

3. Geographical analysis of Embedded Value

EV results for 2006 and 2005 are converted from local currency using different exchange rates. Our comments in this section relate to business issues only and not to movement in exchange rates.

a) Geographical analysis of Embedded Value

Table 3.1

In USD millions,
as of December 31

Geographical analysis of Embedded Value

	Shareholders' net assets		Value of business in-force		Embedded Value	
	2006	2005	2006	2005	2006	2005
United States	652	623	1,675	1,544	2,327	2,167
United Kingdom	2,536	2,181	2,597	2,438	5,133	4,619
Germany	960	743	336	103	1,296	846
Switzerland	1,077	861	493	184	1,570	1,045
Rest of Europe	1,265	987	1,391	1,022	2,656	2,009
International Businesses	686	658	424	336	1,110	994
Global Life	7,176	6,053	6,916	5,627	14,092	11,680

Table 3.2

In USD millions,
as of December 31, 2006

Geographical analysis of value of business in-force – 2006

	United States	United Kingdom	Germany	Switzerland	Rest of Europe	International Businesses	Total
Certainty equivalent value of business in-force	2,031	3,120	690	719	1,638	563	8,761
Frictional costs	(114)	(191)	(236)	(41)	(78)	(68)	(728)
Time value of options and guarantees	(127)	(84)	(88)	(136)	(86)	(7)	(528)
Cost of non market risk	(115)	(248)	(30)	(49)	(83)	(64)	(589)
Value of business in-force	1,675	2,597	336	493	1,391	424	6,916

Table 3.3

In USD millions,
as of December 31, 2005

Geographical analysis of value of business in-force – 2005

	United States	United Kingdom	Germany	Switzerland	Rest of Europe	International Businesses	Total
Certainty equivalent value of business in-force	1,912	2,886	589	610	1,251	453	7,701
Frictional costs	(107)	(164)	(202)	(27)	(62)	(58)	(620)
Time value of options and guarantees	(157)	(69)	(229)	(355)	(98)	(9)	(917)
Cost of non market risk	(104)	(215)	(55)	(44)	(69)	(50)	(537)
Value of business in-force	1,544	2,438	103	184	1,022	336	5,627

Frictional Costs

The frictional costs have increased broadly in line with the shareholders' net assets and reflect changes in the economic conditions. In Switzerland the increase was also due to the revision to the minimum level of capital to which frictional costs are applied.

Time value of options and guarantees

The change in the time value of options and guarantees from 2005 to 2006 reflects the following:

- In the **US**, the reduction was mainly related to the higher market yield curve in 2006, which reduced the overall exposure to market risk on interest and surrender guarantees from universal life and interest sensitive deferred annuity business.
- In the **UK**, the increase was due to significant unit linked business with guarantees on death written during 2006, partially offset by good investment performance. For with profits business, management has in place an investment matching strategy which includes the use of derivative hedging and which mitigates the time value of options and guarantees for 2006 and the prior year.
- In **Germany**, the significant reduction reflects the increase in the risk free yield curve and the reduction of interest rate implied volatilities over the period. The average interest guarantee in respect of the conventional business remains at 3.5% while the ten year risk free rate increased from 3.6% in 2005 to 4.2% for 2006. The time value of options and guarantees is mainly related to guaranteed minimum interest rates as well as guaranteed surrender values and annuity options.
- In **Switzerland**, the strong reduction was mainly related to improved investment conditions due to the higher yield curve and lower implied volatilities. For individual business the reduction is also due to the refinement of expected management actions as investment conditions change, and the implementation of an interest rate hedge.
- In **Rest of Europe**, the reduction is mainly due to the lower implied volatilities for the Euro interest rates and the increase in the risk free rates. Most of the countries have profit sharing rules with guarantees on maturity and surrender similar to those in Germany, or in the case of Ireland, similar to those in the UK.
- In **International Businesses**, the time value of options and guarantees has remained stable. The time value of options and guarantees relates mostly to business in Hong Kong that provides minimum interest rate guarantees at maturity. The unit linked and protection products written in this region have no significant time value of options and guarantees.

Cost of non market risk

The change in the cost of non market risk from 2005 to 2006 reflects the following:

- In the **US**, the cost of non market has increased due to the mortality risk associated with the significant portion of term assurance business and the higher market yield curve in 2006.
- In the **UK**, the slight increase is mainly due to a revision of expense allocations which has an impact on the operational risk allowance.
- In **Germany**, higher interest rates have reduced shareholder exposure to operational risks such as longevity experience due to higher profit sharing.
- In **Switzerland**, the increase in risk free rates and ongoing implementation of Zurich's group pension business model have kept the cost of non market risk for the shareholders at constant level.
- In **Rest of Europe**, the increase reflects higher volumes of business in-force which was partially offset by the impact of better economic conditions.
- In **International Businesses**, the increase was broadly in line with the growth in business in-force. Our Japanese business writes mainly cancer and critical illness protection products and our Chilean business is a significant writer of immediate annuities.

b) New business

Summary of new business results

Table 3.4

New business volumes	Annual premiums		Single premiums		APE		PVNBP	
	2006	2005	2006	2005	2006	2005	2006	2005
United States	105	102	80	90	113	111	1,039	1,070
United Kingdom	237	319	5,303	4,717	767	790	6,729	6,987
Germany	440	493	914	322	532	525	4,691	4,045
Switzerland	60	73	257	322	86	105	773	1,058
Italy	15	14	817	892	97	103	898	959
Spain	19	20	576	842	77	104	703	987
Ireland	107	111	909	557	198	167	1,504	1,190
Isle of Man	216	170	817	567	297	227	1,903	1,451
Other Europe	25	23	113	99	36	33	297	284
International Businesses	139	115	264	222	165	138	950	785
Global Life	1,363	1,440	10,050	8,630	2,368	2,303	19,487	18,816

Table 3.5

New business value, after tax	New business value, after tax		New business margin, after tax			
			as % APE		as % PVNBP	
	2006	2005	2006	2005	2006	2005
United States	59	71	52.0%	64.4%	5.7%	6.7%
United Kingdom	94	78	12.2%	9.9%	1.4%	1.1%
Germany	126	86	23.7%	16.5%	2.7%	2.1%
Switzerland	33	6	38.8%	5.8%	4.3%	0.6%
Italy	21	18	21.2%	17.3%	2.3%	1.9%
Spain	16	24	21.1%	22.8%	2.3%	2.4%
Ireland	46	38	23.2%	22.9%	3.1%	3.2%
Isle of Man	61	38	20.5%	16.5%	3.2%	2.6%
Other Europe	7	5	19.7%	14.9%	2.4%	1.7%
International Businesses	52	42	31.7%	30.7%	5.5%	5.3%
Global Life	515	406	21.7%	17.7%	2.6%	2.2%

Table 3.6

In USD millions, for the years ended December 31

**New business¹
value, before tax**

	New business value, before tax		New business margin, before tax			
			as % APE		as % PVNBP	
	2006	2005	2006	2005	2006	2005
United States	111	123	97.8%	111.1%	10.7%	11.5%
United Kingdom	134	110	17.4%	13.9%	2.0%	1.6%
Germany	207	144	39.0%	27.4%	4.4%	3.6%
Switzerland	44	9	51.1%	8.9%	5.6%	0.9%
Italy	31	28	32.5%	27.0%	3.5%	2.9%
Spain	24	38	31.4%	36.2%	3.4%	3.8%
Ireland	52	43	26.2%	25.6%	3.5%	3.6%
Isle of Man	61	37	20.5%	16.5%	3.2%	2.6%
Other Europe	8	6	22.2%	16.7%	2.7%	1.9%
International Businesses	68	56	41.2%	40.8%	7.2%	7.2%
Global Life	740	594	31.2%	25.8%	3.8%	3.2%

¹ In certain countries particularly 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 and after allowing for policyholders' tax.

Analysis of new business components

Table 3.7

In USD millions,
for the year ended December 31, 2006**Geographical
analysis of
new business
value, after tax
– 2006**

	United States	United Kingdom	Germany	Switzerland	Rest of Europe	International Businesses	Total
Certainty equivalent new business value	74	133	122	47	173	67	616
Frictional costs	(2)	(1)	(16)	(1)	(5)	(6)	(31)
Time value of options and guarantees	(3)	(30)	23	(9)	(3)	0	(22)
Cost of non market risk	(10)	(8)	(3)	(4)	(14)	(9)	(48)
New business value	59	94	126	33	151	52	515

Table 3.8

In USD millions,
for the year ended December 31, 2005**Geographical
analysis of
new business
value, after tax
– 2005**

	United States	United Kingdom	Germany	Switzerland	Rest of Europe	International Businesses	Total
Certainty equivalent new business value	89	116	122	30	151	55	563
Frictional costs	(2)	(1)	(17)	(2)	(5)	(6)	(33)
Time value of options and guarantees	(6)	(31)	(11)	(18)	(9)	0	(75)
Cost of non market risk	(10)	(6)	(8)	(4)	(14)	(7)	(49)
New business value	71	78	86	6	123	42	406

- In the **US**, the new business value decreased following a review of cost allocations. Also contributing to the decrease was the effect of rising interest yields in the US, which result in higher discounting of future profits. The proportion of interest sensitive business in the new business is lower than for the existing business portfolio, and hence the time value of options and guarantees is small.
- In the **UK**, there was an increase in new business value, mainly as a result of a lower cost base due to the revised business model, more favorable reinsurance conditions for term business and the revised operating assumptions offset by the change in economic basis. This increase was also partially offset by the time value of options and guarantees arising from death guarantees on certain investment contracts sold in 2006.
- In **Germany**, there was an increase in new business value, mainly driven by a reduction in time value of options and guarantees. The new business written in 2006 has reduced the time value of options and guarantees for the business written in prior years and this produces the positive time value for new business. Additionally, synergies following the merger of the life entities and the revision of lapse and mortality assumptions improved the new business value.
- In **Switzerland**, there was a large increase in new business value primarily due to asset management fees for group pension contracts placed with external foundations, benefits realized from refinements to the business model and an increase in risk free rates compared with the prior year, which led to a reduction in the cost of options and guarantees.
- In **Rest of Europe**, there was an increase in value primarily attributable to the repricing of two main products and revised persistency assumptions in the Isle of Man. These effects were partially offset by Spain where the initial costs associated with the shift to the higher margin risk business were spread over lower sales than in 2005. The reduction in the time value of options and guarantees for Rest of Europe is mostly due to Italy as a result of the reduction of investment guarantees offered on new business as well as the increase in the risk free rates over 2006.
- In **International Businesses**, there was an increase in value as a result of profitable new business sold in Hong Kong and Chile. This business has very limited financial options and guarantees.

c) Analysis of movement in Embedded Value from December 31, 2005 to December 31, 2006

Table 3.9
in USD millions, for the year ended December 31, 2006

Geographical analysis of movement in Embedded Value

	United States	United Kingdom	Germany	Switzerland	Rest of Europe	International Businesses
Opening Embedded Value	2,167	4,619	846	1,045	2,009	994
Operating profit expected from in-force business and shareholders' net assets, after tax	152	269	37	86	109	65
New business value, after tax	59	94	126	33	151	52
Operating variance, after tax	56	(301)	50	64	54	71
Total operating profit, after tax	267	62	213	183	314	188
Economic variance, after tax	(7)	(119)	148	92	56	(29)
EV profit, after tax	260	(57)	361	275	370	159
Dividends and capital movements	(100)	(47)	(44)	137	(5)	(64)
Closing Embedded Value before foreign currency translation effects	2,327	4,515	1,163	1,457	2,374	1,089
Foreign currency translation effects	0	618	133	113	282	21
Closing Embedded Value after foreign currency translation effects	2,327	5,133	1,296	1,570	2,656	1,110

- In the **US**, operating profit includes a significant contribution from new business value and the benefit of improvements in the mortality experience assumption. Actual mortality and persistency experience was also favorable during 2006. Economic variance reflects a change in the shape and level of the risk free yield curve offset by actual investment returns on shareholders' net assets.
- In the **UK**, operating profit includes a significant contribution from new business value. The operating profit was reduced by expenses incurred in the development of a new administration system, variations in charges and benefits on policies and an increase in expense assumptions. This was partly offset by favorable mortality experience. The economic variance reflects the impact of changes in legislation and regulation and the increase in the risk free yield curve over the year partly offset by the impact of strong unit growth.
- In **Germany**, operating profit includes a significant contribution from new business value. In addition the corporate restructuring of the German entities increased shareholder value partly offset by an increase in expense assumptions. Economic variance reflects the strong increase in the risk free yield curve and a reduction in the Euro interest rate volatilities over 2006.
- In **Switzerland**, operating profit includes a significant contribution from new business value. Positive effects include the clarification of the Bonus Fund requirements, the allowance for asset management fees, and the implementation of an interest rate hedge. The economic variance reflects the impact of the increase in the risk free yield curve at short to medium durations as well as a strong increase in unrealized gains on equity and property.
- In **Rest of Europe**, principally the Isle of Man, Ireland, Italy and Spain, operating profits include a significant contribution from new business value. A review of mortality assumptions in Ireland, and a reduction in the lapse assumption for the Isle of Man, increased the operating profit. This has been offset by expense increases in Italy and an update of the persistency assumptions for Ireland. Economic variance reflects the reduction in the corporate tax rate for Spain and the increase of the risk free yield curve for the Euro zone. This was partly offset by exchange rate movement in the Isle of Man.
- In **International Businesses**, operating profit includes a significant contribution from new business value in particular from Hong Kong. The revision of the persistency assumptions for Chile and Australia in line with improved experience also enhanced the operating profit. Economic variance reflects the reduction in the risk free yield curve in Chile from 2005.

4. Embedded Value methodology

EV represents the shareholders' interests in the entities included in Global Life as set out in the Group's consolidated IFRS financial statements. EV excludes any value from future new business. Zurich has adopted the methodology for its EV based on the European Embedded Value Principles issued by the CFO Forum in May 2004, selecting a "bottom-up" market consistent approach. The following sets out the principles adopted and definitions used in that approach.

a) Covered business

Covered business includes all business written by companies that are included in Global Life, in particular:

- life and critical illness insurance;
- savings business (with profit, non-profit and unit-linked);
- pensions and annuity business; and,
- long-term health and accident insurance.

For certain smaller companies, no EV has been calculated but these companies have been included in the EV at their shareholders' equity value, as calculated in accordance with IFRS. The contribution from these companies to the EV is approximately 2%.

b) Calculation of Embedded Value

EV presented in this document is derived through calculations which are performed separately for each business unit. Enhanced models to produce market consistent valuations have been developed by each of our life businesses.