

somewhat
different

Market Consistent Embedded Value
2008

hannover re[®]

Market Consistent Embedded Value (MCEV) 2008

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Introduction

Hannover Rückversicherung AG (Hannover Re) is a member of the CFO Forum and first disclosed EEV results for the financial year 2005. For the year 2006 the methodology was further refined in order to be market consistent. The 2008 MCEV disclosure complies with the European Insurance CFO Forum Market Consistent Embedded Value Principles[©] (MCEV Principles) published in June 2008. In particular, the reference rates have been set equal to the swap yield curves without any adjustments. The main change in methodology is the introduction of the Cost of Residual Non Hedgeable Risks (CoRNHR) determined using a cost of capital approach. Furthermore, the Required Capital (RC) reflects not only the minimum local solvency capital, but includes additional amounts to meet internal objectives. Notwithstanding the MCEV Principles the disclosure does not include a group MCEV.

The majority of the treaties written by Hannover Re do not contain any significant financial options or guarantees (FOGs). The time value of options and guarantees for a few treaties originating from the US has been determined using stochastic projections. The fixed interest and equity volatilities for the stochastic projections are based on market implied volatilities. A stochastic approach was not necessary in respect of other treaties with interest guarantees as the liabilities are backed by matching assets, and the remaining FOGs were not material. A small amount of FOGs from the South African subsidiary was estimated using deterministic sensitivities.

All the amounts in the results tables are shown in million EUR rounded to one decimal place. Small differences may therefore appear between the totals and the sum of the individual amounts.

The Directors of Hannover Re acknowledge their responsibility for the preparation of the supplementary information in accordance with the MCEV Principles.

B&W Deloitte GmbH, actuaries and consultants, has been engaged to review the MCEV results. The scope and conclusions of this review are shown at the end of the document.

The MCEV disclosure should not be viewed as a substitute for Hannover Re's primary financial statements.

1. Covered Business

The business covered includes the business reported in the Life & Health Segment of Hannover Re's (Hannover Life Re or HLR) published financial statements with the exception of a small portion of business which was historically assigned to companies outside the Life & Health business centres.

This disclosure document generally shows total results as well as a breakdown for the Domestic and Foreign Operations.

The Domestic Operations include the business written directly by Hannover Rückversicherung AG and E+S Rückversicherung AG in Hannover and also the business written by the branches in Paris, Stockholm, Kuala Lumpur and Hong Kong as well as by the new branches in Seoul and Shanghai. Due to our strategic direction the business written by the life segment of the subsidiary Hannover ReTakaful in Bahrain was included also under Domestic Operations. As at year end 2008 the business volume of Bahrain was relatively small. Therefore Bahrain has been included 'at equity' in the MCEV 2008. Business retroceded by the Foreign Operations to Hannover Re is also included under Domestic Operations.

The Foreign Operations include the life reinsurance subsidiaries of Hannover Re in the UK, Ireland, the United States, South Africa, Australia and Bermuda. HLR Bermuda was founded in 2007 but included in the 2007 EEV disclosure 'at equity' because the level of new business was not significant. The new business has increased substantially in 2008 and the 2008 MCEV results have been determined for HLR Bermuda.

Hannover Life Re writes the following lines of business: Individual Life and Group Life, Unit Linked as well as conventional business, Standard, Impaired and Enhanced Annuities; Disability Income, Critical Illness, Long-Term Care, Medical Supplement, Medicare, and Special (Personal Accident) Risks.

All the values shown in the disclosure are net of intra group and external retrocessions. In the case of intra group retrocessions, this means that the retroceded business is excluded by the ceding company and included by the receiving company. The values shown are post tax and before or after minority interests as stated. Consistent with the internal management of the business most of the results in the disclosure are shown before the deduction of the minority interests.

The consolidated results allow for the elimination of the book values of the Foreign Operations for which an MCEV has been determined.

All formulae, abbreviations and notations are provided in the Appendix.

2. Market Consistent Embedded Value 2008 and its Components

2.1. Highlights 2008

The following table shows the MCEV performance in 2008, the excellent Value of New Business as well as the New Business Margin.

Table 1: Highlights MCEV 2008 (Before Minorities)

In EUR million or percent	2008			2007	
	Before Consolidation			After Consol. ¹⁾	After Consol. ¹⁾
	Domestic Operations	Foreign Operations	Total	Total	Total
MCEV	1,560.3	861.3	2,421.6	1,652.0	1,715.1
Return on MCEV ²⁾			4.4%	6.0%	20.1%
Value of New Business	82.2	68.3	150.5	150.5	106.4
New Business Margin	2.1%	2.9%	2.4%	2.4%	3.2%

1) The book values of the subsidiaries that have determined MCEV results have been eliminated

2) Excluding changes in currency exchange rates

In spite of the current capital market situation the key MCEV performance indicators show a moderate development in comparison to the 2007 results:

- The MCEV decreased by 3.7% due to:
 - The dividend for 2007 paid in 2008;
 - The impact of currency exchange rates;
 - The decrease of PVFP due to lower interest rates which have a negative impact on the Foreign Operations because the assets backing the reserves are not always deposited with the ceding companies;
 - The increase in FOGs resulting from the lower interest rates, higher credit spreads and higher interest rate volatility;
 - Higher Frictional Costs of Required Capital due to higher amounts of Required Capital
- Return on MCEV before the change in currency exchange rates but after the opening adjustments (as shown in the analysis of change) decreased from 20.1% to 6.0%
- Value of New Business increased by 41.4% due to higher new business volumes
- The New Business Margin decreased from 3.2% to 2.4% due to two one-off effects in 2007 which were reported in the 2007 EEV disclosure.

2.2. MCEV 2007 and MCEV 2008

Table 2 below shows the elements of the MCEV as well as the MCEV before and after consolidation adjustments.

Table 2: MCEV 2008 and MCEV 2007 (Before Minorities)

In EUR million	2008			2007		
	Domestic Operations	Foreign Operations	Total	Domestic Operations	Foreign Operations	Total
Free Surplus	280.9	244.1	525.0	381.7	400.3	782.0
Required Capital ¹⁾	567.4	425.0	992.4	461.5	245.8	707.3
SNW	848.3	669.1	1,517.3	843.3	646.1	1,489.4
PVFP	860.6	385.0	1,245.6	794.6	503.3	1,298.0
CoRNHR	120.4	131.9	252.4	128.9	129.3	258.2
FOGs	5.0	36.6	41.6	0.3	6.1	6.5
FCoRC	23.1	24.3	47.4	20.5	18.2	38.7
VIF	712.1	192.2	904.2	644.9	349.7	994.5
MCEV	1,560.3	861.3	2,421.6	1,488.1	995.8	2,483.9
Consol. ²⁾			-769.5			-768.8
MCEV after Consol.			1,652.0			1,715.1

1) Sum of local required capital before allowing for diversification between the entities of HLR

2) Book values of the subsidiaries that have determined MCEV results

The MCEV 2008 after consolidation and minorities is EUR 1,482.1 million (MCEV 2007 EUR 1,540.0 million).

2.3. VIF 2008 Breakdown

The following table shows the breakdown of the VIF between Life, Annuity and Health/ Personal Accident (PA) business.

Table 3: VIF (Before Minorities)

In EUR million	Domestic Operations	Foreign Operations	Total
Life	639.0	226.1	865.2
Annuity	52.4	7.7	60.1
Health / Personal Accident	20.6	-41.6	-21.0
Total	712.1	192.2	904.2

The major product lines shown above include a wide variety of different reinsurance contracts. The negative VIF for Health / PA under Foreign Operations is caused by the very low reference rates.

As well as differentiating the business by the type of risk covered, it is also possible to distinguish between treaties that only provide risk cover and those that include financing to cover the ceding companies' acquisition expenses or to purchase blocks of business. The VIF for treaties providing risk cover and financing is shown in the following table:

Table 4: VIF (Before Minorities)

In EUR million	Domestic Operations	Foreign Operations	Total
Risk Treaties	204.7	125.6	330.4
Financing Treaties	507.3	66.5	573.9
Total	712.1	192.2	904.2

2.4. Financial Options and Guarantees, Look Through and Pension Deficits

– Financial Options and Guarantees (FOGs)

All the significant FOGs in Hannover Life Re's portfolio originate from the US market and are mainly due to guarantees under interest sensitive products. The value of FOGs shown for the Domestic Operations is mainly due to retrocessions from the US subsidiary to Hannover Re. New in the year 2008 is a small amount of FOGs from the South African subsidiary, which is 100% retroceded to Hannover Re. The other treaties with interest guarantees either have assets matching the liabilities (e.g. impaired life annuities in the UK) or are not material (e.g. Italian financing treaties covering participating business).

Table 5: Time Value of Financial Options and Guarantees (Before Minorities)

In EUR million	Domestic Operations	Foreign Operations	Total	in % of MCEV
FOGs 2007	0.3	6.1	6.5	0.4
FOGs 2008	5.0	36.6	41.6	2.5

The FOGs have increased significantly due to lower interest rates and higher volatilities of interest rates and equity. Furthermore, the modelling of credit spreads has been improved to take account of the increase in credit spreads during 2008.

Participating Business

Hannover Life Re has a few reinsurance treaties where the returns to the reinsurer are dependent on a profit participation in the underlying products. The gross written premium and the contribution to the VIF of these treaties are not material. The profit participation elements have, therefore, not been modelled explicitly.

- **Look Through**
The level of services provided to the operating companies by service companies within Hannover Re is not material. Consequently, the MCEV calculations do not explicitly allow for the profits generated within such service companies.
- **Pension Deficits**
Pension liabilities for the majority of the pension obligations are based on defined contribution plans or reinsured outside of the group. Pension Deficits only arise from a small part of the pension liabilities for the Domestic Operations and the subsidiary in Australia. They are determined as the difference between the respective IFRS and statutory pension liability.

Table 6: Pension Deficits in EUR million (Before Minorities)

31 December 2008	31 December 2007
2.6	0.2

3. New Business

3.1. Value of New Business

The following table shows the Value of New Business (VNB) for the year 2008.

Table 7: Value of New Business (Before Minorities)

In EUR million	Domestic Operations	Foreign Operations	Total
Profit/Loss on New Business during year	-100.7	-36.5	-137.1
PVNB	214.4	145.0	359.3
FCoRC	5.0	5.1	10.0
CoRNHR	25.7	35.2	60.8
FOGs	0.9	0.0	0.9
Value of New Business	82.2	68.3	150.5

The Value of New Business after minorities is EUR 146.2 million.

The Value of New Business (before minorities) has increased by EUR 44.1 million from EUR 106.4 million in 2007 to EUR 150.5 million in 2008.

The VNB for the Domestic Operation has once again increased. This is mainly caused by the retroceded new business from the subsidiary in the United States as well as the directly written business in Germany, the UK and the business written by the branches. Due to a higher level of

financing business the loss on new business during the year increased to EUR -100.7 million (2007: EUR -70.2 million). Some of these treaties were included in the 'L7' securitisation transaction that was carried out in the 4th quarter of 2008.

The overall VNB for the Foreign Operations has more than doubled from EUR 32.3 million in 2007 to EUR 68.3 million in 2008. This excellent result was mainly due to the business written by the subsidiaries in Ireland and Bermuda. The loss on new business during the year is EUR - 36.5 million, whereas in 2007 a profit of EUR 4.7 million was shown. The positive last year's result was caused by two one-off effects described in the 2007 disclosure.

3.2. New Business Margins

The following table displays the New Business Margins as a proportion of Present Value of New Business Premium (PVNBP) and Annual Premium Equivalent.

Table 8: New Business Margins (Before Minorities)

In EUR million and percent	Domestic Operations	Foreign Operations	Total
VNB (Basic)	82.2	68.3	150.5
New Business Premium in 2008	1,094.4	697.2	1,791.6
PVNBP	2,833.2	1,665.4	4,498.5
New Business Regular Premium	666.5	661.8	1,328.3
New Business Single Premium	427.9	35.4	463.3
New Business Margin¹⁾	2.1%	2.9%	2.4%
Annual Premium Equivalent Margin¹⁾	11.6%	10.3%	10.9%

1) The statutory accounting basis in Bermuda and Ireland is similar to IFRS, i.e. deposit account treaties are shown with zero premium (i.e. the PVNBP is nil). This has a positive impact on the New Business Margin for the Foreign Operations.

The new business margins continue to reflect our policy of writing high quality business and exceed the 2006 results. The higher 2007 margins were caused by one-off effects described in the last year's disclosure.

The margins after minorities are 2.4% (New Business Margin) and 11.1% (Annual Premium Equivalent Margin).

4. Analysis of Earnings

The Analysis of Earnings of the MCEV 2007 to the MCEV 2008 consists of the following elements:

Table 9: Analysis of Earnings (Before Minorities)

In EUR million	Earnings on MCEV analysis				
	Before Consolidation				After Consol.
	Free Surplus	Required Capital	VIF	MCEV	MCEV
Opening MCEV	782.0	707.3	994.5	2,483.9	1,715.1
Opening adjustments	-294.3	129.3	33.5	-131.5	-131.5
Dividend Payments	-165.0	0.0	0.0	-165.0	-165.0
Transfer to MCEV Principles	-129.3	129.3	33.5	33.5	33.5
Adjusted opening MCEV	487.7	836.7	1,028.1	2,352.4	1,583.7
New business value	-359.9	222.7	287.6	150.5	150.5
Expected existing business contribution (reference rate)	18.5	30.3	86.8	135.6	99.5
Expected existing business contribution (in excess of reference rate)	0.7	1.4	6.7	8.7	7.0
Transfers from VIF and required capital to free surplus	311.1	-61.2	-249.9	0.0	0.0
Experience variance	-25.3	0.2	-44.6	-69.7	-69.7
Assumption changes	-10.0	0.9	0.7	-8.4	-8.4
Other operating variance	0.0	0.0	-6.6	-6.6	-6.6
Operating MCEV earnings	-64.9	194.3	80.9	210.3	172.4
Economic variances	20.7	0.0	-126.6	-106.0	-78.1
Other non operating variances	3.5	-3.5	0.3	0.3	0.3
Total MCEV earnings	-40.7	190.8	-45.5	104.6	94.6
Closing adjustments	78.0	-35.1	-78.3	-35.5	-26.2
Capital Injection	88.6	0.0	0.0	88.6	88.6
Dividend Payments	-9.0	0.0	0.0	-9.0	0.0
Change in currency exchange rate	-1.6	-35.1	-78.3	-115.1	-114.8
Closing MCEV	525.0	992.4	904.2	2,421.6	1,652.0

Opening adjustments

- Dividend Payments
The Life & Health Segment share of the dividend payments to Hannover Re shareholders in 2008 is shown under Dividend Payments.
- Transfer to MCEV Principles
The level of Required Capital has increased for some subsidiaries due to the move to the MCEV Principles. Details are provided in the section 'Methodology'. The Free Surplus (FS) decreased by the same amount.
The increase in VIF is mainly caused by the decrease in CoRNHR in comparison to the Cost of Non Financial Risks under the 2007 methodology. The new methodology more appropriately reflects the non hedgeable risks. Furthermore, the models for the American subsidiary have been amended to allow for future cost of insurance increases (i.e. an increase to the premiums for the risk covers) to mitigate the negative results in some of the stochastic projections.

Expected existing business contribution

- At the reference rate
This includes the unwinding for one year of the discount rates (i.e. the reference rates) in respect of the VIF and includes a release from risk for the FOGs and the CoRNHR. The expected contribution on the Free Surplus and the Required Capital is equal to the reference rates less tax and investment management expenses on these amounts.
- In excess of reference rate
This reflects the management's best estimate of the expected investment returns in the year to the valuation date.

Experience variances

- The negative experience variances for the Domestic Operations can mainly be explained by the increase in administration expenses and a delay in planned amortisation under financing treaties written in Australia and New Zealand.
- The negative experience variances for the Foreign Operations mainly arise from the subsidiaries in US und Ireland. In the US the administration expenses were higher than expected. The subsidiary in Ireland experienced higher lapse rates and mortality rates under a few treaties and higher administration expenses.

Assumption changes

The assumption changes are mainly driven by the higher administration expense assumptions for the Domestic Operations and change to the mortality assumptions for the South African subsidiary. The negative impact on the free surplus is due to changes to the reserving bases in the UK.

Economic variances

For Domestic Operations the assets backing most of the liabilities are deposited back with the ceding companies and this means that Hannover Life Re is not subject to asset risks on the bulk of its assets. Besides the low impact on SNW this yields also to the effect that the reduction of interest rates yields to an increase in PVFP due to lower discount rates.

Under Foreign Operations the negative effect of lower future investment income exceeds the positive effect of lower discount rates.

The reduction in the reference rates over the year leads to an increase in the unrealised gains but this is offset by the increase in credit spreads. The FOGs increase due to lower interest rates and higher interest rate and equity volatilities.

Closing adjustments

- Capital Injection
This is the sum of the change in intra company Bridge Financing and the allowance for Surplus Notes in the MCEV of the American subsidiary (see Appendix I).
- Dividend Payments
The dividends paid by the Australian subsidiary to Hannover Re. This effect is nil after consolidation.
- Change in Currency Exchange Rates
The EURO has strengthened during 2008 relative to all the important currencies with the exception of the US dollar.

5. Sensitivities

5.1. Sensitivities of MCEV

The following table shows the sensitivity of the MCEV to changes in specified economic and non-economic assumptions. The sensitivities are described in the Appendix. The sensitivity deviations are shown in percent of the basic values.

Table 10: Sensitivities of the MCEV (Before Minorities)

In EUR million or percent	Before Consolidation			After Consol.
	Domestic Operations	Foreign Operations	Total	Total
MCEV (Basic)	1,560.3	861.3	2,421.6	1,652.0
Sensitivities to Economic Assumptions				
Interest Rate environment + 100 bps	- 2.4%	+ 5.7%	+ 0.5%	+ 0.8%
Interest Rate environment - 100 bps	+ 2.9%	- 6.0%	- 0.3%	- 0.4%
Swaption implied volatilities + 25%	- 0.1%	- 2.0%	- 0.8%	- 1.1%
Sensitivities to Non Economic Assumptions				
Expenses - 10%	+ 1.1%	+ 1.2%	+ 1.1%	+ 1.6%
Lapse + 10%	- 0.7%	+ 3.0%	+ 0.6%	+ 0.9%
Lapse - 10%	0.0%	- 4.0%	- 1.4%	- 2.1%
Mortality/Morbidity + 5%	- 8.2%	- 12.2%	- 9.6%	- 14.1%
Mort./Morb.+ 5%, Life/Disab. Bus. only	- 8.8%	- 12.8%	- 10.2%	- 15.0%
Mort./Morb.+ 5%, Annuity Bus. only	+ 0.7%	+ 0.6%	+ 0.6%	+ 0.9%
Mortality/Morbidity – 5%	+ 9.7%	+ 19.5%	+ 13.2%	+ 19.3%
Mort./Morb.– 5%, Life/Disab. Bus. only	+ 10.4%	+ 20.1%	+ 13.8%	+ 20.3%
Mort./Morb.– 5%, Annuity Bus. only	- 0.7%	- 0.6%	- 0.7%	- 1.0%
Required Capital				
RC = Minimum Solvency Capital	0.0%	+ 0.9%	+ 0.3%	+ 0.4%

Only non symmetric sensitivities are shown in both directions.

The sensitivities increase as a result of the consolidation adjustments because the book values of the subsidiaries are removed from the base value.

The sensitivities for mortality and morbidity indicate that the business benefits from the diversification between financing and risk treaties. The impact of this sensitivity is lower within the Domestic Operations due to a larger proportion of financing business. Nevertheless this sensitivity has a higher impact than last year. For the Domestic Operations this is mainly caused by a higher portion of risk treaties as well as improvements to the modelling of administration expenses. The increase for the Foreign Operations is mainly caused by a large new treaty written by the subsidiary in US which is sensitive to changes in the mortality assumptions.

Due to the structure of our investment portfolio the sensitivity 'Equity/Property market values +/- 10%' as well as 'Equity/Property implied volatility +25%' has no impact on the MCEV and is therefore not shown.

5.2. Sensitivities of Value of New Business

Sensitivities have also been calculated for the Value of New Business. The sensitivity deviations are shown in percent of the basic values.

Table 11: Sensitivities of Value of New Business (Before Minorities)

In EUR million or percent	Domestic Operations	Foreign Operations	Total
VNB (Basic)	82.2	68.3	150.5
Sensitivities to Economic Assumptions			
Interest Rate environment + 100 bps	- 5.1%	+ 45.4%	+ 17.8%
Interest Rate environment - 100 bps	+ 7.2%	- 55.2%	- 21.1%
Swaption implied volatilities + 25%	0.0%	0.0%	0.0%
Sensitivities to Non Economic Assumptions			
Expenses - 10%	+ 4.0%	+ 2.5%	+ 3.4%
Lapse + 10%	- 8.5%	+ 9.9%	- 0.2%
Lapse - 10%	+ 8.5%	- 20.7%	- 4.8%
Mortality/Morbidity + 5%	- 17.8%	- 40.9%	- 28.3%
Mort./Morb.+ 5%, Life/Disab. Bus. only	- 21.5%	- 46.0%	- 32.6%
Mort./Morb.+ 5%, Annuity Bus. only	+ 5.4%	+ 4.1%	+ 4.8%
Mortality/Morbidity – 5%	+ 24.2%	+ 48.0%	+ 35.0%
Mort./Morb.– 5%, Life/Disab. Bus. only	+ 28.9%	+ 52.3%	+ 39.5%
Mort./Morb.– 5%, Annuity Bus. only	- 5.5%	- 4.3%	- 5.0%
Required Capital			
RC = Minimum Solvency Capital	0.0%	+ 2.3%	+ 1.0%

6. Reconciliation of IFRS Equity to MCEV / Embedded Value not Recognised

Life & Health reinsurance business is actively written by Hannover Re, E+S Re and the life reinsurance subsidiaries of Hannover Re. The consolidated MCEV is derived from the business written by these companies.

The Life & Health Segment IFRS equity excluded from the consolidated MCEV is defined as 'IFRS equity outside'. The IFRS equity of Hannover Life Re is derived by deducting the IFRS equity outside from the IFRS equity of the Life & Health Segment. The respective values are shown below in EUR million:

IFRS equity	728.2 (2008)	776.8 (2007)
IFRS equity outside	13.6 (2008)	11.5 (2007)

Hannover Life Re specialised in writing, and continues to write, reinsurance financing business. The acquisition of large volumes of financing business is only possible due to the financial support provided by the P&C Segment of Hannover Re. Within the segmental reporting this historic financing is shown as an inter-segmental liability from the Life & Health Segment to the P&C Segment ('**Bridge Financing**'). The impact of Bridge Financing on the Hannover Re Group balance sheet is neutral as the liability for the Life & Health Segment and the asset for the P&C Segment cancel each other out. The Bridge Financing is EUR 700.6 million (2008) and EUR 643.3 million (2007).

Table 12 shows the reconciliation of the IFRS equity for the Life & Health Segment to the MCEV. The **Embedded Value not Recognised (EVNR)** quantifies the difference between the MCEV and the Adjusted IFRS equity.

Table 12: Reconciliation and EVNR (After Consolidation, Before Minorities)

In EUR million	31 Dec 2008	31 Dec 2007
IFRS Equity	728.2	776.8
IFRS equity outside	-13.6	-11.5
Intra Company Surplus Notes	-58.6	-41.1
Bridge Financing	700.6	643.3
Adjusted IFRS Equity	1,356.5	1,367.5
Valuation Differences	-576.4	-640.7
VIF	904.2	994.5
Other Adjustments	-32.3	-6.3
EVNR	295.5	347.6
MCEV	1,652.0	1,715.1

7. Assumptions

7.1. Economic Assumptions

7.1.1. Swap Rates

The reference rates have been calibrated to the swap curves as shown below. A risk neutral approach has been applied and all asset classes are assumed to yield the reference rates.

Table 13: Swap Yield Curves as at 31 December 2008

In %	EUR	USD	GBP	AUD	ZAR
1 Year	3.05	1.27	1.99	3.25	9.01
2 Years	2.68	1.47	2.60	3.51	8.25
3 Years	2.96	1.73	2.88	3.85	8.00
4 Years	3.12	1.96	3.06	4.18	7.93
5 Years	3.25	2.11	3.16	4.25	7.85
6 Years	3.36	2.24	3.23	4.28	7.82
7 Years	3.48	2.37	3.31	4.31	7.78
8 Years	3.57	2.45	3.36	4.32	7.75
9 Years	3.65	2.52	3.40	4.32	7.72
10 Years	3.74	2.60	3.45	4.33	7.69
20 Years	3.88	2.81	3.60	3.77	6.94
30 Years	3.57	2.77	3.32	3.05	6.59

For the EEV 2007 the following swap rates were used.

Table 14: Swap Yield Curves as at 31 December 2007

In %	EUR	USD	GBP	AUD	ZAR
1 Year	4.70	4.06	5.56	7.48	11.20
2 Years	4.53	3.80	5.21	7.55	10.77
3 Years	4.50	3.90	5.14	7.59	10.31
4 Years	4.54	4.04	5.11	7.58	9.98
5 Years	4.56	4.17	5.09	7.52	9.74
6 Years	4.58	4.30	5.08	7.46	9.57
7 Years	4.61	4.42	5.06	7.36	9.46
8 Years	4.65	4.51	5.05	7.33	9.35
9 Years	4.68	4.59	5.03	7.27	9.25
10 Years	4.72	4.66	5.02	7.18	9.17
20 Years	4.91	4.97	4.81	6.93	8.43
30 Years	4.89	5.01	4.65	6.71	8.02

7.1.2. Volatilities

Hannover Life Re's portfolio has FOGs in the US. The economic scenarios for calculating these FOGs were generated using the Libor Market Model with 1,000 scenarios. Due to time constraints the FOGs as at year end 2008 were calculated based on volatilities and the US swap yield curve as at 30 November 2008. The change in US volatilities and swap rates between 30 November 2008 and 31 December 2008 was not deemed to necessitate an adjustment to the results.

The economic scenarios were calibrated using the following swaption implied volatilities.

Table 15: US Dollar swaption volatilities (30 November 2008)

In %	Swap Term (years)										
Option Period (years)	1	2	3	4	5	7	10	15	20	25	30
1	69.5	63.3	58.1	54.4	52.7	50.1	48.8	50.0	51.2	52.4	52.4
2	53.6	49.1	46.1	44.8	44.2	43.4	43.3	44.4	45.1	45.4	45.6
3	43.3	41.0	40.4	40.2	40.3	40.2	40.7	42.0	42.6	43.1	42.9
4	36.7	36.8	37.0	37.2	37.5	37.7	38.4	39.8	39.9	40.7	40.3
5	35.0	35.2	35.3	35.5	35.6	36.1	36.9	37.8	38.0	38.1	37.9
7	31.3	31.9	32.3	32.8	33.4	34.0	34.3	34.6	34.3	34.8	34.5
10	29.1	29.8	30.4	30.7	30.8	31.6	30.9	31.1	29.9	30.1	29.8
15	30.0	30.8	30.4	30.6	31.0	30.5	29.4	28.4	27.8	27.6	29.6
20	28.3	28.1	27.6	28.1	28.2	27.4	26.8	25.9	25.6	25.6	25.8
25	25.9	25.9	26.2	26.4	26.6	26.2	25.5	24.2	24.3	24.5	22.9
30	25.1	25.1	25.2	25.4	25.6	25.3	25.9	25.8	24.3	25.2	24.6

The FOGs for the MCEV 2007 were calculated based on volatilities as at 30 September 2007 (20 year swap term) as shown in the following table. The result was adjusted to reflect the change in the market between 30 September 2007 and 31 December 2007.

Table 16: US Dollar swaption volatilities (30 September 2007)

In %	Swap Term (years)
Option Period (years)	20
1	15.9
2	15.3
3	14.9
4	14.6
5	14.2
7	13.4
10	12.3
20	11.6
30	10.6

7.1.3. Currency Exchange Rates

Table 17: Equivalent in EUR of 1 unit of the original currency

	USD	GBP	AUD	ZAR
2008	0.71546	1.04167	0.49366	0.07593
2007	0.67953	1.36129	0.59613	0.09970

7.1.4. Credit Risk on Assets

The credit risk on assets is reflected in the initial market value of the assets. All assets are then assumed to earn risk free returns. Credit defaults are modelled explicitly in the stochastic models and calibrated to the spreads at 30 November 2008.

7.1.5. Counterparty Risk

Counterparty Risk under the reinsurance treaties is reflected within the Cost of Residual Non Hedgeable Risks. These risks mainly reflect the possible loss of unamortised initial financing should the ceding company become insolvent.

7.1.6. Tax

The currently applicable average tax rates are:

Table 18: Tax Rates in percentage

Germany	UK	US	Ireland	Australia
31.93	28.00	33.60	12.50	30.00
South Africa	France	Sweden	Hong Kong	Malaysia
36.37	34.38	28.00	16.50	26.00

The projections allow for tax losses carried forward. For Bermuda the tax rate equals zero.

7.2. Non-Economic Assumptions

7.2.1. Cost of Residual Non Hedgeable Risks

The cost of capital approach is described in section 'Methodology'. The capital charge was set to 4.5% and the required capital was determined at the 99.5% confidence level.

7.2.2. Mortality Improvements

Mortality improvements under products covering death benefits have been assumed within the Foreign Operations mainly for certain reinsurance treaties covering UK term assurances.

7.3. Expenses

The total actual administration expenses for the year 2008 have been taken into account in deriving the expense assumptions. The expenses have been allocated to the treaties and projected into the future allowing for expense inflation.

Appendix

I. Methodology

Hannover Re has adopted the MCEV Principles. The embedded value calculations are performed using market consistent economic assumptions. Investment returns for all asset classes are assumed to be equal to the reference rates and explicit allowance is made to cover the CoRNHR.

General Assumptions

- The group companies are going concerns, i.e. they remain in operation and continue writing new business.
- The MCEV is calculated using best estimate assumptions.
- All values are post-tax.
- Expense inflation was recognised for the MCEV calculations. For part of the business it has been assumed that efficiency gains will partly compensate expense inflation.
- Overhead expenses are included within the administrative expenses.
- No future new business is included in the calculations.
- No productivity gains are considered, except for those compensating the expense inflation.

New Business

New business is defined as new reinsurance treaties written or new policies written under existing treaties during the year. External retrocession of new business treaties is assumed to be negative new business.

The Value of New Business is calculated at the point of sale and includes the profit or loss during the year in which the new business was sold.

Shareholder Net Worth

The Shareholder Net Worth (SNW) corresponds to the consolidated market value of the asset backing shareholders funds after deduction of intangible assets, subordinated debt and any other element accounted for the in-force business. The SNW is divided into the Required Capital (RC) and the Free Surplus (FS)

The Shareholder Net Worth is derived from the consolidation of the Net Asset Values of the following companies:

- Domestic Operations:
 - Hannover Rück AG (Hannover Re) – Life Division
 - E+S Rück AG (E+S Re) – Life Division
- Foreign Operations:
 - HLR Africa, Johannesburg
 - HLR Ireland, Dublin
 - HLR America, Orlando Fl.
 - HLR UK, Virginia Water/London
 - HLR Australasia, Sydney
 - HLR Bermuda, Hamilton

Hannover Re holds 100% of the shares of all life subsidiaries with the exception of the life segment of E+S Re in which the shareholding is 64.19%.

Hannover Re and E+S Re are both composite reinsurance companies writing life and non-life reinsurance business. The Net Asset Value of the companies included in the scope of the MCEV has been derived by making adjustments to the IFRS equity for the Life & Health Segment.

Required Capital

The Required Capital (RC) is the amount of capital required to support covered business, i.e. market value of the assets required to back liabilities for covered business, whose distribution to shareholders is restricted.

The RC is always at least equal to the local Statutory Minimum Solvency Margin. The level of the RC for each business center is set equal to the maximum of:

- The level of capital at which the local regulator are empowered to take action
- The level of capital required by rating agencies (in order to maintain the desired rating)
- The target capital level of the business unit
- Any other level of capital to achieve internal management objectives

The Required Capital was set between 100% and 225% of the local Statutory Minimum Solvency Margin. The Required Capital for the American subsidiary includes intra company surplus notes from the P&C Segment to the extent that these are required to meet the target Required Capital.

Free Surplus

The Free Surplus (FS) is the market value of any assets allocated to, but not required to support the covered business.

Present Value of In-Force Business

The Present Value of In-Force Business (VIF) consists of

- Present Value of Future Profits (PVFP)
- Time Value of Financial Options and Guarantees (FOGs)
- Cost of Residual Non Hedgeable Risks (CoRNHR)
- Frictional Costs of Required Capital (FCoRC)

Present Value of Future Profits

The PVFP is the present value of projected statutory shareholders' profits (net of taxes) from the covered business in force calculated on a certainty equivalent basis. The discount rates are spot rates derived from the reference rates. Pension Deficits and Look Through are included in the PVFP.

Time Value of Financial Options and Guarantees

The majority of treaties either do not have significant FOGs or the assets and liabilities are well matched. The PVFP for these treaties has been calculated using deterministic projections.

Stochastic models have been used to estimate the FOGs for the US business with minimum interest guarantees. The Time Value of the FOGs (TVFOGs) is derived as the difference between PVFP on a certainty equivalent basis and the arithmetic mean of PVFPs derived from a large number of stochastic scenarios.

The small amount of FOGs from the South African subsidiary, which are 100% retroceded to Hannover Re, was estimated using deterministic sensitivities.

Cost of Residual Non Hedgeable Risks

The MCEV Principles require an allowance for the cost of non hedgeable risks not already allowed for in FOGs or PVFP.

The CoRNHR has been determined based on a cost of capital approach using an internal economic capital model. The capital has been determined consistent with a 99.5% confidence level over a one year time horizon. Diversification benefits have been allowed within the non hedgeable risks, but not between hedgeable and non hedgeable risks. The economic capital is projected forward using appropriate risk drivers (e.g. the premiums or mathematical reserves) and the present value is calculated using the reference rates.

The CoRNHR cover the following non financial risks:

- Mortality risk
- Longevity risk
- Morbidity risk
- Disability risk
- Lapse risk
- Expense risk
- Pandemic risk
- Operational risk

as well as cedent counterparty risk and non hedgeable financial risks.

Frictional Costs of Required Capital

The FCoRC are defined as the tax on the projected investment returns and investment costs on asset backing the Required Capital over the projected lifetime of the underlying risks.

Sensitivities

- **Interest environment + / - 100 bps**
Under this sensitivity a parallel shift in the risk free yield curve is assumed. As a consequence current market values of fixed interest assets and future reinvestment rates also change. This sensitivity is not performed in isolation, but there are associated impacts on most other economic assumptions.
- **Swaption implied volatilities + 25%**
This sensitivity shows the impact of an increase in swaption implied volatilities on the cost of options and guarantees.
- **Expenses - 10%**
This sensitivity applies to the projected level of expenses without a change in the expense inflation.
- **Lapse + / - 10%**
Hereunder a 10% proportional increase/ decrease in lapse rates is applied, i.e. a multiplicative change in lapse rates.
- **Mortality/Morbidity + / - 5%**
The sensitivity has been performed for three different situations:
 - Mortality and Morbidity are proportionately reduced for all classes of business at the same time.
 - The sensitivity is performed only for life, disability, medical insurances and related products.

- Mortality is changed only for the annuity policies.
- **Required Capital**
For the sensitivity 'RC=Minimum Solvency Capital' the amount of required capital is set equal to the level of solvency capital at which the supervisor is empowered to take any action.

II. Glossary

CoRNHR	Cost of Residual Non Hedgeable Risks Explicit allowance for residual non hedgeable financial and non financial risks.
FCoRC	Frictional Costs of Required Capital Cost of double taxation and cost of asset management.
Covered business	The treaties included in the MCEV calculations; in line with the MCEV principles
MCEV	Market Consistent Embedded Value Defined as the present value of future distributable earnings of the business in-force plus the portion of capital and surplus that is not needed to support the business in-force; Methodology in line with the MCEV Principles of the CFO-Forum
FOGs	Financial Options and Guarantees Time value of financial options und guarantees; determined on stochastic techniques consistent with the methodology and assumptions used in the underlying MCEV
FS	Free Surplus The market value of any capital and surplus allocated to, but not required to support, the in-force covered business at the valuation date
VIF	Value of In-Force Covered Business The present value of future shareholder cash flows projected to emerge from the in-force covered business and the assets backing the associated liabilities after allowance for FOGs, CoRNHR and FCoRC
PVFP	Present Value of Future Profits The present value of future shareholder cash flows projected to emerge from the assets backing liabilities of the in-force covered business
RC	Required Capital Assets attributed to the covered business over and above that required to back liabilities for covered business whose distribution to shareholders is restricted.
SNW	Shareholder Net Worth Free Surplus plus Required Capital

III. Formulae and Abbreviations

$$\text{MCEV} = \text{SNW} + \text{VIF}$$

MCEV:	Market Consistent Embedded Value
SNW:	Shareholder Net Worth
VIF:	Present Value of In-Force Business

$$\text{SNW} = \text{FS} + \text{RC}$$

SNW:	Shareholder Net Worth
FS:	Free Surplus
RC:	Required Capital

$$\text{VIF} = \text{PVFP} - \text{CoRNHR} - \text{FOGs} - \text{FCoRC}$$

VIF:	Present Value of In-Force Business
PVFP:	PVFP based on a certainty equivalent approach including Pension Deficits and Look Through
CoRNHR:	Cost of Residual Non Hedgeable Risks
FOGs:	Time Value of Financial Options and Guarantees
FCoRC	Frictional Costs of Required Capital

$$\text{CoRNHR} = \text{F} * \text{EC}$$

CoRNHR:	Cost of Residual Non Hedgeable Risks
F:	Capital Charge (percentage)
EC:	Economic Capital (present value) based on the 99.5% percentile confidence level

$$\text{TVFOGs} = \text{PVFP} - \text{Mean Stochastic PVFP}$$

TVFOGs:	Time Value of FOGs
PVFP:	PVFP based on a certainty equivalent approach including Pension Deficits and Look Through
Mean stochastic PVFP:	derived from a large number of stochastic scenarios

$$\text{Return on MCEV} = \frac{\text{Closing MCEV} - \text{Closing Adjustments} - \text{Adjusted Opening MCEV}}{\text{Adjusted Opening MCEV}}$$

$$\text{VNB} = \text{P/L(NB)} + \text{PVNB} - \text{CoRNHR} - \text{FOGs} - \text{FCoRC}$$

VNB	Value of New Business
P/L(NB)	Profit or Loss on New Business during the year
PVNB	Present Value of the new business profits
CoRNHR	Cost of Residual Non Hedgeable Risks on New Business
FOG	Value of FOGs on New Business
FCoRC	Frictional Cost of Required Capital on New Business

$$\text{NBM} = \frac{\text{VNB}}{\text{NBP} + \text{PVNBP}}$$

NBM: New Business Margin
 VNB: Value of New Business
 NBP: New Business Premium current year
 PVNBP: Present Value of New Business Premium

$$\text{APEM} = \frac{\text{VNB}}{\text{APE}} = \frac{\text{VNB}}{\text{NBRP} + 10\% \text{NBSP}}$$

APEM: Annual Premium Equivalent Margin
 VNB: Value of New Business
 APE: Annual Premium Equivalent
 NBRP: New Business Regular Premium
 NBSP: New Business Singular Premium

IV. Disclaimer

The information provided in this report does in no way whatsoever constitute legal, accounting, tax, or other professional advice.

While Hannover Re has endeavoured to include in this report information it believes to be reliable, complete and up-to-date, the company does not make any representation or warranty, express or implied, as to the accuracy, completeness or updated status of such information.

Some of the information in this report may be forward-looking information or information on future expectations based on currently available information. Such information naturally is subject to risks and uncertainties. Factors such as the development of general economic conditions, future market conditions, unusual catastrophic loss events, changes in the capital markets and other circumstances may cause the actual events or results to be materially different from those anticipated by such information. Hannover Re assumes no obligation to update any forward-looking information contained in this report.

It should be noted that all calculations are based on data reported by the ceding companies of Hannover Re and its subsidiaries, mainly bulk data, which do not allow exact specifications on the portfolio composition.

Therefore, in no case whatsoever will Hannover Re and its affiliate companies be liable to anyone for any decision made or action taken in conjunction with the information in this report or for any related damages.

The Directors
Hannover Rückversicherung AG
Karl-Wiechert-Allee 50
30625 Hannover

4th May 2009

Dear Sirs

Review of the Market Consistent Embedded Value of the Life & Health segment of Hannover Rückversicherung AG as at 31st December 2008

The Life and Health Reinsurance business of Hannover Rückversicherung AG (“Hannover Re”), as reported under the “life and health reinsurance” segment in the primary financial statements, is written by Hannover Rückversicherung AG and E+S Rückversicherung AG, together with their subsidiaries, branches and offices (together “Hannover Life Re” or “HLR”).

Hannover Re has determined the Market Consistent Embedded Value (“MCEV”) results of HLR for 2008 as set out in the Statements of Market Consistent Embedded Value (together “the Statements”) on a basis consistent with the requirements of the European Insurance CFO Forum Market Consistent Embedded Value Principles^{©(1)} (“MCEV Principles”). These Statements, the methodologies applied and the assumptions underlying them are each the sole responsibility of the Board of Directors (“the Directors”) of Hannover Re.

The Statements have been prepared by Hannover Re as the aggregate of separate Market Consistent Embedded Values determined for each significant operating unit making due allowance for inter group transactions including retrocessions, any minority interests together with the elimination of the book values of the businesses for which an MCEV has been calculated.

The calculation of MCEVs necessarily makes numerous assumptions with respect to economic conditions, operating conditions, taxes, and other matters, many of which are beyond Hannover Re’s control. Although the assumptions used represent estimates which the Directors believe are together reasonable, actual experience in future may vary from that assumed in the calculation of MCEV and such variation may be material. Deviations from assumed experience are normal and are to be expected.

The resulting MCEV does not purport to be a market valuation of Hannover Re and should not be interpreted in that manner since it does not purport to encompass all of the many factors that may bear upon a market value.

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Scope of B&W Deloitte's Review

We have reviewed the methodology adopted and assumptions and calculations made by the Directors to determine the MCEV for the businesses concerned and their aggregation into the consolidated MCEV of HLR.

The non hedgeable risk based capital, which is the basis for the calculation of the cost of residual non hedgeable risks, has been determined by HLR using an internal capital model. We have not reviewed the internal model or the level of non hedgeable risk based capital. Hannover Re has decided to not publish the Group Embedded Value as required by the MCEV Principles.

Our work was conducted in accordance with generally accepted actuarial practices and processes. It comprised a combination of such reasonableness checks, analytical review and checks of clerical accuracy as we considered necessary to provide reasonable assurance that the Statements have been compiled free of significant error. However, we have relied upon the completeness and accuracy of the data and information supplied by Hannover Re and its subsidiaries, including the book value of the net assets as disclosed in Hannover Re's financial statements on which the Statements are based. Accordingly, as is customary, we have not audited, verified or otherwise substantiated that data and information.

Opinion

In our opinion, with the exceptions highlighted in the scope of the B&W Deloitte review above, the MCEV methodology as approved by the Directors of Hannover Rückversicherung AG is appropriate, the assumptions taken together are reasonable and the estimate of the Market Consistent Embedded Value have been accurately compiled consistent with the "MCEV Principles".

This report is made solely to Hannover Rückversicherung AG's Directors as a body. To the fullest extent permitted by law we do not accept or assume responsibility to anyone other than Hannover Rückversicherung AG's Directors as a body for our work in respect of this report or for the conclusions that we have reached.

Yours faithfully



Bharat Bhayani
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