Embedded Value Report – Life Insurance

1. Overview

Zurich Financial Services Group (Zurich) has reported Embedded Value (EV) in respect of the year ended December 31, 2006 together with comparative figures for the year ended December 31, 2005 in line with the European Embedded Value Principles issued by the CFO Forum, for the companies and business reported in its Global Life segment (Global Life), which is defined as covered business. Certain other life businesses are included in Other Businesses segment and have been excluded from the EV. This report primarily relates to Global Life, but information relating to Other Businesses is given in section 2.f below.

The EV methodology adopted by Zurich 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 the capital markets; and
- options and guarantees are valued using market consistent models calibrated to observable market prices.

In line with the European Embedded Value Principles, the EV is broken down into the following components:

- shareholders' net assets, including free surplus and required capital allocated to covered business; and
- the value of business in-force.

The adoption of the European Embedded Value Principles does not affect the basis of reporting the statutory results, the regulatory capital position or the dividend paying capacity of Zurich. EV is derived from the local statutory, regulatory and IFRS financial statements of Zurich's Global Life entities and is presented net of minority interests. However new business value is shown before deduction of minorities.

EV information in this supplement includes:

- Summary of Embedded Value results;
- Geographical analysis of Embedded Value results;
- Embedded Value methodology;
- Embedded Value assumptions.

EV as of December 31, 2006 and the previous year comparatives, as well as the new business value, the analysis of movement and the sensitivities have been subject to external review by Deloitte & Touche LLP. Their Statement of External Review is set out in section 6.

2. Summary of Embedded Value results

a) Embedded Value of Global Life

Embedded Value

Table 2.1

in USD millions, as of December 31	2006	2005
Shareholders' net assets	7,176	6,053
Value of business in-force	6,916	5,627
Embedded Value	**14,092**	**11,680**

The shareholders' net assets are based on local statutory accounting adjusted to reflect shareholders' interest in the market value of net assets after the exclusion of goodwill and other necessary actuarial adjustments.

The value of business in-force is the present value of future projected profits from covered business, and can be defined as the certainty equivalent value of business in-force less frictional costs, time value of options and

guarantees and cost of non market risk. Further details of the methodology used in the calculation of these items are given in section 4.

Value of business in-force

Table 2.2

in USD millions, as of December 31	2006	2005
Certainty equivalent value of business in-force	8,761	7,701
Frictional costs	(728)	(620)
Time value of options and guarantees	(528)	(917)
Cost of non market risk	(589)	(537)
Value of business in-force	**6,916**	**5,627**

A breakdown of the EV results by geographical region is set out in section 3 below. A definition of the EV components is given in section 4.

Frictional costs are applied to the total capital held by the covered business. As of December 31, 2006 total capital is the sum of:

- USD 3.4 billion of minimum solvency margin required by regulation;
- USD 1.0 billion of any additional solvency margin that life business units consider is in practice required; and,
- USD 2.8 billion of free surplus.

The sum of the first two items above is referred to as "required capital" elsewhere in this document.

b) New business

New business value is the value added by new business written, calculated at the point of sale, without any value from future new business sales. It is calculated consistently with Zurich's EV methodology and assumptions as explained for the value of business in-force in section 4.

Frictional costs are applied to the minimum solvency margin required to be held in respect of new business.

New business [1] volumes

Table 2.3

in USD millions, for the years ended December 31	2006	2005
Annual premiums	1,363	1,440
Single premiums	10,050	8,630
New business annual premium equivalent (APE) [2]	2,368	2,303
Present value of new business premiums (PVNBP) [3]	19,487	18,816

[1] Gross of minorities.
[2] APE is taken as new annual premiums plus 10% of single premiums.
[3] PVNBP is equal to new single premiums plus the present value of annual premiums.

New business [1] margin

Table 2.4

in USD millions, for the years ended December 31	2006		2005	
	after tax	before tax [2]	after tax	before tax [2]
New business value	**515**	**740**	**406**	**594**
New business margin (as % APE)	21.7%	31.2%	17.7%	25.8%
New business margin (as % PVNBP)	2.6%	3.8%	2.2%	3.2%

[1] Gross of minorities.
[2] In certain countries, particularly in the UK, where life insurance companies pay tax in respect of both policyholders and shareholders, the results shown in the above table are before shareholders' tax but after deducting policyholders' tax.

New business value, after tax

Table 2.5

in USD millions, for the years ended December 31	2006	2005
Certainty equivalent new business value	616	563
Frictional costs	(31)	(33)
Time value of options and guarantees	(22)	(75)
Cost of non market risk	(48)	(49)
New business value, after tax	**515**	**406**

EV is shown net of minority holdings. Where Zurich has a majority interest in a subsidiary company, the new business value and the premium information are shown gross of minority holdings. The minorities' share of new business value mostly relates to subsidiaries in Germany.

The new business value after tax, the annual premium equivalent and present value of new business premiums net of minority holdings are shown in the following table:

New business value, after tax net of minorities

Table 2.6

in USD millions, for the years ended December 31	2006	2005
New business value, after tax	491	388
New business annual premium equivalent (APE)	2,269	2,198
Present value of new business premiums (PVNBP)	18,589	18,017

c) Analysis of movement in Embedded Value

The following table provides an analysis of the movement in the EV for the covered business from December 31, 2005 (opening EV) to December 31, 2006 (closing EV). The analysis is shown separately for shareholders' net assets and the value of business in-force, and includes amounts transferred between these components.

Analysis of movement in Embedded Value

Table 2.7

in USD millions, for the year ended December 31, 2006	Shareholders' net assets	Value of business in-force	Total
Opening Embedded Value	6,053	5,627	11,680
Expected transfer from value of business in-force to shareholders' net assets, after tax	956	(956)	0
Expected return on in-force business and shareholders' net assets, after tax	228	490	718
New business value, after tax	(592)	1,107	515
Operating variance, after tax	(56)	50	(6)
Total operating profit, after tax	**536**	**691**	**1,227**
Economic variance, after tax	66	75	141
EV profit, after tax	602	766	1,368
Dividends and capital movements	(104)	(19)	(123)
Closing Embedded Value before foreign currency translation effects	6,551	6,374	12,925
Foreign currency translation effects	625	542	1,167
Closing Embedded Value after foreign currency translation effects	**7,176**	**6,916**	**14,092**

Total operating profit after tax consists of the following:

- **Expected transfer from value of business in-force to shareholders' net assets, after tax** shows the profits expected to emerge during the period in respect of business that was in-force at the beginning of the period. The net effect is zero, as the reduction in value of business in-force is offset by the increase in shareholders' net assets. The expected profits do not include changes in solvency margin over the period.
- **Expected return on in-force business and shareholders' net assets, after tax** is calculated as the expected change in the EV resulting from a projection of the assets and liabilities over the period based on expected "real world" returns. Further details are given below in section 5.a "Expected return for the analysis of movement".
- **New business value, after tax** reflects the value added by new business written during the period. This item is valued at the point of sale. The reduction in shareholders' net assets shown in respect of new business (i.e. new business strain) excludes the solvency margin set up in respect of the new business. Including solvency margin, the new business strain is USD 0.7 billion.
- **Operating variance, after tax** is the difference between actual experience during the period and that expected based on the operating assumptions. It also includes the impact of changes in assumptions in respect of future operating experience.

The other components of the movement in EV are:

Economic variance, after tax arises from the differences between the actual investment returns in the period and the expected investment returns based on economic assumptions as at the start of year, and allows for the change in future economic assumptions between the start and end of the period. It also includes the impact of legal and regulatory changes in the period.

Dividends and capital movements reflect dividends paid by the covered business to the Group and capital received from the Group. Capital movements can also relate to value of business in-force in respect of acquisitions and disposals, or corporate restructuring.

Foreign currency translation effects represent the impact of currency movements over the year. Closing EV before foreign currency translation effects is based on beginning of year exchange rates.

d) Reconciliation of IFRS net assets to Embedded Value for covered life business

Reconciliation of Global Life IFRS net assets to Embedded Value

Table 2.8

in USD billions, as of December 31, 2006	Total
Goodwill	0.5
Intangible assets [1]	2.9
Tangible assets	8.3
Global Life IFRS net assets	**11.7**
Adjustments to Global Life IFRS net assets for Embedded Value	
Minorities	(0.2)
Reserves and investments valuation differences	(0.9)
Intangible assets [1]	(2.9)
Goodwill	(0.5)
Certainty equivalent value of business in-force	8.7
Frictional costs	(0.7)
Time value of options and guarantees	(0.5)
Cost of non market risk	(0.6)
Embedded Value	**14.1**

[1] Intangible assets are defined as deferred policy acquisition and origination costs and other intangible assets less front end fees.

e) Sensitivities

A number of sensitivities have been produced to indicate the sensitivity of the EV and the new business value to changes in certain assumptions. These are in line with the CFO Forum's Additional Guidance on European Embedded Value Disclosures issued in October 2005.

Sensitivities

Table 2.9

In USD millions

	Change in Embedded Value	Change in new business value
Actual Value	14,092	515
Economic sensitivities		
100 basis points increase in risk free yield curve	(271)	16
100 basis points decrease in risk free yield curve	(481)	(62)
10% fall in equity and property market values	(571)	n/a
100 basis points increase in risk discount rate	(721)	(93)
10% increase in implied volatilities for equities and properties	(213)	(33)
10% increase in implied volatilities for risk free yields	(775)	(20)
Operating sensitivities		
10% decrease in voluntary discontinuance rates	328	51
10% decrease in maintenance expenses	299	30
10% decrease in initial expenses and commissions	n/a	109
5% improvement in mortality and morbidity for assurances	210	21
5% improvement in mortality for annuities	(179)	(1)
Frictional costs applied to 150% of minimum solvency margin	266	(16)

The key assumption changes represented by each of these sensitivities are as follows:

Economic sensitivities

- 100 basis points increase and decrease in the risk free yield curve across all durations;
- 10% fall in equity and property market values (EV only, this is not applicable for new business);
- 100 basis points increase in the discount rates (e.g. a discount rate of 6% p.a. would increase to 7% p.a.);
- 10% increase in implied equity and property volatilities (e.g. 15% p.a. would increase to 25% p.a.);
- 10% increase in implied risk free volatilities (e.g. 15% p.a. would increase to 25% p.a.);

Operating sensitivities

- 10% decrease in voluntary discontinuance rates (e.g. a base assumption of 5% p.a. would decrease to 4.5% p.a.);
- 10% decrease in maintenance expenses (e.g. a base assumption of USD 30 p.a. would decrease to USD 27 p.a.);
- 10% decrease in initial expenses and commissions (new business values only);
- 5% improvement in mortality and morbidity assumptions for assurances (e.g. if the base mortality assumption for assurances was 90% of a particular table this would decrease to 85.5%);
- 5% improvement in mortality assumptions for annuities (e.g. if the base mortality assumption for annuities was 90% of a particular table this would decrease to 85.5%);
- Frictional costs applied to 150% of minimum solvency margin, rather than to total capital for in-force business or minimum solvency margin for new business.

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 change on the time value of options and guarantees.

The 100 bps increase in risk free yield curve reduces the value of some products, such as term assurance, with fixed cash flows which are discounted at higher rates. This reduction is partially offset by the increase in the value of other products, such as those with profit sharing, due to the higher assumed investment returns on investment of net cash flows. The former effect is particularly apparent in the US where this sensitivity leads to a decrease in value. This is only partially offset by positive effects particularly in Germany.

A decrease in yield curve creates an increase in the cost of options and guarantees which outweighs the improvement in value of products with fixed cash flows.

The sensitivity to a 1% p.a. increase in discount rates represents an increase in the discount rates used to discount projected shareholder profits, with no change to the assumed investment returns. This moves away from market consistent methodology and hence is not strictly pertinent under a market consistent approach. For stochastic modeling, the increase in discount rates applies to each year in each projected simulation.

f) Life business included in Other Businesses

Zurich writes life business in Kemper Investors Life Insurance Company and in Centre operations, which are not managed in Global Life, but are centrally managed. The main products written by these businesses are:

- Variable annuity contracts that provide annuitants with guarantees related to minimum death and income benefits;
- Disability business; and,
- Bank owned life insurance business.

Zurich has estimated the EV of these businesses based on the same principles as the covered business, including deductions for time value of options and guarantees, frictional costs and cost of non market risks, but using more approximate models. The results are set out as follows:

Estimated Embedded Value of life businesses in Other Businesses

Table 2.10

in USD billions, as of December 31	**2006**	2005
Shareholders' net assets	1.2	1.2
Value of business in-force	0.9	0.1
Time value of options and guarantees	(0.3)	(0.3)
Cost of non market risk	(0.3)	(0.3)
Embedded Value	**1.5**	**0.7**

EV for Other Businesses has increased by USD 0.8 billion, from 2005 to 2006 mostly due to Kemper Life Insurance Company. Value of business in-force has increased as a result of higher interest rates and a capital injection to support a strengthening of the reserve basis.