Zurich Insurance Group

ZURICH®

Embedded value report

Annual results 2016

Embedded value report

Zurich produces and reports embedded value in accordance with the Market Consistent Embedded Value (MCEV) Principles and Guidance issued by the European Insurance CFO Forum (CFO Forum) in April 2016 to provide an economic view of the value of the life business from a shareholder's perspective without any allowance for the value attributable to future new business, to support financial management and strategic decision making. This report provides an overview of the movement in the MCEV over the calendar year 2016 and new sales during the year, including further splits into constituent parts and geographical regions.

Contents

This report describes the development of embedded value of the Global Life segment of the Zurich Insurance Group for the year ended December 31, 2016.

The opening embedded value for 2016 has been restated to reflect the adoption of the new capital regimes in the European Economic Area (Solvency II, SII), in Switzerland (Swiss Solvency Test, SST) and in Mexico. The transition to the new regimes has been reflected in the relevant MCEV key performance indicators for 2016. 2015 figures have not been restated and therefore are not fully comparable with the 2016 calculated figures, unless otherwise stated.

1. Basis for preparation

The statements in this report relate to a representation of the shareholders' economic value of Zurich in-force covered life and related businesses on a Market Consistent Embedded Value (MCEV) basis.

MCEV is a recognized method for the measurement of the value of distributable statutory earnings arising from assets allocated to the covered business:

- → MCEV looks at the value of the business created or diluted allowing for the whole policy term.
- → Assumptions and risk margins are explicit, best estimate and transparent.
- → Asset and liability cash flows are valued using risk discount rates consistent with those applied to similar cash flows in capital markets, and options and guarantees are valued using market consistent models calibrated to observable market prices.
- → The analysis of change captures all value movements including those caused by risk taking.
- → MCEV is particularly useful when there is a mismatch in timing between income receipts and benefit/expense outflows, especially for assessing new business value.
- → MCEV is calculated using a "bottom-up" approach with allowances for the time value of financial options and guarantees, for the frictional cost of required capital and for the cost of non-hedgeable risks. It excludes any value from future new business.

Zurich has disclosed MCEV, in line with the Principles and Guidance issued by the European Insurance CFO Forum in April 2016, which were revised following the introduction of Solvency II in Europe.

In the context of the implementation of new capital regimes in Europe and Mexico, and SST in Switzerland, the beginning of period required capital of these life businesses was restated to be based on the current solvency regimes. The definition of shareholders' net assets for MCEV continues to be based on local statutory balance sheets. Local regulatory balance sheet requirements in the UK and Ireland have been aligned to Solvency II, where future profits are included in Solvency II Own Funds, resulting in a transfer of USD 1.8 billion from the value of business in-force into the shareholders' net assets.

The overall impact of these changes to the basis of calculating the opening MCEV was an increase of USD 43 million mostly from lower frictional costs. For further details, see section 9 of the report.

Zurich engaged PwC to audit the methodology, assumptions and results in accordance with the MCEV CFO Forum Principles and Guidance as described in the "Auditor's report on embedded value" section.

All amounts in the embedded value report, unless otherwise stated, are shown in U.S. dollars, rounded to the nearest million with the consequence that the rounded amounts may not add to the rounded total in all cases. All ratios and variances are calculated using the underlying amounts rather than the rounded amounts.

Embedded value report (continued)

2. Covered business

Covered business relates to business written by life insurance entities that are within Global Life, including life reinsurance ceded to the Group, specifically the following product lines:

- → Life and critical illness including riders.
- → Savings (with profit, non-profit, unit-linked and universal life).
- → Pensions and annuities.
- → Long-term health and accident.

Certain entities in Global Life, that write business wrapped in an investment vehicle but with some life insurance features, are also included as part of covered business.

Group expenses allocated to Global Life but not directly allocated to specific life insurance companies are also valued on an economic basis as part of covered business.

There are certain legacy life portfolios in run-off not considered as core to the Group's strategy which are not included in Global Life perimeter and are not included in the covered business.

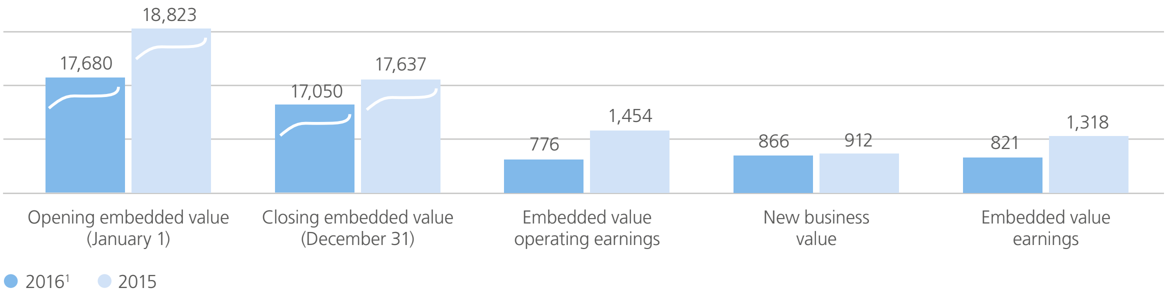
For certain smaller companies in Global Life, including holding companies, pension funds and purely financial shell companies, no embedded value has been calculated but these companies have been included in embedded value with an amount equal to IFRS shareholders' equity, as calculated in accordance with Group accounting policies. The contribution from these companies to embedded value is less than 5 percent.

The MCEV for the entire Group would be the sum of the value of Global Life covered business using MCEV Principles as noted in this report and the value of the non-covered business at unadjusted IFRS shareholders' equity value as reported in the Zurich Group financial statements. Non-covered businesses include the life businesses managed as part of Non-Core Businesses outside Global Life and all other Group businesses including General Insurance and Farmers.

3. Embedded value report – executive summary

Key results

in USD millions, for the years ended December 31



[1] 2016 opening embedded value has been restated and 2016 results presented reflect the change due to the new capital regimes in Europe, Switzerland and Mexico.

Embedded value key results

in USD millions, for the years ended December 31	2016	2015	Change
Opening embedded value before the methodology change	17,637	19,290	(1,654)
Methodology change[1]	43	(467)	510
Opening embedded value after the methodology change	17,680	18,823	(1,143)
Closing embedded value	17,050	17,637	(586)
Embedded value operating earnings	776	1,454	(677)
of which new business value	*866*	*912*	*(45)*
Embedded value earnings	821	1,318	(498)

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

Global Life continued to execute on its strategy in delivering earnings and with continued expansion in key markets. The growth was driven through robust new business performance as well as acquisitions of the retail life insurance protection business of Macquarie Group in Australia and MAA Takaful Berhad in Malaysia. Progress was made on building a simpler and more customer-focused business by integrating the segments within the Group and decreasing the level of costs related to projects.

The decrease in embedded value was mainly driven by adverse foreign currency translation effects and capital movements noted in 2016.

New business value was USD 866 million. This was 5 percent lower than the prior period in U.S. dollar terms and broadly in line with previous year in local currency terms. The stable performance was attributable to growth in protection business coupled with improved business mix thanks to new product propositions and re-pricing activities offset by adverse foreign currency translation effects.

Embedded value operating earnings were USD 776 million, a 47 percent decrease compared with the prior year. In line with Group strategy expense reductions were observed through lower development and one-off costs. The decrease in operating earnings was driven by the following:

- → Model refinements, primarily in Switzerland related to a change in methodology for the valuation of the corporate business.
- → Updated operating assumptions related to expense and mortality assumptions in the UK and to lapse assumptions in Zurich International Life and International Group Risk Solutions (IGRS).

Embedded value earnings were USD 821 million representing a return of 4.6 percent. The embedded value earnings remained resilient despite the persistent low interest rate environment and continued volatile market conditions.

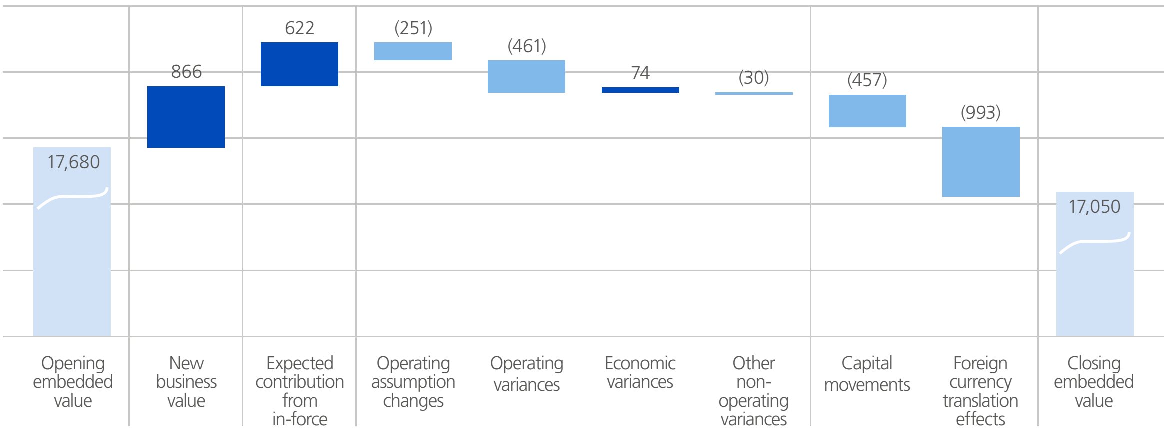
Embedded value report (continued)

4. Analysis of embedded value earnings and value of business in-force

The graph and table below show how embedded value has decreased from USD 17,680 million (after restating the opening embedded value for the change in required capital in Europe, Switzerland and Mexico due to the new capital regimes) to USD 17,050 million during 2016.

Embedded value development

in USD millions, for the year ended December 31, 2016



Analysis of embedded value earnings

in USD millions, for the years ended December 31	2016			2015
	Share-holders' net assets	Value of business in-force	Total	Total
Opening embedded value before the methodology change	**7,097**	**10,540**	**17,637**	**19,290**
Methodology change[1]	**1,849**	**(1,806)**	**43**	**(467)**
Opening embedded value after the methodology change	**8,946**	**8,734**	**17,680**	**18,823**
New business value	**(531)**	**1,398**	**866**	**912**
Expected contribution at reference rate	103	157	**260**	**239**
Expected contribution in excess of reference rate	222	140	**362**	**432**
Expected transfer to shareholders' net assets	878	(878)	**–**	**–**
Operating assumption changes	(37)	(214)	**(251)**	**(170)**
Operating variances	(34)	(426)	**(461)**	**41**
Embedded value operating earnings	**600**	**177**	**776**	**1,454**
Economic variances	404	(330)	**74**	**(46)**
Other non-operating variances	(376)	346	**(30)**	**(89)**
Embedded value earnings	**628**	**193**	**821**	**1,318**
Capital movements	(484)	28	**(457)**	**(1,166)**
Foreign currency translation effects	(592)	(402)	**(993)**	**(1,339)**
Closing embedded value	**8,498**	**8,553**	**17,050**	**17,637**

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

Local regulatory balance sheet requirements in the UK and Ireland have been aligned to Solvency II, where future profits are included in Solvency II Own Funds, resulting in a transfer of USD 1.8 billion from the value of business in-force into the shareholders' net assets.

Components of value of business in-force

in USD millions, as of December 31	2016					2015
	CE[1]	FC[2]	TVFOG[3]	CRNHR[4]	Value of business in-force	Value of business in-force
North America	2,933	(80)	(258)	(281)	**2,315**	**2,332**
Latin America	270	(33)	(0)	(86)	**150**	**77**
EMEA	7,302	(169)	(747)	(1,111)	**5,275**	**7,616**
Asia-Pacific	1,316	(100)	(13)	(216)	**988**	**553**
Other[5]	(120)	–	–	(56)	**(175)**	**(38)**
Global Life	**11,700**	**(381)**	**(1,018)**	**(1,749)**	**8,553**	**10,540**

1 CE is the certainty equivalent value of business in-force.
2 FC is the frictional costs.
3 TVFOG is the time value of financial options and guarantees including the application of a liquidity premium.
4 CRNHR is the cost of residual non-hedgeable risk (see section 9 for further details).
5 Other includes the business written by IGRS and the Group expenses allocated to Global Life but not directly allocated to specific life insurance companies.

Decreases in the value of business in-force are noted in EMEA as a result of implementation of Solvency II in the UK and Ireland, resulting in a transfer of USD 1.8 billion from the value of business in-force into shareholders' net assets.

Maturity profile of value of business in-force

The value in-force (VIF) maturity profile sets out the time period over which the discounted VIF profits are expected to emerge into shareholders' net assets. It does not include the release of required capital to free surplus which usually accompanies the emergence of the VIF profit. The VIF emergence takes into account frictional costs, the cost of residual non-hedgeable risk and the time value of financial options and guarantees valued based on market consistent economic assumptions. For further details, see section 10 of the report.

The VIF maturity profile shows that 32 percent of the VIF is expected to emerge into shareholders' net assets over the next five years and an additional 25 percent over the following five years.

Maturity profile of value of business in-force

in USD millions, as of December 31	2016		2015	
	VIF	% of Total	VIF	% of Total
1 to 5 years	2,772	32%	3,731	35%
6 to 10 years	2,128	25%	2,594	25%
11 to 15 years	1,581	18%	1,850	18%
16 to 20 years	973	11%	989	9%
more than 20 years	1,098	13%	1,374	13%
Total	**8,553**	**100%**	**10,540**	**100%**

Embedded value report (continued)

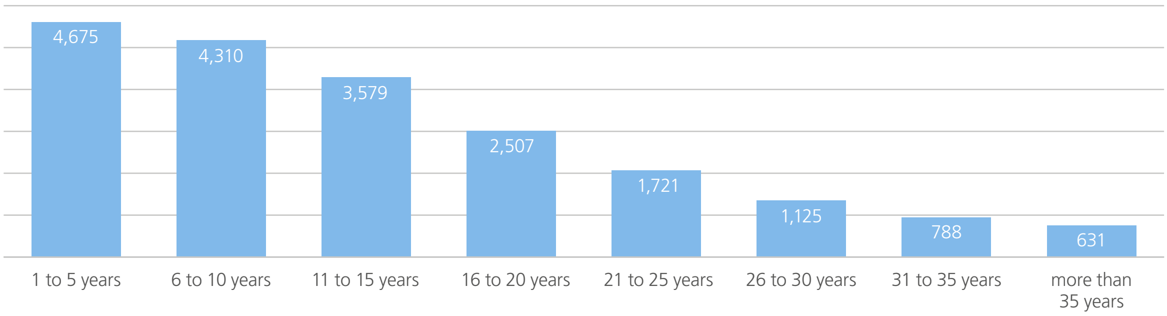
Projected profit on real world basis

The projected profit on a "real world" basis shows the expected pattern of the undiscounted profit released by the in-force business as of December 31, 2016 (excluding future new business) estimated using real world best estimate economic assumptions (further details in section 10). This projected profit on a real world basis does not include the release of the required capital supporting the in-force business.

The projection of the profits allowing for the real world economic assumptions shows the portion of the additional expected return earned on assets covering the liabilities attributable to shareholders, mostly in EMEA and North America due to the long term nature of the business and its underlying investment components.

Future real world undiscounted profit

in USD millions, for the year ended December 31, 2016



5. Value of new business

New business by quarter

in USD millions	2016					2015				
	Q1	Q2	Q3	Q4	Q4 YTD	Q1	Q2	Q3	Q4	Q4 YTD
Annual premium equivalent (APE)[1,3]	**1,071**	**1,177**	**1,290**	**1,240**	**4,779**	**1,192**	**1,251**	**1,127**	**1,201**	**4,772**
New annual premiums	653	675	864	718	2,909	753	667	664	725	2,809
New single premiums	4,182	5,029	4,264	5,225	18,701	4,389	5,840	4,630	4,762	19,621
Present value of new business premiums (PVNBP)[2]	12,486	14,005	11,293	13,082	50,866	13,832	12,851	12,463	13,336	52,482
Average annual premium multiplier	12.7	13.3	8.1	10.9	11.1	12.5	10.5	11.8	11.8	11.7
New business value[4]	**254**	**241**	**189**	**182**	**866**	**204**	**208**	**237**	**263**	**912**
New business margin[4] (% of APE)	**27.0%**	**24.0%**	**17.1%**	**17.0%**	**21.0%**	**19.2%**	**18.7%**	**23.9%**	**24.9%**	**21.6%**
New business margin[4] (% of PVNBP)	**2.2%**	**1.9%**	**1.8%**	**1.5%**	**1.9%**	**1.6%**	**1.7%**	**2.0%**	**2.1%**	**1.9%**

1 APE is measured as new annual premiums plus 10 percent of new single premiums.
2 PVNBP is measured as new single premiums plus the present value of new annual premiums.
3 Premiums, APE and PVNBP are shown gross of non-controlling interests.
4 New business value and new business margin are reported net of non-controlling interests.

New business annual premium equivalent (APE) was USD 4,779 million, an increase of USD 8 million in U.S. dollar terms or 7 percent on a local currency basis. Lower new business sales in North America and in EMEA, particularly in Germany and Zurich International Life, were partly offset by increased sales in individual savings business in Spain. A 42 percent increase in Latin America on a local currency basis was mostly due to the effect of a large corporate protection contract in the Zurich operations in Chile and higher sales of individual protection products in Zurich Santander Brazil.

PVNBP was USD 50,866 million, a decrease of USD 1,616 million in U.S. dollar terms but an increase of 4 percent on a local currency basis reflecting the same impacts as for APE. The decrease in the average annual premium multiplier was driven by corporate business in Switzerland due to a modeling refinement of renewal premium payment and updated lapse assumptions in IGRS.

Movement of new business value and new business margins

Analysis of new business value and margin

in USD millions	NBV[1]	NBM[1]
New business value 2015	**912**	**21.6%**
Change in volumes and business mix	49	0.4%
Economic and operating variances	(44)	(1.0%)
Foreign currency translation effects	(51)	n.a.
New business value 2016	**866**	**21.0%**

1 New business value and new business margin (% of APE) are reported net of non-controlling interests.

New business value was USD 866 million. This was 5 percent lower than the prior period in U.S. dollar terms and broadly in line with previous year in local currency terms. The stable performance was attributable to growth in the protection business, in particular in individual protection in Farmers New World Life (FNWL), Zurich Santander and BancSabadell and in corporate protection in the UK. In addition EMEA has benefited from an improved business mix predominately in Switzerland and in Italy due to re-pricing activities and the launch of new product propositions in 2016. This was offset by lower swap rates in EMEA and Japan, lower volumes in Zurich International Life and Ireland and a decrease in captive business and large deals in IGRS.

New business margin decreased by 0.6 percentage points to 21.0 percent. This resulted from negative economic and operating variances, coupled with changes in the mix of business primarily in Latin America, driven by the low margin corporate protection contract in the Zurich operations in Chile. This was partially offset by modeling enhancements in Switzerland and Japan, and positive business mix changes (driven by Switzerland, Zurich International Life, FNWL and Australia).

Embedded value report (continued)

New business by geographical region

in USD millions, for the years ended December 31

	APE[1]		New business value[2]		New business margin[2] % of APE	
	2016	2015	**2016**	2015	**2016**	2015
North America	156	179	110	100	70.7%	56.1%
Latin America	1,231	957	126	125	14.7%	21.1%
EMEA	3,191	3,422	501	526	17.2%	16.3%
Asia-Pacific	155	157	88	112	57.8%	72.1%
Other[3]	47	57	40	49	86.5%	85.1%
Global Life	**4,779**	**4,772**	**866**	**912**	**21.0%**	**21.6%**

[1] APE is shown gross of non-controlling interests.
[2] New business value and new business margin are shown net of non-controlling interests.
[3] Other includes the business written by IGRS.

6. Sensitivities

Sensitivities

in USD millions, as of December 31, 2016	Change in embedded value[1]	Change in new business value[1]
Reported embedded value and new business value[1]	**17,050**	**866**
Base embedded value and base new business value[1]	**16,806**	**856**
Operating sensitivities		
10% increase in initial expenses	n.a.	(5%)
10% decrease in maintenance expenses	4%	8%
10% increase in voluntary discontinuance rates	(4%)	(12%)
10% decrease in voluntary discontinuance rates	5%	15%
5% improvement in mortality and morbidity for assurances	5%	13%
5% improvement in mortality for annuities	(1%)	(1%)
Economic sensitivities		
100 basis points increase in risk free yield curve	(1%)	2%
100 basis points decrease in risk free yield curve[2]	(2%)	(6%)
10% fall in equity market values	(2%)	(1%)
10% fall in property market values	(2%)	(0%)
25% increase in implied volatilities for risk free yields	(2%)	(2%)
25% decrease in implied volatilities for risk free yields	2%	2%
25% increase in implied volatilities for equities and properties	(1%)	(1%)
25% decrease in implied volatilities for equities and properties	1%	1%

[1] Values used to calculate the sensitivities exclude a liquidity premium and include the effect of using the end of year best estimate assumptions (rather than the reported new business value where beginning of quarter best estimate assumptions are used).
[2] Risk free forward annual yields are decreased by 100 basis points at each duration. However, if a risk free forward annual yield at a given duration is less than 100 basis points, the decrease is floored to zero at that duration, except for Switzerland where negative rates were allowed for. For further details, see section 9.

The key assumption changes represented by each of these sensitivities are given in section 9.

In each sensitivity calculation, all other assumptions remain unchanged except where they are directly affected by the revised assumption. The results include the impact of assumption changes on all embedded value components. The 100 basis points decrease in risk free yield curve increases the value of some products, such as short term assurance business, with fixed future cash flows discounted at lower rates. This increase is offset by a reduction in the value of other products, such as those where lower assumed investment returns reduce profitability.

Embedded value report (continued)

7. Reconciliation of shareholders’ equity to embedded value

Reconciliation of shareholders’ equity to embedded value

in USD billions, as of December 31, 2016	Total
Shareholders’ equity[1]	**17.3**
Less intangible assets	
Goodwill	*(0.2)*
Deferred policy acquisition costs and deferred origination costs	*(13.2)*
Other intangibles and present value of future profits	*(2.9)*
Deferred front-end fees	*4.9*
Pension scheme liabilities[2]	1.4
Less non-controlling interests[3]	0.0
Other adjustments[4]	1.2
Embedded value shareholders’ net assets	**8.5**
Value of business in-force	8.6
Embedded value	**17.1**

1 Shareholders’ equity is the Global Life share of total shareholders’ equity as reported in the consolidated financial statements prepared on the basis of the Group’s accounting policies set out in note 3 of the consolidated financial statements.
2 Pension scheme liabilities are deducted from shareholders’ equity but are not deducted from embedded value shareholders’ net assets.
3 Primarily from non-controlling interests in Zurich Santander and Spain.
4 Other adjustments include tax differences, policyholders’ share of intangibles, reserving differences and asset valuation differences.

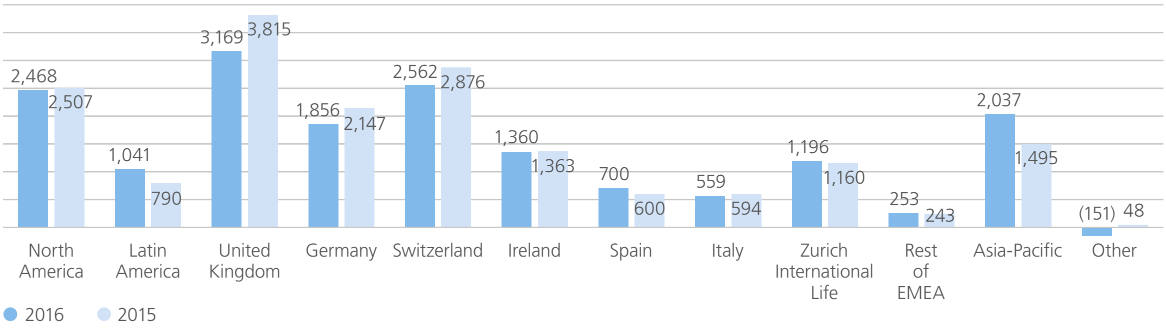
8. Regional analysis of embedded value and new business value

Analysis of embedded value earnings by geographical region

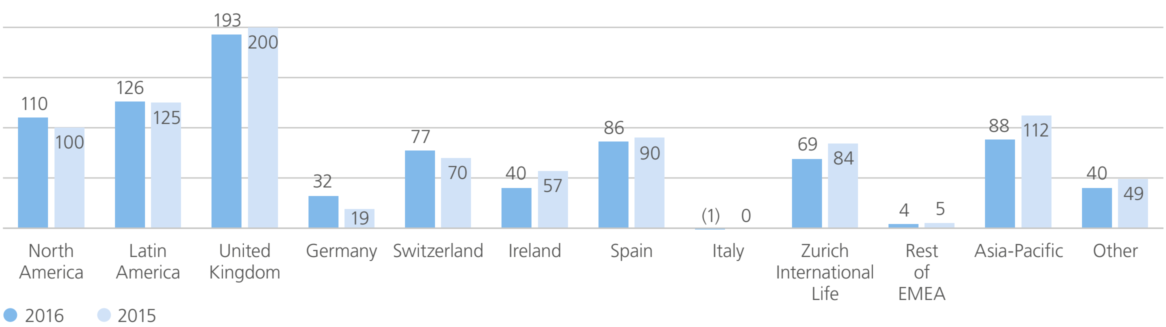
in USD millions, for the year ended December 31, 2016	North America	Latin America	EMEA	Asia-Pacific	Other[2]	Total
Opening embedded value before the methodology change	**2,507**	**790**	**12,797**	**1,495**	**48**	**17,637**
Methodology change[1]	**–**	**0**	**37**	**–**	**5**	**43**
Opening embedded value after the methodology change	**2,507**	**790**	**12,834**	**1,495**	**53**	**17,680**
New business value	**110**	**126**	**501**	**88**	**40**	**866**
Expected contribution at reference rate	43	77	103	35	2	260
Expected contribution in excess of reference rate	67	55	220	20	1	362
Expected transfer to shareholders' net assets	–	–	–	–	–	–
Operating assumption changes	(24)	14	(255)	200	(185)	(251)
Operating variances	(43)	24	(307)	(90)	(44)	(461)
Embedded value operating earnings	**153**	**296**	**262**	**252**	**(187)**	**776**
Economic variances	(28)	23	59	20	0	74
Other non-operating variances	(60)	12	10	11	(2)	(30)
Embedded value earnings	**65**	**331**	**331**	**283**	**(189)**	**821**
Capital movements	(103)	(122)	(514)	300	(18)	(457)
Foreign currency translation effects	–	43	(997)	(42)	3	(993)
Closing embedded value	**2,468**	**1,041**	**11,655**	**2,037**	**(151)**	**17,050**

All metrics are reported net of non-controlling interests.
[1] This includes the change in the required capital in Europe, Switzerland and Mexico due to the new capital regimes.
[2] Other includes the business written by IGRS and the Group expenses allocated to Global Life but not directly allocated to specific life insurance companies.

Embedded value by geographical region
in USD millions, for the years ended December 31



New business value by geographical region
in USD millions, for the years ended December 31



Embedded value report (continued)

EMEA

New business

EMEA analysis of new business value and margin

in USD millions	NBV[1]	NBM[1]
New business value 2015	**526**	**16.3%**
Change in volumes and business mix	41	2.0%
Economic and operating variances	(31)	(1.0%)
Foreign currency translation effects	(34)	n.a.
New business value 2016	**501**	**17.2%**

[1] New business value and new business margin (% of APE) are reported net of non-controlling interests.

New business value was USD 501 million, a decrease of USD 25 million but an increase of 2 percent on a local currency basis. The reduction was mostly driven by the unfavorable currency translation effects primarily caused by the fall in the British pound. Negative economic variances due to lower swap rates and higher market volatilities, mainly impacting Switzerland and Italy, and negative operating expense variances mostly in Ireland and Zurich International Life due to lower volumes, were more than offset by the improved business mix mainly in the UK, Zurich International Life, Italy and Switzerland.

Volumes and business mix changes positively impacted the new business value by USD 41 million. The main positive contributors were:

- UK due to improved margins in corporate pension business coupled with large sales of corporate protection business.
- Italy due to the launch of a new product proposition with less exposure to market volatility and re-pricing activities applied to existing portfolios.
- Switzerland due to the introduction of zero percent guaranteed interest rate products, higher focus on higher margin individual protection and unit-linked products coupled with a reduction in guaranteed products.
- Zurich International Life due to 2015 sales of low margin products in the Middle East and Hong Kong that were not repeated in 2016 while achieving higher margins in protection business from re-pricing activities.

These improvements were partially offset by the impact in Spain from a higher proportion of lower margin individual savings business despite the positive contribution from higher margins in the protection business.

Embedded value development

EMEA analysis of embedded value earnings

in USD millions, for the years ended December 31	2016			2015
	Share-holders' net assets	Value of business in-force	Total	Total
Opening embedded value before the methodology change	**5,181**	**7,616**	**12,797**	**13,988**
Methodology change[1]	**1,850**	**(1,813)**	**37**	**(334)**
Opening embedded value after the methodology change	**7,031**	**5,803**	**12,834**	**13,653**
New business value	**(258)**	**759**	**501**	**526**
Expected contribution at reference rate	9	94	**103**	**110**
Expected contribution in excess of reference rate	80	139	**220**	**292**
Expected transfer to shareholders' net assets	613	(613)	**–**	**–**
Operating assumption changes	(1)	(254)	**(255)**	**(77)**
Operating variances	118	(425)	**(307)**	**216**
Embedded value operating earnings	**562**	**(300)**	**262**	**1,068**
Economic variances	287	(228)	**59**	**17**
Other non-operating variances	(400)	410	**10**	**(33)**
Embedded value earnings	**449**	**(118)**	**331**	**1,052**
Capital movements	(492)	(22)	**(514)**	**(1,033)**
Foreign currency translation effects	(608)	(389)	**(997)**	**(875)**
Closing embedded value	**6,380**	**5,275**	**11,655**	**12,797**

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

The embedded value earnings in EMEA were negatively impacted by changes in operating assumptions and other operating variances but were still positive overall after allowing for the expected contribution from in-force business and new business. The embedded value was also reduced by large dividend payments in Germany, Switzerland and the UK, and the unfavorable foreign currency translation effects, mostly due to the fall in the British pound.

The negative operating assumption impact was largely a consequence of unfavorable expense and mortality assumption updates in the UK and Germany, and persistency assumptions in particular in Zurich International Life following a deterioration in experience in the previous year. This was partially offset by some positive developments in Ireland where expenses, mortality and morbidity assumption changes all contributed positively to embedded value.

The negative operating variances arose mainly from a model refinement in Switzerland for corporate business, including more granular modeling and a refinement of renewal premium payment, together with the one-off and development expenses in the UK. To a lesser extent, positive operating variances were mainly observed in Germany from modeling improvements relating to the investment strategy and the cost allocation model.

Economic and non-operating variances were small overall due to offsetting impacts. The overall lower interest rate environment in the region led to a positive investment variance mostly on the fixed income portfolios, only partially offset by the higher best estimate reserve and the allowance for negative swap rates in Switzerland. In non-operating variances, a negative impact resulting from the increase in local statutory equalization reserves in Switzerland as a consequence of low swap rates was balanced by an increase in the value of multi-currency business in Zurich International Life in U.S. dollar terms, benefiting from stronger U.S. dollar denominated revenues.

Capital movements were USD 514 million. Dividends were USD 656 million with the main payments from Germany, Switzerland and the UK. Capital injections were USD 138 million mostly into the non-insurance UK companies.

Embedded value report (continued)

Embedded value results EMEA

in USD millions, for the years ended December 31

	United Kingdom		Germany	
	2016	2015	**2016**	2015
Embedded value information:				
Opening embedded value before the methodology change	**3,815**	**4,210**	**2,147**	**2,691**
Methodology change[1]	**5**	**(86)**	**–**	**(96)**
Opening embedded value after the methodology change	**3,820**	**4,124**	**2,147**	**2,595**
New business value	193	200	32	19
Expected contribution at reference rate	25	26	25	23
Expected contribution in excess of reference rate	30	30	24	49
Expected transfer to shareholders' net assets	–	–	–	–
Operating assumption changes	(180)	134	(50)	17
Operating variances	(50)	75	78	26
Embedded value operating earnings	**18**	**466**	**110**	**135**
Economic variances	(34)	(58)	36	21
Other non-operating variances	(27)	(60)	3	(23)
Embedded value earnings	**(43)**	**348**	**150**	**132**
Capital movements	11	(441)	(392)	(318)
Foreign currency translation effects	(619)	(216)	(49)	(262)
Closing embedded value	**3,169**	**3,815**	**1,856**	**2,147**
New business information:[2]				
Annual premiums	672	758	190	230
Single premiums	4,329	4,838	888	1,769
Annual premium equivalent (APE)	1,105	1,242	279	406
Present value of new business premiums (PVNBP)	22,014	24,202	2,740	3,874
New business value	**193**	**200**	**32**	**19**
New business margin (% of APE)	17.5%	16.1%	11.7%	4.9%
New business margin (% of PVNBP)	0.9%	0.8%	1.2%	0.5%

[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).
[2] Premiums, APE and PVNBP are reported gross of non-controlling interests.
[3] Mainly includes business written through licenses into Asia-Pacific and Middle East.

	EMEA											
	Switzerland		Ireland		Spain		Italy		Zurich International Life[3]		Rest of EMEA	
	2016	2015	**2016**	2015	**2016**	2015	**2016**	2015	**2016**	2015	**2016**	2015
	2,876	**2,875**	**1,363**	**1,451**	**600**	**605**	**594**	**684**	**1,160**	**1,150**	**243**	**321**
	21	**(69)**	**(8)**	**(23)**	**3**	**(17)**	**14**	**(7)**	**–**	**(32)**	**2**	**(4)**
	2,897	**2,807**	**1,355**	**1,428**	**603**	**588**	**608**	**678**	**1,160**	**1,118**	**245**	**317**
	77	70	40	57	86	90	(1)	–	69	84	4	5
	7	13	(1)	3	9	4	28	23	5	14	6	4
	78	118	20	27	22	23	5	2	28	32	12	12
	–	–	–	–	–	–	–	–	–	–	–	–
	8	(59)	42	(73)	29	4	(3)	(18)	(117)	(25)	15	(57)
	(285)	138	(46)	21	(20)	31	(9)	(28)	(4)	(56)	29	10
	(115)	**280**	**55**	**36**	**126**	**151**	**19**	**(20)**	**(19)**	**47**	**67**	**(27)**
	171	(32)	(10)	47	(7)	38	(64)	9	(6)	(19)	(26)	9
	(228)	(24)	–	–	12	(8)	12	(4)	243	85	(5)	1
	(172)	**225**	**45**	**83**	**131**	**182**	**(33)**	**(14)**	**218**	**114**	**35**	**(17)**
	(131)	(131)	–	–	(11)	(107)	–	–	28	(9)	(19)	(26)
	(32)	(25)	(40)	(148)	(22)	(62)	(15)	(69)	(211)	(63)	(8)	(31)
	2,562	**2,876**	**1,360**	**1,363**	**700**	**600**	**559**	**594**	**1,196**	**1,160**	**253**	**243**
	209	134	149	138	153	99	86	84	176	312	18	19
	1,375	2,010	2,341	3,054	4,360	2,785	1,548	1,494	334	371	198	152
	346	335	383	443	589	378	241	234	210	349	37	34
	3,797	4,104	3,216	3,842	5,553	3,704	2,165	2,135	1,808	2,498	402	357
	77	**70**	**40**	**57**	**86**	**90**	**(1)**	**0**	**69**	**84**	**4**	**5**
	22.3%	21.0%	10.5%	13.0%	28.0%	44.4%	(0.3%)	0.2%	32.9%	23.9%	10.8%	13.6%
	2.0%	1.7%	1.3%	1.5%	3.0%	4.6%	(0.0%)	0.0%	3.8%	3.3%	1.0%	1.3%

Embedded value report (continued)

North America

New business

North America analysis of new business value and margin

in USD millions	NBV[1]	NBM[1]
New business value 2015	**100**	**56.1%**
Change in volumes and business mix	(0)	8.1%
Economic and operating variances	10	6.6%
Foreign currency translation effects	–	n.a.
New business value 2016	**110**	**70.7%**

[1] New business value and new business margin (% of APE) are reported net of non-controlling interests.

New business value was USD 110 million, an increase of USD 10 million or 10 percent. The positive contribution from a higher margin Index Universal Life (IUL) product launched in FNWL in the second half of 2015, was partially offset by a loss in value from lower sales of individual protection business in Zurich American Life Insurance Company (ZALICO) because of increased competition. New business value and margin also improved in FNWL from updated persistency assumptions on the Level Term protection product, and in ZALICO from modeling enhancements related to frictional costs and mortality loadings.

Embedded value development

North America analysis of embedded value earnings

in USD millions, for the years ended December 31	2016			2015
	Share-holders' net assets	Value of business in-force	Total	Total
Opening embedded value before the methodology change	**175**	**2,332**	**2,507**	**2,883**
Methodology change[1]	**–**	**–**	**–**	**(58)**
Opening embedded value after the methodology change	**175**	**2,332**	**2,507**	**2,826**
New business value	**(103)**	**213**	**110**	**100**
Expected contribution at reference rate	20	23	**43**	**29**
Expected contribution in excess of reference rate	67	–	**67**	**68**
Expected transfer to shareholders' net assets	123	(123)	**–**	**–**
Operating assumption changes	2	(26)	**(24)**	**8**
Operating variances	(42)	(1)	**(43)**	**(42)**
Embedded value operating earnings	**68**	**85**	**153**	**163**
Economic variances	12	(40)	**(28)**	**(50)**
Other non-operating variances	2	(62)	**(60)**	**(22)**
Embedded value earnings	**81**	**(17)**	**65**	**91**
Capital movements	(103)	–	**(103)**	**(409)**
Foreign currency translation effects	–	–	**–**	**–**
Closing embedded value	**154**	**2,315**	**2,468**	**2,507**

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

Embedded value reduced mostly as a result of dividend payments made by FNWL to Farmers Group, Inc. amounting to USD 105 million, offsetting the increase in embedded value arising from earnings in 2016. The embedded value earnings of USD 65 million were attributable to a stable expected contribution and solid new business performance but were reduced by adverse operating variances.

The adverse operating variances arose from the ZALICO IUL product due to negative persistency and mortality experience also leading to a revised expected premium profile. Modeling changes in FNWL increased operating earnings from an improved premium profile behavior in the Farmers Flexible Universal Life (FFUL) product.

Latin America

New business

Latin America analysis of new business value and margin

in USD millions	NBV[1]	NBM[1]
New business value 2015	**125**	**21.1%**
Change in volumes and business mix	9	(7.3%)
Economic and operating variances	8	0.9%
Foreign currency translation effects	(16)	n.a.
New business value 2016	**126**	**14.7%**

[1] New business value and new business margin (% of APE) are reported net of non-controlling interests.

New business value was USD 126 million, essentially the same in U.S. dollar terms but showing an increase of 14 percent on a local currency basis.

In Zurich Santander, new business value was USD 103 million, an increase of USD 3 million or 13 percent on a local currency basis. This was mainly due to an increase in sales in both protection and unit-linked businesses in Brazil despite the volatile market and political environment mostly offset by unfavorable foreign currency translation effects in the region. The decrease in new business margin for the region arose mainly from a large corporate protection contract in the Zurich operations in Chile.

Embedded value development

Latin America analysis of embedded value earnings

in USD millions, for the years ended December 31	2016			2015
	Share-holders' net assets	Value of business in-force	Total	Total
Opening embedded value before the methodology change	**712**	**77**	**790**	**1,081**
Methodology change[1]	**(1)**	**2**	**0**	**(27)**
Opening embedded value after the methodology change	**711**	**79**	**790**	**1,054**
New business value	**(60)**	**187**	**126**	**125**
Expected contribution at reference rate	46	31	**77**	**64**
Expected contribution in excess of reference rate	55	–	**55**	**51**
Expected transfer to shareholders' net assets	77	(77)	**–**	**–**
Operating assumption changes	9	5	**14**	**(104)**
Operating variances	35	(12)	**24**	**(87)**
Embedded value operating earnings	**162**	**134**	**296**	**49**
Economic variances	70	(47)	**23**	**9**
Other non-operating variances	23	(11)	**12**	**(4)**
Embedded value earnings	**255**	**76**	**331**	**53**
Capital movements	(122)	(0)	**(122)**	**(23)**
Foreign currency translation effects	47	(4)	**43**	**(295)**
Closing embedded value	**891**	**150**	**1,041**	**790**

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

Embedded value increased in Latin America from embedded value earnings of USD 331 million. This benefited from a stable in-force contribution especially in the Zurich operations in Chile due to the additional returns over risk free rates earned on the assets covering the annuity portfolios and strong new business performance in Zurich Santander.

There were no significant operating or economic variances. However, the embedded value reduced as a result of dividend payments, mainly from the Zurich Santander entities. This was partially offset by favorable foreign currency translation effects in Brazil.

Embedded value report (continued)

Asia-Pacific

New business

Asia-Pacific analysis of new business value and margin

in USD millions	NBV[1]	NBM[1]
New business value 2015	**112**	**72.1%**
Change in volumes and business mix	18	12.5%
Economic and operating variances	(41)	(26.8%)
Foreign currency translation effects	0	n.a.
New business value 2016	**88**	**57.8%**

[1] New business value and new business margin (% of APE) are reported net of non-controlling interests.

New business value was USD 88 million, a decrease of USD 23 million or 24 percent on a local currency basis. This reduction was mostly driven by lower swap rates in Japan, adverse assumption changes in Japan and Australia and the deconsolidation of Singapore from covered business. This decrease was partially offset by favorable changes in business mix mainly in Australia due to re-pricing activities boosting margins in individual protection business and to a lesser extent from modeling enhancements mainly in Japan.

Embedded value development

Asia-Pacific analysis of embedded value earnings

in USD millions, for the years ended December 31	2016			2015
	Share-holders' net assets	Value of business in-force	Total	Total
Opening embedded value before the methodology change	**942**	**553**	**1,495**	**1,586**
Methodology change[1]	**–**	**–**	**–**	**(36)**
Opening embedded value after the methodology change	**942**	**553**	**1,495**	**1,551**
New business value	**(100)**	**189**	**88**	**112**
Expected contribution at reference rate	28	7	**35**	**35**
Expected contribution in excess of reference rate	19	1	**20**	**20**
Expected transfer to shareholders' net assets	25	(25)	**–**	**–**
Operating assumption changes	(30)	230	**200**	**(71)**
Operating variances	(89)	(1)	**(90)**	**(9)**
Embedded value operating earnings	**(148)**	**400**	**252**	**87**
Economic variances	33	(13)	**20**	**(6)**
Other non-operating variances	(1)	11	**11**	**6**
Embedded value earnings	**(115)**	**398**	**283**	**87**
Capital movements	251	49	**300**	**13**
Foreign currency translation effects	(29)	(13)	**(42)**	**(156)**
Closing embedded value	**1,049**	**988**	**2,037**	**1,495**

All metrics are reported net of non-controlling interests.
[1] For 2016, this includes the change in the required capital in Europe, Switzerland and Mexico due to the introduction of new capital regimes. For 2015, this includes the change in the CRNHR methodology (not allowing for diversification benefits between covered and non-covered business in accordance with MCEV Guidance 9.7).

Embedded value increased in Asia-Pacific from embedded value earnings and capital movements, partially offset by foreign currency translation effects.

Embedded value earnings were enhanced from a maintenance expense assumption update in Japan where significant expansion of the business led to a material reduction in unit costs and also to a lesser extent in Australia where the acquisition of the retail life insurance protection business of Macquarie Group has resulted in expense synergies.

Capital movements also boosted embedded value since injections from the Group were used to finance the transaction with Macquarie Group in Australia (consolidated based on an MCEV value for the portfolio) and to purchase MAA Takaful Berhad in Malaysia (consolidated at IFRS shareholders' equity value). This was partially offset by the deconsolidation of Singapore from the embedded value results which is no longer included in Global Life.

Other

Other mirrors the segmental reporting in the Group Annual Report. Global Life manages its business through four main regions and a fifth "Other" region including business units that do not fall within the management responsibility of the main regions. The two main units contributing to the Other result are:

- International Group Risk Solutions (IGRS) which writes high margin group risk protection and pooling business.
- The expense result from the Global Life Central team which is net of recharges to the Global Life business units.

Negative operating earnings arose from the persistency assumption update in IGRS for cross-border business.

Embedded value report (continued)

9. Embedded value methodology

The Group has applied Market Consistent Embedded Value (MCEV) Principles and Guidance issued by the European Insurance CFO Forum in April 2016 for its embedded value report for the companies and businesses in its Global Life segment (the covered business). The embedded value report primarily relates to Global Life. The embedded value methodology adopted by the Group is based on a bottom-up market consistent approach to allow explicitly for market risk. In particular, asset and liability cash flows are valued using risk discount rates consistent with those applied to similar cash flows in capital markets, and options and guarantees are valued using market consistent models calibrated to observable market prices. Where markets exhibit a limited capacity, the valuation is based on historical averages. Embedded value excludes any value from future new business.

All amounts in the embedded value report, unless otherwise stated, are shown in U.S. dollars, rounded to the nearest million with the consequence that the rounded amounts may not add to the rounded total in all cases. All ratios and variances are calculated using the underlying amounts rather than the rounded amounts.

a) Reporting of embedded value

In line with MCEV Principles, embedded value is split between shareholders' net assets and value of business in-force. See details in next two sections.

The results are disclosed in a format aligned with the segmental reporting in the Group's Annual Report.

b) Shareholders' net assets

Shareholders' net assets represent the market value of net assets held in respect of the covered business under local statutory requirements, and consist of the required capital and free surplus. The level of required capital reflects the amount of capital considered by the directors of each legal entity to be appropriate to manage the business. This is set at least at the level equal to the regulatory required capital of each legal entity, at which the regulator would intervene to request a capital injection and in addition, for the main companies, an adequate buffer to cover short-term volatilities in solvency due to financial and non-financial risks or to achieve the capital required to maintain the desired credit rating.

The definition of shareholders' net assets is based on the local statutory balance sheets. Local regulatory balance sheet requirements in the UK and Ireland have been aligned to Solvency II, where future profits are included in Solvency II Own Funds, resulting in a transfer of USD 1.8 billion from the value of business in-force into the shareholders' net assets.

In Switzerland and IGRS, required capital for the embedded value is based on both the Swiss Solvency Test (SST) and the constraints arising from the tied assets requirements as defined by Swiss regulation. The SST regime has been included in the MCEV required capital starting from January 1, 2016.

Solvency margin (SM) represents the shareholders' portion of the local minimum solvency margins as follows:

Required capital (% SM)

	2016 Required capital (% SM)[1]	2015 Required capital (% SM)[1]
North America	349%	349%
Latin America	127%	127%
EMEA[2]	157%	137%
Asia-Pacific	142%	140%
Other[3]	403%	150%
Global Life	**159%**	**144%**

[1] In 2016 SM is based on Solvency II and SST respectively in Europe and Switzerland. In 2015 SI regimes were used.
[2] EMEA includes the change in the regulatory capital regimes in Europe and Switzerland. Local management's capital policies were revised accordingly as a result of the implementation of the new regimes.
[3] Other includes the change in the capital requirements on the life business written by IGRS after the adoption of SST.

Shareholders' net assets are based on local statutory and regulatory accounting. In the UK and Ireland local regulatory balance sheets are based on Solvency II methodology. Adjustments are made to embedded value where appropriate, for example in respect of any unrealized gains attributable to shareholders. Any such adjustments are made consistently with the calculation of the value of business in-force.

c) Value of business in-force

The value of business in-force is the present value of future projected profits, distributable after tax to shareholders from the covered business. It is defined as the certainty equivalent value of business in-force less frictional costs, the time value of financial options and guarantees, and the cost of residual non-hedgeable risk. These components are explained below. The methodology for the calculation of the value of business in-force continues to the based on the full economic boundaries of the life business, with the exception of the run-off life insurance operations in Hong Kong where Solvency II contract boundaries were applied.

Certainty equivalent (CE) value is the value calculated using risk discount rates aligned with those applied to the underlying cash flows in the capital markets. It includes the intrinsic value but excludes the time value of financial options and guarantees which is allowed for separately, as described below.

Frictional costs (FC) reflect a deduction for the cost of holding the required capital. Under the market consistent framework, the FC represents tax in respect of the future investment return on required capital together with the cost of future investment management expenses on required capital.

For the purpose of these calculations, required capital is assumed to run-off in line with existing business.

The allowance for FC is included both in the value of business in-force and in new business value. For new business value, FC is applied to the required capital to be held in respect of that business.

Time value of financial options and guarantees (TVFOG) represents additional costs in excess of the intrinsic value of options and guarantees which are already allowed for in the CE value. These are based on the variability of investment returns which need to be allowed for explicitly under MCEV Principles. The time value is calculated on a market consistent basis using stochastic modeling techniques, and after making allowance for expected management and policyholder behavior.

For products with significant guarantees, the time value has been calculated on a market consistent basis by deducting the average present value of shareholder cash flows using 1,000 stochastic economic simulations from the CE value (both for the value of business in-force and separately for new business value).

For most products, the average value has been calculated using Monte Carlo simulations. For a small number of products, the TVFOG has been derived using closed form solutions.

Where appropriate, the calculation of the TVFOG makes allowance for:

→ Dynamic actions that would be taken by management under different economic simulations, for example to implement a life business' investment strategy.

→ Dynamic policyholder behavior, for example changes in surrender behavior as interest rates rise or fall, or take-up rates of guaranteed annuity options.

The **cost of residual non-hedgeable risk (CRNHR)** is an explicit deduction for non-hedgeable financial risks (non-hedgeable asset/liability management risks and reinsurance credit risk), and non-financial risks (mortality, persistency, expenses and operational risk). The CE value allows for best estimate shareholder cash flows. The CRNHR is largely an allowance for uncertainty in shareholder cash flows, and for risks which are not already considered in the CE value or the TVFOG, such as operational risk. Most residual non-hedgeable risks have a symmetric impact on embedded value apart from operational risk.

CRNHR is calculated as a charge on the capital held for residual non-hedgeable risks. This is calculated according to Zurich's internal risk based capital model by applying 2,000 shocks to the embedded value assumptions. To align with the MCEV Principles the risk based capital is scaled to a 99.5 percent confidence level by using empirical distributions where available, or by assuming probability distributions as appropriate.

Embedded value report (continued)

The capital is projected over the lifetime of the business using appropriate risk drivers for each risk type. The present value of the risk capital is calculated by applying the swap curve as of the valuation date. The CRNHR allows for diversification across risk types and across geographical segments, but no allowance for diversification between covered and non-covered business is made for in line with the MCEV principles and guidance set by the CFO Forum.

A 4 percent cost of capital charge has been applied to the diversified present value of non-hedgeable risk based capital.

d) New business

New business covers new contracts sold during the reporting period and includes recurring single premiums, new premiums written during the period on existing contracts and variations to premiums on existing contracts where these premiums and variations have not previously been assumed to be part of business in-force. Where recurring single premiums are projected over time to derive the corresponding new business value, they are treated as annual premium for the volume definition. Corporate life business valued with a contract renewal assumption is treated as annual premium. The methodology for the calculation of the new business value continues to be based on the full economic boundaries of the life business.

New business is valued at the point of sale. Explicit allowance is made for FC, TVFOG, and CRNHR. New business value is valued using actual new business volumes.

The value generated by new business written during the period is the present value of the projected stream of after tax distributable profits from that business.

In certain profit sharing funds, the new business written can affect the TVFOG for business written in prior years. This effect is taken into account in the new business value by valuing the new business on a marginal approach, the difference between embedded value with and without the new business. This captures the effect of cross-subsidies between business in-force and new business due to, for example, different interest rate guarantees operating in a shared common pool of assets.

New business is valued on a discrete quarter basis. Once calculated and reported, new business value for a quarter will not change in subsequent quarters in local currency terms. For details on the assumptions used for new business see section 10.

New business amounts in the embedded value report are reported after the effect of non-controlling interests.

The analysis of the developments of the new business value during the financial year has been performed as follows:

- Change in volumes and business mix includes the variance in business volumes written during the current year assuming previous year margins and the change in the type of covered business written during the current year with the most updated margins.
- Economic and operating variances include the effect of the change in economic and non-economic operating assumptions, any effect of model changes impacting the new business values and the change in operating and economic variances. New business operating assumptions are reviewed annually and updated as appropriate with effect from the first quarter of the next calendar year. In general operating assumptions remain unchanged throughout the year.
- Foreign currency translation effects include the variance in exchange rates from the beginning of period to the end of the period.

e) Asset and liability data

The majority of the Group's embedded value has been calculated using a "hard close" approach, such that all asset and liability data reflect the actual position as of the valuation date.

Germany has followed an approach where liability model points are set up in advance, using the structure of a previous run, and then projected to the valuation date by scaling to match the actual balance sheet figures.

f) Market consistent discounting

The Group has adopted a bottom-up market consistent approach for the projection and discounting of future cash flows in the calculation of embedded value. As a result, the risks inherent in the cash flows are allowed for in a way that is consistent with the way the market is expected to allow for such risks.

In principle, this method values each cash flow using a risk discount rate consistent with that applied to such a cash flow in the capital markets. For example, an equity cash flow is valued using an equity risk discount rate, and a debt security cash flow is valued using a debt security discount rate. If a higher return is assumed for equities, the equity cash flow is discounted at this higher rate.

In practice, the Group has applied a computational method known as a "risk neutral" approach. This involves projecting the assets and liabilities using a distribution of asset returns where all asset types, on average, earn the same risk free rate.

The risk free yield curve assumptions are based on the swap curve in each major currency (U.S. dollar, euro, British pound and Swiss franc). For liabilities where payouts are either independent or move linearly with markets, deterministic techniques (referred to as "certainty equivalent") have been used. In such cases, the projection and discounting are based on the same risk free yield curve. Further details are set out under Economic assumptions in section 10.

g) Economic scenario generator
All operations use actual yield curves observable as of the valuation date for the calculation of the certainty equivalent value of business in-force.

The calculations of the TVFOG are based on stochastic simulations using an economic scenario generator provided by Moody's Analytics. The simulations have been calibrated to conform to the economic parameters specified by the Group.

The simulations used for calculation of TVFOG reflect the actual yield curves and implied volatilities observable as of the valuation date. Further details are set out under section 10.

Simulations are produced for the economies in the U.S., the UK, Switzerland and the Eurozone.

For the economies in the U.S., the UK and the Eurozone, risk free nominal interest rates are modeled using a LIBOR market model. Negative nominal interest rates, if any, are floored to zero.

In Switzerland, risk free nominal interest rates are modeled using a variant of the LIBOR market model with displacement diffusion and stochastic volatility. This model allows for modeling negative nominal interest rates in a market where these are more severe than in other economies.

The excess return on other asset classes relative to the total returns on risk free assets are then modeled using a multifactor lognormal model.

Hong Kong uses U.S. dollar simulations because their principal liabilities are U.S. dollar denominated. Chile uses closed form solutions rather than simulations. Other operations, not mentioned above, have no significant options and guarantees. Further details are set out under economic assumptions in section 10.

h) Holding companies
Holding companies allocated to Global Life have been included in embedded value at IFRS shareholders' equity. Related expenses have been included in the projection assumptions. Holding companies outside Global Life are not included in the embedded value of the covered business.

i) Consolidation adjustments
Where a reinsurance arrangement exists between two life companies within Global Life, the value of the reinsurance is shown in embedded value of the region to which the ceding company belongs.

j) Debt
Where a loan exists between a company in Global Life and a Group company outside Global Life, the loan is included in embedded value at the same value included in the balance sheet of the other Group company.

k) "Look through" principle – service companies
There are some companies within Global Life that provide administration and distribution services. These are valued on a look through basis. The results do not include any Group service companies outside Global Life.

Embedded value report (continued)

In Germany, the majority of distribution and administration is provided by service companies. These are valued on a look through basis. These companies also provide limited services to companies outside Global Life. The value of business in-force and new business value reflect the services provided to companies within Global Life. The shareholders' net assets of Global Life include, however, the full shareholders' net assets of these service companies.

In Switzerland, an investment management company provides asset management services to pension schemes written in foundations and other pension funds. The present value of the net asset management fees, after tax, is included in embedded value and new business value.

l) Employee pension schemes

In the Group's consolidated financial statements, actuarial gains and losses arising from defined benefit pension and other defined benefit post-retirement plans are recognized in full in the period in which they occur and are presented on a separate line in the statement of comprehensive income, with a liability recognized for employee benefit deficits under IAS 19. This adjustment has not been made in the detailed embedded value described in this embedded value report. If the adjustment had been made embedded value as of the valuation date would have been lower by USD 1,383 million. The actuarial and economic assumptions used for this adjustment are consistent with those used for the equivalent allowance made in the Group's consolidated financial statements.

Expense assumptions for each life business include expected pension scheme costs in respect of future service entitlements.

m) Change in legislation or solvency regime

The impacts of changes in legislation are included in economic variance for the analysis of movement when they occur. Generally the changes in solvency regimes are also included in economic variances, with the exception of this year, where the impact has been included in the restated opening embedded value.

n) Translation to Group presentation currency

To align embedded value reporting with the Group's consolidated financial statements, relevant results have been translated to the Group presentation currency, U.S. dollar, using average exchange rates for the period. This applies to new business value and new business volumes (APE and PVNBP) for the current period and comparative figures. This approach has also been applied to the analysis of movement. Valuations as at a specified date are translated at end-of-period exchange rates.

The rates can be found in note 1 of the audited consolidated financial statements as of December 31, 2016.

o) Sensitivities

The key assumption changes represented by each of the sensitivities in section 6 are as follows:

Operating sensitivities

A 10 percent increase in initial expenses was considered for new business value only.

A 10 percent decrease in maintenance expenses means that, for example, a base assumption of USD 30 per annum would decrease to USD 27 per annum.

A 10 percent decrease in voluntary discontinuance rates means that, for example, a base assumption of 5 percent per annum would decrease to 4.5 percent per annum.

A 5 percent improvement in mortality and morbidity assumptions for assurances means that, for example, if the actuarial mortality assumption for assurances was 90 percent of a particular table, this would decrease to 85.5 percent.

A 5 percent improvement in mortality assumptions for annuities means that, for example, if the actuarial mortality assumption for annuities was 90 percent of a particular table, this would decrease to 85.5 percent.

Economic sensitivities

A 100 basis points increase and decrease was applied to the risk free forward yield curve across all durations.

For the economies in the U.S., the UK and the Eurozone, if a 100 basis points decrease in the yield curve results in a negative rate for a given duration, the corresponding rate is set to zero at that duration.

For Switzerland, where negative nominal interest rates are modeled, a 100 basis points decrease was applied to the risk free forward yield curve across all durations.

A 10 percent fall in equity and property market values was assessed for embedded value only.

A 25 percent increase in implied risk free volatilities means that, for example, a volatility of 20 percent per annum would increase to 25 percent per annum.

A 25 percent increase in implied equity and property volatilities means that, for example, a volatility of 20 percent per annum would increase to 25 percent per annum.

In each sensitivity calculation, all other assumptions remain unchanged except where they are directly affected by the revised conditions. The results include any impact of the assumption changes on the time value of financial options and guarantees.

p) Expected contribution

Expected contribution at reference rate

The expected contribution at reference rate is the projected change in embedded value over the year using risk free investment returns applicable at the start of the year.

Expected contribution in excess of reference rate

The expected contribution in excess of reference rate is the additional embedded value expected to be created if real world expected investment returns applicable at the start of the year were to emerge.

Expected transfer to shareholders' net assets

The expected transfer to shareholders' net assets shows the profits expected to emerge during the year in respect of business in-force at the start of the year. The net effect on embedded value is zero, because the change in the value of business in-force is offset by an equal and opposite change in shareholders' net assets.

q) Operating and economic variances

Operating assumption changes

Changes in assumptions about future operating experience also have an impact on operating variances, including mortality and morbidity, persistency, expenses and other assumptions.

Operating variances

Operating variances include:

- Operating experience variances: Operating experience variances measure the difference between actual experience during the period and that implied by the operating assumptions. Experience variances occur in the normal course of business as short-term experience fluctuates around long-term assumptions.
- Other operating variances: include modeling changes, development and one-off expenses and other operating variances not captured elsewhere.

Economic variances

Economic variances arise from the difference between actual economic experience during the year and the expected experience implied by the economic assumptions at the start of the year.

Other non-operating variances

Other non-operating variances include the impact of legal, tax and regulatory changes implemented during the year as well as other one-off items.

Embedded value report (continued)

10. Embedded value assumptions

Projections of future shareholder cash flows expected to emerge from covered business and for new business are determined using best estimate operating assumptions. These assumptions, including mortality, morbidity, persistency and expenses, reflect recent experience and are reviewed annually and updated as appropriate. Allowance is made for future improvements in annuitant mortality based on experience and externally published data. Favorable changes in future operating efficiency are not anticipated in the assumptions – in particular for expenses and persistency.

For the purposes of calculating the value of business in-force, future economic assumptions, for example, investment returns and inflation, are based on period end conditions and assumed risk discount rates are consistent with these conditions.

For the purposes of calculating new business value, for each discrete quarter of new business, economic assumptions are based on market conditions at the start of the quarter. New business operating assumptions are reviewed annually and updated as appropriate with effect from the first quarter of the next calendar year. In general operating assumptions remain unchanged throughout the year.

a) Economic assumptions

Market consistent framework

The Group has adopted a computational method known as "risk neutral market consistent". With this method the key economic assumptions are:

- Risk free rates.
- Volatilities implied by different asset prices.
- Correlations between different asset returns.

All asset classes are expected to provide an average return in line with the risk free rates, although with different volatilities. No allowance for Solvency II EIOPA yield curves was made for the calculation of the embedded value, except for the calculation of the embedded value for the run-off life operations in Hong Kong.

Choice of "risk free yield curve"

The risk free yield curve is derived from mid-market swap rates applicable to each economy as of the valuation date. These curves were used to extract forward reinvestment yields that are used for all asset classes. The yield curves are consistent with the assumptions used by investment banks to derive their option prices and their use ensures consistency with the derivation of modeled return volatilities. They also have the advantage of being available for most of the markets in which the Group operates. Domestic yield curves are used by businesses in other countries, except Hong Kong and Argentina which use the U.S. dollar, as their liabilities are principally U.S. dollar-denominated.

Implied asset volatility and correlations

The Group's embedded value model is based on market consistent economic assumptions.

For the economies in the U.S., the UK and the Eurozone, the modeled interest rate volatilities are based on at-the-money swaption prices for different terms and tenors quoted according to the "lognormal volatility" market convention. For U.S. and Eurozone, quotations as of end of December have been used. For the UK, where no quotations were available as of end of December, the latest available quarterly quotations as of end of June have been used.

For Switzerland, the modeled interest rate volatilities are based on at-the-money and not-at-the-money swaption prices for different terms and tenors quoted according to the "nominal volatility" market convention. This represents a more robust market convention where negative rates are observed. Quotations as of end of December have been used.

Volatility of property investment is derived from relevant historical return data for each modeled economy. Assumptions for long-term equity volatility and long-term correlations between equity, property and bond indices are prepared with reference to historical analyses.

Inflation
Inflation assumptions have been derived from the yields on index linked government bonds relative to the corresponding nominal government yield curve, where such index linked government bonds exist. Where appropriate, allowance has been made for expense inflation to exceed the assumed level of price inflation reflecting the contribution of salary related expenses to life company expenses. In Switzerland, reference was made to Swiss Financial Market Supervisory Authority (FINMA) published rates.

Risk discount rate
Under the risk neutral approach, risk discount rates are based on the same risk free yield curves as those used to project the investment return.

For stochastic modeling, the risk discount rates are simulation specific and also vary by calendar year consistently with the projected risk free yields in each simulation.

Liquidity premiums
The CFO Forum engaged Moody's Analytics (former Barrie & Hibbert) who estimated a liquidity premium proxy to be equal to 50 percent times the credit spread over swaps less 40 basis points where credit spreads over swaps are equal to the credit spread on a representative corporate bond index less the swap rate for each particular currency.

The Group applies liquidity premium in the operating currencies of U.S. dollar, euro, British pound and Swiss franc in its embedded value.

The liquidity premium is applied to the following lines of business:

- → 100 percent for annuities.
- → 75 percent for contracts with participating features, universal life contracts and fixed interest annuities in the U.S.
- → 0 percent for all other lines of business.

All sensitivities in the report relate to the base yield curve with no liquidity premium.

Real world assumptions and expected contribution
The expected contribution for the analysis of embedded value earnings is based on a projection from the start of period to the end of period. This requires assumptions regarding the investment returns expected to be achieved over the period on different asset classes. The investment return assumptions (for this purpose only) are based on the real world returns expected by the Group. The use of real world investment assumptions gives a more realistic basis for the expected contribution calculation and allows for the risk underlying each asset. Any under or over performance will be reported through economic variance. Future real world undiscounted profits are also calculated with the same real world assumptions.

For fixed interest assets, the real world investment return assumptions are based on the gross redemption yield on the assets, less an allowance for defaults where appropriate, together with an adjustment to reflect the change over the period implied in the yield curve assumptions.

For equity assets for units where there is a substantial equity allocation, the investment return assumption is based on the long-term real world expected return. For equity assets for units without a material equity allocation the investment return assumption is based on the one year swap rate at the start of period plus a margin to reflect the additional risk associated with investment in this asset class. The equity risk premium was set equal to 420 basis points to be added on top of the 10 year swap rate of the relevant currency as of December 31, 2016.

For property assets, the investment return assumptions are based on the one year swap rate at the start of period plus a margin to reflect the additional risk associated with investment in this asset class. The property risk premium was set equal to 200 basis points (a reduction of 90 basis points compared to prior year) to be added on top of the 10 year swap rate of the relevant currency as of December 31, 2016.

These assumptions have been set by asset class and separately for each sub-fund in each life business in order to best reflect the actual assets held.

Embedded value report (continued)

Participating business
Rates of future bonus or crediting rates have been set at levels consistent with the risk neutral investment return assumptions and current bonus plans. In the UK, bonus rates have been set so as to exhaust any remaining assets in the relevant long-term funds. In certain scenarios shareholder injections may be required to meet existing guaranteed benefits and this additional cost is included in the TVFOG.

In other European life businesses and in the U.S., bonuses have been set to be consistent with the investment return assumptions and with the book value approach used by these life businesses. Existing practice, contractual and regulatory requirements as well as reasonable expectations of policyholders are considered in setting bonuses.

Taxation
Current income tax legislation and rates have been assumed to continue unaltered, except where future changes to such tax rates or tax legislation have been substantively enacted.

b) Operating assumptions
Demographic assumptions
The assumed future mortality, morbidity and lapse rates have been derived from recent operating experience and relevant industry statistics. Where operating experience or industry statistics are limited, the assumptions are derived from a best estimate of future developments and are subject to regular review as more experience emerges. Where appropriate, surrender and option take-up rate assumptions that vary according to the investment simulation under consideration have been used, based on an assessment of likely policyholder behavior.

Expense assumptions
Management expenses have been analyzed between expenses related to acquisition of new business, the maintenance of business in-force and, where appropriate, development expenses and one-off expenses. Future expense assumptions allow for expected levels of maintenance expenses. Headquarters' expenses relating to covered business have been allocated to business units, or to Global Life's central unit which is in region Other, and are reflected in assumed future expenses.

The maintenance expense assumptions allow for the expected cost of providing future service benefits in respect of the Group staff pension schemes. An adjustment to embedded value is noted in section 9 for pension scheme liabilities and no allowance is made in the expense assumptions for any contributions as a result of past service benefits.

No allowance has been made for future productivity improvements in the expense assumptions.

Where service companies have been valued on a look through basis, the value of profits or losses arising from these services have been included in embedded value and new business value.

The Group is liable for payments to be made to various distributors, each payment being dependent on preceding sales volumes or profits or other factors, in accordance with distribution agreements. As part of the economic valuation, for each such agreement, a liability is included in embedded value shareholders' net assets for the best estimate of the next potential payment attributable to the business issued to date.

In countries where significant development work is performed these are shown under "operating variances".

Any expense excluded from the unit cost base used for assumption setting requires approval from the Head of Group Planning and Performance.

Expenses excluded from the unit cost base are included in the operating variances and are related to development expenses and one-off expenses. Development expenses relate to expenses incurred to improve the long-term capacity of the business or to reduce its future unit costs, and include certain expenses for start-up operations, certain expenses for regional offices, and certain central overhead expenses not reflected in the long-term assumptions of the business units. They also include certain project-based costs and certain distribution expenses. One-off expenses are those that are not expected to recur and are short-term in nature.

All expenses in embedded value are net of tax appropriate to the business unit to which the expense is charged.

c) Dynamic decisions

To reflect more realistically the outcome of stochastic simulations, the assumptions for each simulation make allowance for the behavior of policyholders and management actions in response to the investment conditions modeled.

In many life businesses, policyholders can exercise an option against the life company in certain circumstances, such as to surrender a policy. For example an increase in the lapse rates could be assumed when interest rates rise (or a corresponding reduction when interest rates fall). This dynamic effect in relation to lapse rates has been allowed for in the stochastic models.

The stochastic models allow, where appropriate, for management actions to change investment strategy in response to market conditions.

Statement by Directors

Statement by Directors

This Embedded value report has been prepared in all material respects in accordance with the Market Consistent Embedded Value Principles and Guidance issued by the European Insurance CFO Forum in April 2016.

The methodology and assumptions underlying the report are described in sections 9 and 10.

Auditor's report on embedded value

Auditor's report on embedded value

To the Board of Directors of Zurich Insurance Group Ltd

Opinion

We have audited the embedded value report of Zurich Insurance Group Ltd. and its subsidiaries (the Group), for the year ended December 31, 2016, and notes to the embedded value report, including the Market Consistent Embedded Value (MCEV) methodology and MCEV assumptions.

In our opinion, the embedded value report has been prepared, in all material respects, in accordance with the Market Consistent Embedded Value Principles issued by the European Insurance CFO Forum.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibility under those standards are further described in the "Auditor's responsibilities for the audit of the embedded value" section of our report.

We are independent of the Group in accordance with the IESBA Code of Ethics for Professional Accountants, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter – Basis of accounting

We draw attention to sections 9 and 10 of the embedded value report, which describe the basis of accounting. The embedded value report is prepared in compliance with the MCEV Principles referred to below and as a result, may not be suitable for another purpose. This report does not extend to any financial statements of Zurich Insurance Group Ltd. Our opinion is not modified in respect of this matter.

Responsibilities of the Board of Directors for the embedded value

The Board of Directors is responsible for the preparation of the embedded value report in accordance with the MCEV Principles issued by the European Insurance CFO Forum, as described on pages 20 to 29 of the embedded value report, and for such internal control as the Board of Directors determines is necessary to enable the preparation of a embedded value report that is free from material misstatement, whether due to fraud or error.

In preparing the embedded value report, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern assumptions unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's responsibilities for the audit of the embedded value

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

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

→ Identify and assess the risks of material misstatement of the embedded value report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

→ Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

→ Evaluate the appropriateness of the Group's accounting policies based on MCEV Principles used and the reasonableness of estimates and related disclosures made.

Auditor's report on embedded value (continued)

- Conclude on the appropriateness of the Board of Directors' use of the going concern assumptions and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the embedded value report or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Obtain sufficient appropriate audit evidence regarding the information of the entities or business activities within the Group to express an opinion on the embedded value report. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee of the Board of Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

PricewaterhouseCoopers AG

Peter Eberli
Audit expert

Stephen O'Hearn
Global relationship partner

Zurich, February 8, 2017

Disclaimer & Cautionary Statement

Certain statements in this document are forward-looking statements, including, but not limited to, statements that are predictions of or indicate future events, trends, plans or objectives of Zurich Insurance Group Ltd or the Zurich Insurance Group (the Group). Forward-looking statements include statements regarding the Group's targeted profit, return on equity targets, expenses, pricing conditions, dividend policy and underwriting and claims results, as well as statements regarding the Group's understanding of general economic, financial and insurance market conditions and expected developments. Undue reliance should not be placed on such statements because, by their nature, they are subject to known and unknown risks and uncertainties and can be affected by other factors that could cause actual results and plans and objectives of Zurich Insurance Group Ltd or the Group to differ materially from those expressed or implied in the forward-looking statements (or from past results). Factors such as (i) general economic conditions and competitive factors, particularly in key markets; (ii) the risk of a global economic downturn; (iii) performance of financial markets; (iv) levels of interest rates and currency exchange rates; (v) frequency, severity and development of insured claims events; (vi) mortality and morbidity experience; (vii) policy renewal and lapse rates; and (viii) changes in laws and regulations and in the policies of regulators may have a direct bearing on the results of operations of Zurich Insurance Group Ltd and its Group and on whether the targets will be achieved. Zurich Insurance Group Ltd undertakes no obligation to publicly update or revise any of these forward-looking statements, whether to reflect new information, future events or circumstances or otherwise.

All references to "Farmers Exchanges" mean Farmers Insurance Exchange, Fire Insurance Exchange, Truck Insurance Exchange and their subsidiaries and affiliates. The three Exchanges are California domiciled interinsurance exchanges owned by their policyholders with governance oversight by their Boards of Governors. Farmers Group, Inc. and its subsidiaries are appointed as the attorneys-in-fact for the Farmers Exchanges and in that capacity provide certain non-claims administrative and management services to the Farmers Exchanges. Neither Farmers Group, Inc., nor its parent companies, Zurich Insurance Company Ltd and Zurich Insurance Group Ltd, have any ownership interest in the Farmers Exchanges. Financial information about the Farmers Exchanges is proprietary to the Farmers Exchanges, but is provided to support an understanding of the performance of Farmers Group, Inc. and Farmers Reinsurance Company.

It should be noted that past performance is not a guide to future performance.

Persons requiring advice should consult an independent advisor.

This communication does not constitute an offer or an invitation for the sale or purchase of securities in any jurisdiction.

THIS COMMUNICATION DOES NOT CONTAIN AN OFFER OF SECURITIES FOR SALE IN THE UNITED STATES; SECURITIES MAY NOT BE OFFERED OR SOLD IN THE UNITED STATES ABSENT REGISTRATION OR EXEMPTION FROM REGISTRATION, AND ANY PUBLIC OFFERING OF SECURITIES TO BE MADE IN THE UNITED STATES WILL BE MADE BY MEANS OF A PROSPECTUS THAT MAY BE OBTAINED FROM THE ISSUER AND THAT WILL CONTAIN DETAILED INFORMATION ABOUT THE COMPANY AND MANAGEMENT, AS WELL AS FINANCIAL STATEMENTS.