Swiss Re

Swiss Re Group's Life and Health business
Embedded value and embedded value earnings for the year ended 31 December 2005

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Introduction

The Swiss Re Group is presenting additional information on its Life and Health operations to that shown in its 2005 published financial statements, which were prepared on a Swiss GAAP basis.

An alternative method of reporting the financial results of the life and health insurance operations of an insurance company is to use an embedded value method. This method is used by a number of life insurance groups and bancassurance groups to provide supplementary information to that shown in their published accounts.

The embedded value is an estimate of the value of shareholders' interests in the life and health insurance operations of Swiss Re, excluding any value attributable to future new business.

Value added by new business and embedded value earnings, which together are equal to the change in the embedded value over the year, after adjustment for any capital movements such as dividends and capital injections, provide a measure of the performance of the life and health insurance operations of an insurance company.

The 2005 embedded value supplementary information has been calculated in accordance with the European Embedded Value ("EEV") principles issued in May 2004 by the European Chief Financial Officers' Forum ("CFO Forum").

Embedded value highlights

CHF millions	2004*	2005
Embedded value	17 059	20 065
Value added by new business	666	283
Embedded value operating profit	1 100	1 519
Embedded value earnings excl. new business	1 335	1 437

* Not restated to EEV methodology. See next section.

Impact of implementing European Embedded Values

In May 2004 the CFO Forum, a group representing 19 major European insurers, issued a set of principles according to which embedded value results should be produced. Swiss Re has adopted these principles in respect of the calculation of its 2005 year-end results.

In order to reflect the implementation of the EEV principles, certain adjustments to methodology and assumptions were made. These changes and the impact on the EV are summarised below:

- The cost of financial options and guarantees has been explicitly calculated using risk neutral stochastic investment scenarios. The previous methodology had a combination of some explicit allowance (CHF 97 million) as well as implicit allowance within the risk discount rate. The net result of these changes was to reduce the embedded value by CHF 378 million.

- The approach taken in determining the risk discount rate has been refined. The approach continues to be "bottom up". However exposure of the in-force business to equity market risk is now taken into account explicitly. At the same time the equity risk premium has been adjusted. The net result of these changes was to increase the embedded value by CHF 539 million.

The net result of the above changes was to increase the opening embedded value as at 1 January 2005 by CHF 161 million.

All of the above impacts were calculated using opening exchange rates.

The 2004 embedded value earnings and value added by new business have not been restated to the revised EEV consistent methodology as the differences are relatively small. Estimates of the impact of the revised methodology on the 2005 EV operating profits are contained in this report.

Further information regarding methodology and assumptions is set out in the appendix.

Coverage

The embedded value results cover all the life and health business written by Swiss Re. This is defined as the "Covered Business". It encompasses :

- all life, health and disability business written through Swiss Re's Life & Health ("L&H") business segment consistent with the primary accounts;
- current and projected future expenses incurred by Swiss Re's L&H business segment on a look through basis; and
- the portion of investment management charges and Group overheads allocated to the L&H business segment consistent with the primary accounts.

Embedded value

The embedded value of Swiss Re's covered business at 31 December 2005 was CHF 20.1 billion, an increase of CHF 3.0 billion since the previous year end.

CHF millions	**2004***	**2005**
Free surplus	1 079	2 134
Required capital	6 648	7 266
Adjusted net worth	7 728	9 400
Value of in-force business	10 758	12 248
Cost of holding required capital	(1 427)	(1 583)
Embedded value	17 059	20 065

* Not restated to EEV methodology.

The time value of financial options and guarantees as at 31 December 2005 included in the value of in-force at that date, was as follows:

GMDB business	CHF 205m
US interest spread business	CHF 102m
Other business **	CHF 49m
Total time value	CHF 356m

** Approximate methods used.

The change in the embedded value over the year is broken down in the table below. The EEV adjustment is the impact on the embedded value of adjusting the methodology and assumptions in order to comply with the EEV Principles and Guidance. This impact has been calculated as at 31 December 2004, and using the exchange rates applicable at that date.

CHF millions	**2004**	**2005**
Opening embedded value	16 003	17 059
EEV adjustment	-	161
Value added by new business	666	283
Embedded value earnings	1 335	1 437
Exchange rate movements	-862	1 910
Capital movements	-83	-785
Closing embedded value	17 059	20 065

Value added by new business and embedded value earnings

The 2004 and 2005 after-tax embedded value earnings of the Covered Business operations of the Swiss Re Group are shown below.

CHF millions	**2004**	**2005**
Value added by new business	666	283
Profit from existing business		
– expected return	783	923
– operating assumption changes	-192	42
– experience variances	187	237
Expected return on shareholders' net worth	322	317
Operating profit	1 100	1 519
Investment variances	250	234
Economic assumption changes	-15	-316
Embedded value earnings excl. new business	1 335	1 437

The 2004 value added by new business and EV earnings have not been restated to the revised EEV compliant methodology as differences are not material. As an indication, the impact of calculating certain components of the 2005 earnings on the previous methodology, using assumptions consistent with the previous methodology, have been estimated: Value added by new business would have been CHF 20 million lower. Expected return from existing business would have been CHF 10 million higher.

The 2005 operating assumptions of positive CHF 42 million relates mainly to mortality assumption changes, partially offset by reserve strengthening for discontinued health lines in the US.

The positive experience variance of CHF 237 million relates mainly to mortality experience.

Embedded value compared to the Group balance sheet

Part of the embedded value of the covered business is already recognised in the Swiss Re Group consolidated balance sheet, for example it includes an asset reflecting the present value of future profits in respect of acquired business.

Valuing the covered business on an embedded value basis recognises additional shareholders' equity of CHF 1 765 million.

CHF millions	2004	2005
Value of in-force business	10 758	12 248
Adjusted net worth	7 728	9 400
Cost of holding solvency capital	-1 427	-1 583
Embedded value	17 059	20 065
Shareholders' equity recognised in the Group balance sheet	-15 457	-18 300
Embedded value not recognised in the balance sheet	1 602	1 765

The shareholders' equity attributed to the Covered Business does not include any allocation of Group long-term debt or goodwill.

Alternative assumptions

The risk adjusted discount rate appropriate to any investor will depend on the investor's own requirements, tax position and perception of risks associated with the realisation of future regulatory profits. In order that potential investors may judge the effect of using other risk adjusted discount rates, and the effect of alternative mortality, morbidity and reinvestment yield assumptions, the estimated sensitivity of the embedded value and the value added by new business to changes in these assumptions is shown below:

CHF millions	**Change in embedded value**	**Change in value added by new business**
Base value – 2005	**20 065**	**283**
Change in risk adjusted discount rate		
- Reduced by 100bps	**1 500**	**90**
- Increased by 100bps	**-1 300**	**-80**
Change in reinvestment rate [1]		
- Reduced by 100bps	**-1 100**	**-90**
- Increased by 100bps	**1 100**	**90**
Equity market shock [2]		
- 10% fall	**-200**	**-10**
Reduce Required Capital to minimum level [3]	**700**	**40**
Reduce Lapse Rates by 10%	**-200**	**10**
Decrease maintenance expenses by 10%	**200**	**20**
Mortality and morbidity rates reduced by 5% [4]		
- Mortality	**2 600**	**100**
- Morbidity	**400**	**10**
Remove all allowance for future mortality improvement [5]	**-3500**	**-170**
Increase mortality improvements to 1% per annum [6]	**2 000**	**90**

In calculating the impact of each of the above alternative assumptions, all of the other assumptions have been left unchanged.

[1]The change in the assumed reinvestment rate illustrates the impact of assuming a 100bps higher/lower return on future investment in fixed interest bonds, and an equivalent increase/decrease in the assumed equity earned rate. No account has been taken of possible future changes in reserving bases which may result from changes in future fixed interest yields. The illustration for new business assumes that all new business cash flows are invested at the alternative rate.

[2] Assumes returns in percentage terms unchanged after the fall.

[3] The minimum required capital is the amount of capital below which the insurer would be in breach of its minimum statutory capital requirements. Most regulators require an insurer to hold capital in excess of this amount.

[4] The assumption is that future mortality/morbidity rates are lower than those assumed in the base calculations, by a uniform 5% in all future years. The related impacts on profit share agreements and changes in premium rates at future renewal dates allow for the current premium rates to be maintained.

[5] In certain territories the projected regulatory profits allow for future gradual improvements in mortality rates. The impact of excluding such future improvements is illustrated here. The related impacts on profit share agreements and changes in premium rates at future renewal dates have been allowed for.

[6] This illustrates the impacts of allowing for a compound 1% pa improvement in mortality rates at all ages throughout the projections, for all life business, in place of the allowance made in the base calculations. The related impact on profit share agreements and changes in premium rates at future renewal dates have been allowed for.

External audit

PricewaterhouseCoopers LLP have carried out an audit of the 2005 Embedded Value and Embedded Value Earnings calculations.

Their full opinion is appended.

11 April 2005

Appendix: Embedded value methodology and assumptions

Embedded value

The embedded value on the covered business is the sum of:

- the value of shareholders' interests in the in-force business (the value in-force), which includes a deduction for the time value of financial options and guarantees,
- the capital required to support the in-force business (the required capital) less a charge for the cost to shareholders of holding the required capital, and
- the free surplus held within the L&H companies.

The adjusted net worth of the covered business is equal to the sum of the free surplus and the required capital on the business.

Value in force

The value of in force is the present value of future profits less a deduction for the time value of financial options and guarantees.

Present value of future after tax regulatory profits

The value of shareholders' interests in the in-force covered business is the present value of the projected stream of future after-tax regulatory profits that are expected to be generated from the policies in-force at the valuation date. This present value is calculated using risk adjusted discount rates consistent with the economic assumptions and which reflect the risks associated with the emergence of distributable earnings not allowed for elsewhere in the calculations.

The projected stream of future after-tax regulatory profits is computed using best estimate assumptions with regard to future mortality, morbidity, lapse rates, maintenance expenses and taxation.

Financial options and guarantees

The cost of all material financial options and guarantees have been taken into account. The most material of these are in respect of:

- Guaranteed minimum death benefits on North American business (GMDB). All of this business is in run-off. Future premiums and sums assured depend on investment market performance and contain guarantees which result in an asymmetric distribution of possible outcomes.

- US interest sensitive business (Universal Life and Deferred Annuity), which incorporates guaranteed minimum crediting rates.

Both the intrinsic and the time value of these options and guarantees are taken into account in the calculation of the value of in-force.

For these products the value of future regulatory profits has been determined using stochastic techniques which project regulatory cash flows under a significant number of stochastic scenarios to determine a stochastic present value of future profits. The stochastic investment scenarios are risk neutral and market consistent. Consistent with that, regulatory profit projections use risk neutral investment assumptions for returns on equities and for future investment in (disinvestment of) fixed interest investments.

The stochastic present value of future profits includes both the intrinsic and the time value of embedded options and guarantees. The time value has been calculated separately for information and disclosure purposes. This is the difference between the stochastic value and a single deterministic value using consistent risk neutral investment assumptions.

The projection models make allowances where appropriate for the effect of expected policyholders' behaviour in different economic scenarios.

There is a partial hedge in place against GMDB downside risk, using long equity put options. The hedge cash flows and market values are taken into account in calculating both the EV and the EV earnings.

Adjusted net worth

The adjusted net worth comprises the required capital plus free surplus. The assets underlying the adjusted net worth are adjusted to reflect their market value.

Required capital

Required capital is the capital the Swiss Re Group allocates to its life and health operations to demonstrate security to its cedants, to satisfy local regulatory solvency requirements and to ensure that overall Group solvency and rating agency requirements are met. This approach generally results in capital well in excess of the minimum local regulatory solvency requirements. The financial impact of this excess is set out in this report in the section dealing with alternative assumptions.

Assets backing required capital may be regarded as being locked-in and are projected to earn an after-tax investment return which is less than the risk adjusted discount rates used in the calculation of the value of in-force business.

The annual charge for the cost to shareholders of maintaining required capital is the difference in the year between the after-tax amount earned on assets supporting required capital and the amount expected in accordance with the risk adjusted discount rate. The charge for the cost to shareholders of holding required capital over the outstanding life of in-force policies is the present value of these annual charges.

Free surplus
The free surplus is the amount of capital and surplus allocated to, but not required to support, the in-force covered business.

No free surplus is allocated to the life and health insurance operations in the composite insurance companies.

Value added by new business

The value added by new business is defined as the value added to shareholders' interests by new business written during the year, after an allowance for the cost of holding required capital, using closing assumptions and including the value added between the point of sale and the end of the year.

New business includes: new individual business cessions in the year, new group schemes and increments to existing group schemes, new blocks of Admin Re^{SM} business and new cessions in the year on any Admin Re^{SM} blocks still open to new business, and the full value of business that is subject to active annual renewal (e.g. annual stop-loss covers). This is unchanged from 2004.

The value added by new business is calculated at year-end and includes the statutory cash flows generated by the business during the year.

Embedded value earnings

Embedded value earnings are defined as the change in the embedded value over the year after adjustment for any capital movements and excluding value added by new business. Consistent with the end of year values these earnings are after-tax.

For the life and health insurance companies, capital movements comprise dividends paid and other capital movements between the life and health insurance companies and the ultimate holding company of the Swiss Re Group. For composite insurance companies, capital movements comprise: life and health regulatory profits arising during the year; changes in required capital and allocated investment returns on required capital in the year; and other relevant capital movements between the composite insurance companies and the ultimate holding company of the Swiss Re Group.

Embedded value earnings comprises the following components, the first two of which in aggregate are referred to as operating profit:

- the profit to shareholders from the existing business equal to:
  - the expected return on the value of the shareholders' interests in the in-force business, including allowance for the cost of holding required capital,
  - current year experience variances caused by the differences between the actual experience during the year and the expected experience, based on the year end operating assumptions,
  - the impact of changes in the assumptions for future operating experience;
- the expected investment return on the shareholders' net worth, based upon the year end economic assumptions;
- investment variances caused by differences between the actual or, in the case of composite insurance companies, the allocated investment return in the year and the expected experience, based on the year end economic assumptions;
- the impact of changes in economic assumptions in the year (e.g. changes in discount rates and future investment rates).

The effect of currency exchange movements is generally not included as a component of embedded value earnings and is instead shown separately as a movement in embedded value. There are some exceptions involving business written in minor currencies where exchange effects are included in embedded value earnings as part of experience variances. This treatment is consistent with the Swiss Re Group accounting policies.

Expenses

All expenses incurred during the year are included in the embedded value earnings.

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

Acquisition expenses relating to Admin Re[SM] business are allocated in proportion to the amount of capital invested, averaged over a period. Differences in a particular year resulting from this approach are included in current year in-force earnings as experience variances.

Post-Retirement benefit costs

The full cost of post retirement benefits has been taken into account, including any deficits and/or surpluses in any underlying Funds. The costs are based on those calculated for inclusion in the Group's primary accounts. Allocations to the Covered Business are consistent with the allocations used for the L&H segment of the primary accounts.

Securitisation

In 2005 Swiss Re securitised the future profits being generated by several blocks of in-force life policies. The impact of these securitisations on the current year and future projected regulatory profits has been taken into account in calculating the embedded value and embedded value earnings. The impact of the 2005 securitisations (Queensgate and ALPS) on the EV earnings are not material. The main impact other than in the composite insurance companies was a transfer of value of in-force (VIF) to adjusted net worth.

Assumptions - General

The embedded value method, in common with any valuation method based on projections about the future, involves judgement when establishing the assumptions to be used. The Swiss Re Group actively and carefully reviews assumptions, selecting those which are considered to be appropriate and seeking consistency among operations, whilst reflecting local business portfolios, experience and market environments.

Assumptions such as mortality, morbidity, lapse rates and maintenance expenses are chosen to reflect recent and expected future experience.

Regulatory technical provisions have been projected using current methods except where it is known that these will change. In certain territories the projected regulatory profits allow for future gradual improvements in mortality rates, together with the related impact on regulatory technical provisions, profit share agreements and changes in non-guaranteed premium rates at future renewal dates.

Projected tax has been allowed for on the basis that applies to each legal entity within the Swiss Re Group. Current tax legislation and rates have been assumed to continue unaltered, except where changes in future tax rates or bases have been announced. Appropriate allowance has been made for accrued tax losses and other tax assets.

Economic assumptions - General

The investment return assumptions used for life and health insurance companies are consistent with the asset valuation basis used in the regulatory accounts of those companies. In the case of composite insurance companies, the asset allocations and investment return assumptions used are consistent with investment return allocations underlying the regulatory accounts for their life and health insurance business. There is no allocation in the regulatory accounts for the investment return on required capital, so for the purposes of the embedded value and embedded value earnings calculations, a combination of government and corporate bonds and equities is assumed to be hypothecated to cover required capital in the composites, and the allocated investment return on assets backing required capital is based on the actual performance of these asset classes.

Economic assumptions - Risk discount rate

Future shareholder profits or losses generated by the in-force business have been discounted at the risk adjusted discount rate ("RDR"). Swiss Re calculates the RDR using a bottom up approach which is set separately for each major currency. The RDR is equal to the sum of:

- the risk free rate, based on yield to maturity on 10 year benchmark government fixed income security. The risk free rate is adjusted to allow for the average duration of profit emergence in certain cases (e.g. 15 years for Canada).

- an addition of 0.35% to allow for the non-diversifiable risk, within the projected future after-tax regulatory profits, associated with exposure to equity markets. This reflects a Beta of 10% in respect of the future regulatory profits of in-force Covered business and an equity risk premium of 3.5%. This applies to the restatement of the 2004 closing embedded value as well as to the 2005 closing embedded value. The low level of Beta reflects the predominance of non-economic risks (such as mortality and morbidity) within the policies reinsured by Swiss Re, and the low equity holdings backing adjusted net worth. The non-diversifiable equity risk within the GMDB products is not taken into account as that risk is taken into account explicitly elsewhere in the calculations (refer to Financial Options and Guarantees sub-section above).

- a 2.5% points margin judged to be appropriate for the additional capital costs required to cover insurance risks, agency costs, and the illiquidity of the profit streams.

The principal economic assumptions are listed below for the major currencies.

	Euro %	UK %	USA %	Canada %
Risk adjusted discount rate				
2005	6.1	7.0	7.3	7.0
2004[1]	6.5	7.4	7.1	7.5
Risk free rate[2]				
2005	3.3	4.1	4.4	4.2
2004	3.7	4.6	4.2	4.4
Fixed interest reinvestment rate (pre-tax)				
2005	3.5	4.1	5.3	4.7
2004	4.0	4.6	5.5	5.5

Equity rate of return assumed to be equal to risk free plus 350 basis points.

[1] Based on revised EEV compliant methodology

[2] Based on 10 year government bonds.

For products with significant financial options and guarantees the above fixed interest reinvestment rates and equity return assumptions are not used. Instead returns consistent with risk neutral stochastic scenarios are used. These scenarios are based on the term structure of risk free rates and market consistent volatilities at the date of calculation and the following volatility assumptions.

Exchange rates

The embedded value is calculated using closing exchange rates. Value added by new business and embedded value earnings are calculated using the average exchange rate over the previous year.

The key exchange rates used in embedded value results are shown in the table below:

CHF per 1 unit of:	**EUR**	**GBP**	**USD**	**CAD**
2004 Closing FX	1.55	2.18	1.14	0.95
2005 Average FX	1.55	2.26	1.24	1.03
2005 Closing FX	1.55	2.26	1.32	1.13

Reinsurance business and data

In common with other reinsurance groups, the business written by Swiss Re Group is more diverse than that written by most primary insurance companies. In addition, in calculating the EV, valued added by new business and EV earnings, less data is usually available than is the case for primary insurance companies and this data is sometimes not available when the financial statements and embedded value calculations are finalised. This means that more estimates must be made in calculating the embedded value and embedded value earnings (including the value added by new business) than is the case for primary insurance companies and that more approximate methods are used where the data does not support full projections of regulatory profits. Consequently, the results should be regarded as less precise than those of some primary insurance groups.