

Baloise Group

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**MARKET CONSISTENT  
EMBEDDED VALUE REPORT**

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**2012**

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## 1. INTRODUCTION

### 1.1. Basis of Preparation

Since 2001 the Baloise Group has published Embedded Value (“EV”) results for its Life Insurance businesses as supplementary information to its statutory and IFRS accounts. EV represents shareholders’ economic value of the in-force life segment business at the valuation date, excluding future new business. It measures the shareholder value that an insurance portfolio is expected to create over its lifetime, taking a long term view of profitability. This differs from other accounting standards such as IFRS which currently focus on revenues and expenses occurring during a single reporting period.

Since 2009 the Baloise Group has published the EV results in line with the European Insurance CFO Forum ‘Market Consistent Embedded Value Principles’<sup>1</sup> (“MCEV Principles”).

This document provides details of the results, methodology and assumptions used to calculate the 2012 MCEV for the Baloise Group in accordance with the disclosure requirements of the MCEV Principles.

The methodology and assumptions used to determine the 2012 embedded value results for the Baloise Group, as well as the new business value and the analysis of movement between 2011 and 2012, have been subject to external review by the Actuarial & Insurance Solutions practice of Deloitte. Their opinion is included in the section ‘External Reviewer Statement’.

### 1.2. Covered Business

Baloise Group’s MCEV results cover all its material life insurance operations and entities, consistent with the business covered in its IFRS Life Insurance Segment as consolidated into the Group’s IFRS accounts.

A Market Consistent Embedded Value is calculated for all the life entities of the Baloise Group except for the life business in Austria, Croatia, Liechtenstein and Serbia. For materiality reasons, the life businesses of these companies have been included in Baloise’s MCEV at their IFRS equity value. The statutory book values of companies held within the other life companies from the Baloise Group are removed as a consolidation effect.

All calculations are net of external reinsurance; results for individual operations are gross of internal reinsurance. All results reflect the interest of Baloise shareholders in the business. Where Baloise does not hold 100% of the shares of a particular entity a deduction is made for the corresponding external, or minority, interest.

Although no future new business is included in the valuation, the results are produced on the assumption that all operations remain open to new business and continue to operate in a similar manner and scale relative to the current position; i.e. on a “going concern” basis.

### 1.3. Definitions

According to the MCEV Principles, the MCEV represents the present value of shareholders’ interests in the earnings distributable from assets allocated to the covered business after allowance for the aggregate risks in the covered business, where the allowance for risk is calibrated to match the market price where reliably observable.

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The MCEV consists of the following components<sup>2</sup>:

- Shareholders' Net Assets ("SNA") – the market value of assets attributed to covered business, which are not backing the liabilities from the covered business.
- Value of In-Force ("VIF"), made up of the following components:
  - Present Value of Future Profits – the present value of future post-tax shareholder profits from the assets backing the liabilities associated with the in-force covered business. Baloise calculates this value on a 'certainty equivalent' basis and refers to it as the Certainty Equivalent Value of Business In-Force ("CEVBF")
  - Time Value of Financial Options and Guarantees ("TVFOG") – an allowance for the potential impact on future shareholder cash flows of all financial options and guarantees in the in-force covered business, valued in line with similar cash flows (from a timing and risk perspective) that are traded in capital markets<sup>3</sup>;
  - Frictional Costs of Capital ("FCC") reflecting the taxation and investment management costs on shareholder assets locked into the business. Baloise's approach is to apply this cost to the whole SNA, whereas the MCEV Principles only require it to be applied to Required Capital;
  - Cost of Non-Hedgeable Risks ("CNHR") - an allowance for the potential impact on shareholder cash flows of risks, both financial and non-financial, not allowed for in the CEVBF or the TVFOG.

Baloise also refers to the CEVBF net of TVFOG as the Net Present Value of Future Profits ("NPVFP").

New business is the sale of new Life Insurance Segment contracts during the reporting year, including cash flows arising from the projected renewal of those new contracts. Its definition and the derivation of the Market Consistent Value of New Business ("MCVNB") are discussed below under Methodology.

Two measures of the volume of new business are used to derive the margin on new business. The measures of volume are APE (Annual Premium Equivalent)<sup>4</sup> and PVNBP (present value of new business premiums)<sup>5</sup>.

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<sup>2</sup> Further details of Baloise's approach to defining and calculating these items are given in the Methodology section below.

<sup>3</sup> Further details on the methods employed and the Economic Scenario Generator used are given in the Methodology section below.

<sup>4</sup> APE (Annual Premium Equivalent) is the annual amount of new regular premiums plus 10% of new single premiums written.

<sup>5</sup> PVNBP (present value of new business premiums) is calculated as the present value from new business, discounting using the reference yield curve, of its initial and expected future premiums using assumptions and projection periods that are consistent with those used to calculate the MCVNB.

## 2. MCEV AND MCVNB RESULTS

### 2.1. Baloise MCEV

The Baloise MCEV was CHF 2'753m at 31.12.2012 with a total return of 26.4%, split into an operating return on MCEV of 17.4% and an economic return on MCEV of 9.0% in 2012.

The strong operating performance generated earnings of CHF 378m. It is mainly driven by Switzerland and reflects in particular the positive impact of a revision of the biometric assumptions resulting from selective underwriting and disciplined pricing as well as the expected emergence of value from in-force business. The operating earnings also include the new business value of CHF 23m.

The positive economic return was mainly driven by the tightening of credit spreads during the year and a favorable investment experience which more than compensated the historically low CHF and EUR interest rates in almost all entities.

**Table 1 – Baloise MCEV**

CHF Mio.	31.12.2011	31.12.2012	Change	RoEV <sup>6</sup>
Switzerland	1'645	2'170	525	32.6%
Germany	181	177	-4	1.1%
Belgium	106	161	55	29.4%
Luxembourg	122	152	30	25.6%
Other	79	96	17	-8.6%
Consolidation adjustments	20	-4	-23	n.a.
<b>Total</b>	<b>2'153</b>	<b>2'753</b>	<b>600</b>	<b>26.4%</b>

The Baloise Embedded Value is the sum of the individual entity Embedded Values subject to consolidation adjustments. These adjustments result from the removal of the statutory book values of those life companies held within other Life entities included in the MCEV and from the effect on CNHR of diversification of risk between companies. Baloise's MCEV can be further broken down into the following components as shown in Table 2:

**Table 2 – Breakdown of Baloise MCEV**

CHF Mio.	31.12.2011	31.12.2012	Change	Change in %
CEVBF	1'890	2'249	360	19.0%
TVFOG	-419	-392	27	-6.4%
CNHR	-347	-393	-46	13.3%
FCC	-90	-100	-10	10.6%
<b>Value of In-Force (VIF)</b>	<b>1'034</b>	<b>1'365</b>	<b>331</b>	<b>32.0%</b>
Shareholders' Net Assets (SNA)	1'119	1'388	269	24.0%
<b>MCEV</b>	<b>2'153</b>	<b>2'753</b>	<b>600</b>	<b>27.9%</b>

The components of the Value of In-Force and the definition of the Shareholders' Net Assets follow the MCEV Principles and are described in the Methodology section below.

<sup>6</sup>The returns on opening MCEV of each entity are calculated in local currency and are net of capital movements and the impact of acquired/divested business. The returns of Belgium and Total are computed on adjusted opening MCEVs that include the opening value of Nateus Life NV which Baloise acquired in 2011.

## 2.2. Volume and Value of New Business

The Baloise new business margin on APE was 8.9% in 2012, slightly lower than a year earlier. The new business value decreased by 32.7% to CHF 23m despite operational improvements, mainly due to lower volumes in Switzerland and adverse changes in market conditions with historically low interest rates. APE decreased by 22.6% mainly driven by the decline in Switzerland.

Table 3a shows the new business volumes, value and margins using APE (Annual Premium Equivalent) as a measure for the volume of new business.

**Table 3a – Baloise New Business - Premium Volumes, Values and Margins on APE**

CHF Mio.	APE			MCVNB			NB Margin on APE		
	2011	2012	Change	2011	2012	Change	2011	2012	Change
Switzerland	159	109	-31.0%	28	0	-100.0%	17.3%	0.0%	-17.3% pts
Germany	74	49	-33.5%	8	10	18.7%	11.1%	19.8%	8.7% pts
Belgium	24	37	58.2%	2	6	182.6%	9.4%	16.8%	7.4% pts
Luxembourg	51	68	33.3%	4	8	80.3%	8.1%	11.0%	2.9% pts
<b>Total<sup>7</sup></b>	<b>342</b>	<b>264</b>	<b>-22.6%</b>	<b>35</b>	<b>23</b>	<b>-32.7%</b>	<b>10.2%</b>	<b>8.9%</b>	<b>-1.3% pts</b>

In Table 3b the new business margins on PVNBP (present value of new business premiums) are displayed.

**Table 3b – Baloise New Business - Premium Volumes, Values and Margins on PVNBP**

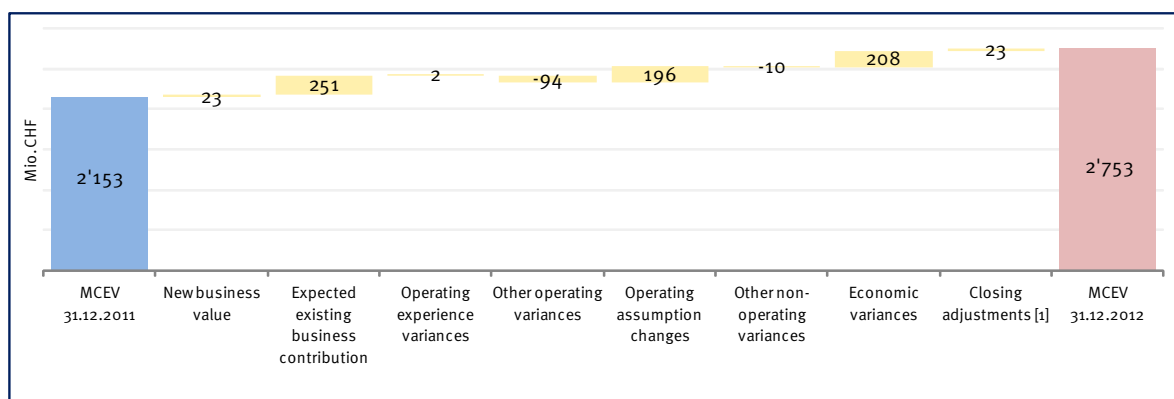
CHF Mio.	PVNBP			MCVNB			NB Margin on PVNBP		
	2011	2012	Change	2011	2012	Change	2011	2012	Change
Switzerland	2'035	1'493	-26.6%	28	0	-100.0%	1.4%	0.0%	-1.4% pts
Germany	633	429	-32.3%	8	10	18.7%	1.3%	2.3%	1.0% pts
Belgium	255	421	65.1%	2	6	182.6%	0.9%	1.5%	0.6% pts
Luxembourg	514	686	33.3%	4	8	80.3%	0.8%	1.1%	0.3% pts
<b>Total<sup>7</sup></b>	<b>3'780</b>	<b>3'029</b>	<b>-19.9%</b>	<b>35</b>	<b>23</b>	<b>-32.7%</b>	<b>0.9%</b>	<b>0.8%</b>	<b>-0.1% pts</b>

MCVNB is calculated at the year-end, using year-end projection assumptions and is adjusted to comply with a point of sale valuation. Further details of Baloise's approach to defining new business are given in the Methodology section below.

<sup>7</sup> The 2011, the total values include CHF 34m APE, CHF 343 PVNBP and CHF -7m MCVNB of Baloise Life Liechtenstein.

### 2.3. Analysis of Change in MCEV

Elements in the movement in the MCEV over the year are shown below:



[1] Includes the impact of acquired/divested business, capital movements, intercompany, and currency translation effects

**Table 4 – Baloise 2012 MCEV Movement and Earnings Analysis**

CHF Mio.	SNA	VIF	MCEV
<b>Opening MCEV</b>	<b>1'119</b>	<b>1'034</b>	<b>2'153</b>
New Business Value	-38	61	23
Expected existing business contribution (reference yield only)	19	67	86
Expected existing business contribution (in excess of reference yield)	41	124	165
Expected transfers to SNA	75	-75	0
Operating experience variances	-21	23	2
Other operating variances	-110	16	-94
Operating assumption changes	0	196	196
<b>Operating MCEV earnings</b>	<b>-33</b>	<b>412</b>	<b>378</b>
Other non-operating variances	15	-24	-10
Economic variances	168	40	208
<b>Total MCEV earnings</b>	<b>149</b>	<b>428</b>	<b>577</b>
Closing adjustments	120	-97	23
<b>Closing MCEV</b>	<b>1'388</b>	<b>1'365</b>	<b>2'753</b>

The total **return on the opening MCEV** amounts to 26.4%. Strong operating earnings contributed 17.4% to the return on opening embedded value.<sup>8</sup>

The **value of new business** of CHF 23m is made up of investment from SNA (as initial expenses, commissions and reserves exceeding the initial premiums received) in future shareholder cash flows from the new business that serve to increase VIF. The value shown is that of new business still in force at the year-end, using year-end projection assumptions and adjusted to point of sale to reflect discounting and changes in unrealised gains. Entity-specific details on the origins of the MCVNB are given below.

The **expected existing business contributions** include:

- expected earnings on the opening SNA and VIF at the opening reference yields including the impact of release from risk in TVFOG and CNHR (CHF +86m), and

<sup>8</sup> The returns are calculated on an adjusted opening MCEV of CHF 2'175 m that includes the opening value of Nateus Life NV which Baloise acquired in 2011.

- ii. management's expectation of additional earnings (CHF +165m) primarily in respect of risky assets expected to earn long term returns in excess of reference yields.<sup>9</sup> The main contribution resulted in 2012 from the expected emergence of value from spreads on sovereign and corporate bonds, which were particularly high at year end 2011.

As the in-force business runs off during the year [transfers to SNA](#) shows the expected release of profit from the in-force portfolio into shareholder equity. This release of profits has no net impact on the MCEV.

[Operating experience variances](#) (CHF +2m) include the impact of experience versus expectations in the insurance contract portfolios in non-economic areas such as mortality, expenses, and persistency. These variances have generally been small in 2012.

[Other operating variances](#) (CHF -94m) include the impact on MCEV of adjustments of the bonus rates and of changes in the bonus rules except for those which are directly driven by the change in economic conditions and are therefore captured in the economic variances. The position also contains the variance due to modelling changes, the impact of management decisions such as the changes in the asset allocation, as well as adjustments to comply with a point of sale valuation of the new business written during the year. In 2012, the other operating variances mainly resulted from attributions to bonus funds and strengthening of reserves in Switzerland.

Assumptions for experience in areas such as lapses, mortality and expenses are reviewed on a regular basis. The impact (CHF +196m for 2012) of any changes in expectations is captured in [Operating Assumption Changes](#). The positive contributions mainly reflect experience-driven updates of biometric assumptions in Switzerland.

[Other non-operating variances](#) (CHF -10m) include any other non-economic deviations from expectation that are not captured by the items above, e.g. the impact of tax and regulatory changes. In 2012, the negative impact from a court ruling in Germany regarding lapse penalty clauses was partially offset by the positive contribution of a tax asset in Luxembourg.

[Economic variances](#) (CHF +208m) include the impact of both economic experience during the year and assumption changes at the year-end regarding economic items such as reference yields, volatilities, inflation rates, returns on investments, and taxes. The economic variances were driven by the narrowing of credit spreads during the year and favorable investment results in all entities. These effects outweighed the declines in interest rates and liquidity premiums whose negative impacts were reduced by a change of the parameters used for the extrapolation of the yield curve following the current Solvency II guidance (see Economic Assumptions section below).

[Closing adjustments](#) include the impact of acquired/divested business, capital movements, intercompany, and currency translation effects. The business of Nateus Life NV, which Baloise acquired in 2011, is for the first time included in Baloise's year end MCEV reporting. It was included at the beginning of the period with its opening value of CHF +22m. Capital movements include dividends due from the Life Segment to Baloise Group during 2012 and capital contributions to Life Segment business. In 2012, CHF +24m capital contributions were paid into the part of the Life Segment recognized as "Other" in MCEV reporting. Intercompany effects reflect profit transfers from the Life Segment into other segments and account for CHF -20m in 2012. Currency translation effects resulting from the consolidation in Swiss Francs finally reduced the MCEV by CHF 3m.

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<sup>9</sup>The risk premiums over the reference yields used for this calculation are shown in the Economic Assumptions section below.



## 2.4. Sensitivities

Sensitivities are an important part of the MCEV analysis in order to judge those areas in which shareholder value can change with experience. The following tables show changes in Baloise's MCEV and MCVNB resulting from changes in various economic and operating parameters. These sensitivities follow the descriptions in the MCEV Principles (see the Methodology section for details).

**Table 5a – Baloise Economic Sensitivities**

CHF Mio.	$\Delta$ MCEV	$\Delta$ MCEV in %	$\Delta$ MCVNB	$\Delta$ MCVNB in %
Base Value	2'753	-	23	-
+100 bps to reference yields	473	17%	14	61%
-100 bps to reference yields	-1'052	-38%	-37	-160%
10% decrease in equity / property values	-375	-14%	-7	-28%
25% increase in equity / property implied volatilities	-161	-6%	-1	-5%
25% increase in swaption implied volatilities	-202	-7%	-4	-18%
without liquidity premium	-197	-7%	-2	-8%

The MCEV is particularly sensitive to movements in fixed interest yields and to changes in the liquidity premium since a significant part of the in-force business is traditional business in which shareholder profits are driven by a margin on future interest yields. The effect is asymmetric due to the impact of guarantees and options tending to impact more in low interest rate scenarios. The sensitivity mainly stems from Switzerland, Germany, and Belgium as a large share of these businesses is traditional business with interest rate guarantees close or above the level of interest rates at year-end 2012. The interest rate sensitivities reduced compared to 2011 partly due to an increase in the duration of the bond portfolio, and also because improved conditions in the equity and credit markets allow more flexibility to share investment fluctuations with policyholders.

The economic sensitivities of the MCVNB broadly follow those of the MCEV.

**Table 5b – Baloise Operating Sensitivities**

CHF Mio.	$\Delta$ MCEV	$\Delta$ MCEV in %	$\Delta$ MCVNB	$\Delta$ MCVNB in %
Base Value	2'753	-	23	-
10% decrease in lapse rates	71	3%	7	28%
10% decrease in maintenance expenses	150	5%	8	34%
10% decrease in initial expenses	n.a.	n.a.	5	21%
5% improvement in mortality assumptions – insurance	23	1%	2	9%
5% improvement in morbidity assumptions	46	2%	0	1%
5% improvement in mortality assumptions – annuity	-38	-1%	-1	-5%
1%-pt decrease for CNHR	111	4%	4	18%

Lower lapse rates keep the business on Baloise's books for longer, increasing the average period over which shareholder profits are earned. In some markets this positive impact is offset by lower projected profits on surrenders. Overall the impact on Baloise's 2012 MCEV is slightly positive (+3%). As expected, lower projected expenses increase the MCEV. Mortality improvements affect different types of products in different ways. Lower mortality rates increase profits on (protection) products with mortality risk (+1% on the Baloise 2012 MCEV) and reduce profits on (annuity-type) products with longevity risk (-1% on the Baloise 2012 MCEV). Improvements in morbidity increase the MCEV as expected. Baloise also provides the sensitivity of the MCEV to a different rate of capital charge for the CNHR so that analysts can make their own estimates of this cost.

The operational sensitivities of the MCVNB broadly follow those of the MCEV.

No sensitivity to the level of Required Capital has been provided as Baloise calculates the FCC on the whole SNA. Hence a different level of Required Capital has a neutral impact on the overall MCEV, simply affecting the way the SNA would be split between Required Capital and Free Surplus.

## 2.5. Reconciling MCEV Shareholders' Net Assets to IFRS Equity

The local statutory balance sheets, rather than IFRS balance sheets, are the starting point for the MCEV projections. It is possible, however, to reconcile the net assets used in determining the MCEV for Baloise's Life business with those published under IFRS, by considering the adjustments necessary to reach statutory net assets:

CHF Mio.	Total
<b>IFRS Shareholders' Equity as at 31.12.2012</b>	<b>3'174</b>
Removal of DAC & intangible assets	-122
Unrealised capital gains included in VIF instead of SNA under MCEV	-1'551
Difference in IFRS reserves compared to statutory reserves	-394
Other adjustments	281
<b>Shareholders' Net Assets as at 31.12.2012</b>	<b>1'388</b>

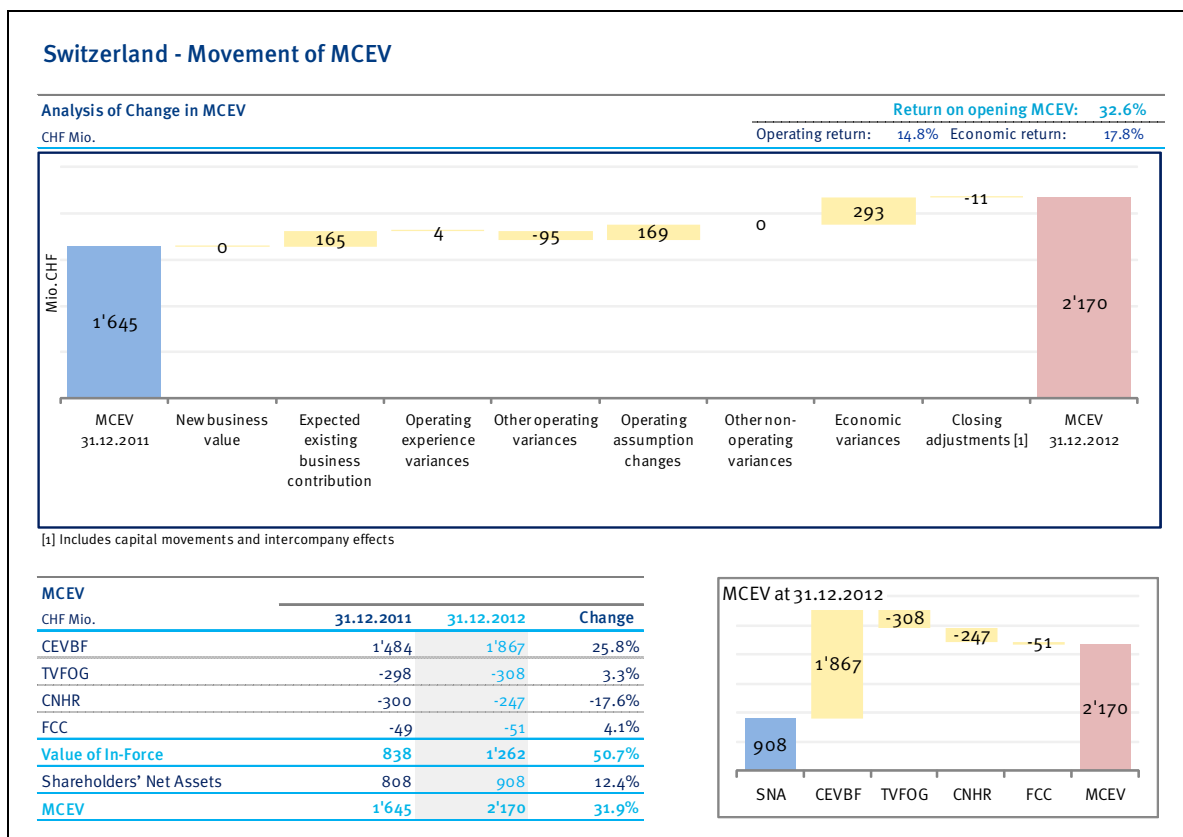
The major elements of the reconciliation are as follows:

- Elimination of all Deferred Acquisition Costs (DAC) and intangible assets from the IFRS balance sheet;
- Deduction from IFRS net assets of unrealised gains that are projected in the MCEV as part of the VIF but form part of the IFRS net assets;
- Further reconciliation steps between the Statutory and IFRS balance sheets, predominantly reflecting different reserving bases.

### 3. DETAILED RESULTS BY REGION

The following tables provide an overview of the movement of the MCEV and of the volume and value of the new business of the various entities of the Baloise group. All returns in this section are shown in local currency.

#### 3.1. Switzerland



In 2012, Switzerland reported a strong operating return of 14.8%. Together with the positive contribution from economic variances this results in a total return on MCEV of 32.6%.

The operating experience variances (CHF +4m) reflect essentially the better than expected persistency and expense results.

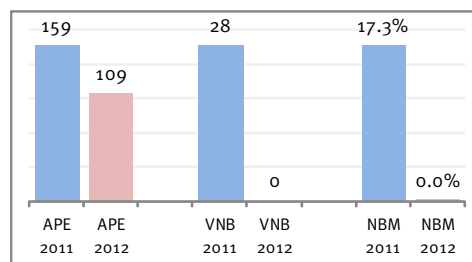
The dominant effects captured in the other operating variances (CHF -95m) are due to higher than anticipated contributions to the bonus funds, which allow policyholder a portion of the good financial result, as well as due to further strengthening of reserves in view of the low interest rates.

The operating assumption changes accounted for CHF +169m, mainly due to a reassessment and revision of the biometric assumptions resulting from selective underwriting and disciplined pricing.

Switzerland's MCEV benefited significantly on various economic effects. Despite the historically low interest rates, the economic variances contributed CHF +293m to the increase in MCEV, essentially due to the tightening of credit spreads combined with good equity performance.

## Switzerland - Volume and Value of New Business

New Business - Premium Volumes, Values and Margins			
CHF Mio.	31.12.2011	31.12.2012	Change
MCVNB	28	0	-100.0%
Regular Premium	89	67	-24.4%
Single Premium	696	422	-39.4%
APE	159	109	-31.0%
NB Margin on APE	17.3%	0.0%	-17.3% pts
PVNB	2'035	1'493	-26.6%
NB Margin on PVNB	1.4%	0.0%	-1.4% pts

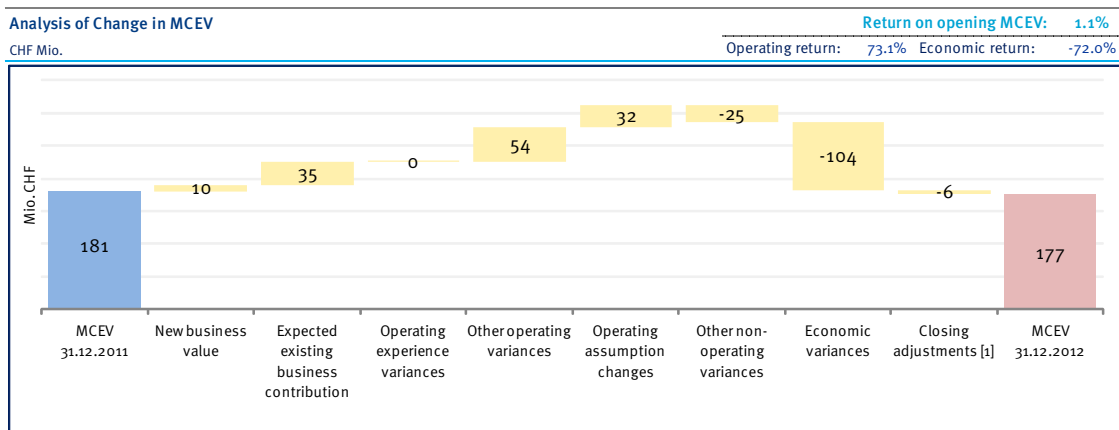


The volume of new business decreased in comparison to last year's value reflecting among others the impact of cautious underwriting guidelines.

The positive effects of the operational improvements on the new business value were outweighed by a strong negative economic contribution and volume reductions. Due to the point of sale valuation, neither the tightening of the credit spreads, nor the favorable equity performance, which increased the MCEV, contributed to the value of new business. Therefore, the adverse effect of all-time low interest rates deteriorated the new business value and margin to zero.

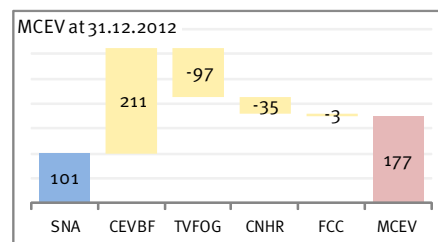
## 3.2. Germany

### Germany - Movement of MCEV



[1] Includes capital movements, intercompany, and currency translation effects

MCEV			
CHF Mio.	31.12.2011	31.12.2012	Change
CEVBF	218	211	-3.5%
TVFOG	-99	-97	-2.5%
CNHR	-36	-35	-3.7%
FCC	-10	-3	-67.5%
Value of In-Force	73	76	3.8%
Shareholders' Net Assets	108	101	-6.1%
MCEV	181	177	-2.1%

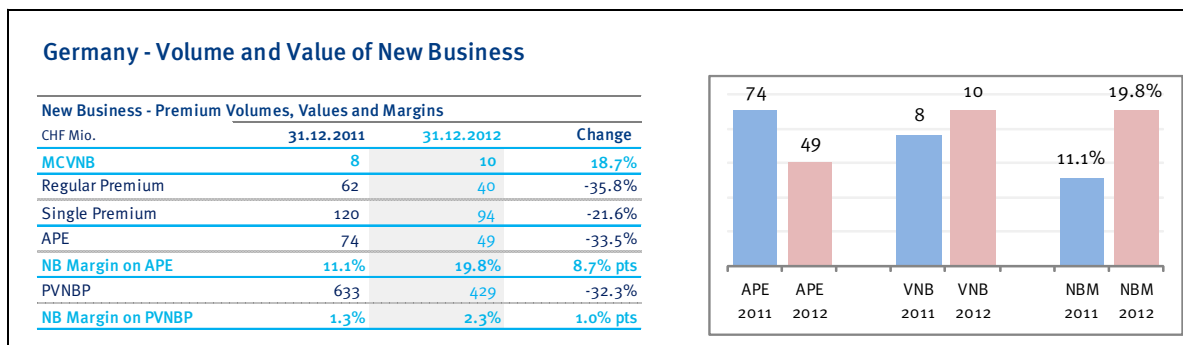


In Germany a strong positive operating return of 73.1% was mostly offset by the adverse impact of the economic variances resulting in a total return on MCEV of 1.1% in local currency.

The positive contribution of the other operating variances (CHF +54m) is mainly due to an improved modeling of the regulatory framework in Germany, an allowance for future dynamic premium increases, as well as adjustments of bonus rates. The operating assumption changes increased the MCEV by CHF +32m and capture the favorable contribution of updated expense assumptions and of changes in the asset allocation to reduce the

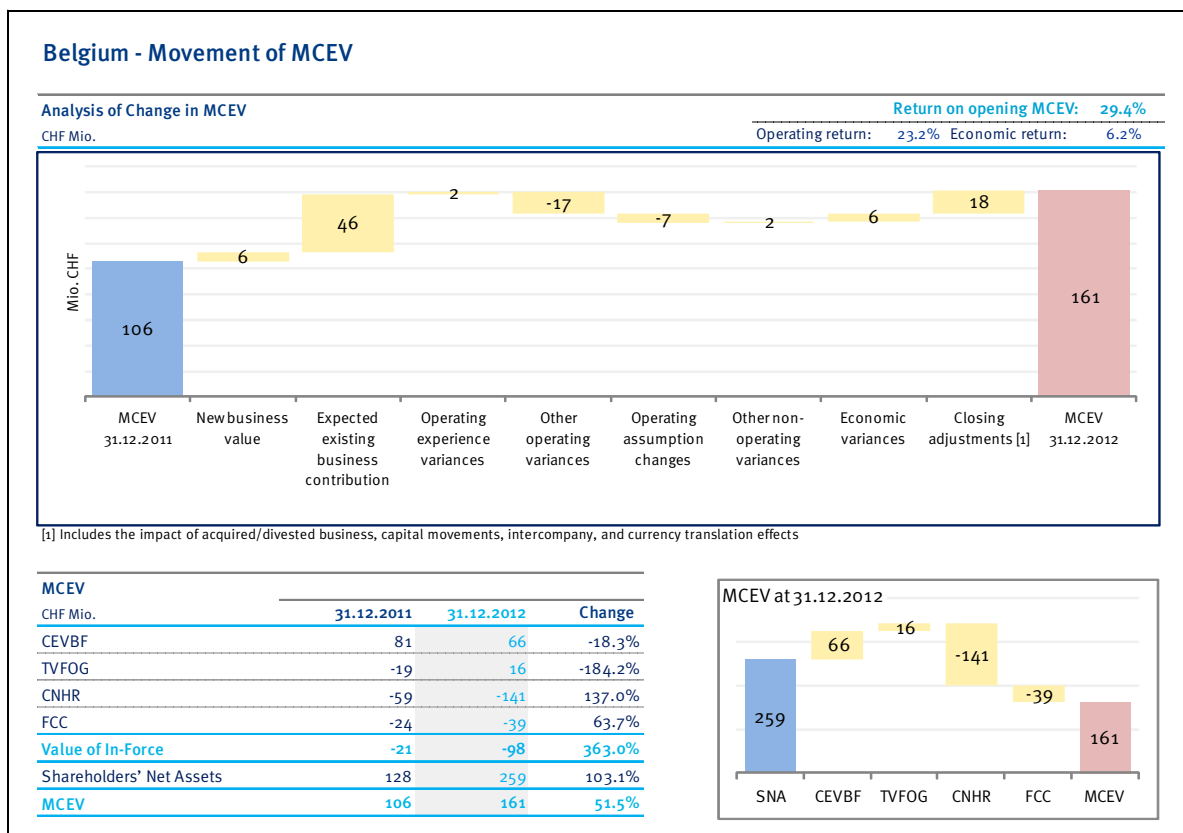
duration gap. The other non-operating variances (CHF -25m) reflect the negative impact of a court ruling in Germany, which declares certain lapse penalty clauses invalid.

The outstanding operating performance was nearly completely eliminated by the economic variances which accounted for CHF -104m CHF and were mainly driven by the decline of the interest rates and the lower liquidity premium.



In Germany APE decreased versus 2011 mainly because the dynamic premium increases of the reporting period from 2012 onwards are not included in the APE but in the in-force business as a consequence of the modeling of future dynamic premium increases. The new business margin benefited from this model refinement and also increased because of favorable operating assumptions changes and the lowering of the guaranteed interest rate from 2.25% to 1.75% in Germany, which in total more than compensated the negative impacts of the change in economic conditions.

### 3.3. Belgium



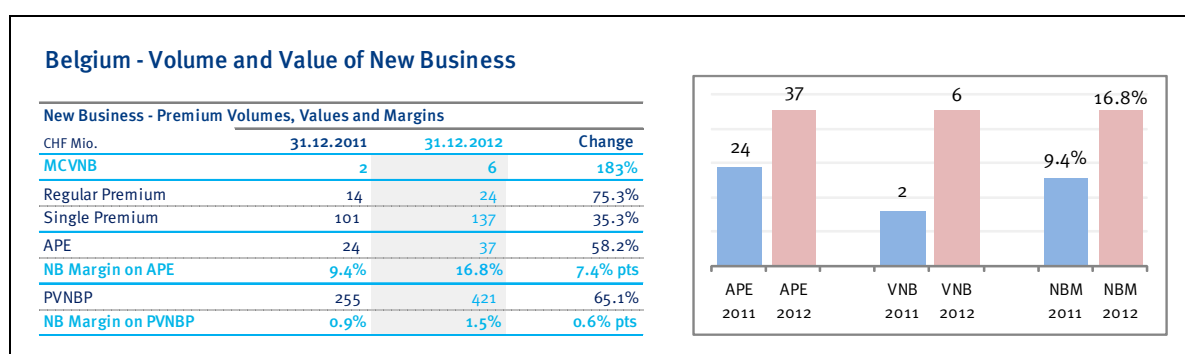
Belgium reported a total return on MCEV of 29.4% in local currency in 2012, mainly driven by a strong operating return of 23.2%.

The high level of the expected existing business contribution (CHF +46m) is explained by the high spreads on Belgium sovereign bonds at year end 2011.

The operating experience variances (CHF +2m) are due to positive risk results which were partially offset by one-off costs for the integration of the Belgium entities. Other operating variances accounted for CHF -17m and reflect the impact of model refinements and bonus payments. The operating assumption changes (CHF -7m) were negatively affected by revised cost assumptions which include anticipated integration and project costs for the coming years. This effect is partially compensated by the management decision to lower the guarantees on new premiums for the in-force portfolio.

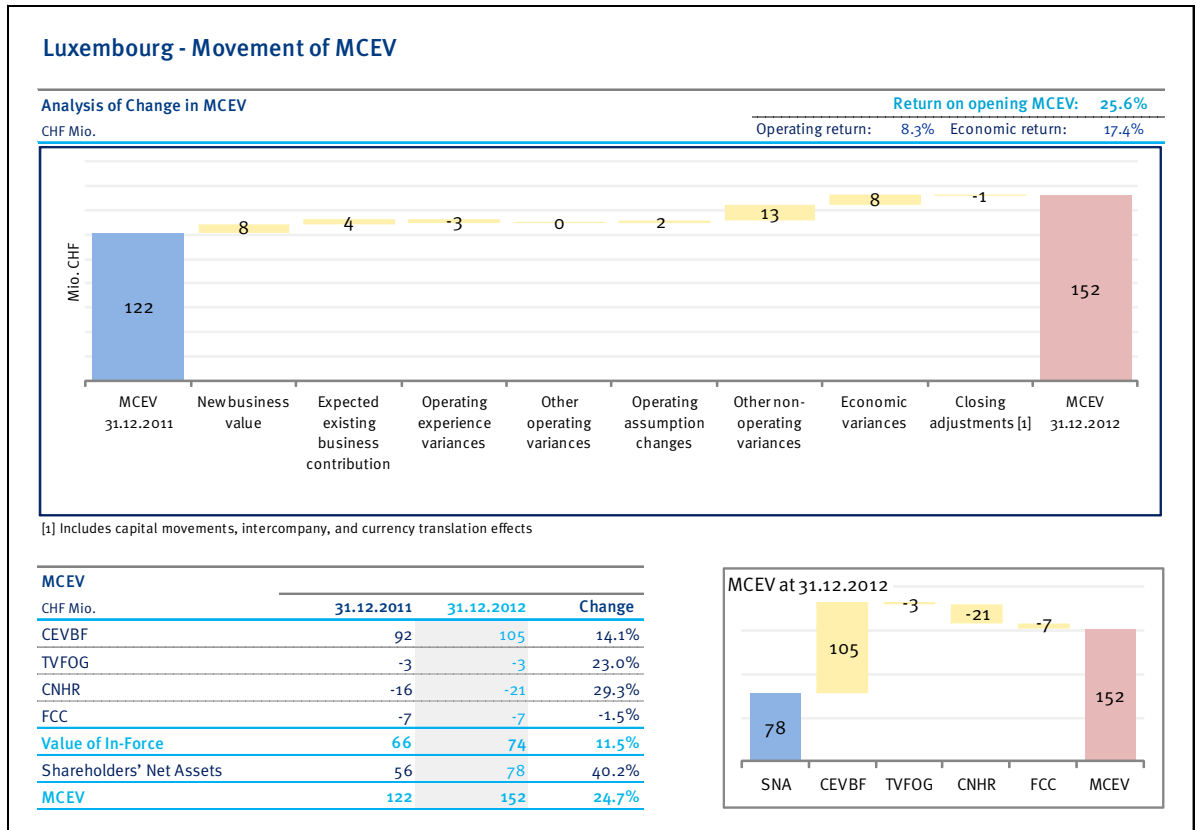
The decrease in credit spreads and the outstanding result of the year outweighed the decrease of the yield curve and of the liquidity premium resulting in positive economic variances of CHF +6m.

The closing adjustments (CHF +18m) are mainly related to the inclusion of Nateus Life NV, which Baloise acquired in 2011, partially offset by intercompany and currency translation effects.



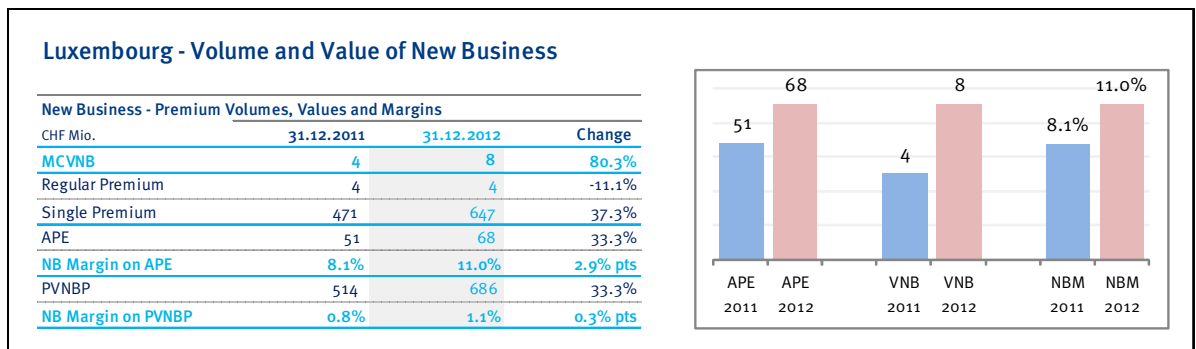
The Belgium APE increased by 61.8% (in local currency) due to the inclusion of Nateus Life NV as well as due to organic growth. The decrease in guarantees for the new business positively impacted the margin which increased by 7.4% pts to 16.8% on APE.

### 3.4. Luxembourg



Luxembourg reported a total return on the MCEV of 25.6% in local currency in 2012. The operating return was equal to 8.3%.

The main driver of Luxembourg's MCEV was the other non-operating variances (CHF +13m) which is positive due to an increase of a tax asset of the local holding. Further positive impacts resulted from the new business (CHF +8m) written in 2012 and from the economic variances (CHF +8m) which benefited from a favorable financial result and the decrease in inflation rates.



In Luxembourg, APE increased by 36.3% in local currency due to growth in the Unit Linked business. The new business margin benefited from higher loadings and the decrease of inflation rates, resulting in an increase of the margin by 2.9% pts on APE.

## 4. METHODOLOGY

The MCEV is a measure of the consolidated value of shareholder investments in the covered business, determined as the value arising from the run-off of business in force at the year-end using assumptions consistent with a going concern basis. To determine the assumptions for valuing in-force business it is assumed that the company continues to write new business at levels consistent with recent years, although no value of future new business is included in the MCEV.

Projections are made of future cash flows net of external reinsurance and net of taxes over 40 years, with a split between shareholders and policyholders of the residual balance sheet at the end of the projections.

Baloise's MCEV is the sum of the Shareholders' Net Assets (SNA) and the Value of In-Force (VIF) of its Life Insurance Segment business, terms which are described further below.

The Baloise Group provides each reporting entity with detailed methodological guidelines based on the MCEV principles and with basic economic assumptions used in the calculation of its MCEV. MCEV results are signed off against these by the local CEO.

### 4.1. Covered Business

For the purposes of Baloise Group MCEV reporting, covered business is defined as all the business included in the Life Insurance segment of the published IFRS accounts. This includes a range of traditional and unit linked life insurance risk protection, savings / investment and retirement products distributed to individuals and companies by the life entities of the Baloise Group. Descriptions of terms below apply to legal entities and businesses within the Life Insurance segment.

A Market Consistent Embedded Value is calculated for Basler Leben AG ("Baloise Switzerland"), the life business of Mercator Verzekeringen NV and of Nateus Life NV (together "Baloise Belgium")<sup>10</sup>, Basler Lebensversicherungs-Aktiengesellschaft<sup>11</sup> and Basler Leben AG Direktion für Deutschland (together "Baloise Germany") and for Baloise Vie Luxembourg SA ("Baloise Luxembourg"). The other Life Companies<sup>12</sup> (together "Other") from the Baloise Group have been included at their IFRS equity value and the statutory book values of those Companies within other life entities have been removed as a consolidation effect.

### 4.2. Components of MCEV

#### Shareholders' Net Assets

The SNA is given by the statutory shareholders' equity<sup>13</sup> plus the amount of undisclosed surplus allocated to the SNA after tax plus the pension scheme deficit / surplus cost after tax<sup>14</sup>.

The starting point for determining SNA is shareholders' equity as reported in the local statutory balance sheet. In some territories this balance sheet includes some assets at values other than market value<sup>15</sup> and some technical reserves set up<sup>16</sup> voluntarily, which together can be significant. Where relevant an 'undisclosed surplus'

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<sup>10</sup> From 19.01.2013 on Baloise Belgium NV

<sup>11</sup> Until 21.12.2012 Deutscher Ring Lebensversicherung-Aktiengesellschaft

<sup>12</sup> These Companies are the life business of Basler Versicherungs-Aktiengesellschaft in Österreich ("Basler Austria"), Basler osiguranje Zagreb d.d. ("Basler Croatia"), Baloise Life Liechtenstein AG ("Baloise Liechtenstein"), and Zivotno osiguranje "Basler" a.g.o. ("Basler Serbia").

<sup>13</sup> Includes dividend for the year reported on, which is payable in the following year.

<sup>14</sup> See 'Employee Pension Schemes' below for details

<sup>15</sup> E.g. historical cost, lowest ever value

<sup>16</sup> E.g. financial reserves



is determined as the sum of such hidden reserves in the assets (unrealised gains) and in the liabilities. To determine the proportion of this surplus included in projections to calculate the NPVFP, appropriate assets are selected with a statutory book value exactly sufficient to back technical reserves (net of any applicable deferred acquisition costs) and funds for future appropriation and bonuses. The unrealised gains on these assets are included in the calculation of NPVFP in accordance with local rules and any relevant past practice, in particular regarding the timing of realisation and proportion of gains expected to be allocated to policyholders as bonus. Any remaining assets, together with their unrealised gains, are included in SNA.

The SNA can be split into Required Capital (RC) and Free Surplus (FS) in line with MCEV Principles 3, 4 and 5. In line with its policy of charging the same rate of FCC to the entire SNA (see 'Frictional Costs of Capital' below), Baloise does not report such a split.

#### Value of In-Force

The Value of In-Force is defined to be the Net Present Value of Future Profits (NPVFP) minus Frictional Costs of Capital (FCC) minus Cost of Non-Hedgeable Risks (CNHR). The NPVFP is given by the Certainty Equivalent Value of the Business In-Force (CEVBF) minus the Time Value of Financial Options and Guarantees (TVFOG).

These two items are described below. Both involve projections of a balance sheet consisting of local statutory liabilities and assets in line with local legal obligations, company practice due to commercial and competitive constraints and local market practice in the calculation of Embedded Values.

#### Certainty Equivalent Value of Business in-Force

Financial projections of the statutory balance sheet are carried out allowing for expected behaviour of the in-force business. The Certainty Equivalent Value of Business in Force ("CEVBF") is the present value of the expected future profits (net of tax) attributable to shareholders. It is based on the assumption that all asset classes earn the forward reference yield, from which general investment management costs<sup>17</sup> are deducted. All projected best-estimate cash flows are discounted using the same reference yield curve (i.e. the equivalent gross reference zero yield curves). However, the existing bond portfolio is assumed to run off at the running yield, while new money is invested at the reference yield. For business with financial options or guarantees the CEVBF includes the intrinsic value of the options / guarantees.

#### Time Value of Financial Options and Guarantees

The CEVBF does not allow for asymmetries in the risks that financial outcomes for shareholders could be better or worse than expected in the CEVBF scenario, in particular where products or funds include a guarantee or option of which the policyholder could take advantage in adverse circumstances. Options and guarantees with significant financial risk explicitly valued in the MCEV include:

- Minimum guaranteed interest rates;
- Bonus options;
- Maturity guarantees;
- Guaranteed minimum death benefits (GMDB);
- Guaranteed annuity options (GAO) / conversion factor for Swiss Group business;
- Surrender options.

For products with such features a stochastic financial projection is run allowing for the range of possible scenarios for financial markets. The Time Value of Financial Options and Guarantees ("TVFOG") is calculated

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<sup>17</sup> Excluding specific property management costs.

as the difference between the average over all scenarios of the net present value of future profits to Baloise Group shareholders, and the (usually higher) value from the deterministic (certainty equivalent) projection described above under CEVBF. It therefore captures the cost to shareholders in those scenarios where the options / guarantees come into the money and are exercised.

Within the stochastic scenarios which are calculated for Switzerland, Germany and Belgium, discounting is done by deflators (stochastic discount factors) which are calibrated to produce market consistency<sup>18</sup>. These stochastic projections are performed using the TSM economic scenario generator supplied by Deloitte Capital Markets and calibrated to the reference yields (see Economic Assumptions section below).

Such calculations can be particularly important to capture the potential cost to shareholders of providing support to ‘participating’ funds in order to provide the basic policyholder guarantees in scenarios where the unrealised gains and reserves such as bonus funds are exhausted (shareholder burn-through cost). In such scenarios, where assets are projected in any year to be insufficient, shareholders are assumed to inject sufficient capital to meet basic policyholder guarantees. At the end of the projection shareholders are assumed to meet any shortfall of assets against liabilities, or receive a part of any residual assets as a “liquidation dividend”, the amount of which reflects local practice and local requirements.

Where the result is not expected to be materially different from a full stochastic projection, some guarantees and options are valued using closed form solutions. This is the case for Baloise Luxembourg, most of whose business is unit-linked without guarantees.

#### Frictional Costs of Capital

Frictional costs of capital (“FCC”) are costs incurred by shareholders due to investment via the structure of an insurance company compared to investment as individuals, such as tax on profits within the insurance company or the costs of investment management.

Such costs on reserves held to meet expected policyholder benefits are reflected in the calculation of the NPVFP. Baloise’s MCEV and MCVNB also allow for the deduction of the following FCC on the total SNA (and not only on the RC), as at the valuation date the whole SNA is held by the Group to support it as a going concern backing both in-force business and the development of future new business:

- Taxation of the investment income on shareholders’ net assets held by the insurance company, at the rate paid locally by each entity;
- Investment expenses (net of tax relief) incurred in managing the shareholders’ net assets.

#### Cost of Non-Hedgeable Risks

The volatility of the returns on risky assets (such as stock market-listed equities), whose risk is for the most part readily hedgeable in financial markets, is reflected in the determination of the NPVFP. The MCEV also allows for the cost of volatility of non-hedgeable risk factors such as mortality, morbidity, expenses and lapse rates. As – by definition – there is no clear market for such risks, their valuation is open to interpretation. MCEV Principle 9 proposes a standard method – a ‘cost of capital’ approach – which Baloise follows.

The initial amount of capital at risk is calculated in a similar manner to the Swiss Solvency Test (SST) analytical model for insurance risk, i.e. based on a number of sensitivities and using the same correlation matrix between

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<sup>18</sup> The calibration ensures that observed market prices of key assets and derivatives are reproduced sufficiently closely when valuing using projection and discounting of cash flows under stochastic scenarios.

sensitivities. However, the assumptions used for the calculations are those from the MCEV rather than those from the SST. For example, reference yields are swap rates and not government bond rates. This initial capital at risk is then projected for future years in line with the evolution of an appropriate proxy measure such as reserves or premiums. A capital charge of 4% is applied to the resulting projected capital at risk. It represents the excess return or risk premium that a shareholder might expect on capital exposed to non-hedgeable risks. These annual charges are discounted using the reference yields and summed up to give the part of the Cost of Non-Hedgeable Risks (“CNHR”) which relates to insurance risks. Allowance is made for diversification of risk between countries, product types and risk factors using a matrix of estimates of correlations between the various risks.

In addition, the CNHR also includes an allowance for the estimated potential impact on shareholder cash flows of bond defaults where this is not otherwise captured in the CEVBF or TVFOG. This allowance is made by including a cost of capital approach for credit risk, adapted to take into account the shareholder’s share in credit risk.

#### 4.3. Dynamic Actions, Bonus Policy and Policyholder Behaviour

The actions taken by policyholders and management are likely to vary in different financial scenarios. Baloise has set up Management Decision Rules for each business unit setting out its expected approach to managing, amongst others, targets for asset realizations, the choice of the investment strategy – asset allocations and mix – and setting bonuses or allocation of investment surplus depending on experience and expectations of the financial performance of the business. These Management Decision Rules can have a significant impact on the MCEV, as they define the timing of the cash flows and the distribution of income between the policyholder and the shareholder. The Rules are implemented in cash flow projections for calculating MCEV and New Business Values and have regard to:

- The behaviour of the insurance business in each country;
- The past application of discretion;
- The influence of market practice regarding that discretion;
- Past public communication; and
- Legal requirements.

#### Bonus Rates

The amount of bonus allocated to policyholders is chiefly dependent on:

- The technical result and financial return of the companies;
- The local regulatory environment, in particular regarding the existence of a ‘legal quote’;
- The guaranteed interest rate of the products;
- The policyholders' expectation given local market practice; and
- The solvency situation of the company (with respect to unrealised gains, bonus fund or financial reserves).

#### Dynamic Assumptions in Stochastic Models

For stochastic modelling certain assumptions vary with the scenario being modelled. These include:

- Bonus rates are linked to the dynamic realisation of gains of the fund and the fund performance, reflecting past and expected future management behaviour in different scenarios. Bonus rates dependent on scenario-dependent projected returns follow the kind of rules described above.

- Option take-up rate(s), such as annuity take-up rates, are scenario-dependent where financial scenarios are expected to, or have in the past, affected policyholder take-up rates.
- Dynamic policyholder lapse rates are implemented where stochastic projections are performed. Where possible such lapse rules reflect the local observed past behaviour, and expected future behaviour of policyholders.
- Dynamic asset allocation strategies are incorporated into the stochastic models, where appropriate. They reflect past behaviour, and expected future behaviour of the management.

#### 4.4. New Business

In line with MCEV Principle 10 new business is defined as covered business arising from the sale of new contracts during the reporting year, including cash flows arising from the projected renewal of those new contracts. The distinction between new business and variations on existing business for each product is based on the specific policy conditions, is consistent from year to year, and corresponds to the classification used for Baloise's published new business figures. In 2012, an exception is Germany where the definition of new business was partially changed from 2011 to 2012 due to the modeling of future dynamic premium increases. In each case account is taken of:

- The contract terms;
- Whether increments are automatic or whether additional sales effort is required;
- The manner in which management and the industry treat such cases in managing the business;
- Whether further initial commission is paid.

Values of new business are calculated using similar approaches to those applied for in-force – dependent on the type of business (participating, non-participating, unit linked) and the type of options / guarantees attached. These allow for TVFOG on new business, FCC and CNHR. Subject to appropriate allocation of assets and unrealised gains (see below) the FCC is calculated in proportion to the solvency margin in respect of new business. The CNHR for new business written during the year is derived either directly, similarly as for in-force, or from the CNHR for the in-force portfolio based on the respective size of the present value of future mathematical reserves for the new business and for the in-force, thus allowing for both the relative size of new business at inception and the relative size of its future development compared to the in-force.

The value calculated is for the business still in force at the end of the year, using year-end projection assumptions adjusted to comply with a point of sale valuation.

Consistent with the 'going concern' approach to calculating MCEV, the MCVNB for funds containing participating business is calculated using a marginal approach. This means that the MCVNB (before acquisition expenses) is calculated by performing valuations of the portfolio at the year-end including and excluding new business. The MCVNB is the difference in NPVFP between the two portfolios after acquisition expenses to the company, after allowing for frictional costs and costs of non hedgeable risk related to new business and after adjustments to point of sale. Note that no proportional sharing of the unrealised capital gains between in-force and new business is done, as this would artificially increase the value added by new business.

#### 4.5. Asset and Liability Data

Market values of individual investments are taken where available (“marked-to-market”), or estimated where there is no liquid market (“marked to model”), for example by discounting unquoted loan and mortgage asset proceeds. Credit risk is captured via an increase in the CNHR (as explained above).

For bonds, market and book values are calculated at each point in time in order to project the realisation of gains. The book value is amortised according to local accounting rules.

For equities, the current total book value and market value are input to projection models – future realisations are calculated at an aggregate, rather than a single stock, basis. Local regulatory and accounting frameworks, for example the ‘lowest value’ principle, are incorporated in the model where appropriate.

For property investments price and income indices are applied in projection models to the current value and income to generate changes in property values and regular income.

Other bond-like securities such as loans (including policy loans) and mortgages are modelled as separate ‘buckets’ of government bonds in their respective currency. For policy loans in Switzerland, the theoretical duration of the loans has been shortened to take into account expected policy lapses. For all other purposes these assets are modelled as regular government bonds.

Other equity-like securities such as private equity and minority participations in non-group companies, as well as alternative investments (mainly hedge funds) have been modelled as linear combinations of existing cash and equity categories, with weights aiming to ensure that the overall volatility of the asset class is in line with market data.

When a substantial part of the assets are held in foreign currencies (in practice, only those assets of Baloise Switzerland denominated in Euros) they are modelled explicitly, including the foreign exchange risk. For other assets denominated in foreign currency but modelled as local currency assets, the modelled volatilities are adjusted to reflect the foreign exchange risk.

Liabilities are calculated in line with local statutory requirements using individual policy data. For projection purposes policies of the same product with similar term, duration and risk profile are grouped to form ‘model points’. Checks are made to ensure that modelled values are sufficiently close to those for individual policies.

#### 4.6. Sensitivities

The sensitivities shown in this report follow the descriptions in the MCEV Principles 17.8.

- **+/- 100 bp to reference yields** - indicates the impact of a sudden parallel shift in the entire reference yields<sup>19</sup>, including allowance for consequent movements in fixed interest asset values and other assumptions.
- **10% decrease in equity/property market values** - indicates the impact of a sudden change in the market-values of equity and property assets, without a corresponding change in dividend / rental yields, the situation being equivalent to a fall of 10% of the absolute amount of the future dividends or rental yields.

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<sup>19</sup> Including the ultimate forward rate. The shifted reference yields are floored at zero.

- **25% increase in equity/property implied volatilities** - indicates the impact of a (multiplicative, i.e. volatilities x 1.25) 25% increase in market implied equity/property volatilities on the cost of options and guarantees.
- **25% increase in swaption implied volatilities** - indicates the impact of a (multiplicative) 25% increase in market implied swaption volatilities on the cost of options and guarantees.
- **without liquidity premium** - indicates the impact of using reference rates without a liquidity premium.
- **10% decrease in maintenance expenses** – indicates the impact of a reduction in the projected future cost of administering contracts, with no change in inflation assumptions.
- **10% decrease in initial expenses** – indicates the impact of a reduction in the cost of acquiring new business, including initial commissions.
- **10% decrease in lapse rates** – indicates the impact of a (multiplicative) reduction in projected lapse / surrender rates. Depending on the terms for lapses the impact on MCEV and on MCVNB could be positive or negative for different types of contracts or for an individual contract at different times.
- **5% improvement in mortality rates** – indicates the impact of a (multiplicative) reduction in deaths at all ages. The distinction is made between death coverage and annuity contracts where the risk to shareholder cash flows is from higher (death coverage) versus lower (annuities) mortality.
- **5% improvement in morbidity rates** – indicates the impact of a (multiplicative) reduction in disability insurance claims incidence rates at all ages.
- **1%-pt decrease in capital charge for CNHR** – indicates the impact of changing the rate of charge for capital for non-hedgeable risks from 4% to 3%.

The events described are assumed to occur immediately after the valuation date. The economic sensitivities of the new business value hence indicate how the value of the business written in the reporting period changes if the economic market conditions change. They give no indication of the profitability of future new business written in the changed market conditions. The sensitivities allow for consistent changes in future cash flows and experience assumptions directly affected by the changed assumption, for example bonus rates. Each sensitivity is treated independently of the others, though in practice there is likely to be some correlation between them. The sensitivities show the impact of only one from a continuum of possible changes in the parameters tested – note that impacts may not be linear with respect to variation of any given parameter.

Sensitivity projections include the same set of dynamic management and policyholder reaction rules as the main MCEV / MCVNB projection. In more extreme scenarios, or stable long-term scenarios far away from the best estimate, policyholder behaviour might be expected to change and management might be expected to take different (mitigating) actions such as changes to pricing terms – such actions have not been included in these sensitivities. For some types of business the impacts of changing experience are mitigated by the requirement / decision to share profits and losses with policyholders.

#### 4.7. Further Definitions and Assumptions

##### MCEV theory

The overall approach under MCEV aims to value future statutory profits in line with the way in which financial markets value cash flows with similar timing and uncertainty. In the absence of variations in experience (of investment performance, claims, lapses, expenses...) against that expected, in particular asymmetries in the effect of such variations on shareholder profit, this is achieved by summing SNA and using the ‘certainty equivalent’ approach (as described above) to determine a VIF. Calculation of the TVFOG as described above makes a market-based allowance for the cost to shareholders of future variation in financial market risks that are generally hedgeable, whilst the calculation and deduction of FCC and CNHR make allowance – albeit in areas for which prices are not generally visible in markets – respectively for the direct cost of holding capital within the insurance business in excess of that needed to meet reserves, and the price that shareholders require for exposing their capital to risks that are not generally hedgeable.

Beyond the approach described above no allowance is made for other costs sometimes associated with market consistent valuation of a business - 'Agency costs', 'Limited liability put option', or 'Costs of financial distress'. Allowing for the Limited liability put option would be inappropriate under the assumption of the business as a going concern in which shareholders are assumed to contribute capital to meet shortfalls of assets over liabilities. Allowance for costs of financial distress, being largely related to future new business, is inappropriate in the context of a valuation excluding any value of future new business.

#### Economic Scenario Generator

For stochastic modelling Baloise employs TSM supplied by Deloitte Capital Markets. TSM is an economic model that delivers simulations of market scenarios and deflators for all years of the projection period (currently 40 years for Baloise). Usually 5,000 simulations (e.g. for Switzerland) but at least 1,000 simulations are used in the projections. The economic model is calibrated to the reference yields in such a way that modelled market values of equities, bonds and some specific swaptions and equity options, reproduced using deflator techniques, are market consistent. TSM can model several economies simultaneously (in effect EUR and CHF for Baloise).

#### Consolidation Adjustments

MCEV and MCVNB are calculated as described above on an entity-by-entity basis within each country where Baloise has Life Insurance Segment business. Each entity models its business gross of intra-group reinsurance so that all intra-group reinsurance contracts consolidate out. For the smaller covered businesses – those in Austria, Croatia, Liechtenstein and Serbia – no VIF-related projections are carried out. Their MCEV is simply set equal to Baloise's share of their IFRS equity value.

The Baloise Group's MCEV / MCVNB is the sum of these individual entity MCEV / MCVNB, where the MCEV is subject to consolidation adjustments to:

- Allow for stakes held in covered business by investors outside the Baloise Group;
- Remove the statutory book values of those companies within other Life entities; and
- Allow for the effect on CNHR of diversification of risk between countries.

#### Holding Companies, Service Companies and "Look Through" Principle

In the Baloise Group, all expenses incurred with regard to covered business are passed down to the life insurance entities and these costs are included<sup>20</sup> in the expenses modelled in the NPVFP. The expenses passed to the Life Insurance companies include an allocation of Head Office expenses incurred by the Baloise Holding which are split between life, non-life and asset management segments and pushed down to the respective entities. Thus expenses allowed for in the MCEV are entirely consistent with the IFRS reporting for the Life Insurance Segment of the Baloise Group.

MCEV Principles Guidance (G11.13) requires that profits for the covered business are measured on a "look-through" basis. On this basis, where services such as investment management are provided and charged for by another Group entity the cost reflected in the MCEV should be that to the group as a whole (rather than just that to the Life entity). In line with the "look-through" principle, Baloise's MCEV allows for services provided to the covered business by all suppliers – whether within the Life segment, within the Baloise Group but outside the Life segment, or external to the Baloise Group – at their cost to the Baloise Group. This approach applies to expenses allowed for in calculation of both the NPVFP and the MCVNB. Profit or loss to the Baloise Group

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<sup>20</sup> Except for those investment expenses allowed for in FCC.

companies outside the Life Segment on services provided to the Life Segment is thereby included in the MCEV and MCVNB.

#### Employee Pension Schemes

For the Baloise MCEV calculation adjustments are made to the SNA in respect of any employee pension scheme surplus / deficit and ongoing obligations relative to those as calculated under IAS 19 except of those which are already included in the NPVFP at their market consistent value. The SNA is adjusted<sup>21</sup> to allow for:

- The net of tax shareholders' share (as some will effectively be allocated to policyholders) of the proportion allocated in respect of employees working in the Life Insurance Segment (vs. other IFRS segments) of the surplus / deficit in the pension fund as per the IAS 19 Defined Benefit Obligation ("DBO").
- Any excess / shortfall<sup>22</sup> of the IFRS future contribution rate<sup>23</sup> compared to the pension fund contributions allowed for in the statutory expense basis (which forms the basis for expenses in the NPVFP), multiplied by a Net Present Value factor to allow for its continuation over the projected run-off of in-force business, adjusted for any surplus / deficit to allow for its net of tax impact on shareholders in the Life Insurance segment.

#### Employee Share Options

All employee benefits are accounted for. Wherever there is an obligation this is reflected in a market consistent liability in line with IAS 19 which is included in the liabilities for the MCEV calculations. All actual expenditure is allowed for in the expense used to produce future expense assumptions.

#### Currency Conversion for Group Presentation

MCEV and MCVNB calculated in local currency are converted to CHF at year-end rates and year-average rates, respectively, as disclosed below in the MCEV Assumptions Section.

#### Group MCEV

Although MCEV Principles Guidance (G17.3.37-45) describes an approach to disclosure of a measure of the consolidated value of shareholders' interests in both covered business and other business segments combining covered business at MCEV and other business segments at (adjusted) IFRS net asset values, Baloise does not disclose such a 'Group MCEV'.

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<sup>21</sup> Increased for a surplus, decreased for a deficit.

<sup>22</sup> Reduction / increase in SNA.

<sup>23</sup> That projected to be sufficient to maintain assets at the level of the IAS19 DBO.



## 5. MCEV ASSUMPTIONS

### 5.1. Economic Assumptions

The economic assumptions are updated at each valuation and, taken together, aim to ensure that projected cash flows are valued in line with similar cash flows traded on capital markets.

#### Reference Yield Curves

The reference yield curves used for the calculation of Baloise MCEV are based on the following swap rates as at the valuation date.

**Table 7 - Reference Yield Curves**

Term (years)	CHF	CHF	EUR	EUR
	31.12.2011	31.12.2012	31.12.2011	31.12.2012
1	0.05%	0.06%	1.41%	0.33%
3	0.19%	0.11%	1.38%	0.47%
5	0.59%	0.34%	1.74%	0.77%
10	1.26%	0.98%	2.43%	1.61%
15	1.52%	1.34%	2.74%	2.09%
20	1.74%	1.71%	2.75%	2.27%
30	2.10%	2.19%	2.55%	2.82%

Following Omnibus II<sup>24</sup>, Baloise applied a macroeconomic approach to derive the reference yield curves after the last liquid point (LLP) for CHF and EUR in 2012. Beyond this point, the Smith-Wilson extrapolation methodology is used to reach the currency specific ultimate forward rate (UFR), which reflects a long term equilibrium interest rate.

For the MCEV 2012, Baloise has included a liquidity premium (LP) of 5 bp for Switzerland and of 37 bp for the Euro Zone. The liquidity premiums are derived in accordance with the methodology proposed by the CFO-Forum. As in QIS5, the liquidity premium depends on the nature of the liabilities and is applied to the following lines of business:

- 100% for annuities in pay out;
- 75% for participating business;
- 0% for non participating risk business, unit linked business and variable annuities.

The liquidity premium is added to the forward rate only until five years before the last liquid point. Beyond that point a five year linear decrease to zero is used. For the extrapolated part of the reference rates no liquidity premium is applied. The following table summarizes the parameters which underlie the construction of the reference yield curves used for CHF and EUR.

**Table 8 –Liquidity Premium and Extrapolation**

Currency	LP	LP	LLP	UFR
	31.12.2011	31.12.2012	31.12.2012	31.12.2012
CHF	25 bp	5 bp	15 years	3.20%
EUR	108 bp	37 bp	20 years	4.20%

For certainty equivalent projections the discount rates used are the swap rates referred to in the table above after allowance for the liquidity premium. For stochastic projections TSM discounts cash flows using a series of

<sup>24</sup> For year-end 2011, Baloise has followed QIS 5 instead of Omnibus II.

'deflators' for each scenario. Deflators are time-dependent stochastic discount factors calibrated to give the market values of assets and thus produce market-consistent projections.

The same model is used for both the certainty equivalent projections and the stochastic projections, ensuring that the CEVBF and the TVFOG are consistent with each other.

#### Equity and Property Volatilities

The equity volatility statistics shown below are based on analysis of the TSM output data, and hence show the economic projection assumptions produced by TSM for the two main currencies. The following table shows the annualised volatilities of equity indices used in the EV calculation, calibrated to market-implied volatilities of forward at-the-money 10-year EuroStoxx 50 (EUR) and SMI (CHF) capital return options.

**Table 9a - Equity implied volatility**

	Switzerland		Euro Zone	
	31.12.2011	31.12.2012	31.12.2011	31.12.2012
Equity implied Volatility	20.23%	18.77%	27.02%	24.44%

Baloise also makes assumptions regarding the volatility of property investments, estimated from relevant historic return data:

**Table 9b - Property volatility**

	Switzerland		Germany		Belgium		Luxembourg	
	31.12.2011	31.12.2012	31.12.2011	31.12.2012	31.12.2011	31.12.2012	31.12.2011	31.12.2012
Property volatility	4.60%	4.45%	4.12%	3.61%	13.03%	13.11%	5.49%	5.41%

#### Interest Rate Volatilities

Interest volatility can be described by the implied volatility of interest rate swaptions. Swaption implied volatilities vary both by the term of the option and also the term of the underlying swap contract. The following tables show swaption implied volatilities based on the TSM simulations used for the EV calculation and calibrated to market-implied at-the-money swaption volatilities:

**Table 10a - Swaption implied volatilities CHF, 31.12.2011**

	5 year swap term	10 year swap term	15 year swap term	20 year swap term	25 year swap term	30 year swap term
5 year option	69.3%	60.6%	51.8%	44.7%	39.5%	35.6%
10 year option	57.7%	46.9%	39.5%	34.5%	30.9%	28.2%
15 year option	43.5%	36.4%	31.6%	28.2%	25.6%	23.6%
20 year option	35.4%	30.8%	27.4%	24.8%	22.7%	21.1%
25 year option	30.5%	27.5%	25.0%	22.9%	21.2%	19.8%
30 year option	26.9%	23.9%	21.6%	19.7%	18.2%	17.0%

**Table 10b - Swaption implied volatilities CHF, 31.12.2012**

	5 year swap term	10 year swap term	15 year swap term	20 year swap term	25 year swap term	30 year swap term
5 year option	82.5%	64.7%	50.4%	42.2%	37.1%	33.6%
10 year option	56.7%	42.6%	35.7%	31.6%	28.7%	26.5%
15 year option	36.8%	31.6%	28.3%	25.8%	23.9%	22.3%
20 year option	31.2%	28.0%	25.3%	23.2%	21.5%	20.1%
25 year option	29.4%	26.7%	24.3%	22.3%	20.7%	19.4%
30 year option	25.6%	23.1%	20.9%	19.2%	17.7%	16.6%

**Table 10c - Swaption implied volatilities EUR, 31.12.2011**

	5 year swap term	10 year swap term	15 year swap term	20 year swap term	25 year swap term	30 year swap term
5 year option	31.6%	27.5%	26.3%	26.1%	25.1%	23.1%
10 year option	25.7%	25.4%	25.7%	24.7%	22.5%	20.3%
15 year option	26.9%	27.2%	25.3%	22.1%	19.3%	17.2%
20 year option	29.7%	25.8%	21.3%	18.1%	15.8%	14.2%
25 year option	26.1%	20.6%	17.2%	14.8%	13.2%	12.0%
30 year option	17.9%	14.9%	12.9%	11.5%	10.5%	9.7%

**Table 10d - Swaption implied volatilities EUR, 31.12.2012**

	5 year swap term	10 year swap term	15 year swap term	20 year swap term	25 year swap term	30 year swap term
5 year option	35.3%	28.8%	26.1%	22.2%	19.3%	17.3%
10 year option	25.4%	24.0%	20.4%	17.7%	15.9%	14.6%
15 year option	24.2%	19.2%	16.4%	14.7%	13.4%	12.4%
20 year option	16.7%	14.6%	13.1%	12.0%	11.2%	10.5%
25 year option	14.2%	12.8%	11.7%	10.8%	10.1%	9.5%
30 year option	12.1%	10.9%	9.9%	9.2%	8.6%	8.1%

### Risk—Adjusted Returns

For the expected existing business contribution in excess of reference rates, risk premiums on bonds, equity and real estate are applied. For bonds, the risk premium is estimated based on each entity's bond portfolio taking into account a reduction to allow for the default risk. For equities, the risk premium is assumed to be 300 bp. For properties, the risk premium above reference yield is set to 150 bp in Switzerland, to 250 bp in Belgium, to 100 bp in Luxembourg and to 100 bp in Germany. These risk premiums contribute to the expected existing business contribution in the analysis of earnings but do not have any impact on Baloise MCEV.

### Correlations

Assumptions are also derived in TSM regarding the correlations between returns on different asset classes – including equity total returns, dividend yields, inflation rates and bond yield curves. These are calibrated to averages of weekly correlations over the last 10 years between equity total returns and forward spot rates over various terms. The resulting correlations between 10-year bond returns and equity total returns are -0.22 (CHF) and -0.40 (EUR) at 31.12.2012.

The correlations between equity and property total returns are derived from relevant historical data. The correlations used were: -0.10 (Switzerland), -0.01 (Germany), +0.46 (Belgium) and +0.67 (Luxembourg) at 31.12.2012.

### Inflation

The average rates of annual price inflation used in projections are shown below and are derived as follows:<sup>25</sup>

- For projections in CHF, in the absence of a market for inflation-linked bonds, synthetic inflation-linked bonds were used, calibrated to a target inflation in year 1 of 0.5%, in year 2 of 0.8% and year 3 of 1.1% for the short term and 2.0% (previous year: 2.0%) for long term, which corresponds to the inflation target of the Swiss National Bank.

<sup>25</sup> The long term inflation for CHF and EUR produced from TSM are slightly higher than the target inflation due to the way inflation, interest rates and currencies are correlated within the model.

- For projections in EUR the mean inflation is calibrated to a short term inflation target of 2.7% which is derived from a consumer price index. The long term target is set to 2.3% (previous year: 2.5%) based on inflation-linked bonds and the inflation target of the European Central Bank.

**Table 11a – Inflation, 31.12.2011**

Projection Term (years)	1	2	5	10	20	40
CHF	0.5%	0.8%	0.9%	1.0%	1.1%	2.5%
EUR	3.0%	3.0%	3.0%	2.9%	2.9%	3.0%

**Table 11b – Inflation, 31.12.2012**

Projection Term (years)	1	2	5	10	20	40
CHF	0.5%	0.8%	1.1%	1.3%	1.5%	2.8%
EUR	2.7%	2.7%	2.7%	2.6%	2.6%	2.7%

Expenses are assumed to grow in line with price inflation. For Group contracts where contributions are salary-dependent, salaries are assumed to grow slightly above price inflation.

#### Foreign Exchange Rates

For businesses operating outside Switzerland values calculated in local currency are converted to CHF at the following rates – year-end rates for year-end items (e.g. MCEV) and year-average rates for items representing values spread throughout the year (e.g. MCVNB).

**Table 12 - Exchange Rates**

CHF per EUR	31.12.2011	31.12.2012
Year-end	1.214	1.207
Year average	1.233	1.205

## 5.2. Taxation and Legislation

All components of tax, including tax payable on investment returns, are modelled as explicit cash flows, at the rates expected to be incurred by each entity in the Life Insurance Segment. Tax rate assumptions are summarised in the following table:

**Table 13 - Corporate Tax rate**

Country / Company	2011	2012
Switzerland	20.0%	20.0%
Germany	30.5%	31.0%
Belgium	34.0%	34.0%
Luxembourg	31.1%	31.1%

Values allow for all current local regulation and any known future changes. The tax rate in Germany is a weighted average between the tax rates of the German entities.

### 5.3. Operating Assumptions

#### Demographic Assumptions

Assumptions used in projections for variables such as lapse / surrender, paid-up policies, withdrawal, mortality and morbidity rates are based on analyses of Baloise's recent experience with the aim of projecting a best estimate of future experience.

Experience analyses for each of these factors are undertaken on a regular basis and attention paid particularly to the most recent experience as well as longer term trends. Adjustments are made where the experience or trends are not expected to continue in the long term.

Lapse rates are measured and projected by product type and, where possible, by duration in force. Experience analyses are normally weighted by annual premium or reserves for single premium policies rather than by numbers of policies.

Experienced mortality rates are normally investigated by sex, age and product type, weighted by sum assured or annuity rather than by numbers of policies or lives.

#### Expense Assumptions

Expense assumptions are based on allocations of all expenses incurred by the Baloise Group on Life Insurance Segment business ("Look-Through Basis" – see section 'Further Definitions and Assumptions' above) during the reporting year, including allocations of overheads within the Segment and of Baloise Holding expenses allocated to the Segment, plus expected expense inflation. No allowance is made for any future productivity gains. In total expenses of CHF 13.1m are treated as 'one-off' or non-recurring costs. They were partially already anticipated in the previous year and therefore partially already included in the MCEV 2011. The one-off costs mainly relate to integration and project costs in Belgium.

Expenses are split into the following categories:

- Investment management expenses – allocated in projections as a percentage of invested assets by reducing future investment returns.
- Acquisition costs allocated to new business consisting of:
  - Commissions;
  - Other acquisition costs.
- Maintenance costs allocated via a combination of 'unit costs' and proportional costs to the existing business, consisting of:
  - Policy maintenance costs;
  - Adjusted administration expenses;
  - Investment expenses, where these are not directly deducted from investment returns.

## Dynamic Management Actions and Policyholder Behaviour

Management's selection of bonus rates and policyholder lapse rates are key variables for which dynamic assumptions – varying depending on the economic scenario – are applied in stochastic projections. Local application of dynamic bonus rates is consistent with current market and company practices as well as local regulatory requirements. In particular the 90% minimum legal quote for Group business in Switzerland and the “Mindestzuführungsverordnung” in Germany is respected. In the Swiss Individual business, in Belgium and Luxembourg there is no legal quote. Here bonuses are essentially driven by market competition and modelled through a target credited rate, and by constraints on the bonus fund or on statutory solvency rules.

Where appropriate, dynamic asset allocation strategies are incorporated into the stochastic models reflecting the past behaviour and expected future behaviour of the management.

For local application of dynamic lapse rates the yields available on bonds are generally used as a proxy for policyholder expectations. Where bonus rates, or the earnings used to calculate them, are higher (lower) than policyholder expectations, then lower (higher) lapse rates are used in the projections since the policyholder is less (more) likely to lapse. The lapse parameters depend on the company and on the type of the policy.

## 6. DIRECTORS' STATEMENT AND EXTERNAL REVIEWER STATEMENT

### Directors' Statement

The MCEV Accounts have been prepared in accordance with the latest MCEV Principles<sup>26</sup> launched by the European Insurance CFO Forum in June 2008 and amended in October 2009. Any deviation from the MCEV Principles or interpretation is stated in the Methodology section of this report.

We hereby confirm that the data, assumptions, models and methodology used to prepare the MCEV accounts:

- Are materially accurate;
- Appropriately reflect the way the Life business is managed, as well as its regulatory constraints and market environment;
- Cover the essential drivers of the Company's profitability and risks.

### External Reviewer Statement

*Baloise Holding, Aeschengraben 21, CH-4002 Basel, Switzerland*

*Dear Sirs,*

#### ***Review of Embedded Value for the year ended December 31, 2012 of the Life segment of Baloise***

*We have reviewed the Market Consistent Embedded Value for the Life segment of Baloise as set out in Baloise's Financial Report for the year end 2012 ("the Disclosure"). The Disclosure comprises the Market Consistent Embedded Value of the Life segment as at 31 December 2012 together with the value of new business generated and the analysis of movement in the Embedded Value during 2012 (together "the Embedded Value results"). The scope of our review covered Baloise's major life insurance companies and considered the methodology adopted together with the assumptions and calculations made by Baloise in its Embedded Value.*

*The Embedded Value results, the assumptions underlying them and the information contained in the Disclosure are the sole responsibility of the Board of Directors of Baloise. They have been prepared by Baloise on the basis of Baloise's methodology as described in the Disclosure.*

*Our review 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 Market Consistent Embedded Value results have been compiled free of significant error. However, we have relied without verification upon the completeness and accuracy of data and information supplied by Baloise, including the shareholders' net assets as disclosed in the audited local statutory accounts and the IFRS accounts of the companies in the Life segment.*

*The calculation of Market Consistent Embedded Value results necessarily makes numerous assumptions with respect to economic conditions, operating conditions, taxes, and other matters, many of which are beyond Baloise'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 the Embedded Value results and any such variations may be material. Deviations from assumed experience are normal and are to be expected. Market Consistent Embedded Value does not purport to be a market valuation and should not be interpreted in that manner since it does not encompass all of the many factors that may bear upon a market value, in particular franchise value.*

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*In our opinion,*

- *The methodology and assumptions used are appropriate and - except as explicitly noted in the Disclosure - are compliant with the Market Consistent Embedded Value Principles set out by the European Insurance CFO Forum in June 2008 (the “MCEV Principles<sup>27</sup>”) and amended in October 2009;*
- *The assumptions taken together made by Baloise are reasonable; and*
- *Baloise’s Embedded Value and New Business Value have been properly compiled on the basis of the methodology and assumptions chosen by Baloise and are compliant with the MCEV Principles.*

*Our opinion is made solely to Baloise’s Directors as a body. To the fullest extent permitted by law we do not accept or assume responsibility to anyone other than Baloise’s Directors as a body for our work in respect of this opinion or for the conclusions that we have reached.*

*Yours faithfully,*

*Deloitte Consulting AG*

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## 7. LIST OF ABBREVIATIONS

APE .....	Annual Premium Equivalent
CEO .....	Chief Executive Officer
CEVBF .....	Certainty Equivalent Value of Business in Force
CFO .....	Chief Financial Officer
CNHR .....	Cost of Non Hedgeable Risks
DAC .....	Deferred Acquisition Costs
DBO .....	Defined Benefit Obligation
ESG .....	Economic Scenario Generator
EV .....	Embedded Value
FCC .....	Frictional Cost of Capital
FS .....	Free Surplus
GAO .....	Guaranteed Annuity Option
GMDB .....	Guaranteed Minimum Death Benefit
IAS .....	International Accounting Standards
IFRS .....	International Financial Reporting Standards
LLP .....	Last Liquid Point
LP .....	Liquidity Premium
MCEV .....	Market Consistent Embedded Value (= SNA + VIF)
MCVNB .....	Market Consistent Value of New Business
NPVFP .....	Net Present Value of Future Profits (= CEVBF – TVFOG)
PVNBP .....	Present Value of New Business Premiums
RC .....	Required Capital
SMI .....	Swiss Market Index
SNA .....	Shareholders Net Assets (= RC + FS)
SST .....	Swiss Solvency Test
TSM .....	The Smith Model
TVFOG .....	Time Value of Financial Options and Guarantees
UFR .....	Ultimate Forward Rate
UL .....	Unit Linked
VIF .....	Value of In Force (= CEVBF – TVFOG – FCC – CNHR)

# Information on the Baloise Group

The Market Consistent Embedded Value Report 2012 is only published in English.

## AVAILABILITY AND ORDERING

The Market Consistent Embedded Value Report 2012 will be available on the Internet at [www.baloise.com/annualreport](http://www.baloise.com/annualreport) from 19 March 2013.

## INFORMATION FOR SHAREHOLDERS AND FINANCIAL ANALYSTS

Detailed information and data on Baloise shares, the IR agenda, the latest presentations and how to contact the Investor Relations team can be found on the internet at [www.baloise.com/investors](http://www.baloise.com/investors). This information is available in German and English.

## INFORMATION FOR MEMBERS OF THE MEDIA

You will find the latest media releases, presentations, reports, images and podcasts of various Baloise events as well as media contact details at [www.baloise.com/media](http://www.baloise.com/media).

## CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

This publication is intended to provide an overview of Baloise's operating performance. It contains forward-looking statements that include forecasts of future events, plans, goals, business developments and results and are based on Baloise's current expectations and assumptions. These forward-looking statements should be noted with due caution because they inherently contain both known and unknown risks, are subject to uncertainty and may be adversely affected by other factors. Consequently, business performance, results, plans and goals could differ substantially from those presented explicitly or implicitly in these forward-looking statements. Among the influencing factors are (i) changes in the overall state of the economy, especially in key markets; (ii) financial market performance; (iii) competitive factors; (iv) changes in interest rates; (v) exchange rate movements; (vi) changes in the statutory and regulatory framework, including accounting standards; (vii) frequency and magnitude of claims as well as trends in claims history; (viii) mortality and morbidity rates; (ix) renewal and expiry of insurance policies; (x) legal disputes and administrative proceedings; (xi) departure of key employees; and (xii) negative publicity and media reports. Baloise accepts no obligation to update or revise these forward-looking statements or to allow for new information, future events, etc. Past performance is not indicative of future results.