**(142)**	**(471)**
Acquired/divested business	**4,633**	**1,099**	**5,732**	**(5,732)**	**(4,633)**	**—**
Closing Group MCEV	**19,560**	**2,026**	**21,586**	**584**	**2,610**	**22,170**
Direct capital instrument and tier 1 notes						**(1,123)**
Equity attributable to shareholders of Aviva plc on an MCEV basis						**21,047**

1 Covered business represents the business that the MCEV calculations cover, as detailed in note F1 – Basis of preparation. 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 the table 'Reconciliation of IFRS total equity to Life MCEV' above.
3 Net assets for the total life businesses on an MCEV basis presented net of non-controlling interests.
4 The acquisition of Friends Life in April 2015 increased MCEV equity by £5,975 million at the acquisition balance sheet date by virtue of the issue of share capital, with profits in the period also contributing to the closing MCEV. Further details can be found in note F1 – Basis of preparation.
5 Non-covered business reflects £38 million less profit than IFRS reporting, reflecting the inclusion within covered business profits of asset management profits for managing covered business assets, as well as results for fund management and health business treated as short-term business for IFRS reporting.

Net of tax & non-controlling interests 31 December 2014	Covered business[1,4] £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[4] £m B+C	Total £m A+B+C
Opening Group MCEV	14,990	599	15,589	(898)	(299)	14,691
Opening adjustments[5]	766		766	(232)	(232)	534
Adjusted opening Group MCEV	15,756	599	16,355	(1,130)	(531)	15,225
Operating MCEV earnings	1,950	—	1,950	(34)	(34)	1,916
Non-operating MCEV earnings	(331)	(34)	(365)	107	73	(258)
Total MCEV earnings	1,619	(34)	1,585	73	39	1,658
Other movements in IFRS net equity	—	533	533	794	1,327	1,327
Capital and dividend flows	(1,116)	—	(1,116)	64	64	(1,052)
Foreign exchange variances	(468)	(20)	(488)	(48)	(68)	(536)
Acquired/divested business	(517)	(38)	(555)	572	534	17
Closing Group MCEV	15,274	1,040	16,314	325	1,365	16,639
Direct capital instrument and tier 1 notes						(892)
Equity attributable to shareholders of Aviva plc on an MCEV basis						15,747

1 Covered business represents the business that the MCEV calculations cover, as detailed in note F1 – Basis of preparation. 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 the table 'Reconciliation of IFRS total equity to Life MCEV' above.
3 Net assets for the total life businesses on an MCEV basis presented net of non-controlling interests.
4 A £490 million decrease to the closing Group MCEV of covered business and increase in the closing Group MCEV of non-covered business is due to the sale of Aviva Life and Pensions Ireland Limited (ALPI) to Aviva Life & Pensions UK Limited (UKLAP) from Aviva Insurance Limited (AIL), as detailed in note F1 – Basis of preparation.
5 Represents a restatement of opening 2014 MCEV relating to a reassessment of liquidity premium and extension in scope of covered business.

F1 – Basis of preparation

The Group MCEV analysis of earnings on page 5 presents the Group's results and financial position for the covered life and related businesses on the Market Consistent Embedded Value (MCEV) basis and for its non-covered businesses and non-covered but related to life 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. Consistent with CFO Forum guidance issued in 2012 and revised in October 2015, no explicit allowance has been made for the new European regulatory regime (Solvency II), which will become effective on 1 January 2016, and associated consequences. The impact of allowing for Solvency II would be expected to increase the net worth with a corresponding reduction in the value of in-force business. The aggregate impact of this change on the overall MCEV has not been quantified.

The CFO Forum Guidance is not adopted in a number of respects:

- Guidance 17.3.5 indicates that where covered business includes business in several IFRS segments sufficient disclosure should be made to show both the IFRS and MCEV values by IFRS segment. This is not the case for Aviva Investors and Singapore retail fund management business, UK health business and Singapore guaranteed renewable health business. These product lines are classified as 'Fund management' and 'General Insurance and Health' operating segments as appropriate under IFRS, but are included within other long-term business for MCEV reporting as part of the 'Other', 'UK & Ireland' and 'Asia' operating segments as appropriate.
- Guidance 17.3.29 indicates that changes to models to reflect improvements or rectify errors should be included in the 'other operating variances' line in the analysis of earnings. Where possible, such model refinements have been reported in the analysis of earnings on the line where the impact would have occurred in order to provide better information when considering assumption changes/experience variances over multiple reporting periods.
- Guidance 17.3.32 and 17.3.47 indicate that, when a company has more than one geographical area of operation, the business classifications disclosed should be consistent with those used for the IFRS financial statements. While MCEV results have been aligned with Aviva's management structure the classifications have been presented at a more aggregated level than those segments presented in the Group's IFRS financial statements.

The directors consider that, under the current Solvency I reporting regime effective at 31 December 2015, 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 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 our 2015 and 2014 report have been audited by our auditors, PricewaterhouseCoopers LLP. The PricewaterhouseCoopers LLP report can be found on page 30.

(a) 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, with the exception of Solvency II, as stated above. 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. 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 20% tax rate was used for 2015 for grossing up *(FY14: 20%).*

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 covered business, 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 highest 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;

where 'highest of' is assessed as the basis yielding the lowest level of free assets.

F1 – Basis of preparation continued

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 some of the reattributed inherited estates in the UK. The remaining reattributed inherited estate is predominantly in the form of the VIF of non-profit business written within the fund, and to the extent that this VIF emerges into cash, may be available to be transferred to the shareholders' fund subject to passing the relevant financial strength tests.

The same definition of required capital is used for both existing and new business except in certain entities in Italy where new business reflects the targeted capital level which better reflects the capital requirements of the new business. The total required capital for the entities in question is still based on the overall biting constraint. There is a true-up within economic variances for the difference between calculating the new business required capital on a target rather than economic capital basis, where the latter is the biting constraint. 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 note F2.

Statutory required capital relating to with-profits business is generally assumed to be covered by the surplus within the with-profit funds, with any required capital in excess of this attributed to the shareholder. Where the surplus in 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. For some of the UK business, this rate is one-ninth of the cost of bonus; while in other cases this rate is variable and dependent on scheme rules.

During 2014, two capital management actions were taken in the UK that enable certain shareholder assets to be reflected on the regulatory balance sheet and the economic risk to be hedged more efficiently. The first involved the transfer of certain assets and associated liabilities from the RIEESA to the New With Profits Sub Fund (NWPSF). The second capital management action resulted in future shareholder transfers (that arise as bonuses are paid to policyholders) emerging in the NWPSF rather than the Non Profit Sub Fund (NPSF) and this reduced the present value of in-force covered business with an offsetting increase in required capital and free surplus. These effects are presented within 'Other operating variances' in note F5. The total impact at FY14 was an increase in free surplus of £199 million, an increase in required capital of £851 million and a reduction in the present value of in-force covered business of £1,055 million.

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.

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)

This 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 F2.

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.

F1 – 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 or 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.

In the current period, stochastic models in France are calibrated to market yield curves and adjusted volatility levels at the valuation date; the approach has changed during 2015 to better reflect the sustained low interest rate and high volatility environment. Tests are performed to confirm that the scenarios used produce results that replicate the market price of similar financial instruments. Further information on adjustments to volatility levels is given in note F2. In the comparative period, stochastic models were calibrated to market yield curves and volatility levels at the valuation date.

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, Italian, French and Spanish 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 in line with drivers of the capital requirement. 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 risk (CNHR)

The cost of residual non-hedgeable risk (CNHR) covers risks not already allowed for in the time value of options and guarantees or the PVFP. The allowance includes the impact of: non-hedgeable financial risks; non-financial risks; and other product level asymmetries. No allowance has been made for symmetrical risks as these are diversifiable by investors.

The most significant category within the CNHR is non-financial risk, which includes insurance, expense, persistency and operational risks. It is assumed that there are no hedgeable non-financial risks. The allowances for non-hedgeable financial risks and product level asymmetries are not material. This is because they are either modelled explicitly and included in the TVOG or are included in the PVFP through the use of appropriate best-estimate assumptions. The asymmetric risks allowed for in the TVOG or PVFP are described earlier in the Basis of preparation.

The CNHR capital is calculated such that capital levels 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 including allowance for management actions consistent with the base MCEV. Diversification benefits are included between non-hedgeable risks of the covered business. No diversification benefit is assumed with hedgeable risks of the covered business or with non-covered business in general. 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.

(b) Covered business

The MCEV calculations cover the following lines of business unless specifically noted below:

- Life insurance;
- Long-term health and accident insurance
- Short-term health business in the UK and Singapore managed on a long-term basis (introduced 1 January 2014);
- Savings and annuity business;
- Managed pension fund business;
- Equity release business in the UK;
- UK retail fund management business (introduced 1 January 2014); and
- Singapore retail fund management business (introduced 1 January 2015)

From 1 January 2014, health business managed as long-term business in the UK and Singapore and some retail fund management business in the UK are classified as long-term covered business under MCEV. From 1 January 2015, the retail fund management business in Singapore is also classified as long-term covered business. In the IFRS financial statements these contracts remain classified as short-term business.

Effective 9 May 2014, the UK's retail fund management business was sold to Aviva Investors by UK Life, and the MCEV balance sheet value of this business has since been disclosed in the 'Other' operating segment (where Aviva Investors is presented). In the geographical analysis of life MCEV operating earnings, results for the current period are also included in the 'Other' operating segment; in the comparative period the first 4 months profit or loss is included in the 'United Kingdom and Ireland' operating segment with the remaining months in the 'Other' operating segment.

F1 – Basis of preparation continued

Covered business includes that written by the Group's life insurance subsidiaries as well as the Group's share of certain life and related business written in our associated undertakings and joint ventures, including Indonesia, India, China, Turkey, Taiwan and South Korea (until its disposal in June 2014).

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'.

For MCEV reporting, borrowings are valued on an IFRS basis, consistent with the IFRS primary statements. At 31 December 2015 the market value of the Group's external debt, subordinated debt, preference shares (including General Accident plc preference shares classified as non-controlling interests) and direct capital instrument was £9,094 million *(31 December 2014: £7,511 million)*. External debt remains classified as non-covered business, consistent with the approach taken in the prior period. In addition, internal debt between covered and non-covered business within the Group is generally valued on an IFRS basis in both parts of the business to ensure that the Group MCEV is neither positively nor negatively impacted by the existence of such debt.

In addition the Group MCEV includes earnings from non-covered business such as the Group's fund management operations and subsidiaries, where not arising due to the provision of services to our Life business. These earnings are included in the Group MCEV at their IFRS value.

(c) Acquisition of Friends Life

On 10 April 2015, the Group completed the acquisition of 100% of the outstanding ordinary shares of Friends Life Group Limited ('Friends Life') through an all share exchange which gave Friends Life shareholders 0.74 Group shares for every Friends Life share held. In total, 1,086,326,606 Group shares were issued and commenced trading on 13 April 2015.

Following the acquisition, several key adjustments were made to the Friends Life base MCEV balance sheet to arrive at the final MCEV acquisition balance sheet. These changes include alignments to Aviva's methodology for the calculation and application of the liquidity premium, annuitant mortality assumptions, project costs and cost of non-hedgeable risk. Further, a number of adjustments and reclassifications were made to the IFRS and local statutory balance sheets which had a consequential impact on the MCEV acquisition balance sheet. In total, the alignments had an impact of £(547) million on the life covered MCEV (net of tax and minority interests). In addition, the 2003 and 2005 Step-up Tier one Insurance Capital Securities ('STICS') issuances were reclassified to non-covered business with an impact of £517 million on the life covered MCEV (net of tax and minority interests). The total impact of all adjustments was a reduction in life covered MCEV of £(30) million (net of tax and minority interest) as at the acquisition balance sheet date.

For MCEV reporting, results for Friends UK have been included in the 'UK & Ireland' operating segment and results for Friends Provident International ('FPI') have been included in the 'Asia and other' operating segment as these are the most appropriate geographical areas of operation for each of these businesses. This classification is consistent with the IFRS financial statements.

The acquisition increased life covered MCEV by £4,650 million and total Group MCEV by £5,975 million (both net of tax and minority interest) as at the acquisition date. In the period from 10 April 2015 to 31 December 2015 the acquired subsidiaries impacted total MCEV operating profit and total MCEV profit by £146 million and £(261) million (both net of tax and minority interest) respectively.

(d) IFRS Restatement of prior period figures

Restatements of IFRS financial statements have been consistently reflected in the Group MCEV financial statements, where applicable. During 2015, management has changed the definition of Group operating profit on an IFRS basis to exclude amortisation and impairment of acquired value of in-force business ('AVIF'), aligning the presentation to the amortisation and impairment of intangible assets as non-operating items. The change in presentation had no impact on the Group MCEV analysis of earnings.

(e) Held for Sale operations

There are no held for sale operations included in life covered business at 31 December 2015, and no material operations were sold during 2015.

Operations sold, held for sale or reclassified in the comparative period

During 2014 several operations were held for sale and sold. Details are as follows:

- The sale of Aviva Corporacion Caixa Galicia de Seguros y Reaseguros S.A. ('CxG'), a Spanish life assurance company, was completed on 11 December 2014.
- The sale of the Italian long-term business Eurovita Assicurazioni S.p.A ('Eurovita') was completed on 30 June 2014.
- The disposal of the Group's Korean joint venture business, Woori Aviva Life Insurance ('WALI') completed on 27 June 2014.
- During 2013, the Group's 60% stake in the Indonesian business 'Aviva Indonesia' was classified as held for sale following the intention to structure the business as a joint venture where Aviva's ownership is 50%. The restructure completed on 26 May 2014.
- During the first half of 2014 it was determined that the value of the Group's Taiwan joint venture, First-Aviva Life Insurance Co., Ltd would no longer be recovered principally through a sale. As a result, the business was reclassified out of 'assets of operations held for sale'.

F1 – Basis of preparation continued

(f) Restructuring

During 2015, Aviva International Insurance Limited ('AII') increased its shared ownership in Poland's insurance joint ventures (BZ WBK-Aviva Towarzystwo Ubezpieczeń Ogólnych SA and BZ WBK-Aviva Towarzystwo Ubezpieczeń na Życie SA) from 34% to 51%. The result is an increase in closing MCEV of £3 million (net of tax and minority interest).

On 3 July 2015 Aviva Poland acquired 100% of the shares of Expander Advisors Sp. z o.o. ('Expander'), with a resulting reduction in closing MCEV of £23 million.

In 2014 significant restructuring of the Irish, Turkish, Polish and Italian businesses took place. The Irish and Turkish restructuring continued during 2015. Details are as follows:

- The sale of Aviva Insurance Limited's ('AIL') investment in Aviva Life & Pensions Ireland Limited ('ALPI') to Aviva UK Life & Pensions Limited ('UKLAP') was completed on 31 December 2014. The methodology used to calculate the MCEV in ALPI was unchanged at 31 December 2014 as the entity was still regulated by the CBI and remained an entity in its own right. The total closing MCEV as at 31 December 2014 of the Group was unchanged from this restructuring. The transfer of the ALPI business to UKLAP took place on 1 January 2015, and an alignment of methodologies and bases resulted in an increase to closing MCEV of £34 million.
- On 13 November 2014 Aviva and its joint venture partner Sabanci Holdings completed an initial public offering of a minority share of their Turkish life and pensions joint venture AvivaSa Emeklilik ve Hayat A.S ('Aviva SA'), reducing the Group's holdings in Aviva SA from 49.8% to 41.3%. On 7 August 2015 the Group further reduced its holding in Aviva SA to 40.0%. Sabanci and the Group continue to share contractual joint control of Aviva SA.
- On 30 September 2014, Aviva International Insurance Limited ('AII') sold its Polish business, Aviva Powszechne Towarzystwo Emerytalne Aviva BZ WBK SA ('Poland Pensions') to Aviva Towarzystwo Ubezpieczen na Zycie S.A. ('Poland Life'). The transaction resulted in a reduction in the share of the Poland Pensions business owned by Aviva from 84.9% to 81%.
- On 22 December 2014, the Italian long-term business Aviva S.p.A., which was 50% owned by Aviva Italia Holdings ('AIH'), transferred its share in the joint venture Aviva Vita S.p.A. ('Aviva Vita') to AIH. AIH increased its interest in Aviva Vita from 25.5% to 80% and its interest in the joint venture Aviva Assicurazioni Vita S.p.A. from 50% to 80%.

(g) New business premiums

New business premiums include:

- premiums arising from the sale of new contracts during the period;
- non-contractual additional premiums;
- expected renewals on new contracts and expected future contractual alterations to new contracts; and
- payments on recurring single premium policies, except for some existing stakeholder-style pensions business in the UK where, if a regular pattern in the receipt of premiums for individuals has been established, the regular payment is treated as a renewal of an existing policy and not new business.

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 except for some existing stakeholder-style pensions business as set out above.

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.

(h) 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 premium (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 start of period implied discount rate (IDR). The IDR is the rate of discount such that a traditional embedded value calculation for the covered business equates to the MCEV. As such, the IDR is based on 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.

The total expected return is therefore the total of:

- expected existing business contribution, based on reference rates;
- expected existing business contribution, due to returns in excess of reference rates; only this component is impacted by the approach; and
- expected return on shareholders' net worth (grossed up for tax for pre-tax presentation)

The approach to expected return has no impact on total return or on the closing balance sheet.

F1 – Basis of preparation continued

(i) 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-profits 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-profits policies. However, under stochastic modelling there may be some extreme economic scenarios when the total assets in the Group's with-profits 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.

(j) Consolidation adjustments

The effect of transactions between the Group's 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.

During 2014, UK Annuities (UKA) and UK General Insurance (UK GI) entered into a quota share reinsurance arrangement with Aviva International Insurance Limited (AII). Both treaties have an effective date of 1 January 2014 covering 10% of the UKA business and 5% of the UK GI business and remain in place during 2015. The impact of this arrangement has been reflected within the Group MCEV results.

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 (other operations 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 other operations 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 Group MCEV, 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 and are included as part of non-covered but related to life business in the Group MCEV.

(k) Exchange rates

The Group's principal life overseas operations during the period were located within the eurozone, Poland and Singapore. 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 F2.

F2 – Principal Assumptions

Economic Assumptions – deterministic

(a) Reference rates and expense inflation

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. For some businesses, where the impact is immaterial, a flat yield curve has been assumed. For most businesses, the curve is extrapolated beyond the last available market data point to an ultimate forward rate using the Nelson-Siegel functional form if necessary. For markets in which there is no reliable swap yield curve, the risk-free rate is based on relevant government bond yields with adjustments made to reflect the local market environment where necessary. 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.

The principal economic assumptions used are as follows:

Reference rate (spot, swap rates) and expense inflation

United Kingdom	2015	2014
Reference Rate		
1 year	**0.7%**	0.6%
5 years	**1.6%**	1.5%
10 years	**2.0%**	1.9%
15 years	**2.2%**	2.1%
20 years	**2.3%**	2.2%
Expense inflation[1]	**2.9%**	3.0%

1 The expense inflation rate quoted relates to the UK life & pensions business (UKLAP) and the UK annuity business (UKA). The methodology used to set the expense inflation assumption in Friends UK is calculated in a consistent manner and results in an assumption of 3.7% at FY15.

Eurozone	2015	2014
Reference Rate		
1 year	**0.1%**	0.2%
5 years	**0.3%**	0.4%
10 years	**1.0%**	0.8%
15 years	**1.5%**	1.2%
20 years	**1.6%**	1.4%
Expense inflation[1]	**1.0%**	0.9%

1 Based on France, the largest eurozone business. Inflation is modelled using a real yield curve; the figures disclosed above show the inflation rate at a duration of 10 years.

Poland	2015	2014
Reference Rate		
1 year	**1.6%**	1.8%
5 years	**2.0%**	1.9%
10 years	**2.5%**	2.2%
15 years	**2.7%**	2.4%
20 years	**2.8%**	2.5%
Expense inflation	**1.0%**	0.7%

For service companies, expense inflation relates to the underlying expenses rather than the fees charged to the life company.

F2 – Principal Assumptions continued

(b) Liquidity premiums

The following liquidity premium adjustments are made to the swap rate for certain contracts. The risk-free rate is taken as the swap yield curve for the currency of the liability, adjusted by adding the following to each swap rate:

									New business	Embedded value
	4Q 2015	**3Q 2015**	**2Q 2015**	**1Q 2015**	4Q 2014	3Q 2014	2Q 2014	1Q 2014	**2015**	2014
UK immediate annuities[1]	**1.41%**	**1.40%**	**1.59%**	**1.59%**	1.31%	0.89%	0.98%	1.05%	**1.14%**	1.09%
UK deferred annuities[2]	**n/a**	**n/a**	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**0.86%**	0.82%
Ireland immediate annuities	**0.45%**	**0.28%**	**0.16%**	**0.19%**	0.19%	0.21%	0.24%	0.28%	**0.38%**	0.19%
France immediate annuities	**0.45%**	**0.28%**	**0.16%**	**0.19%**	0.19%	0.21%	0.24%	0.28%	**0.38%**	0.19%
France participating business	**0.34%**	**0.21%**	**0.12%**	**0.15%**	0.14%	0.16%	0.18%	0.21%	**0.29%**	0.15%
Italy participating business	**0.34%**	**0.21%**	**0.12%**	**0.15%**	0.14%	0.16%	0.18%	0.21%	**0.29%**	0.15%
Spain annuities	**0.45%**	**0.28%**	**0.16%**	**0.19%**	0.19%	0.21%	0.24%	0.28%	**0.38%**	0.19%
Spain participating business	**0.34%**	**0.21%**	**0.12%**	**0.15%**	0.14%	0.16%	0.18%	0.21%	**0.29%**	0.15%

1 Immediate annuities have also been sold in the UK life and pensions business (UKLAP) and Friends UK as well as the UK annuity business (UKA). At FY15, the liquidity premium for Friends UK policies is 77 bps for existing business and 90 bps for new business, and for UKLAP policies is 76 bps *(FY14: 61 bps;)*.
2 Deferred annuities and participating business eligible for a liquidity premium have been sold in the Aviva UK life and pensions business (UKLAP) and Friends UK as well as in the UK Annuity business (UKA). The liquidity premium for UKLAP policies at FY15 is 57 bps *(FY14: 46 bps;)*. The approach to estimating the liquidity premium in the UKLAP business was revised during 2014 to be consistent with the approach taken for these products in other businesses. The liquidity premium in Friends UK at FY15 is 58 bps for existing business; volumes of new business sold are not material.

The CEIOPS (now EIOPA) Task Force on Liquidity Premium issued a set of Principles dated 1 March 2010 on the application of the liquidity premium. Principle 2 states that 'the liquidity premium should be independent of the investment strategy followed by the company'. In agreement with this, from 1 January 2014 Aviva removed the requirement for the liquidity premium to only apply to those liabilities backed by corporate bonds or certain illiquid non-traded assets (notably UK commercial mortgages). As a consequence an optimised notional portfolio is assumed which can include the actual assets backing the liabilities and the matching that exists between them.

For assets valued on a mark to model basis (notably UK commercial mortgages and equity release assets) the liquidity premium continues to be estimated consistently with the underlying valuation model. For all other assets, the formula structure proposed by the CFO / CRO Forum and adopted in the Solvency II Fifth Quantitative Impact Study (QIS 5) is adopted. The formula for the liquidity premium is:

United Kingdom/Europe: 50% of (iBoxx Corporate bond spread – 40bps)

For immediate and bulk purchase annuities, 100% of the full liquidity premium is applied, while 75% liquidity premium is applied to participating business and deferred annuities. No liquidity premium is applied to any other products. The liquidity premium is applied to all components of the MCEV with the exception of the adjustment for the 'look-through' into service company expenses.

(c) Risk premium

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. This risk premium is used for operating profit, Implied Discount Rates (IDR), Internal Rates of Return (IRR) and payback period. More detail is given in note F1 – 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.

All territories	**2015**	2014
Equity risk premium	**3.5%**	3.5%
Property risk premium	**2.0%**	2.0%

Future returns on fixed interest investments are calculated from prospective yields less an adjustment for credit risk; this includes an adjustment for credit risk on all eurozone sovereign debt.

Economic Assumptions – stochastic

(a) Methodology used to derive assumptions

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 'Non-economic assumptions'.

F2 – Principal assumptions continued

Model – United Kingdom

Swap rates are generated by a model, the LIBOR Market Model Plus (LMM+), which projects a full swap curve at monthly intervals. Forward rates are assumed to have a distribution that lies between the log-normal and normal distributions. Although this does not guarantee 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 introduction of a liquidity premium results in a parallel shift to the underlying yield curve. After making this adjustment, 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 a liquidity premium plus an excess return. A stochastic volatility jump diffusion model is used, which allows for varying levels of volatility over time and across strike prices. Option volatilities are taken from Markit.

The model also generates property total returns and real yield curves, which is a significant asset class for the UK. In the absence of liquid market data, the property volatilities are based on historic data.

Assumptions for correlations between asset classes have been set based on historic data.

Model – Europe and Asia

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 introduction of a liquidity premium results in a parallel shift in the underlying yield curve. After making this adjustment, the model is calibrated to at-the-money swaptions of a variety of terms and tenors. Swaption volatilities are taken from SuperDerivatives. Tests are performed to confirm that the scenarios used produce results that replicate the market price of similar financial instruments. In France, the calibration approach was changed during 2015 with stochastic models now calibrated to market yield curves (with a liquidity premium) and adjusted volatility levels at the valuation date to target the market observed prices of such options, in order to better reflect the sustained low interest rate and high volatility environment. In the comparative period, stochastic models were calibrated to market yield curves (with a liquidity premium) and volatility levels at the valuation date.

The total annual return on equities is calculated as the return on one-year swaps plus a liquidity premium, where applicable, 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. For most business, the model is calibrated to at-the-money options for a variety of terms; the exception is the model in Poland which uses a fixed volatility based on historic data, given the lack of a deep and liquid market for options in Poland. Option volatilities are taken from Markit.

Assumptions for correlations between asset classes have been set based on historic data.

(b) Volatilities

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 used for the majority of business in each territory.

	2015 Swap length				2014 Swap length			
Option length	**10 years**	**15 years**	**20 years**	**25 years**	10 years	15 years	20 years	25 years
UK Sterling								
10 years	**30.6%**	**30.4%**	**30.2%**	**30.1%**	27.2%	26.0%	25.2%	24.6%
15 years	**30.7%**	**30.1%**	**29.5%**	**28.9%**	25.5%	24.5%	23.7%	22.9%
20 years	**30.6%**	**29.8%**	**29.0%**	**28.0%**	25.2%	23.9%	22.8%	21.7%
25 years	**30.4%**	**29.2%**	**28.1%**	**26.4%**	24.7%	23.4%	22.0%	20.6%
Euro								
10 years	**34.6%**	**34.5%**	**34.5%**	**35.1%**	38.4%	34.8%	32.6%	30.9%
15 years	**38.0%**	**36.7%**	**35.5%**	**35.9%**	37.4%	33.4%	30.7%	29.4%
20 years	**43.8%**	**40.5%**	**37.3%**	**37.5%**	36.2%	31.9%	28.9%	28.0%
25 years	**44.0%**	**41.0%**	**38.1%**	**38.1%**	33.8%	29.9%	27.2%	26.3%

F2 – 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, except for Poland as noted above, where a fixed volatility based on historic data is used. The following table sets out the equity implied volatilities used for the majority of business in each territory. Where market data is not available (particularly for 15 year options), equity volatilities are based on implied volatilities from modelled returns.

	2015		2014	
Option length	UK	France	UK	France
5 years	**20.5%**	**21.5%**	20.3%	20.7%
10 years	**22.6%**	**21.5%**	22.3%	20.8%
15 years[1]	**24.0%**	**21.8%**	22.7%	20.9%

1 Based on implied volatilities from modelled returns.

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. Model property implied volatility at FY15 is 16% for the majority of business in the UK and 13% for other markets *(FY14: 15% for the UK and 13% for other markets).*

Non-economic assumptions

(a) Demographic assumptions

Assumed future mortality, morbidity and lapse rates have been derived from an analysis of 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, for example 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, that is, 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.

(b) 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, although in a number of start-up operations an allowance is made for the spreading of fixed costs over a larger volume of business. In the UK, maintenance expense assumption changes in the current period are driven by expense savings, both as a result of reduced property rental charges in UK Life entities and continued efficiency savings that have been delivered. In addition, the approach to projection of future expenses within the UK Life service company has been refined.

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.

Other assumptions

(a) Poland financial levy

Following the election of a new government in Poland in October 2015 a levy is expected to be charged against financial service providers who manage assets above a certain threshold. For insurers the levy is expected to be 0.44% on assets over 2 billion PLN and implemented in February 2016. The levy has been fully reflected in the closing MCEV of covered business as at 31 December 2015 as although the levy applies to all short and long-term insurance business, the majority of the impact is on long-term business. The impact of the levy is £(76) million (net of tax and minority interest), presented within other non-operating variances in the analysis of earnings.

(b) Poland Pensions legislation change

On 4 September 2013, the Polish government announced a preferred option to change the Pillar II Pensions system (OFE), with the draft law being published on 10 October 2013. The changes were significant and in summary involved the transfer of over 50% of existing pensions assets to the state system along with an additional gradual transfer 10 years before retirement; in addition new premiums will be credited to the state system unless pension scheme members specifically stated otherwise.

The document enacting the change became law on 1 February 2014. Subsequently, customers had the opportunity to decide whether to stay with Aviva; this window closed in 2014 and the long-term implications of the regulation change were fully reflected in the MCEV at 31 December 2014, with no impact expected in any future period.

(c) Poland regulatory change on surrender charges

During 2015 there has been a regulatory change in Poland whereby surrender charges on unit-linked business have been restricted, with an impact of £(1) million on closing MCEV (net of tax and minority interest) at 31 December 2015.

F2 – Principal assumptions continued

(d) UK budget announcement on annuity reform

On 19 March 2014, the UK Chancellor of the Exchequer announced new legislation that removes the requirement for people who are retiring to take their defined contribution pension as an annuity. From April 2015 anyone who is aged 55 or over is able to take their entire pension fund as cash, although only the first 25% is tax-free. The remaining 75% of the fund is taxed at the saver's marginal rate.

Following the announcement, Aviva has experienced decreased demand for annuities in the UK, although annuities still play a central role in post-retirement financial planning as a tax efficient method of securing a guaranteed lifetime income. The reforms allow pension savers a greater level of flexibility that is likely to lead to changes in policyholder behaviour that may affect when customers take their retirement benefits and also lapse experience. There is continuing uncertainty within pension markets and an allowance of £75 million (net of tax and minority interest) was made at FY15 *(FY14: £50 million)*, with the increase since FY14 reflecting the acquisition of Friends Life. This amount was deducted from the value-in-force at FY14 and FY15, thereby reducing the opening and closing MCEV and is presented within other non-operating variances.

(e) UK pension scheme charge caps and commission

On 27 March 2014 the Pensions Minister announced that fees on default funds in auto-enrolment schemes would be capped at 0.75% p.a. from April 2015; and both active member discounts and commission payments will not be permitted from April 2016. On 17 October 2014 the Department for Work and Pensions issued a consultation paper containing draft legislation for these changes. This consultation closed on 14 November 2014. These changes were approved by Parliament and became regulation in March 2015.

Aviva's response has been to:

- Apply a cap on annual management charges on default funds of 0.75% p.a.
- Abolish active member discounts and set leaver charges to active member levels.
- Remove initial commission immediately and renewal commission by the regulatory requirement date in April 2016.

At 31 December 2014 the expected impact on Group's MCEV was estimated as £165 million (net of tax and minority interest). Of this, £20 million related to new business, and was deducted from the value of new business. The remaining £145 million related to existing business and was included within other non-operating variances, thereby reducing the closing MCEV. At 31 December 2015 the expected impact on the Group's MCEV has been estimated at £147 million (net of tax and minority interest) with the £18 million benefit since FY14 reflecting the acquisition of Friends Life and a refinement in the estimation technique used in the UK Life calculations.

(f) UK exit charges

On 19 January 2016 the Chancellor of the Exchequer announced that the UK government will change the law to place a duty on the Financial Conduct Authority to cap excessive early exit charges for pension savers. The FCA will be responsible for setting the level of the cap and will consult fully on this in due course. Aviva has been planning for a degree of voluntary reduction in exit charges, but there is a risk that the FCA will impose a cap at a more onerous level and with wider scope than has been assumed to date, which could result in a provision being required when there is greater clarity from the FCA.

(g) Spain pensions legislation change

During 2014 the Spanish government reduced the cap on annual management charges on pensions products from 2% p.a. to 1.5% p.a. The impact of this at 31 December 2014 was to reduce the value in force by £4 million (net of tax and minority interests).

(h) Cost of residual non-hedgeable risk (CNHR)

For the balance sheet and operating profit, a charge of 3.0% *(FY14: 3.2%)* 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 decrease in the charge since FY14 results from a reassessment of the group diversification benefit.

(i) Economic assumption changes in France

The French business is particularly sensitive to interest rates and swaption volatilities. This is primarily due to the high proportion of guarantees on some of their participating business and a dynamic lapse methodology that assumes policies lapse if the expected crediting rates payable to policyholders become substantially lower than a rate assumed to be payable by the French market in general. Over 2014, the eurozone saw a significant fall in interest rates and increase in swaption volatilities. At FY14, as part of their usual assumption review, Aviva France made a number of economic assumption changes to reflect the current low interest rate environment. In particular amendments were made to the future crediting rates assumed to be payable in the French market in general as well as the future crediting rates payable to Aviva France's policyholders. The effect of this change was reported within economic variances along with all other economic movements affecting the MCEV over the reporting period and increased the value of in force business by £293 million (net of tax and minority interest) mainly due to the impact of lower expected future lapses.

During 2015, France made further economic assumption changes, with a total benefit of £170 million on the closing MCEV (net of tax and minority interest) reported within economic variances. Adjusting the split between the income and capital component of equity and property returns in order to better reflect actual asset holdings and the historic dividend yield on these assets had a benefit of £82 million (net of tax and minority interests).

In addition a change was made to the economic scenarios used to calculate the cost of guarantees to ensure that projected future cashflows are valued in line with the market prices of similar financial instruments in the recent low interest rate and high volatility environment, with a benefit of £88 million. Details of this change are noted in the above section on stochastic economic assumptions.

F2 – Principal assumptions continued

(j) Calculation of equity release assets and liabilities in the UK

At 31 December 2014 the model used to the value the equity release assets held in the UK annuity fund was refined. This model derives a best estimate view on property growth based on current market conditions and explicitly calculates the additional return that would be demanded by investors due to uncertainties in the asset cash flows. Additionally there was a change to the methodology for deriving the liquidity premium which is used to discount the asset cash flows. These changes affected both assets and IFRS liabilities by a broadly similar amount. However, there was a negative impact on MCEV as the reduction in yield due to the additional return demanded by investors was not reflected in the MCEV reference rate, meaning that the reduction in asset value was not offset by an increase in VIF. This resulted in an adverse impact of £(312) million which was reflected in the closing MCEV at 31 December 2014.

During 2015, further enhancements have been made to refine the modelling of future withdrawals from customers utilising the drawdown facility of their mortgage, as well as refinements to the calibration of the residential property stress applied when calculating the cost of capital and refinements to the modelling of mortgage assets held in the UK equity release business. These changes have had an adverse impact of £(110) million (net of tax and minority interest) on the closing MCEV at FY15, and are presented within economic variances.

(k) Required capital and tax

	Tax rates[1]		Required capital (% EU minimum or equivalent)	
	2015	2014	**2015**	2014
United Kingdom[2,3]	**18.0%**	20.0%	**100%/ 200%**	100%/ 200%
Ireland[4]	**12.5%**	12.5%	**100%**	180.0%
France	**34.4%**	34.4%	**107.5%**	107.5%
Spain[5]	**25.0%**	25.0%	**152.6%**	146.7%
Italy[6]	**30.8%**	34.3%	**129.4%**	115.5%
Poland	**19.0%**	19.0%	**125.3%**	125.5%
Singapore	**17.0%**	17.0%	**150.0%**	146.7%

1 Current tax legislation and rates have been assumed to continue unaltered except where changes in future tax rates are known.
2 For UKA and UKLAP, the required capital 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-profits business, and this has been included within required capital. For Friends UK, the required capital is 150%.
3 For offshore business sold in the Isle of Man by FPI the corporation tax rate is 0%.
4 Required capital in Ireland has reduced following the transfer of Aviva Life & Pensions Ireland Limited (ALPI) to Aviva UK Life & Pensions Limited (UKLAP).
5 This is the aggregate required capital for in force business in Spain. A higher percentage in the current period reflects changes to business mix over the year.
6 This is the aggregate required capital level for in force business in Italy. A higher percentage in the current period reflects changes to the economic capital methodology implemented at FY14.

The main rate of UK Corporation tax reduced from 21% to 20% at 1 April 2015. This change was considered a known future change for MCEV purposes from 2013 onwards and therefore was already reflected in the opening and closing balances for both the current and comparative period.

As announced in the Summer Budget on 8 July 2015, the UK corporation tax rate is expected to reduce from 20% to 19% from 1 April 2017 and to 18% from 1 April 2020. This change was reflected in the closing MCEV at 31 December 2015 with a benefit of £118 million (net of tax and minority interest) presented within other non-operating variances.

There has been a reduction in the tax rate in Italy from 34.3% to 30.8%, following the reduction in the standard rate of tax (IRES) from 27.5% to 24.0%, with effect from 1 January 2017. This change was reflected in the closing MCEV at 31 December 2015 with a benefit of £14 million (net of tax and minority interest) presented within other non-operating variances.

In France, the long-term tax rate of 34.43% was temporarily increased to 38% in 2013 and this increase was renewed during 2014. The French government also announced that this temporary increase would remain in force during 2015. The impact of this was to reduce the closing MCEV at 31 December 2014 by £13 million (net of tax and minority interests) presented within other non-operating variances. There has been no change to the long-term tax rate assumption in 2015.

In France, legislation was introduced with effect from 1 January 2016 to tax 1% of dividend distributions between French companies at the French corporation tax rate. This applies to the distributions of profits between French companies within Aviva France. A provision has been included in the Group MCEV net assets at 31 December 2015 and results in a reduction in net assets of £12 million and is presented within economic variances.

There has been a reduction to the corporation tax rate in Spain, from 30% in 2014 to 28% for 2015 and 25% for 2016 onwards. From 31 December 2014, this reduction was considered a known future change for MCEV purposes and was reflected in the closing MCEV at 31 December 2014 with a benefit of £8 million (net of tax and minority interests) presented within other non-operating variances.

During 2014 Aviva undertook a review to ensure that dividend withholding taxes across the territories in which it does business are consistently treated in its results. As a result, the MCEV of Aviva's Turkish and Chinese joint venture businesses were adjusted at 31 December 2014 to reflect withholding taxes of 15% and 5% respectively, payable on distribution of profits to their Aviva Group UK shareholder, with adverse impacts of £(19) million and £(6) million respectively (net of tax and minority interest) on the opening MCEV. The adjustments made to the opening MCEV were presented within economic variances in the comparative period~~s~~ in note F4. Components of MCEV profit during 2014 and 2015 reflect the additional withholding tax due.

F2 – Principal assumptions continued

(l) Exchange rates

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

	2015	2014
Eurozone		
Average rate (€1 equals)	**£0.72**	£0.81
Period end rate (€1 equals)	**£0.74**	£0.78
Poland		
Average rate (PLN1 equals)	**£0.17**	£0.19
Period end rate (PLN1 equals)	**£0.17**	£0.18
Singapore		
Average rate ($SGD1 equals)	**£0.48**	£0.48
Period end rate ($SGD 1 equals)	**£0.48**	£0.48

F3 – Development of MCEV

The tables below present the key life and pension MCEV results for 31 December 2015 on both a gross of tax and gross of non-controlling interest basis, and on a net of tax and net of non-controlling interest basis.

	Full Year 2015 £m	Full Year 2014 £m
Present value of new business premiums (gross of tax & non-controlling interests)	**29,765**	24,728
New business margins (gross of tax & non-controlling interests)	**4.0%**	4.1%
Value of new business[1]	**1,192**	1,009
Expected returns	**1,267**	1,246
Experience variances	**9**	38
Operating assumption changes	**153**	448
Other operating variances	**(232)**	6
Operating earnings (gross of tax & non-controlling interests)	**2,389**	2,747
Economic variances	**(743)**	(152)
Other non-operating variances	**11**	(258)
Non-operating earnings (gross of tax & non-controlling interests)	**(732)**	(410)

1 The value of new business figure for 2014 includes Eurovita, CxG and South Korea.

	Full Year 2015 £m	Full Year 2014 £m
Present value of new business premiums (net of tax & non-controlling interests)	**28,130**	22,504
New business margins (net of tax & non-controlling interests)	**3.1%**	3.2%
Value of new business[1]	**869**	712
Expected returns	**918**	854
Experience variances	**(4)**	26
Operating assumption changes	**114**	353
Other operating variances	**(163)**	5
Operating earnings (net of tax & non-controlling interests)	**1,734**	1,950
Economic variances	**(677)**	(125)
Other non-operating variances	**(1)**	(206)
Non-operating earnings (net of tax & non-controlling interests)	**(678)**	(331)

1 The value of new business figure for 2014 includes Eurovita, CxG and South Korea.

All commentary below is on a net of tax and net of non-controlling interest basis.

Profitability

Operating earnings for FY15 are £1,734 million *(FY14: £1,950 million).* These are offset by £(678) million *(FY14: £(331) million* non-operating earnings to give total MCEV earnings of £1,056 million *(FY14: £1,619 million).*

New business

VNB has increased to £869 million *(FY14: £712 million),* primarily driven by growth in the UK & Ireland, Italy and Asia. Friends UK contributed £73 million to the total UK & Ireland new business value of £502 million at FY15. UK & Ireland excluding Friends UK has seen VNB increase by £43 million over the year, with the improvement driven mainly by higher margins on pension and health business, together with increased sales and improved margins on bulk purchase annuities.

In Europe, all markets showed an increase in VNB on a constant currency basis. VNB in Italy increased primarily due to higher margins on with-profits products following management actions to reduce the cost of guarantees, together with an improved mix of business away from with-profits products towards protection business. VNB growth in France (on a constant currency basis) was driven mainly by volume growth and improved margins on protection business. In Poland, VNB showed a small increase on a constant currency basis reflecting increased sales of higher margin business and the 2014 result included a £8 million one-off benefit from regulatory pension changes in Lithuania. An increase in VNB in Spain (on a constant currency basis) was mainly driven by an improved mix within protection business, partly offset by reduced sales of with-profits business following management actions to reduce guarantees available.

In Asia, increases in VNB reflect a continued focus on sales of higher margin products, particularly protection products in China and Singapore as well as retail health business in Singapore. In addition, the current period includes the new business contribution from FPI.

F3 – Development of MCEV continued

Expected return

The total expected return was £918 million *(FY14: £854 million)*. Expected return for existing business was £806 million *(FY14: £723 million)* and expected return on shareholder net worth was £112 million *(FY14: £131 million).* The increase in total expected return from FY14 was driven mainly by an increase in expected return in the UK and Asia, offset partially by lower levels of expected return from Europe due in part to the impact of adverse foreign exchange rate movements. In the UK, this increase was principally due to the acquisition of Friends UK which added £130 million to expected return. In France, a reduction in expected return was due to a lower opening MCEV at the start of 2015 compared to the start of 2014 driven by the negative impact of falling risk-free rates and increased swaption volatilities on the costs of guarantees. In Poland, Spain and Italy, falling risk-free rates and narrowing bond spreads led to a reduction in IDR at the end of 2014 and therefore a reduction in expected return in FY15 compared to FY14. In Italy this has been offset by an increase in Aviva's share of ownership of the business at the end of 2014, and the inclusion of previously unmodelled business.

Experience variances

Experience variances of £(4) million *(FY14: £26 million)* are driven by negative variances in the UK and Asia, partially offset by positive variances in France and Poland. In the UK, negative variances are driven by project costs related to development of systems and processes, offset partially by positive lapse and mortality experience. In France and Poland positive variances are mainly driven by favourable lapse experience. France also benefits from positive experience variances driven by lower levels of policyholder transfers between unit-linked and with-profits contracts.

Operating assumption changes

Operating assumption changes of £114 million *(FY14: £353 million)* are driven by assumption changes in the UK mainly reflecting a reduction to the current and long-term cost base due to continuing restructuring and process improvements and changes to lapse assumptions. Morbidity assumption changes in Singapore and a strengthening of expense assumptions in France partially offset the positive impacts in the UK, as did the increased levels of non-hedgeable risk capital in the CNHR calculation following updated economic capital risk calibrations.

Other operating variances

Other operating variances of £(163) million *(FY14: £5 million*) are driven mainly by the impact in France of a modelling change to reflect policyholder actions to transfer funds between unit-linked and with-profits contracts. The adverse impact in the UK mainly reflects model changes, pricing actions to improve retention of existing corporate pension contracts and the loss of tax relief following the recapture of an Insurance Special Purpose Vehicle (ISPV) within the Group.

Non-operating earnings

Non-operating earnings in the period were £(678) million *(FY14: £(331) million).*

Economic variances of £(677) million *(FY14: £(125) million),* are primarily due to negative economic variances in the UK and Asia partially offset by positive variances in France.

In the UK, the adverse impact primarily reflects widening corporate bond spreads on annuity business, partially offset by increases in liquidity premiums. In addition, equity market underperformance has reduced expected future unit-linked fund charges and shareholder transfers from with-profits funds.

The adverse impact in Asia is mainly driven by falling interest rates in China increasing the cost of guarantees. Positive variances in France are mainly due to an increase in risk-free rates and falling swaption volatilities resulting in a reduction in the cost of guarantees. Economic assumption changes relating to capital and dividend apportionment for equity returns and a change to the ESG calibration to better reflect the low interest rate environment further added to the positive variance in France. Further detail on economic assumption changes in France can be found in Note F2(i).

Other non-operating variances were £(1) million *(FY14: £(206) million),* reflecting several offsetting effects. There were negative variances relating to integration costs following the acquisition of Friends Life, the costs associated with the Group's Solvency II program, new legislation in Poland resulting in a levy on insurance companies (to be implemented in February 2016) and newly enacted legislation in Turkey whereby future fees on pensions would be reduced. These negative variances were broadly offset by the partial release of a provision in the UK established at the end of 2014 (related to charge capping on auto-enrolment pension funds), the announcement to reduce the UK corporation tax rate to 18% by 2020 and the impact of increased assets under management following the acquisition of Friends Life. A further benefit to MCEV resulted from the announcement to reduce tax rates in Italy (effective 2017).

Total Life MCEV

The life covered MCEV is £19,560 million, an increase of £4,286 million in the period from the opening MCEV of £15,274 million. This movement comprises of operating earnings of £1,734 million in the year, economic variances of £(677) million and other non-operating variances of £(1) million, resulting in total MCEV earnings of £1,056 million. Dividend and capital flows from covered business reduce MCEV by £1,074 million. The increase in acquired/divested business of £4,633 million is primarily due to the acquisition of Friends Life on 10 April 2015. Adverse foreign exchange rate impacts also reduced closing MCEV by £329 million.

F4 – Geographical analysis of life MCEV operating earnings

The table below presents the components of the life and pensions MCEV earnings. The components of operating profit are calculated using economic assumptions as at the start of the year (in-force business) or start of the quarter or more frequently (new business) and operating (demographic and expenses) assumptions as at the end of the period.

Net of tax and non-controlling interests Full Year 2015	UK & Ireland £m	Europe £m	Asia £m	Other £m	Total £m
Value of new business	**502**	**232**	**122**	**13**	**869**
Earnings from existing business					
– expected existing business contribution (reference rate)	**139**	**57**	**19**	**3**	**218**
– expected existing business contribution (in excess of reference rate)	**371**	**181**	**33**	**3**	**588**
	510	**238**	**52**	**6**	**806**
Experience variances					
– maintenance expense	**6**	**(4)**	**(10)**	**—**	**(8)**
– project and other related expenses	**(88)**	**—**	**(10)**	**—**	**(98)**
– mortality/morbidity	**16**	**8**	**4**	**—**	**28**
– lapses	**15**	**15**	**(6)**	**—**	**24**
– other	**10**	**31**	**6**	**3**	**50**
	(41)	**50**	**(16)**	**3**	**(4)**
Operating assumption changes:					
– maintenance expense	**145**	**(57)**	**(2)**	**5**	**91**
– project and other related expenses	**(17)**	**—**	**(4)**	**—**	**(21)**
– mortality/morbidity	**(9)**	**23**	**(18)**	**—**	**(4)**
– lapses	**97**	**28**	**(2)**	**(3)**	**120**
– other	**(84)**	**2**	**11**	**(1)**	**(72)**
	132	**(4)**	**(15)**	**1**	**114**
Expected return on shareholders' net worth	**49**	**51**	**12**	**—**	**112**
Other operating variances	**(56)**	**(102)**	**(16)**	**11**	**(163)**
Operating earnings after tax and non-controlling interests	**1,096**	**465**	**139**	**34**	**1,734**
Economic variances					**(677)**
Other non-operating variances					**(1)**
Earnings after tax and non-controlling interests					**1,056**

Please refer to F3 for the complete analysis of the components of MCEV earnings

F4 – Geographical analysis of life MCEV operating earnings continued

Net of tax and non-controlling interests Full Year 2014	UK & Ireland £m	Europe £m	Asia £m	Other £m	Total £m
Value of new business	386	217	101	8	712
Earnings from existing business					
– expected existing business contribution (reference rate)	114	81	16	2	213
– expected existing business contribution (in excess of reference rate)	275	218	14	3	510
	389	299	30	5	723
Experience variances					
– maintenance expense	9	(3)	(2)	(3)	1
– project and other related expenses[1]	(81)	(1)	(1)	—	(83)
– mortality/morbidity	(12)	1	1	—	(10)
– lapses	(24)	26	(1)	1	2
– other[2]	91	18	5	2	116
	(17)	41	2	—	26
Operating assumption changes:					
– maintenance expenses[3]	110	38	(6)	—	142
– project and other related expenses	(33)	—	—	—	(33)
– mortality/morbidity[4]	158	4	12	—	174
– lapses	(26)	17	(5)	11	(3)
– other[5]	71	—	2	—	73
	280	59	3	11	353
Expected return on shareholders' net worth	60	62	9	—	131
Other operating variances[6]	(76)	(15)	50	46	5
Operating earnings after tax and non-controlling interests	1,022	663	195	70	1,950
Economic variances[7]					(125)
Other non-operating variances[8]					(206)
Earnings after tax and non-controlling interests					1,619

1 Within the UK, project and other related expenses reflect higher than expected expenditure on development of systems and processes.
2 Other experience variances in the UK are most notably due to the impact of changes to the pattern of required capital releases as a result of capital management transactions and a reduction in reserves arising from improvements to valuation data.
3 Maintenance expense operating assumption changes in the UK are driven by continuing restructuring and process improvements reducing the current and long-term cost base. In Europe the positive impact of expense assumption changes relate to all territories.
4 In the UK, mortality/morbidity assumption changes primarily relate to annuitant mortality assumption changes.
5 Other assumption changes in the UK include the impact of including age related premium increases on healthcare business and the impact of increased annual management charges following enhancements to unitised with-profits asset shares in NWPSF.
6 Other operating variances include management actions taken to change terms and conditions on some of Asia's healthcare business in Singapore, as well as the impact of refinements to the CNHR calculation in Singapore. There is an impact from prior period adjustments in Aviva Investors (reported in the 'Other' operating segment). In the UK, this partly reflects the impact on frictional costs of capital restrictions as a result of two reinsurance transactions undertaken in 2014.
7 Economic variances are materially driven by negative variances in France and Asia partly offset by positive variances in the UK, Spain and Poland. In particular in France there is a significant adverse impact, partly mitigated by a number of economic assumption changes. Note F2(i) provides further details of economic assumption changes made at FY14.
8 Other non-operating variances are primarily driven by the impact of pension legislation changes in the UK, resulting in lower future management charges levied on auto-enrolment pension funds, and the extension of the temporary corporate tax rate to 2015 in France.

F5 – 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.

Net of tax and non-controlling interests Full Year 2015	**Free surplus £m**	**Required capital[1] £m**	**VIF £m**	**Total MCEV £m**
Opening MCEV	**1,918**	**7,450**	**5,906**	**15,274**
New business value	**(352)**	**405**	**816**	**869**
Expected existing business contribution (reference rate)	**—**	**—**	**218**	**218**
Expected existing business contribution (in excess of reference rate)	**—**	**—**	**588**	**588**
Expected return on shareholders' net worth	**8**	**104**	**—**	**112**
Transfers from VIF and required capital to the free surplus	**1,558**	**(384)**	**(1,174)**	**—**
Experience variances[2]	**(10)**	**(55)**	**61**	**(4)**
Assumption changes[3]	**532**	**120**	**(538)**	**114**
Other operating variances[4]	**205**	**(161)**	**(207)**	**(163)**
	727	**(96)**	**(684)**	**(53)**
Operating MCEV earnings	**1,941**	**29**	**(236)**	**1,734**
Economic variances[5]	**276**	**(147)**	**(806)**	**(677)**
Other non-operating variances[6]	**(283)**	**138**	**144**	**(1)**
Total MCEV earnings	**1,934**	**20**	**(898)**	**1,056**
Capital & dividend flows[7]	**(1,177)**	**6**	**97**	**(1,074)**
Foreign exchange variances	**(40)**	**(143)**	**(146)**	**(329)**
Acquired/divested business[8]	**(132)**	**1,101**	**3,664**	**4,633**
Closing MCEV	**2,503**	**8,434**	**8,623**	**19,560**

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margin.
2 Experience variances include the impact of negative variances in the UK, driven by project costs related to development of systems and processes partially offset by favourable lapse experience in France and Poland.
3 Assumption changes primarily relate to maintenance expenses and lapses in the UK, partially offset by a strengthening of expense assumptions in France. The reduction in VIF and corresponding increase in free surplus largely reflects a weakening of regulatory mortality assumptions in the UK.
4 Other operating variances include the negative impact of a model change in France to allow for policyholder actions to transfer funds between unit-linked and with-profits business. The movement in free surplus includes a c.£200 million benefit arising from the portfolio transfer of our Irish Life business, Aviva Life and Pensions Ireland Limited, to Aviva Life and Pensions UK Limited on 1 January 2015, which resulted in reduced regulatory capital requirements and reserve releases from alignment with the UK reserving basis.
5 The reduction in VIF is primarily driven by the UK resulting mainly from widening corporate bond spreads on annuity business partially offset by increases in liquidity premiums, as well as equity under-performance,.
6 Includes several offsetting effects. Negative variances include integration costs following the acquisition of Friends Life, the Group's Solvency II program costs and new legislation in Poland and Turkey. Positive variances were driven by the partial release of a charge-capping provision in the UK, the announcement to reduce the UK corporation tax rate to 18% by 2020 and the impact of increased assets under management following the acquisition of Friends Life. A further benefit to MCEV resulted from the announcement to reduce tax rates in Italy (effective 2017).
7 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. Capital and dividend flows also includes a transfer of an intercompany balance from non-covered to covered business, reducing non-covered assets and increasing the VIF of covered business by £97 million.
8 Acquired/divested business is principally due to the acquisition of the Friends Life business on 10 April 2015, as set out in note F1 – basis of preparation.

Net of tax and non-controlling interests Full Year 2014	Free surplus £m	Required capital[1] £m	VIF £m	Total MCEV £m
Opening MCEV	2,310	6,551	6,129	14,990
Opening Adjustments[2]	125	107	534	766
Adjusted Opening MCEV	2,435	6,658	6,663	15,756
New business value	(350)	297	765	712
Expected existing business contribution (reference rate)	—	—	213	213
Expected existing business contribution (in excess of reference rate)	—	—	510	510
Expected return on shareholders' net worth	46	85	—	131
Transfers from VIF and required capital to the free surplus	1,221	(267)	(954)	—
Experience variances	(11)	(78)	115	26
Assumption changes[3]	223	(66)	196	353
Other operating variances [4]	32	1,152	(1,179)	5
	244	1,008	(868)	384
Operating MCEV earnings[5]	1,161	1,123	(334)	1,950
Economic variances[6]	37	(24)	(138)	(125)
Other non-operating variances[7]	(32)	—	(174)	(206)
Total MCEV earnings	1,166	1,099	(646)	1,619
Capital & dividend flows[8]	(1,116)	—	—	(1,116)
Foreign exchange variance	(48)	(206)	(214)	(468)
Acquired/divested business[9]	(519)	(101)	103	(517)
Closing MCEV	1,918	7,450	5,906	15,274

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margin.
2 Represents restatement of opening 2014 MCEV relating to a reassessment of liquidity premium and extension in scope of covered business.
3 Assumption changes include annuitant mortality and maintenance expense assumption changes in the UK.
4 Other operating variances are driven by prior period adjustments in Aviva Investors, UK and France and management actions taken to change terms and conditions on some of Asia's healthcare business in Singapore, as well as refinements to the CNHR calculation in Singapore. The large reduction in VIF and offsetting increase in required capital is a result of capital transactions in the UK.
5 Two internal reinsurance arrangements were undertaken in 2014. The first to reinsure an additional 10% of UK Annuity business to Aviva International Insurance Limited and the second to reinsure 10% of UK Annuity business to UKLAP. These transactions had an adverse impact on Group MCEV free surplus of £204 million in total. On an economic capital basis these transactions improve the UK Life position and as a result the adverse impact on MCEV has therefore been excluded from operating capital generation to reflect the economic substance of the management actions.
6 The reduction in VIF is primarily driven by France, where falling interest rates and increased swaption volatilities have increased the cost of guarantees, mitigated to some extent by a number of economic assumption changes.
7 Other non-operating variances include the impact of the Department for Work and Pensions announcement in the UK and the temporary increase in the corporation tax rate in France.
8 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 the service companies includes only future profits and losses, these amounts must be eliminated from the closing embedded value.
9 A decrease of £490 million is due to the sale of ALPI to UKLAP. This line also includes the sale of Eurovita and the decrease in minority interest holding in Italy, the sale of CxG in Spain, a reduction in Aviva's share of Poland Pensions business, and the sale of Woori Aviva Life in South Korea.

F6 – Segmental analysis of life and related business embedded value

The required capital across our life businesses varies between 100% and 200% of EU minimum or equivalent *(103% to 180% at FY14)*. The weighted average level of required capital for our life businesses expressed as a percentage of the EU minimum (or equivalent) solvency margin (Solvency I) has increased to 125% *(FY14: 109%),* mainly due to the acquisition of Friends Life, which has a required capital percentage of 150%, as set out in F2– Principal assumptions. 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 2015 the aggregate regulatory requirements based on the EU minimum test (Solvency I) amounted to £6.8 billion *(FY14: £6.9 billion).* At this date, the actual net worth held in our long-term business was £10.9 billion *(FY14: £9.4 billion)* which represents 160% *(FY14: 136%)* of these minimum requirements.

Net of tax and non-controlling interests Full Year 2015	**Free surplus £m**	**Required capital[1] £m**	**VIF £m**	**Total MCEV £m**
United Kingdom & Ireland[2]	**1,786**	**5,442**	**4,924**	**12,152**
France[3]	**221**	**2,066**	**1,179**	**3,466**
Poland	**136**	**101**	**843**	**1,080**
Italy	**41**	**398**	**273**	**712**
Spain	**46**	**102**	**147**	**295**
Other Europe	**1**	**14**	**97**	**112**
Europe	**445**	**2,681**	**2,539**	**5,665**
Asia[4]	**243**	**289**	**1,036**	**1,568**
Other	**29**	**22**	**124**	**175**
Total	**2,503**	**8,434**	**8,623**	**19,560**

1 Required capital is shown net of implicit items permitted by local regulators to cover minimum solvency margins.
2 The increase in all components of MCEV in the UK & Ireland since FY14 is primarily due to the impact of the acquisition of Friends UK, as set out in F1 – Basis of preparation.
3 The increase in VIF in France since FY14 is driven by the reduction in cost of guarantees as a result of increased risk-free rates and reduced swaption volatilities, as well as the benefit of equity outperformance on unit-linked business and economic assumption changes (see note F2(i) for further details).
4 In Asia, the increase in VIF since FY14 primarily relates to the acquisition of FPI, as set out in F1 – Basis of preparation.

Net of tax and non-controlling interests Full Year 2014	Free surplus £m	Required capital[1] £m	VIF £m	Total MCEV £m
United Kingdom & Ireland[2]	1,079	4,527	2,743	8,349
France	250	2,118	976	3,344
Poland	152	102	946	1,200
Italy	127	348	248	723
Spain	49	117	153	319
Other Europe	5	12	103	120
Europe	583	2,697	2,426	5,706
Asia	235	203	624	1,062
Other	21	23	113	157
Total	1,918	7,450	5,906	15,274

1 Required capital is shown net of implicit items permitted by local regulators to cover solvency margins.
2 Two internal reinsurance arrangements were undertaken in 2014. The first to reinsure an additional 10% of the UK Annuity business to Aviva International Insurance Limited and the second to reinsure 10% of UK Annuity business to UKLAP. These transactions had an adverse impact on Group MCEV free surplus of £204 million in total. On an economic capital basis these transactions improve the UK Life position and as a result the adverse impact on MCEV has therefore been excluded from OCG to reflect the economic substance of the management actions.

F7 – 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 tax and non-controlling interests Full Year 2015	**Regular premiums £m**	**WACF**	**Present value of regular premiums £m**	**Single premiums £m**	**Present value of new business premiums £m**
United Kingdom[1,2]	**1,450**	**5.8**	**8,480**	**7,756**	**16,236**
Ireland	**24**	**6.3**	**152**	**409**	**561**
United Kingdom & Ireland	**1,474**	**5.9**	**8,632**	**8,165**	**16,797**
France	**86**	**8.5**	**729**	**4,092**	**4,821**
Poland[3]	**41**	**8.0**	**328**	**120**	**448**
Italy[4]	**12**	**7.8**	**93**	**2,054**	**2,147**
Spain	**32**	**6.0**	**192**	**430**	**622**
Other Europe	**97**	**3.8**	**365**	**95**	**460**
Europe	**268**	**6.4**	**1,707**	**6,791**	**8,498**
Asia[5]	**300**	**6.9**	**2,060**	**763**	**2,823**
Other	**—**	**—**	**—**	**1,647**	**1,647**
Total life and pensions	**2,042**	**6.1**	**12,399**	**17,366**	**29,765**

1 Includes approximately £1 billion PVNBP relating to a longevity insurance transaction completed in the third quarter of 2015. The PVNBP for this transaction is, as permitted in certain circumstance in MCEV Guidance 10.8, calculated net of reinsurance to enable a more representative new business margin figure.
2 United Kingdom includes Friends UK from 10 April 2015.
3 The Poland WACF has decreased due to reduced sales of pensions business in Lithuania, which has a longer duration.
4 The Italy WACF has increased due to proportionately more protection business (relative to with-profits business) being sold.
5 Asia includes FPI from 10 April 2015.

Gross of tax and non-controlling interests Full Year 2014	Regular premiums £m	WACF	Present value of regular premiums £m	Single premiums £m	Present value of new business premiums £m
United Kingdom	946	5.4	5,108	6,901	12,009
Ireland	26	5.7	149	286	435
United Kingdom & Ireland	972	5.4	5,257	7,187	12,444
France	87	8.1	709	3,924	4,633
Poland	50	8.7	435	138	573
Italy	41	5.7	232	2,410	2,642
Spain	40	6.1	245	864	1,109
Other Europe	111	3.8	421	74	495
Europe	329	6.2	2,042	7,410	9,452
Asia	248	6.4	1,584	367	1,951
Other	—	—	—	881	881
Total life and pensions	1,549	5.7	8,883	15,845	24,728

F8 – 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. It reflects the additional value to shareholders created through the activity of writing new business including the impacts of interactions between in force and new business. The 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.

	Present value of new business premiums		Value of new business		New business margin	
Gross of tax and non-controlling interests	**Full Year 2015 £m**	Full Year 2014 £m	**Full Year 2015 £m**	Full Year 2014 £m	**Full Year 2015 %**	Full Year 2014 %
United Kingdom[1]	**16,236**	12,009	**609**	473	**3.8%**	3.9%
Ireland	**561**	435	**16**	9	**2.9%**	2.1%
United Kingdom & Ireland	**16,797**	12,444	**625**	482	**3.7%**	3.9%
France	**4,821**	4,633	**198**	205	**4.1%**	4.4%
Poland	**448**	573	**65**	64	**14.5%**	11.2%
Italy	**2,147**	2,642	**79**	54	**3.7%**	2.0%
Spain	**622**	1,109	**31**	38	**5.0%**	3.4%
Other Europe	**460**	495	**27**	30	**5.9%**	6.1%
Europe	**8,498**	9,452	**400**	391	**4.7%**	4.1%
Asia[2]	**2,823**	1,951	**151**	127	**5.3%**	6.5%
Other	**1,647**	881	**16**	9	**1.0%**	1.0%
Total life and pensions	**29,765**	24,728	**1,192**	1,009	**4.0%**	4.1%

1 United Kingdom includes Friends UK from 10 April 2015.
2 Asia includes FPI from 10 April 2015.

	Present value of new business premiums		Value of new business		New business margin	
Net of tax and non-controlling interests	**Full Year 2015 £m**	Full Year 2014 £m	**Full Year 2015 £m**	Full Year 2014 £m	**Full Year 2015 %**	Full Year 2014 %
United Kingdom[1]	**16,236**	12,009	**488**	379	**3.0%**	3.2%
Ireland	**561**	435	**14**	7	**2.5%**	1.6%
United Kingdom & Ireland	**16,797**	12,444	**502**	386	**3.0%**	3.1%
France	**4,060**	3,906	**117**	121	**2.9%**	3.1%
Poland	**407**	515	**48**	47	**11.8%**	9.1%
Italy	**1,559**	1,670	**35**	13	**2.2%**	0.8%
Spain	**377**	642	**10**	12	**2.7%**	1.9%
Other Europe	**460**	495	**22**	24	**4.8%**	4.8%
Europe	**6,863**	7,228	**232**	217	**3.4%**	3.0%
Asia[2]	**2,823**	1,951	**122**	101	**4.3%**	5.2%
Other	**1,647**	881	**13**	8	**0.8%**	0.9%
Total life and pensions	**28,130**	22,504	**869**	712	**3.1%**	3.2%

1 United Kingdom includes Friends UK from 10 April 2015.
2 Asia includes FPI from 10 April 2015.

F9 – Risk allowance within present value of in-force (VIF)

Within the VIF, there are additional allowances for risks not included within the present value of future profits calculation.

Net of non-controlling interests 31 December 2015	PVFP £m	Frictional costs £m	Non-hedgeable risks £m	Time value of financial options and guarantees £m	VIF £m
United Kingdom & Ireland	**6,361**	**(329)**	**(945)**	**(163)**	**4,924**
France	**2,145**	**(84)**	**(149)**	**(733)**	**1,179**
Poland	**981**	**(6)**	**(91)**	**(41)**	**843**
Italy	**325**	**(10)**	**(13)**	**(29)**	**273**
Spain	**173**	**(2)**	**(17)**	**(7)**	**147**
Other Europe	**101**	**(2)**	**(2)**	**—**	**97**
Europe	**3,725**	**(104)**	**(272)**	**(810)**	**2,539**
Asia	**1,214**	**(39)**	**(109)**	**(30)**	**1,036**
Other	**127**	**—**	**(3)**	**—**	**124**
Total	**11,427**	**(472)**	**(1,329)**	**(1,003)**	**8,623**

Total risk allowances have increased compared to FY14:

- Frictional costs have increased by £94 million principally driven by the UK following the acquisition of the Friends UK business.
- The allowance for the cost of non-hedgeable risks has increased by £402 million, mainly due to the impact of the acquisition of Friends Life on the UK and Asia operating segments.
- The Time Value of Options and Guarantees has fallen by £343 million primarily due to increasing risk-free rates and falling swaption volatilities in France as well as economic assumption changes. In the UK, the increase is primarily due to the acquisition of the Friends UK business.

Net of non-controlling interests 31 December 2014	PVFP £m	Frictional costs £m	Non-hedgeable risks £m	Time value of financial options and guarantees £m	VIF £m
United Kingdom & Ireland	3,650	(254)	(528)	(125)	2,743
France	2,350	(80)	(189)	(1,105)	976
Poland	1,118	(5)	(115)	(52)	946
Italy	301	(7)	(9)	(37)	248
Spain	179	(2)	(20)	(4)	153
Other Europe	106	(1)	(2)	—	103
Europe	4,054	(95)	(335)	(1,198)	2,426
Asia	737	(29)	(61)	(23)	624
Other	116	—	(3)	—	113
Total	**8,557**	**(378)**	**(927)**	**(1,346)**	**5,906**

F10 – 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 with a floor of 0%, 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% multiplicative increase in equity, property 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. Own sovereign debt is excluded from credit spread sensitivities.

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.

Life and related business embedded value

2015 Embedded value (net of non-controlling interests)	As reported in F6 £m	10bps increase in adjustment to risk-free rates £m	Interest rates 1% increase £m	Interest rates 1% decrease £m	25% increase in swaption implied volatilities £m
United Kingdom & Ireland	**12,152**	**460**	**(265)**	**290**	**—**
France	**3,466**	**70**	**60**	**(415)**	**(140)**
Poland, Italy, Spain and Other Europe	**2,199**	**—**	**(45)**	**65**	**(5)**
Asia and Other	**1,743**	**—**	**85**	**(120)**	**(5)**
Total	**19,560**	**530**	**(165)**	**(180)**	**(150)**

2015 Embedded value (net of non-controlling interests)	As reported in F6 £m	Equity/property 10% increase in market values £m	Equity/property 10% decrease in market values £m	Equity/property 25% increase in volatility £m	Credit spread 50bps increase £m	Credit spread 50bps decrease £m	EU minimum capital or equivalent £m
United Kingdom & Ireland	**12,152**	**335**	**(330)**	**(155)**	**(1,600)**	**1,690**	**50**
France	**3,466**	**240**	**(255)**	**(200)**	**(55)**	**40**	**10**
Poland, Italy, Spain and Other Europe	**2,199**	**40**	**(40)**	**(20)**	**(5)**	**25**	**—**
Asia and Other	**1,743**	**60**	**(60)**	**—**	**(20)**	**20**	**15**
Total	**19,560**	**675**	**(685)**	**(375)**	**(1,680)**	**1,775**	**75**

F10 – Sensitivity analysis continued

New business

2015 Value of new business (net of tax and non-controlling interests)	As reported in F8 £m	10bps increase in adjustment to risk-free rates £m	Interest rates: 1% increase £m	Interest rates: 1% decrease £m	25% increase in swaption implied volatilities £m
United Kingdom & Ireland	502	19	3	(9)	—
France	117	—	7	(35)	(6)
Poland, Italy, Spain and Other Europe	115	—	(5)	5	—
Asia and Other	135	—	17	(17)	—
Total	**869**	**19**	**22**	**(56)**	**(6)**

2015 Value of new business (net of tax and non-controlling interests)	As reported in F8 £m	Equity/property: 10% increase in market values £m	Equity/property: 10% decrease in market values £m	Equity/property: 25% increase in volatility £m	Credit spread: 50bps increase £m	Credit spread: 50bps decrease £m	EU minimum capital or equivalent £m
United Kingdom & Ireland	502	2	(2)	—	(42)	46	1
France	117	5	(8)	(10)	—	(3)	1
Poland, Italy, Spain and Other Europe	115	—	—	—	—	—	—
Asia and Other	135	—	—	—	—	—	8
Total	**869**	**7**	**(10)**	**(10)**	**(42)**	**43**	**10**

(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.

Life and related business embedded value

2015 Embedded value (net of non-controlling interests)	As reported in F6 £m	10% decrease in maintenance expenses £m	10% decrease in lapse rates £m	5% decrease in mortality/ morbidity rates – life assurance £m	5% decrease in mortality/ morbidity rates – annuity business £m
United Kingdom & Ireland	12,152	360	230	240	(625)
France	3,466	100	25	25	(25)
Poland, Italy, Spain and Other Europe	2,199	35	75	30	(5)
Asia and Other	1,743	70	45	50	—
Total	**19,560**	**565**	**375**	**345**	**(655)**

New Business

2015 Value of new business (net of tax and non-controlling interests)	As reported in F8 £m	10% decrease in maintenance expenses £m	10% decrease in lapse rates £m	5% decrease in mortality/ morbidity rates – life assurance £m	5% decrease in mortality/ morbidity rates – annuity business £m
United Kingdom & Ireland	502	28	27	34	(39)
France	117	8	4	2	—
Poland, Italy, Spain and Other Europe	115	4	9	4	—
Asia and Other	135	13	12	12	5
Total	**869**	**53**	**52**	**52**	**(34)**

Independent auditors' report to the directors of Aviva plc

Report on the consolidated MCEV financial statements

Our opinion
In our opinion, the consolidated MCEV financial statements, defined below, for the year ended 31 December 2015 have been properly prepared, in all material respects, in accordance with the European Insurance CFO Forum MCEV Principles issued in June 2008, as amended in October 2009, and the additional guidance issued in October 2015 ('CFO Forum Principles') and the Basis of Preparation set out on pages 6 to 11.

This opinion is to be read in the context of what we say in the remainder of this report.

Emphasis of matter – Solvency II
Without modifying our opinion on the consolidated MCEV financial statements, we draw attention to the Basis of Preparation on pages 6 to 11 which explains that, as permitted by the additional guidance issued in October 2015 by the European Insurance CFO Forum, the consolidated MCEV financial statements have been prepared making no allowance for the impact of Solvency II regulatory requirements.

What we have audited
The consolidated MCEV financial statements, which are prepared by Aviva plc, comprise:
- the reconciliation of IFRS total equity to Life MCEV as at the year ended 31 December 2015;
- the reconciliation of IFRS total equity to MCEV net worth as at the year ended 31 December 2015;
- the group MCEV analysis of earnings for the year ended 31 December 2015; and
- the explanatory notes to the consolidated MCEV financial statements.

The consolidated MCEV financial statements have been prepared in accordance with the CFO Forum Principles and the Basis of Preparation set out on pages 6 to 11.

We have reported separately on the consolidated financial statements of Aviva plc prepared on an IFRS basis for the year ended 31 December 2015. The information contained in the consolidated MCEV financial statements should be read in conjunction with the consolidated financial statements prepared on an IFRS basis, included within the Annual Report of Aviva plc for the year ended 31 December 2015 ('Annual Report').

What an audit of consolidated MCEV financial statements involves
An audit involves obtaining evidence about the amounts and disclosures in the consolidated MCEV financial statements sufficient to give reasonable assurance that the consolidated MCEV financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of:
- whether the accounting policies are appropriate to the group's circumstances and have been consistently applied and adequately disclosed;
- the reasonableness of significant accounting estimates made by the directors; and
- the overall presentation of the consolidated MCEV financial statements.

We primarily focus our work in these areas by assessing the directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

In addition, we read all the other information contained in the Annual Report to identify material inconsistencies with the audited consolidated MCEV financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Independent auditors' report to the directors of Aviva plc continued

Responsibilities for the consolidated MCEV financial statements and the audit

Our responsibilities and those of the directors

The directors are responsible for preparing the consolidated MCEV financial statements in accordance with the MCEV basis set out in Note F1 – Basis of preparation. Our responsibility, as set out in our letter of engagement dated 6 May 2015, is to audit and express an opinion on the consolidated MCEV financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report, including the opinion, has been prepared for and only for the Company's directors as a body in accordance with our letter of engagement dated 6 May 2015 and for no other purpose. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

PricewaterhouseCoopers LLP
Chartered Accountants
London
9 March 2016

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

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. Annuities 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.

Critical illness cover
Pays out a lump sum if the insured person is diagnosed with a serious illness that meets the plan definition.

Deferred annuity
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.

Equity Release
Equity Release Mortgages allow a homeowner to receive a lump sum in return for a mortgage secured on their house. No interest is payable on the loan; instead, interest is rolled-up on the loan, and the loan and accrued interest are repayable at redemption (upon death or moving into long-term care).

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.

Group pension
A pension plan that covers a group of people, which is typically purchased by a company and offered to their employees.

Health insurance
Provides cover against loss from illness or bodily injury. Can pay for medicine, visits to the doctor, hospital stays, other medical expenses and loss of earnings, depending on the conditions covered and the benefits and choices of treatment available on the policy.

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.

Investment sales
Comprise retail sales of mutual fund-type products such as unit trusts, individual savings accounts (ISAs) and open ended investment companies (OEICs).

Individual savings account (ISAs)
Tax-efficient plans for investing in stocks and shares, cash deposits or life insurance investment funds, subject to certain limits.

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.

Open ended investment company (OEIC)
A collective investment fund structured as a limited company in which investors can buy and sell shares.

Pension
A means of providing income in retirement for an individual and possibly his/her dependants.

Personal pension
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.

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.

Collective investment scheme (SICAVs)
This is an open-ended investment fund, structured as a legally independent joint stock company, whose units are issued in the form of shares.

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.

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.

Whole life
A protection policy that remains in force for the insured's whole life; a lump sum will be paid out on death. 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.

General terms

Annual premium equivalent (APE)
Used as a measure of annual sales, taking the annual premium of regular premium contracts plus 10% of single premium contracts.

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)
A major trade association for UK insurance companies, established in July 1985.

Acquired value of in force business (AVIF)
The present value of future profits on a portfolio of long-term insurance and investment contracts, acquired either directly or through the purchase of a subsidiary.

Bancassurance/Affinity
An arrangement whereby banks and building societies sell insurance and investment products to their customers on behalf of other financial providers.

Best Estimate Liabilities (BEL)
The expected present value of future cash flows for a company's current insurance obligations, calculated using best estimate assumptions, projected over the contract's run-off period, taking into account all up-to-date financial market and actuarial information.

Cash remittances
Amounts paid by our businesses to the Group, comprising dividends and interest on internal loans.

Combined operating ratio (COR)
A financial measure of general insurance underwriting profitability calculated as incurred claims expressed as a percentage of net earned premiums, plus written commissions and written expenses expressed as a percentage of net written premiums. A COR below 100% indicates profitable underwriting.

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.

Excess centre cash flow
A measure of excess cash flow, calculated by deducting central operating expenses and debt financing costs from cash remitted by business units.

Fair value
The price that would be received to sell or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e. an exit price).

Financial Conduct Authority (FCA)
The FCA is a company limited by guarantee and is independent of the Bank of England. It is responsible for the conduct business regulation of all firms (including those firms subject to prudential regulation by the PRA) and the prudential regulation of firms not regulated by the PRA. The FCA has three statutory objectives: securing an appropriate degree of protection for consumers, protecting and enhancing the integrity of the UK financial system and promoting effective competition in the interests of consumers.

Funds under management
Represents all assets actively managed or administered by or on behalf of the Group including those funds managed by third parties.

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.

Independent Financial Advisers (IFAs)
A person or organisation, authorised under the FCA, to give independent advice on financial matters.

Internal rate of return (IRR)
A discount rate used to measure profitability. The rate used is that which will bring a series of cash flows to a net present value of nil.

International financial reporting standards (IFRS)
These are accounting regulations designed to ensure comparable financial statements preparation and disclosure, and are the standards that all publicly listed companies in the European Union are required to use.

Inherited estate
In the UK, the assets of the long-term with-profits funds less the realistic reserves for non-profit policies written within the with-profits funds, less asset shares aggregated across the with-profits 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.

Latent claims
General insurance claims that are often not made until many years after the period of cover provided, due to the impact of perils or causes not becoming evident for a number of years. Sources of latent claims include asbestos-related diseases, environmental pollution and industrial deafness.

Long-term and savings business
Collective term for life insurance, pensions, savings, investments and related business.

Minimum capital requirement (MCR)
The Minimum Capital Requirement is the minimum amount of capital that an insurer needs to hold to cover its risks under the Solvency II regulatory framework. If an insurer's capital falls below the MCR then authorisation will be withdrawn by the regulator unless a firm is able to meet the MCR within a short period of time.

Net written premiums
Total gross written premiums for the given period, minus premiums paid over or 'ceded' to reinsurers.

New business strain (NBS)
The name given to the initial impact on shareholders' net assets when an insurance contract is sold. This 'strain' arises because, in addition to meeting costs associated with the sale of contracts, insurance companies must meet capital and reserving requirements at the outset of a contract that are often significantly higher than the premiums received.

Operating expenses
The day-to-day expenses involved in running a business, such as sales and administration, as opposed to production costs.

Operating expense ratio
The Group operating expense ratio is calculated as the Group's operating expenses from continuing operations expressed as a percentage of the Group's operating profit from continuing operations before Group debt costs and operating expenses.

Operating profit
This is a non-GAAP financial performance measure also referred to as adjusted operating profit or operating profit (IFRS basis). It is based on expected investment returns and stated before tax and before non-operating items including impairment of goodwill and amortisation and impairment of acquired value of in-force business and other items.

Own Funds
The amount of capital a firm actually holds under Solvency II on a market value basis. This is the sum of the economic value of assets less the economic value of liabilities. Basic own funds are calculated as the difference between the assets (including transitional measure on technical provisions) and liabilities (including subordinated liabilities) calculated on a combination of best estimate and market consistent assumptions. Available own funds are calculated as basic own funds with any adjustments including off-balance sheet own funds approved by the regulator (known as ancillary own funds). Eligible own funds reflect any tiering restrictions and are the amount of own funds eligible to cover the SCR and MCR.

Present value of new business premiums (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.

Prudential Regulatory Authority (PRA)
The PRA is a part of the Bank of England and is responsible for the prudential regulation of deposit taking institutions, insurers and major investment firms. The PRA has two statutory objectives: to promote the safety and soundness of these firms and, specifically for insurers, to contribute to the securing of an appropriate degree of protection for policyholders.

Risk-adjusted returns
Adjusting profits earned and investment returns by how much risk is involved in producing that return or profit.

Risk Margin
The amount an insurance company would require, in excess of best estimate liabilities, in order to take over and meet the whole portfolio of insurance and reinsurance obligations. It reflects the cost of providing capital equal to the solvency capital requirement for non-hedgable risks necessary to support the insurance obligations over their lifetime. Risk Margin represents the value of deviation risk of the actual outcome compared with the best estimate, expressed in terms of a defined risk measure.

Solvency II
These are insurance regulations designed to harmonise EU insurance regulation. Primarily this concerns the amount of capital that European insurance companies must hold under a measure of capital and risk. Solvency II became effective from 1 January 2016.

Solvency Capital Requirement (SCR)
The Solvency Capital Requirement is the amount of capital the Regulator requires an insurer to hold to meet the requirements under the Solvency II regulatory framework. Holding capital in excess of the SCR demonstrates an insurer has adequate financial resources in place to meet all its liabilities as and when they fall due and that there is sufficient capital to absorb significant losses. Firms may use their own internal model, the European Insurance and Occupational Pensions Authority (EIOPA) prescribed standard formula or a partial internal model to determine SCR.

Total shareholder return
A measure of company performance based on the overall value to shareholders of their investment in a stock over a given period of time. Includes movement in the share price and dividends paid and reinvested, expressed as a percentage of the initial value of the investment or share price at the beginning of the period.

Value of new business (VNB)
VNB is the present value of future profits from new business written at the point of sale. It is calculated on a market consistent basis using economic assumptions set at the start of each quarter or more frequently and the same operating assumptions as those used to determine the embedded value at the end of the reporting period and is stated after the effect of any frictional costs. Unless otherwise stated, it is quoted net of tax and non-controlling interests.

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 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.

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.

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 of covered business as at the reporting date.

Liquidity premium
An addition to the risk-free rate used when projecting investment returns and discounting cash flows on certain types of contracts where the liabilities are illiquid and have cash flows that are predictable.

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.

Market consistent embedded value (MCEV)
A measure of the value of a life business to its shareholders. It is the sum of shareholders net assets and today's value of the future profits that are expected to emerge from business already written, where the assumptions used to calculate future profits are consistent 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.

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.

Real world equivalent Embedded Value (EqEV)
As for other embedded value measures, EqEV is a way of measuring the current value to shareholders of the in-force portfolio of a life and pensions business. EqEV includes the value of future profits and uses a set of realistic assumptions, including real world expected investment returns, allowing for the impact of the uncertainty in these returns in the risk discount rate.

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.

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.

Statutory basis
The valuation basis and approach used for reporting financial statements to local regulators.

Stochastic techniques
Techniques that allow for 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.