

MUNICH RE

MARKET CONSISTENT EMBEDDED VALUE REPORT 2010



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1 Introduction

1.1 Scope of disclosure

In June 2008, the European Insurance CFO Forum ('CFO Forum') published the Market Consistent Embedded Value Principles¹ ('MCEV Principles') in order to bring greater consistency and improved disclosure to the European insurance industry's embedded value. Throughout this document, MCEV as well as embedded value refer to the above MCEV Principles.

In October 2009, the CFO Forum published an amendment to the MCEV Principles to allow for the inclusion of a liquidity premium. However, discussion how and to which products to apply such premiums is still ongoing. Therefore Munich Re follows a prudent approach and does not apply any liquidity premiums in its current valuation. To illustrate the impact of a liquidity premium on our business we state the respective sensitivities.

Munich Re does not report its Group MCEV. In all other respects we fully comply with the MCEV Principles.

In this supplement, the following topics are reported for our covered reinsurance and primary insurance business:

- // The Market Consistent Embedded Value as at 31 December 2010
- // An analysis of embedded value earnings for 2010
- // A reconciliation of embedded value with IFRS equity
- // An analysis of the sensitivities of the embedded value and value of new business as at 31 December 2010
- // A detailed description of the embedded value methodology applied

1.2 Covered business

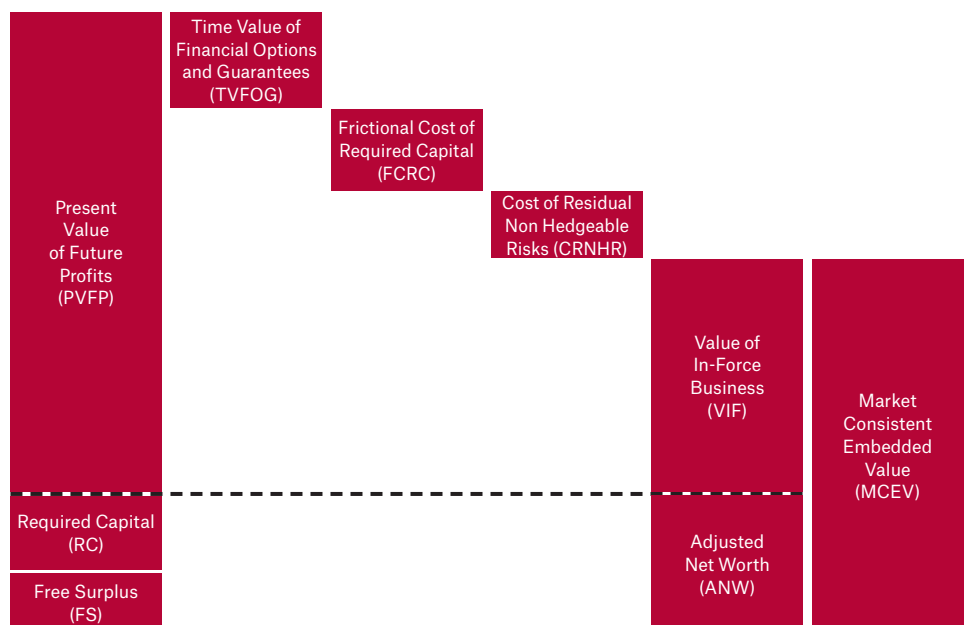
This embedded value report covers 100% of the life reinsurance business written by Munich Re and more than 94% of business written in the life primary insurance and German health entities of Munich Re. German health primary business is long-term business and is therefore included, whereas medical reinsurance business is short-term in nature and therefore excluded. For a detailed list of Munich Re segments and entities covered in this report, refer to Sections 5.14 to 5.17.

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1.3 Definition of Market Consistent Embedded Value

The embedded value is the present value of shareholders' interests in the earnings distributable from assets allocated to covered business after making sufficient allowance for the aggregate risks involved. The MCEV Principles distinguish between the following components of the embedded value:

- // Adjusted net worth (ANW) broken down into the components
 - Free surplus (FS) and
 - Required capital (RC)
- // Value of in-force covered business (VIF), subdivided into
 - Present value of future profits (PVFP)
 - Time value of financial options and guarantees (TVFOG)
 - Frictional cost of required capital (FCRC)
 - Cost of residual non hedgeable risks (CRNHR).



All components are net of taxes, minority interests and policyholder participations (where applicable). The present value of future profits (PVFP) already includes the intrinsic value of all financial options and guarantees; their time value is separately disclosed. Any non hedgeable risks that are not already reflected in the PVFP or TVFOG are covered by the cost of residual non hedgeable risks. The CRNHR is calculated using a cost of capital approach, i.e. given by the product of projected risk capital for non hedgeable risk and the respective cost rate. The frictional cost of required capital consists of the projected tax to be paid as well as fees for the management of these assets and, only for our German health primary business, the policyholder participation on the earnings from assets backing required capital. A detailed description of the MCEV methodology used for preparing this supplement is given in Section 5.

2 Overview of embedded value results 2010

Since 2005 Munich Re has adhered to a strict market consistent framework. Our prudent approach is proven by a good track record regarding experience variances and assumption changes in recent years. As last year, we refrain from applying any liquidity premium in our valuation.

The change from the Market Consistent Embedded Value as at 31 December 2009 to the Market Consistent Embedded Value as at 31 December 2010 is driven by positive foreign exchange effects, a high value of new business, especially in our reinsurance business, and negative economic variances in our primary insurance business.

Highlights

€m	Reinsurance	Primary insurance	Total
Market Consistent Embedded Value 31.12.2009	6,773	5,126	11,899
Opening adjustments	564	16	580
Adjusted MCEV 31.12.2009	7,338	5,141	12,479
Value of new business	475	141	616
Expected return at reference rate	178	133	311
Expected return in excess of reference rate	11	27	38
Experience variances	-157	27	-130
Assumption changes	252	-198	55
Other operating variance	-8	244	237
Operating MCEV earnings 2010	751	375	1,126
Economic variances	245	-1,099	-854
Other non operating variance	22	0	22
Total MCEV earnings 2010	1,018	-724	294
Closing adjustments	-72	-309	-381
Market Consistent Embedded Value 31.12.2010	8,284	4,108	12,393
IFRS equity excluding goodwill	4,772	3,773	8,545
Value not recognised in IFRS equity	3,512	336	3,848

Strong operating earnings of €1,126m were mainly due to an excellent value of new business in our reinsurance entities.

The deterioration of financial markets caused economic variances of -€854m, where a strong decrease in our primary business was partly compensated by a moderate increase in our reinsurance business.

Total embedded value earnings of the covered business of Munich Re amounted to €294m. Our MCEV increased slightly by 4.2% to €12,393m and the value not recognised in IFRS equity reduced by 4.7% to €3,848m.

3 Reinsurance



In 2010, again the embedded value of our life reinsurance business increased significantly. The increase was mainly driven by strong MCEV earnings of €1,018m as well as favourable currency movements (€735m). The MCEV earnings were supported by a very satisfying value of new business of €475m (€562m in 2009). Last year's value of new business was influenced especially by financially-motivated business opportunities that arose as a result of Munich Re's financial strength during the capital market turmoil. In 2010, we profited again from Munich Re's financial strength resulting in a number of financially-motivated reinsurance transactions, albeit to a lesser extent than in 2009. In addition to these one-off business opportunities, we continued to acquire sustainable new business growth across several geographical areas even though pressure on available traditional reinsurance volumes and available margins in certain markets has been increasing.

The embedded value components of our life reinsurance business are presented in the following table. The table displays the embedded value as at 31 December 2010 as well as at 31 December 2009.

MCEV components

	31.12.2010	31.12.2009	Change
	€m	€m	%
Present value of future profits (PVFP)	6,897	5,599	23.2
Time value of financial options and guarantees (TVFOG)	-84	-32	160.6
Frictional costs of required capital (FCRC)	-446	-377	18.2
Cost of residual non hedgeable risks (CRNHR)	-1,482	-1,252	18.4
Value of in-force covered business (VIF)	4,884	3,938	24.0
Free surplus (FS)	526	564	-6.8
Required capital (RC)	2,874	2,271	26.5
Adjusted net worth (ANW)	3,400	2,836	19.9
Market Consistent Embedded Value (MCEV)	8,284	6,773	22.3

The embedded value as at 31 December 2010 was 22.3% higher at €8,284m than the embedded value as at 31 December 2009 (€6,773m). A detailed explanation of the drivers of this increase in embedded value follows later in this section.

At –€84m, the time value of financial options and guarantees as at 31 December 2010 is higher than last year (–€32m), however still moderate. This moderate value results from the fact that within life reinsurance we concentrate on taking biometric risks so that the business only has minor exposure to capital market risks.

The increase in the cost of residual non hedgeable risks was characterised by two opposite effects: the increase in the economic risk capital, mainly due to the growth of the book of business, was partly compensated by risk model changes.

The change in required capital from €2,271m as at 31 December 2009 to €2,874m as at 31 December 2010 was driven by two factors: the required capital for new business is – at €589m – more than twice as large as the required capital released by the run-off of existing business (€244m), reflecting the growth in life reinsurance over the year 2010. Additionally, changes in foreign exchange rates increased the required capital in the reporting currency by €257m.

The total required capital for covered business as at 31 December 2010 of €2,874m exceeds the capital required at a life reinsurance level to cover all minimum solvency requirements by €564m.

The change in embedded value in 2010 is shown in the following table:

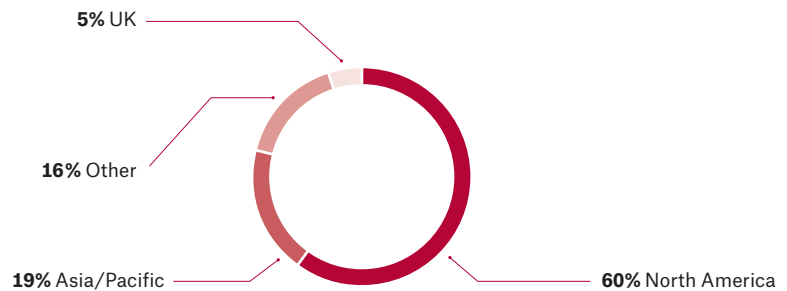
Earnings on MCEV analysis

€m	Free surplus	Required capital	VIF	MCEV
Opening MCEV	564	2,271	3,938	6,773
Opening adjustments	20	200	345	564
Adjusted opening MCEV	584	2,471	4,283	7,338
Value of new business	–686	589	572	475
Expected return at reference rate	6	18	154	178
Expected return in excess of reference rate	11	–	–	11
Transfers from VIF and required capital to free surplus	513	–182	–331	–
Experience variances	–190	27	6	–157
Assumption changes	194	–125	183	252
Other operating variance	81	–65	–24	–8
Operating MCEV earnings	–71	262	560	751
Economic variances	244	83	–82	245
Other non operating variance	9	–	13	22
Total MCEV earnings	182	345	491	1,018
Closing adjustments	–240	57	110	–72
Closing MCEV	526	2,874	4,884	8,284

The **opening adjustments** of €564m represent foreign exchange adjustments from the beginning of the year exchange rates to the average of year exchange rates used in the MCEV earnings analysis.

As in 2009, almost two-thirds of the operating MCEV earnings originated from the favourable **value of new business** (€475m), which has returned to a more sustainable level compared to the impressive VNB of 2009 (€562m). The new business was driven by a sustainable increase in new business volumes in diverse geographical areas, mainly in North America, Asia and Pacific region as well as some one-off block deals aiming to provide capital relief for customers.

VNB split by region



The **expected return** of €189m is close to the one in 2009 (€196m) due to different development of one-year forward rates for the major currencies. Because of our prudent asset allocation, the **expected return in excess of reference rate** is very low.

The experience on mortality and disability business varied slightly against expected values across different markets. The strengthening in assumptions of our US long term care business led to an increase in IFRS reserves. In the MCEV framework, the total effect from the revaluation of US long term care business is reflected in negative **experience variances** as well as in negative operating **assumption changes**. In total, negative assumption changes for US long term care business were more than offset by future mortality expected to be significantly better than previously anticipated in several markets as well as by value optimising business strategies.

The position “**Other operating variance**” shows model changes resulting from the continuous refinement of embedded value calculation models across several markets.

The **economic variances** are in line with our expectations from sensitivity calculations on stressed interest rates. Decreased interest rates and stable credit spreads for main parts of our business led to an increase in the embedded value. As our reinsurance business is dominated by insurance risks such as mortality risk, the impact of changes in the interest rate environment has an opposite, albeit lower, effect on the embedded value than for our primary business.

Overall, we observed very strong operating embedded value earnings of 10.2% and total embedded earnings of 13.9% of the opening MCEV after opening adjustments.

The **closing adjustments** of –€72m comprise foreign exchange adjustments from the average of year exchange rates used in the MCEV earnings analysis to the end of the exchange rates (€170m) as well as a capital repatriation of €242m from life reinsurance business to the Group.

New business

€m	2010	2009
Value of new business (VNB)	475	562
Present value of new business premiums (PVNBP)	12,196	10,576
Annual premium equivalent (APE)	2,126	1,916
%		
New business margin (VNB/PVNBP)	3.9	5.3
VNB/APE	22.3	29.3

The present value of new business premiums as well as the annual premium equivalent show a slight increase compared to last year. The profitability of financially motivated transactions decreased in 2010 compared to 2009.

IFRS reconciliation

	31.12.2010	31.12.2009	Change
	€m	€m	%
IFRS equity excluding goodwill	4,772	4,202	13.6
Market Consistent Embedded Value	8,284	6,773	22.3
Value not recognised in IFRS equity	3,512	2,571	36.6

The embedded value of the covered business as at 31 December 2010 exceeds the corresponding IFRS equity (excluding goodwill) by €3,512m, compared to €2,571 in the previous year.

Sensitivities for embedded value as at 31 December 2010:

Sensitivities MCEV and VNB

	MCEV	Change		VNB	Change	
	€m	€m	%	€m	€m	%
Base case	8,284			475		
Interest rates and assets						
Interest rates -100bp	8,545	260	3.1	519	44	9.3
Interest rates +100bp	7,990	-294	-3.6	440	-35	-7.4
Equity/property values -10%	8,284	-	-	477	3	0.6
Equity/property implied volatilities +25%	8,267	-17	-0.2	474	-1	-0.3
Swaption implied volatilities +25%	8,280	-4	-0.1	475	-	-0.1
Liquidity premium 10bp	8,327	43	0.5	475	-	-
Expenses and persistency						
Maintenance expenses -10%	8,370	86	1.0	485	10	2.2
Lapse rates -10%	8,134	-150	-1.8	477	2	0.4
Lapse rates +10%	8,274	-10	-0.1	453	-21	-4.5
Insurance risk						
Mortality/morbidity (life business) -5%	10,026	1,742	21.0	594	120	25.2
Mortality (life business) +5%	6,805	-1,479	-17.9	372	-103	-21.7
Mortality (annuity business) -5%	8,250	-34	-0.4	474	-	-0.1
No mortality improvements (life business)	4,829	-3,455	-41.7	223	-252	-53.1
Morbidity (life business) +5%	8,003	-281	-3.4	450	-25	-5.3
Required capital						
Minimum solvency capital	8,360	75	0.9	481	6	1.3
Other						
Value of original currencies -10%	7,497	-787	-9.5	429	-46	-9.7

Our life reinsurance business is dominated by insurance risks, most notably mortality risk. While changes in mortality or morbidity assumptions have a strong impact on the embedded value and the value of new business, changes of economic assumptions show only a minor effect on the MCEV in contrast to our primary insurance business.

Overlapping effects from business in different geographical areas, i.e. partly lapse-supported business, leads to non-symmetrical lapse sensitivities on an aggregate life reinsurance level.

The sensitivity of exchange rates relative to the reporting currency reflects the high proportion of business written in foreign currencies. More than 80% of the business is denominated in foreign currencies, especially in the Canadian and the US dollar.

Since Munich Re's embedded value is calculated without taking a liquidity premium into consideration, we show the impact of a liquidity premium of 10bp as a sensitivity.

Except for the stressed assumptions, the sensitivity calculations are performed analogous to the base case.

4 Primary insurance



MCEV components

	Primary insurance (Total)		
	31.12.2010	31.12.2009	Change
	€m	€m	%
Present value of future profits (PVFP)	4,151	4,486	-7.5
Time value of financial options and guarantees (TVFOG)	-1,052	-574	83.2
Frictional costs of required capital (FCRC)	-703	-712	-1.3
Cost of residual non hedgeable risks (CRNHR)	-549	-332	65.2
Value of in-force covered business (VIF)	1,847	2,867	-35.6
Free surplus (FS)	266	268	-0.9
Required capital (RC)	1,996	1,990	0.3
Adjusted net worth (ANW)	2,262	2,258	0.1
Market Consistent Embedded Value (MCEV)	4,108	5,126	-19.8

Our primary insurance shows positive operating MCEV earnings of €375m (or 7.3% relative to the adjusted opening MCEV) and high distributions of dividend in 2010. But unfavourable financial markets had a negative effect on the embedded value of our primary business. These and other details of the change from MCEV 2009 to MCEV 2010 are given on page 13 onward.

In particular the value of our German life primary business is severely affected as this segment is characterised by substantial financial options and guarantees. The MCEV decreased by 41.2%, from €1,717m to €1,010m. Half of this effect stems from the PVFP the other half from TVFOG. Mainly due to lower interest rates and higher implied volatilities, the TVFOG increased by 49.2% compared to 2009.

Our international life primary business is less affected by changed capital markets. The VIF decreased only moderately by 2.9%, from €792m to €769m.

Also our German health primary business is less exposed to capital market fluctuations as technical interest rates are not guaranteed for the whole contract term and policyholder options are more restricted. Since 2009 changed policyholder options caused by the German Health Reform Act (WSG) increased the influence of policyholder behaviour on shareholder cash flows, especially for comprehensive health insurance. These policyholder options are covered by the MCEV model according to current experience, but changed policyholder behaviour is still difficult to estimate for the long run. A change of assumptions according to future experience may lead to substantial future changes in our MCEV figures. Examples of policyholder options are:

- // Lapses with transfer values
- // Obligatory benefit for non-payers without possibility to cancel contracts
- // Change of tariffs

There are ongoing discussions concerning the German healthcare system. If these lead to material changes in legislation, our future MCEV figures are expected to change substantially.

	German life primary			International life primary			German health primary		
	31.12.2010	31.12.2009	Change	31.12.2010	31.12.2009	Change	31.12.2010	31.12.2009	Change
	€m	€m	%	€m	€m	%	€m	€m	%
	1,383	1,736	-20.3	959	845	13.5	1,809	1,905	-5.0
	-973	-652	49.2	-79	78	-201.1	-	-	-
	-294	-288	2.2	-62	-83	-25.3	-348	-342	1.7
	-279	-200	39.5	-49	-48	3.7	-221	-85	160.4
	-163	596	-127.4	769	792	-2.9	1,241	1,479	-16.1
	32	-	-	234	268	-12.8	-	-	-
	1,141	1,121	1.9	362	377	-3.9	492	493	-0.1
	1,173	1,121	4.7	596	645	-7.6	492	493	-0.1
	1,010	1,717	-41.2	1,365	1,438	-5.0	1,733	1,971	-12.1

The increased cost of residual non hedgeable risks from €332m to €549m stems almost entirely from our German life and health primary business. Based on the business model, a capital-market-induced reduction in the VIF also has an impact on the economic risk capital for non hedgeable risks. Apart from this, for German health primary business changed policyholder options caused by the German Health Reform contributed to the increase in non hedgeable risk capital.

Details of the change from MCEV 2009 to MCEV 2010 are explained in the following analysis of MCEV earnings.

Earnings on MCEV analysis

€m	Primary insurance (Total)			
	Free surplus	Required capital	VIF	MCEV
Opening MCEV	268	1,990	2,867	5,126
Opening adjustments	1	7	8	16
Adjusted opening MCEV	269	1,997	2,875	5,141
Value of new business	-89	10	220	141
Expected return at reference rate	6	1	127	133
Expected return in excess of reference rate	3	-	24	27
Transfers from VIF and required capital to free surplus	322	-	-322	-
Experience variances	-7	1	33	27
Assumption changes	2	-	-200	-198
Other operating variance	28	-22	238	244
Operating MCEV earnings	267	-12	120	375
Economic variances	49	-	-1,148	-1,099
Other non operating variance	-	-	-	-
Total MCEV earnings	316	-12	-1,028	-724
Closing adjustments	-319	10	-	-309
Closing MCEV	266	1,996	1,847	4,108

The **opening adjustments** of €16m reflect the increase in the shares of ERGO Versicherungsgruppe AG as well as the acquisition of a profitable bancassurance portfolio in the Baltics. Large parts of our primary business are denominated in euro, therefore foreign exchange adjustments do not have a material impact.

Profitable **new business** increased the embedded value by €141m. More details are given below.

The **expected return at reference rate** generated €133m. As our equity, property and corporate bond exposure is rather small, the additional **expected return in excess of reference rate** led to a moderate contribution of €27m. The assumed risk premiums are shown in Section 6.4.

In total, **experience variances** had a slightly positive impact (€27m). In particular the effect for international life primary business was hardly noticeable (€6m). For our German health primary business, the technical result 2010 was better than expected, which is the main driver for positive experience variances (€35m). Diverse positive and negative effects (e.g. profit-sharing, lapses, expenses, taxation) result in a slightly negative total effect (-€14m) for our German life primary business entities.

Negative effects from our German life and health primary business (-€109m and -€178m, respectively) and positive effects from our international life primary business (€89m) in total led to a negative impact of **assumption changes** (-€198m). For German life primary business several assumption changes (e.g. investment strategy, profit-sharing, morbidity, expenses) have been made. For German health primary business, the better part of the negative effect is due to the increased cost of residual non hedgeable risks; smaller effects on the other MCEV components result from various assumption changes (e.g. profit-sharing, morbidity, expenses). For international life primary business favourable developments of unit-linked and universal life business in Belgium had a very positive effect.

German life primary				International life primary				German health primary			
Free surplus	Required capital	VIF	MCEV	Free surplus	Required capital	VIF	MCEV	Free surplus	Required capital	VIF	MCEV
-	1,121	596	1,717	268	377	792	1,438	-	493	1,479	1,971
-	4	-	4	1	2	4	7	-	2	4	5
-	1,124	596	1,720	269	379	796	1,444	-	494	1,482	1,977
-41	-	96	56	-49	10	98	58	2	-	26	28
-	-	77	78	6	-	11	17	-	-	39	39
-	-	7	7	3	-	8	12	-	-	8	8
181	-	-181	-	72	-	-72	-	69	-	-69	-
-34	-	19	-14	7	1	-2	6	20	-	15	35
1	-	-110	-109	-	-	89	89	2	-	-179	-178
-	6	82	88	28	-28	30	31	-	-	126	126
108	6	-9	104	66	-17	163	212	92	-	-34	58
5	-	-750	-746	17	-	-190	-173	27	-	-207	-180
-	-	-	-	-	-	-	-	-	-	-	-
112	6	-759	-642	84	-17	-28	39	120	-	-241	-122
-81	12	-	-69	-119	-	-	-118	-120	-2	-	-122
32	1,141	-163	1,010	234	362	769	1,365	-	492	1,241	1,733

Positive **other operating variance** (€244m) stems from positive effects in all three segments. For German life and health primary business, model refinements and transition effects of "Neue ERGO" had a positive impact (€88m and €126m, respectively). For international life primary business, several model improvements led to positive other operating variance (€31m); in particular, the methodology of calculating look-through effects has been refined.

In total, operating MCEV earnings were at €375m better than in 2009. This corresponds to 7.3% relative to the adjusted opening MCEV.

The embedded value earnings 2010 are dominated by **economic variances**. Unfavourable financial market developments led to a decrease of €1,099m for our primary insurance business. Most of the decrease stems from our German life primary business (€746m) which is characterised by substantial financial options and guarantees. Thus almost 60% of this effect can be attributed to higher TVFOG.

International life primary business and German health primary business are less exposed to changes in economic assumptions, therefore the negative impacts are comparatively small (-€173m and -€180m, respectively).

Altogether, total MCEV earnings amounted to -€724m (or -14.1% relative to the adjusted opening MCEV). **Closing adjustments** are predominated by high dividends; in particular, higher dividends stem from our international life primary business. Currency movements were insignificant.

All in all, the MCEV for primary insurance decreased by 19.8% to €4,108m as at the end of 2010.

New business

	Primary insurance (Total)		German life primary		International life primary		German health primary	
€m	2010	2009	2010	2009	2010	2009	2010	2009
Value of new business (VNB)	141	132	56	45	58	51	28	36
Present value of new business premiums (PVNBP)	7,798	7,242	4,176	3,775	1,374	1,212	2,247	2,255
Annual premium equivalent (APE)	722	560	462	279	150	148	109	133
%								
New business margin (VNB/PVNBP)	1.8	1.8	1.3	1.2	4.2	4.2	1.2	1.6
VNB/APE	19.6	23.6	12.0	16.0	38.6	34.5	25.2	27.4

The value of new business for primary insurance increased from €132m to €141m.

For our German life primary business the value of new business grew from €45m to €56m despite unfavourable capital market developments. This is mainly due to a change in business mix. The new business margin slightly increased from 1.2% to 1.3%.

The value of new business of our international life primary business increased from €51m to €58m. The better part of the value of new business stems from Belgium, Austria, Italy and Poland. Compared with 2009, considerable increases in value of new business values arose in two countries: In Poland very profitable bancassurance policies have been sold, in Italy term life single premium policies. The overall new business margin of 4.2% remained unchanged.

For our German health primary business, the value of new business decreased from €36m to €28m. Responsible for this is a lower volume, but also a decrease in the new business margin from 1.6% to 1.2%. This decrease can be attributed to adverse capital market developments as well as assumption changes and model refinements.

IFRS reconciliation

	31.12.2010	31.12.2009	Change
	€m	€m	%
IFRS equity excluding goodwill	3,773	3,660	3.1
Market Consistent Embedded Value	4,108	5,126	-19.8
Value not recognised in IFRS equity	336	1,466	-77.1

The embedded value of covered primary insurance business as at 31 December 2010 exceeds the corresponding IFRS equity (excluding goodwill) by €336m. The value not recognised in IFRS equity decreased by €1,130m as at the end of 2010.

Sensitivities MCEV and VNB

	MCEV	Change		VNB	Change	
	€m	€m	%	€m	€m	%
Base case	4,108			141		
Interest rates and assets						
Interest rates -100bp	2,477	-1,632	-39.7	-9	-150	-106.3
Interest rates +100bp	5,207	1,099	26.7	178	37	26.2
Equity/property values -10%	3,965	-143	-3.5	137	-4	-3.0
Equity/property implied volatilities +25%	3,923	-186	-4.5	133	-8	-5.7
Swaption implied volatilities +25%	4,001	-107	-2.6	110	-31	-21.9
Liquidity premium 10bp	4,445	336	8.2	158	17	12.2
Expenses and persistency						
Maintenance expenses -10%	4,176	67	1.6	146	5	3.4
Lapse rates -10%	4,095	-13	-0.3	146	5	3.5
Lapse rates +10%	4,122	14	0.3	133	-8	-6.0
Insurance risk						
Mortality/morbidity (life business) -5%	4,181	73	1.8	147	6	4.1
Mortality (life business) +5%	4,079	-29	-0.7	134	-7	-5.2
Mortality (annuity business) -5%	4,050	-58	-1.4	136	-5	-3.8
No mortality improvements (life business)	4,108	-	-	141	-	-
Morbidity (life business) +5%	4,081	-28	-0.7	137	-4	-3.0
Required capital						
Minimum solvency capital	4,368	259	6.3	149	8	5.8
Other						
Value of original currencies -10%	4,101	-7	-0.2	140	-1	-0.6

Compared with our reinsurance business, most of our primary business is characterised by substantial financial options and guarantees. Therefore, the main drivers are economic assumptions. In contrast, non economic assumptions are of far less significance.

As in previous years, we do not apply a liquidity premium in our calculation. To show the impact of including a liquidity premium, we calculate a sensitivity of 10bp for the whole portfolio. In general, the sensitivity of a liquidity premium shows a stronger effect on the MCEV than an interest rate sensitivity of the same amount.

The asymmetry in interest rate sensitivities reflects the combined impact of interest rate guarantees and policyholder participation, mainly in our German life primary business. Current interest rates are already close to guaranteed interest rates, therefore the effects of all economic and non economic sensitivities are higher than in 2009. In particular, the sensitivity to interest rates and liquidity premium are rather high.

Because of low exposure to equity and property, the corresponding sensitivities are moderate.

The substantial effects of cross-subsidisation between new and in-force participating business (especially in German life and health primary insurance) are reflected in the approach we used to calculate the VNB sensitivities.

Except for the stressed assumptions, the sensitivity calculations are performed analogous to the base case.

5 Embedded value methodology



The embedded value methodology adopted by Munich Re is in accordance with the Market Consistent Embedded Value Principles® ('MCEV Principles') published by the European Insurance CFO Forum ('CFO Forum') in June 2008. We do not apply any liquidity premiums as permitted by an amendment to the MCEV Principles, published by the CFO Forum in October 2009. In this section, we specify the methodology used in preparing this supplementary report.

The embedded value results and IFRS equities are presented at a consolidated Munich Re Group level. Results are presented net of minority interests and policyholders' interests. Intra-Group reinsurance ceded from primary insurers to reinsurers is shown in the reinsurance segment.

The embedded value reporting currency is the euro. Calculations are undertaken in the original currency of the covered business and converted to euros for consolidation purposes. In converting original currency embedded values and their components into euros, the exchange rates as at the relevant valuation dates are used. Changes in the embedded value due to changes in foreign exchange rates are part of opening and closing adjustments. For converting embedded value earnings based on the original currency into euros, average of year exchange rates are used.

5.1 Look-through principle

The assets related to covered business are mainly managed by Munich Re Group's asset management units. The costs and profits from managing these assets are included in the embedded value on a look-through basis.

Where material, costs of other service companies, such as administration and IT, are also included in the embedded value on a look-through basis. Costs of holding companies related to covered business have been allowed for in the embedded value calculations as well.

5.2 Free surplus (FS) and required capital (RC)

The adjusted net worth (ANW) of our covered business is defined as follows:

- // For pure life reinsurance entities, ANW equals local regulatory net worth adjusted to reflect the market value of assets.
- // For composite reinsurance entities, the allocated required capital is used.
- // For primary insurance entities, ANW is based on the local regulatory net worth.

Differences between IFRS and statutory pension liabilities are included in the MCEV as an adjustment to net assets.

The required capital (RC) is defined as follows:

- // For reinsurance entities, RC is derived from a combination of regulatory requirements and internal objectives (e.g. rating requirements, internal economic capital model).
- // For German primary insurers, RC is set to statutory net worth adjusted for differences between IFRS and statutory pension liabilities. With their statutory net worth, all German primary insurers covered in this report have statutory solvency ratios well above 150%.
- // For international primary insurers, RC is equal to 100% of the EU minimum solvency requirements. This simplified assumption has little impact on the MCEV.

The free surplus (FS) is defined as the adjusted net worth less the required capital.

5.3 Value of in-force covered business (VIF)

A bottom-up approach to allow for risk is adopted for the calculation of the present value of in-force covered business. The economic assumptions and discount rates used are calibrated applying a market-consistent methodology to allow for financial risk. In principle, each cash flow is valued according to its inherent financial risk.

For business without significant financial options and guarantees, the certainty-equivalent technique is used. Under this valuation approach, the individual cash flows are adjusted to remove the effects of financial risks. The resulting stream of risk-adjusted profits is then discounted at the risk-free rate.

For business with significant financial options and guarantees, a stochastic model using market-consistent scenarios is applied to determine the VIF. The stochastic models take interactions of assets and liabilities into account and include expected management behaviour; e.g. regarding the investment strategy, the management of unrealised capital gains, and the determination of bonus rates for participating business. In addition, dynamic policyholder behaviour with respect to lapses and surrenders has been allowed for.

In some territories where reinsurance business is written, only limited policy data is available. In such cases, projections are made on a portfolio basis to reflect expected profitability ratios and all other relevant information.

The VIF is broken down into the following items that are exemplified in the sections below:

- // Present value of future profits (PVFP)
- // Time value of financial options and guarantees (TVFOG)
- // Cost of residual non hedgeable risks (CRNHR)
- // Frictional cost of required capital (FCRC)

5.4 Present value of future profits (PVFP)

The PVFP is the present value of future local statutory shareholder after-tax profits emerging from the covered business on the condition that all economic and non economic assumptions are met.

In this respect, PVFP already includes the intrinsic value of financial options and guarantees of covered business. The time value of financial options and guarantees arising from the uncertainty of economic assumptions is disclosed separately.

5.5 Time value of financial options and guarantees (TVFOG)

Participating life business is generally characterised by the following key features:

- // A minimum interest rate or a minimum level of bonus is guaranteed to the policyholder. Hence, whenever the investment return on the allocated assets does not exceed the necessary minimum and other means of funding the guarantees are depleted, the shareholder will bear the cost of maintaining the guarantees.
- // Generally, bonuses and crediting rates exceed minimum guaranteed levels. In this case, the amount credited will be based on profit-sharing rules which involve a degree of management discretion.

The participating features are usually a combination of contractual or legal constraints, and management discretion that has to take competitive pressure or market practice into account. The participating business has been modelled to reflect both contractual and regulatory constraints as well as management discretion. Projected surrender rates depend dynamically on the difference between the risk-free interest rate and the credited rate.

In our market-consistent calculation, we allow for the potential impact on future shareholder cash flows of all financial options and guarantees within the in-force covered business. This allowance is based on stochastic techniques using methods and assumptions consistent with the underlying embedded value. All projected cash flows are valued using economic assumptions in line with the price of similar cash flows that are traded in the capital markets.

Stochastic models are used for all significant life primary and health insurance business. The time value of financial options and guarantees is determined as the difference between the average present value over all stochastic scenarios and the present value for the certainty equivalent scenario. The stochastic model is run using 1,000 scenarios based on an econometric model and takes the following explicitly into account:

- // Management discretion concerning bonus policy and profit-sharing rules
- // Timing of realisation of unrealised capital gains
- // Dynamic asset allocation, in particular management of the equity-backing ratio
- // Dynamic adjustment of technical interest rates for German health primary business
- // Surrender rates dependent on the capital markets

It is predominantly life primary business that is exposed to financial options and guarantees. The following aspects of financial options and guarantees are of particular relevance:

- // All policyholder options (such as full or partial surrender, premium discontinuance and annuitisation) combined with policyholder guarantees (like interest rate guarantees, guaranteed surrender values or guaranteed annuity rates) have a large influence on the VIF.
- // On the other hand, companies are able to substantially influence the value of financial options and guarantees, for example by changing their bonus policy for participating life business or by adjusting the long-term asset allocation. Such management discretion is subject to any contractual guarantees and regulatory or legal constraints.

The TVFOG published in this and other documents of Munich Re reports the net effect.

Our life reinsurance portfolio has only a very limited exposure to financial options and guarantees.

5.5.1 TVFOG in German life primary business

In German life primary business by far the biggest share of the time value of financial options and guarantees results from the guaranteed interest rate together with legal restrictions for the minimum policyholder participation.

The maximum actuarial interest rate in life insurance (commonly referred to as the “guaranteed interest rate”) is laid down in the German federal ordinance concerning actuarial assumptions for future policy benefits (“Deckungsrückstellungsverordnung”).

The German federal ordinance relating to minimum policyholder participation in life insurance (“Mindestzuführungsverordnung”) applies rules concerning customers’ minimum participation in statutory profits that strongly restrict loss offset from the different profit sources (investment result, mortality result, remaining result).

5.5.2 TVFOG in German health primary business

For participating German health primary business, minimum profit-sharing rules are set according to current legal requirements. Management discretion is relevant for the use of free policyholder funds in order to reduce future premium increases necessary to cover the assumed development of healthcare costs. Furthermore, management decisions on how to proceed with changes in technical interest rates are taken into account, subject to legal restrictions.

As detailed analyses show, German health primary business is not exposed to financial options and guarantees since policyholder options are counterbalanced by options of the company. The main reasons are:

- // Technical interest rates are not guaranteed for the whole contract term, but can be changed through a premium adjustment process. In the event of an interest rate reduction, this leads to higher premium rates for the policyholder.
- // If future investment returns are expected to be below the guaranteed interest rate, the German Federal Financial Supervisory Authority (BaFin) demands in accordance with the “Aktuarielle Unternehmenszins-Verfahren (AUZ-Verfahren)” a reduction in the interest-rate guarantee which corresponds to premium rate increases.

5.6 Cost of residual non hedgeable risks (CRNHR)

The cost of residual non hedgeable risks reflects the impact of risks not already allowed for in the TVFOG or the PVFP. For determining the CRNHR we use a cost of capital approach.

For all businesses, the amount of economic risk capital for non hedgeable risks (ERCNHR) is determined by our internal economic capital model and projected over the run-off of the business. In anticipation of future amendments to the MCEV Principles, we already include the diversification between our covered and non-covered business to reflect our integrated risk management process. Diversification between hedgeable and non hedgeable risk is disregarded. The economic risk capital corresponds to the value at risk over one-year time horizon with a confidence level of 99.5%. CRNHR is the present value of future ERCNHR of covered business times the cost rate of 7%.

5.7 Frictional cost of required capital (FCRC)

The cost of holding capital is caused by taxes on profits of assets backing required capital as well as by the cost of their management. For our German health primary business investment income on shareholder funds is subject to policyholder participation and thus also included in the FCRC.

5.8 Change in embedded value

The change in embedded value from one valuation date to the next comprises the following elements:

- // Opening adjustments
- // Embedded value earnings
- // Closing adjustments

The value of acquired or divested business, including the change in stakes of Munich Re in companies covered in this report as well as the change in scope are shown as **opening adjustments**. Also the impact of changes in currency exchange rates from the end of last year to the average of the reporting year is included.

Embedded value earnings are stated at average of year currency exchange rates and at average share of Munich Re in the respective companies. They are explained in more detail in the following section.

Closing adjustments contain changes in currency exchange rates from the average of year to the end of the reporting year and any capital movements, especially dividends.

5.9 Embedded value earnings

The embedded value earnings can be split into the following components:

- // Value of new business
- // Expected return at reference rate
- // Expected return in excess of reference rate
- // Transfer from VIF and required capital to free surplus
- // Experience variances
- // Assumption changes
- // Other operating variance
- // Economic variances
- // Other non operating variance

The sum of the first seven components of embedded value earnings is referred to as operating embedded value earnings.

The value of new business is explained in the following section.

The **expected return at reference rate** ("Expected existing business contribution (reference rate)" according to MCEV Principles) is calculated assuming a risk-free roll-forward of the embedded value at the beginning of the year.

The **expected return above reference rate** ("Expected existing business contribution (in excess of reference rate)" according to MCEV Principles) reflects management's expectation for asset returns above the reference rate. The parameters used for year-end 2009 and year-end 2010 are shown in Section 6.4.

The **experience variances** summarise the prospective and retrospective outcome of differences between the actual operating experience in the reporting year and the operating result assumed in the previous embedded value calculation.

Assumption changes represent the aggregate impact on the embedded value of changes in the operating assumptions within the reporting year. All operating assumptions are subject to an active review at each valuation date.

Other operating variance comprise model changes or model refinements as well as the effect of tax planning action.

The **economic variances** describe the aggregate impact on the embedded value of changes in economic assumptions (including reference rate and implied volatilities) during the reporting year and in the projections years. They are the net effect of a change of economic parameters on the assets and liabilities.

Other non operating variance summarises the impact of changes in the regulatory framework such as taxation or legislation concerning policyholder participation.

5.10 Value of new business (VNB)

VNB is the present value as at the end of the reporting year of the future local statutory after-tax profits in respect of new business written in the reporting year; reduced by the time value of financial options and guarantees, cost of residual non hedgeable risks and frictional costs associated with new business. Additionally, after-tax regulatory profits in respect of this business during the reporting year are included in the reported VNB. The calculation is consistent with the methodology outlined for the value of in-force business.

For reinsurance business, the value of new business can be calculated on a stand-alone basis, as there are no material interactions between in-force and new business. For primary insurance business, because of material interactions between existing and new business, a marginal approach is used.

5.11 Operating assumptions

Operating assumptions describe expected future operating experience. They refer mainly to mortality, morbidity, persistency, expenses and in primary insurance business to policyholder participation. The operating assumptions are based on best estimate assumptions derived from company experience and/or market experience. They are in line with management expectations and reflect recent operating experience of the entities concerned.

All costs related to covered business are split into acquisition, maintenance and investment-related expenses and are fully allowed for in the embedded value. We use a going concern approach in line with the MCEV Principles. Future productivity gains are not anticipated in the embedded value calculations beyond what has been achieved.

5.12 Tax assumptions

Taxation assumptions included in the embedded value models reflect local taxation rates and bases, including future changes that are at an advanced stage of legislative implementation. Tax modelling also includes the valuation of existing tax losses carried forward. No withholding taxes on dividends from subsidiaries have been allowed for.

From last year on we also model within covered business the tax grouping of ERGO.

5.13 Economic assumptions

The economic assumptions are derived following a market-consistent valuation approach. Many asset classes and economic assumptions are modelled stochastically. These include equities and property returns, bond yields, interest rates and inflation.

The construction of risk-neutral economic scenarios requires careful calibration to the underlying market parameters to ensure that the valuation replicates the market prices of assets. The key areas for calibration are initial yield curves, implied market-consistent volatilities of all relevant asset classes and correlations between asset classes. The interest-rate model used considers both parallel shifts and twists to the yield curve.

The economic scenarios have been calibrated to the market conditions at the valuation dates, i.e. risk-free rates, swaption prices and equity option prices. Generally, swap rates have been used as an approximation of the risk-free yield curves. In countries without deep and liquid swap markets, government bonds were used instead.

The calculations of the time value of financial options and guarantees are based on stochastic simulations using an Economic Scenario Generator ("ESG") provided by Barrie & Hibbert. Risk free nominal interest rates are modeled using a LIBOR market model.

The parameters used for year-end 2009 and 2010 are shown in Section 6.4.

5.14 Reinsurance business

Our reinsurance business is characterised by biometric risks. Therefore the influence of economic assumptions is limited. New business is defined as that arising from the sale of new contracts by our customers during the reporting period. Due to the nature of life reinsurance, the value of new business includes the value of expected renewals on those new contracts and expected future contractual alterations to those new contracts. New business comprises:

- // For individual business, new cessions in the year on either new or existing treaties
- // For group business, new group schemes on either new or existing treaties, and also new members to existing group schemes
- // For annually renewable reinsurance contracts (e.g. stop-loss and other non-proportional reinsurance business), new treaties and renewals of existing treaties

Reinsurance companies and major branches writing covered reinsurance life business are listed in the following table:

Covered reinsurance business

Reinsurance companies writing covered life reinsurance business
Munich Reinsurance Company of Australasia Ltd, Sydney
Münchener Rück do Brasil Resseguradora S.A., São Paulo
Münchener Rückversicherungs-Gesellschaft AG, Munich
Munich Reinsurance Company Life Reinsurance Eastern Europe/Central Asia, Moscow
Munich Reinsurance Company of Africa Ltd, Johannesburg
Neue Rückversicherungs-Gesellschaft, Zurich
Munich Re of Malta p.l.c., Floriana
Munich American Reassurance Company, Atlanta, Georgia
Major branch offices writing life reinsurance business
Munich Reinsurance Company Canada Branch (Life), Toronto
Munich Reinsurance Company United Kingdom Life Branch, London

5.15 German life primary business

For primary insurance, new business is defined as business arising from the sale of new contracts during the reporting period. The value of new business includes the value of expected renewals on those new contracts and expected future contractual alterations to those new contracts. For German life primary business, new business includes the current year's increments on existing policies.

It is assumed that in the case of severe financial distress approval from the regulator is granted to restrict policyholder participation and to cover policyholder guarantees by the free RfB and the Terminal Bonus Fund. The changed ordinance to calculate the Terminal Bonus Fund is not implemented yet in the models.

The following German life primary companies are covered:

Covered German life primary business

ERGO Lebensversicherung AG, Hamburg
VICTORIA Lebensversicherung Aktiengesellschaft, Düsseldorf
ERGO Direkt Lebensversicherung AG, Fürth
Vorsorge Lebensversicherung Aktiengesellschaft, Düsseldorf
Vorsorge Luxemburg Lebensversicherung S.A., Munsbach

5.16 German health primary business

In addition to tax and investment cost of required capital, policyholder participation in the profit of the required capital is included in the FCRC for our German health primary business.

The development of healthcare costs is based on general inflation assumptions adjusted for higher health inflation in some parts of the business. Premium rates are assumed to increase in line with these developments.

The following German health primary companies are covered:

Covered German health primary business

DKV Deutsche Krankenversicherung Aktiengesellschaft, Köln

In 2010 ERGO has refined the profile of its special brands, therefore health insurance was pooled under the DKV brand and Victoria Krankenversicherung was merged into DKV Deutsche Krankenversicherung.

5.17 International life primary business

Our covered international life primary business comprises the following companies:

Covered international life primary business

ERGO Previdenza S.p.A., Milan

ERGO Elukindlustuse AS, Tallinn

Sopockie Towarzystwo Ubezpieczen na Zycie Ergo Hestia Spolka Akcyjna, Sopot

ERGO Latvija Dzīvība AAS, Riga

ERGO Lietuva gyvybės draudimas, Vilnius

ERGO Vida Seguros y Reaseguros, Sociedad Anónima, Saragossa

ERGO Life N.V., Brussels

VICTORIA-Seguros de Vida, S.A., Lisbon

VICTORIA-VOLKSBANKEN Versicherungsaktiengesellschaft, Vienna

Bank Austria Creditanstalt Versicherung AG, Vienna

6 Assumptions



6.1 Shareholders' share

Shareholders' share

	Primary insurance	
	31.12.2010	31.12.2009
%		
Germany - life	14	14
Germany - health	15	15
Italy	20	18-20

The shareholders' shares used in the projections represent strategic long-term planning assumptions that are subject to management discretion in the projection.

6.2 Tax rates

Long-term tax rate

	Reinsurance		Primary insurance	
	31.12.2010	31.12.2009	31.12.2010	31.12.2009
%				
Germany	33	33	32	32
Italy	32	32	33	33
US	35	35		
Canada	26	26		
UK	27	28		

Tax grouping of ERGO was established in 2009 and is modelled within covered business.

6.3 Currency exchange rates

Currency exchange rates

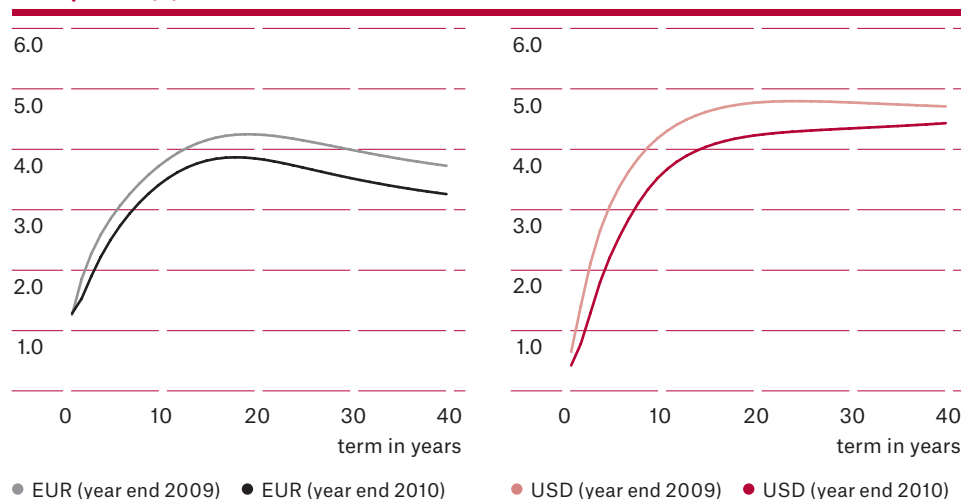
€1 = ... foreign currency	31.12.2010	2010 average year	31.12.2009
USD	1.338	1.327	1.433
CAD	1.336	1.366	1.507
GBP	0.857	0.858	0.886

6.4 Economic assumptions

6.4.1 Risk-free interest rates

Generally, swap rates have been used as an approximation of the risk-free yield curves. In countries without deep and liquid swap markets, government bonds were used instead.

Zero spot rate (%)



The table below shows the zero spot rates at the relevant valuation date for the major currencies.

Zero spot rate

Term	31.12.2010				31.12.2009			
	EUR	USD	GBP	CAD	EUR	USD	GBP	CAD
%								
1 year	1.33	0.44	0.88	1.25	1.31	0.67	1.02	0.82
2 years	1.57	0.80	1.51	1.80	1.89	1.42	1.98	1.57
3 years	1.93	1.30	1.99	2.12	2.29	2.12	2.70	2.17
4 years	2.25	1.81	2.37	2.38	2.61	2.66	3.17	2.60
5 years	2.51	2.22	2.69	2.60	2.86	3.07	3.49	2.93
6 years	2.74	2.56	2.96	2.81	3.07	3.38	3.71	3.21
7 years	2.94	2.86	3.19	3.01	3.26	3.64	3.89	3.44
8 years	3.12	3.12	3.39	3.20	3.42	3.86	4.04	3.66
9 years	3.27	3.34	3.56	3.37	3.57	4.04	4.16	3.86
10 years	3.40	3.53	3.70	3.53	3.71	4.19	4.27	4.05
15 years	3.79	4.04	4.08	4.04	4.13	4.62	4.55	4.70
20 years	3.83	4.23	4.17	4.18	4.22	4.77	4.55	4.84
25 years	3.69	4.30	4.12	4.11	4.13	4.80	4.40	4.68
30 years	3.51	4.35	4.03	3.96	3.97	4.78	4.24	4.50

For interpolation, a regression spline technique is used and extrapolation is done by the Nelson-Siegel form.

6.4.2 Volatilities

The interest rate scenarios have been generated so that they replicate at-the-money swaption prices. The implied volatilities for these swaptions are outlined in the following table:

Target swaption implied volatilities (tenor of 20 years)

Term %	31.12.2010		31.12.2009	
	EUR	USD	EUR	USD
1 year	24.10	25.10	21.00	25.90
2 years	22.00	23.40	20.50	24.70
3 years	20.70	22.10	19.00	23.20
4 years	19.40	21.20	18.20	21.90
5 years	18.70	20.20	17.40	20.60
10 years	18.20	16.30	15.60	16.30
15 years	20.50	15.20	16.20	14.30
20 years	22.70	13.80	17.40	12.80
30 years	20.50	14.40	16.50	12.50

The equity models have been calibrated to prices of at-the-money ten-year European equity index options observed in the OTC market. The implied volatilities of these option prices are shown in the table below.

Target equity implied volatilities

Equity index %	31.12.2010		31.12.2009	
	EURO STOXX	S&P 500	EURO STOXX	S&P 500
	27.30	27.40	28.60	29.00

Given the long-term nature of the financial risks embedded in life insurance contracts, the implied volatilities of swaptions and equity options of the longest available maturities have been taken as target volatilities.

6.4.3 Correlation coefficients

Correlation assumptions are estimated from historic market data. The relevant correlation assumptions between (the log excess returns on) a ten-year nominal zero coupon government bond and an equity index are displayed in the following table:

Correlation coefficients

	10y EUR bond return	EURO STOXX
10y EUR bond return	1.000	0.190
EURO STOXX		1.000
	10y USD bond return	S&P 500
10y USD bond return	1.000	0.180
S&P 500		1.000

6.4.4 Expected return in excess of reference rate

Expected return in excess of reference rate

bp	31.12.2010	31.12.2009
Equities	520	400
Real estate	200	300
Corporate bonds	80	0
All other assets	0	0

7 Independent assurance report



Introduction

Based on the engagement letter dated 29 July 2010, KPMG has been engaged to audit the Market Consistent Embedded Value (MCEV) of Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft, München, (Munich Re) as at 31 December 2010 as stipulated in the accompanying MCEV Report of Munich Re. Munich Re is responsible for the preparation of the MCEV Report including the calculation of the MCEV. This includes particularly setting the operative and economic assumptions, the explanation concerning the determination of the MCEV and its roll forward, the implementation and the operativeness of the system which ensures the completeness and correctness of the data which are necessary for the calculation of the MCEV. Our responsibility is to express an opinion on the calculation of the MCEV as to whether the methodology and the assumptions used comply with the Market Consistent Embedded Value Principles® as published by the CFO Forum on 4 June 2008 and amended in October 2009 (Market Consistent Embedded Value Principles) except principles 17.3.37 to 17.3.45 (Group MCEV). Munich Re does not apply a liquidity premium in the calculation of the MCEV but discloses an additional sensitivity which allows to understand and to assess the impact of a liquidity premium on the MCEV of Munich Re.

Subject matter and criteria

For the calculation of the MCEV, Munich Re applies criteria as set out in the Market Consistent Embedded Value Principles except principles 17.3.37 to 17.3.45. The calculation of Market Consistent Embedded Values is necessarily based on numerous assumptions with respect to economic conditions, operating conditions, taxes, and other matters. Many of these are beyond the Company's control. Actual cash flows in the future are likely to be different from those assumed in the calculation and such variation may be material.

Work performed

We conducted our audit of the MCEV in accordance with the International Standard on Assurance Engagements (3000): "Assurance engagements other than audits or reviews of historical financial information", issued by the International Auditing and Assurance Standards Board. The effectiveness of the accounting-related internal control system in the MCEV calculation is examined primarily on a test basis within the framework of the audit. The audit includes assessing the MCEV principles used and significant estimates and assumptions made by management. As a result of determining our audit strategy and audit objectives we have established Market Consistent Embedded Value Principles 3, 6, 7, 9, 11, 12, 13, 14, 15 and 16 as the special focus of our audit.

We believe that our audit provides a reasonable basis for our opinion.

Regarding our independence, we comply with the requirements of the IFAC Code of Ethics for Professional Accountants.

Conclusion

In our opinion, the methodology and the assumptions used comply with the Market Consistent Embedded Value Principles except principles 17.3.37 to 17.3.45. Munich Re does not apply a liquidity premium in the calculation of the MCEV but discloses an additional sensitivity which allows to understand and to assess the impact of a liquidity premium on the MCEV of Munich Re. In particular:

- // The calculated MCEV is the present value of shareholders' interests in the earnings distributable from assets allocated to the covered business after sufficient allowance for the aggregate risks in the covered business. Section 5 sets out the methodology of making allowance for the aggregate risks. In particular by the use of
 - a level of required capital derived from internal risk models and additional regulatory restrictions,
 - a market-consistent assessment of the time value of financial options and guarantees, and
 - a deduction for frictional cost of required capital based on the cost of double taxation, investment expenses and, where applicable, policyholder participation on the required capital,
 - a deduction for the cost of residual non hedgeable risks.
- // The operating assumptions have been set with appropriate regard to past, current and expected future experience.
- // The economic assumptions used are internally consistent and consistent with observable market data.
- // For the primary participating business, the assumed bonus distribution, asset allocation, allocation of profit between policyholders and shareholders, and other management actions are consistent with other assumptions used in the projections, and with local market practice.
- // We have also performed limited high-level checks on the results of the calculations. We have not, however, performed detailed checks on all the models and processes involved.

We have provided the services described above on behalf of Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft, München. We have carried out our engagement on the basis of the General Engagement Terms included in our engagement agreement dated as of January 1, 2002. By taking note of and using the information as contained in our Assurance Report each recipient confirms to have taken note of the terms and conditions stipulated in the aforementioned General Engagement Terms (including the liability limitations to €4m for negligence specified in item No. 9 included therein) and acknowledges their validity in relation to us.

Cologne, 9 March 2011

KPMG Bayerische Treuhandgesellschaft Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft



Hanno Reich
Partner



Frederik Boetius
Partner

8 Statement by directors



I confirm that the MCEV of Munich Re as at 31 December 2010 has been prepared in accordance with the Market Consistent Embedded Value Principles® (MCEV principles) issued by the CFO Forum on 4 June 2008 and amended in October 2009. In particular I confirm that

- Non economic assumptions for future experience have been set with regard to past, current and expected future experience and to any other relevant data.
- The economic assumptions used are internally consistent and consistent with observable market data.
- Management actions are consistent with other assumptions used in the projections and assumptions used for other purposes, e.g. projections required in the annual planning of profits and losses. The investment strategy and the realisation of unrealised capital gains are in line with management's expectations. For participating business, assumptions on future bonus rates and profit allocation between policyholders and shareholders are made on a basis consistent with the projection assumptions, established company practice and local market practice.
- Dynamic policyholder behaviour is, where material, taken into consideration in the time value of financial options and guarantees.

However, the following Group-wide items of non-compliance exist:

- Munich Re does not publish a Group MCEV according to MCEV principles 17.3.37 to 17.3.45

Munich, 9 March 2011

A handwritten signature in black ink, appearing to read 'J. Schneider'.

Dr. Jörg Schneider
CFO

9 Disclaimer



This report contains forward-looking statements that are based on current assumptions and forecasts of the management of the Munich Re. Known and unknown risks, uncertainties and other factors could lead to material differences between the forward-looking statements given here and the actual development; in particular the results, financial situation and performance of our company. Munich Re assumes no liability to update these forward-looking statements or to conform them to future events or developments.

10 Glossary and abbreviations



Aa

Acquired (divested) business //

Business acquired (divested) through acquisition (sale) of stakes in insurance or reinsurance companies

Adjusted net worth (ANW) //

Also known as shareholders' net worth or adjusted net asset value. MCEV Principles distinguish between free surplus and required capital.

Assumption changes //

Aggregate impact of changes in the operating assumptions on the embedded value

Bb

Best estimate assumption //

An assumption that represents the expected outcome from the range of possible outcomes of future experience

Cc

Capital movements //

Dividends and capital contributions

Costs of residual non hedgeable risks (CRNHR) //

Allowance for risks not already included in the PVFP or TVFOG. Munich Re uses a cost of capital approach with a unique cost rate applied to the projected risk capital for non hedgeable risks.

Covered business //

The business for which the embedded value is reported

Currency movements //

Aggregate impact of currency movements on the embedded value

Ee

Economic assumptions //

These include risk-free interest rates, discount rates, inflation rates and assumptions on the volatility of economic parameters

Economic variances //

Sum of the difference between projected and actual investment return in the reporting year and effects on the embedded value from changes in capital market parameters

Embedded value //

Present value of shareholders' interests in the earnings distributable from assets allocated to covered business after sufficient allowance for the aggregate risks in covered business

European Embedded Value (EEV) //

Embedded value according to the European Insurance CFO Forum European Embedded Value Principles ('EEV Principles'). Published in May 2004, available online at <http://www.cfoforum.nl>

Expected return at reference rate //

Return for the reporting year if all assumptions of the previous year would remain constant. Besides the risk-free roll-forward of the embedded value at the beginning of the year, it also reflects the unwind of frictional costs, costs for non hedgeable risks and the decay of the time value of financial options and guarantees.

Expected return in excess of reference rate //

Additional return expected by the management due to assumed risk premiums for certain asset classes

Experience variances //

The impact on the embedded value of differences between the actual operating experience in the reporting year and the operating result assumed in the previous embedded value calculation

Ff

Free surplus (FS) //

Amount of capital allocated to the business in excess of the required capital

Frictional costs of required capital (FCRC) //

Allowance for taxation and investment costs on the assets backing required capital. Additionally, for German health primary business FCRC includes the cost of profit sharing of investment income on assets backing required capital.

Ii

IFRS //

International Financial Reporting Standard

LI

Look-through basis //

A basis via which the impact of an item on the whole Munich Re Group is measured, rather than on a particular part

Mm

Market Consistent Embedded Value (MCEV) //

Embedded value according to the European Insurance CFO Forum Market Consistent Embedded Value Principles ('MCEV Principles'), Copyright Stichting CFO Forum Foundation 2008. Published in June 2008, available online at <http://www.cfoforum.nl>. Currently we do not make use of any liquidity premiums in line with to the amendment to the MCEV Principles, published by the CFO Forum in October 2009.

Oo

Opening/closing adjustments //

Change in embedded value due to capital movements, foreign exchange variance or acquired/divested business

Operating assumptions //

All assumptions relating to demographic assumptions (e.g. mortality, morbidity), expenses, policyholder participation and policyholder behaviour

Operating MCEV earnings //

The sum of expected return, value of new business, experience variances, assumption changes and other operating variance

Other operating variance //

Effects from a change or improvement in models and tax planning action

Other non operating variance //

Impacts of legal or regulatory changes including taxation

Pp

Participating business //

Primary insurance business in which policyholders have the right to participate in the performance of a specified pool of assets or contracts

Present value of future profits (PVFP) //

The value of future profits from the in-force covered business and the assets backing the associated liabilities; net of tax, policyholder participation and minorities

Present value of new business premiums (PVNBP) //

Present value of future premiums from new business

Rr

Required capital (RC) //

The amount of surplus assets whose distribution to shareholders is restricted

RfB //

The "Rückstellung für Beitragsrückerstattung (RfB)" is the provision for premium refunds in German primary insurance

Risk-free (interest) rates //

Prospective yields on securities considered to be free of default and credit risk

Ss

Statutory basis //

Valuation basis used for reporting financial statements to local regulators

Tt

Time value of financial options and guarantees (TVFOG) //

The time value of financial options and guarantees is part of the VIF; the VIF before deduction of the allowance for the time value of financial options and guarantees reflects their intrinsic value

Vv

Value of in-force business (VIF) //

The value of in-force covered business is the present value of future shareholder cash flows (PVFP) reduced by costs of residual non hedgeable risks (CRNHR), the frictional costs of required capital (FCRC) and the time value of financial options and guarantees (TVFOG)

Value of new business (VNB) //

The value added through the activity of writing new business

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