

## Market Consistent Embedded Value (MCEV)

The Group MCEV is a measure of the consolidated value of shareholders' interest in the in-force business of the Swiss Life Group. It includes the insurance business covered by the MCEV methodology and all other business valued by its IFRS net asset value.

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## 1 Introduction

### 1.1 BASIS OF PREPARATION

Market consistent embedded value (MCEV) is a measure of the consolidated value of shareholders' interests in the in-force covered business of the Swiss Life Group. Covered business includes life, health and pension business of the company. The Group MCEV is a measure of the consolidated value of shareholders' interest in the covered and non-covered business in force of the company. Business in force includes business written as at 31 December 2011; future new business is not included. The notion of market consistent embedded value (MCEV) will alternatively refer within the course of this report to the MCEV of Swiss Life's covered business, of one of its market units, or to Swiss Life's Group MCEV.

Swiss Life's market consistent embedded value reporting follows the European Insurance CFO Forum Market Consistent Embedded Value Principles<sup>1</sup>. The cost of credit risk relating to bonds is calculated and disclosed in addition to the Principles' mandatory requirements. Further details on the MCEV methodology and assumptions are given in sections 4 and 5.

PricewaterhouseCoopers have audited this market consistent embedded value report. Their opinion is part of this report (section 6).

### 1.2 COVERED BUSINESS AND NON-COVERED BUSINESS

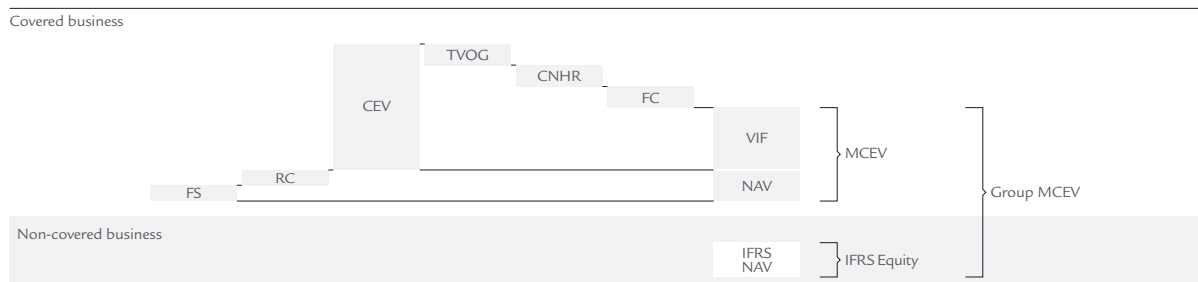
Covered business includes all of Swiss Life's life, health and pension business as well as assumed external reinsurance, with the exception of Swiss Life Insurance Solutions AG, which is not material for MCEV purposes. MCEV (and Group MCEV) are net of ceded external reinsurance. Included are namely operations in Switzerland, France, Germany, Luxembourg, Liechtenstein and Singapore. All other businesses such as investment management and AWD are generally included in the non-covered business at their IFRS net asset values, with the exception of France, where they are included in the covered business.

### 1.3 DEFINITIONS

Swiss Life's Group MCEV consists of the MCEV for covered business and the IFRS net asset value for non-covered business.

According to MCEV Principle 3, the MCEV represents 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. It is calculated on a post-tax basis taking into account current legislation and known future changes.

#### Components of Group MCEV



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The MCEV for covered business consists of the net asset value (NAV), i.e. the value of assets not backing liabilities, and the value of in-force business (VIF), i.e., the value of future profits emerging from operations and assets backing liabilities.

The net asset value is split between:

- the required capital (RC): the amount of capital provided by shareholders deemed necessary to run the business under the chosen definition (see section 4.1)
- the free surplus (FS): additional capital allocated to the covered business above the required capital

The value of in-force covered business is defined as the sum of:

- the certainty equivalent value of future profits (CEV)
- the time value of financial options and guarantees (TVOG), including the cost of credit risks
- the cost of residual non-hedgeable risks (CNHR)
- the frictional costs of required capital (FC)

The IFRS net asset value (IFRS NAV) is defined as the unadjusted IFRS net asset value allocated to the non-covered business.

For details about the MCEV components, see section 4 on methodology. Please note that the notion of certainty equivalent value is equivalent to the notion of present value of future profits in the CFO Forum Principles.

## 2 Summary of MCEV Results

### 2.1 KEY RESULTS

During 2011, the capital markets were characterised by a strong decline of the relevant interest rates, a widening of corporate and sovereign credit spreads and higher interest rate volatilities.

All results and components are shown in CHF million. Rounding differences may occur.

The following tables show key results as at 31 December 2011 compared to the results as at 31 December 2010:

In CHF million			
	2011	2010	
Value of new business	150	209	
Present value of new business premium (PVNBP)	12 914	14 607	
New business margin (%PVNBP)	1.2%	1.4%	

Both the adverse economic environment and the reduction in volume, particularly in the PPLI business, led to a decrease by 28% of the value of new business and to a decrease of the new business margin from 1.4% to 1.2%. Continued expense reductions and an overall improvement of the business mix partially counteracted the adverse capital market developments.

In CHF million				
	Net asset value	Value of in-force business	Total	Total
	2011			
	2010			
Covered business	2 525	2 836	5 361	4 959
Non-covered business	2 367	n/a <sup>1</sup>	2 367	2 636
GROUP MCEV	4 892	2 836	7 728	7 595
Total MCEV earnings			347	1 424
Operating MCEV earnings			772	2 353

<sup>1</sup> n/a: not applicable

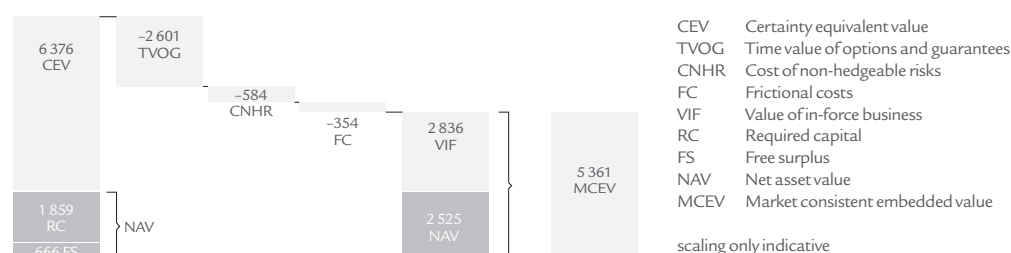
The value of covered business increased by 8%. Operating MCEV earnings contributed to this increase by profitable new business and a strong operating return on the in-force business. A capital transfer also increased the value of covered business. The adverse capital market environment had a negative effect on the MCEV of covered business. This was partially alleviated by the move to QIS 5-styled valuation curves which include liquidity premiums. Due to the mentioned capital transfer and the dividend paid to shareholders, the value of the non-covered business is slightly below the previous year's level. Overall the Group MCEV increased by 2%.

## 2.2 MCEV OF COVERED BUSINESS

The following graph and table show the MCEV by components, together with the previous year's figures:

### MCEV of Covered Business 2011

CHF million



CEV	Certainty equivalent value
TVOG	Time value of options and guarantees
CNHR	Cost of non-hedgeable risks
FC	Frictional costs
VIF	Value of in-force business
RC	Required capital
FS	Free surplus
NAV	Net asset value
MCEV	Market consistent embedded value

In CHF million

	2011	2010
<b>NET ASSET VALUE</b>	<b>2 525</b>	1 928
Free surplus	666	35
Required capital	1 859	1 892
<b>VALUE OF IN-FORCE BUSINESS</b>	<b>2 836</b>	3 032
Certainty equivalent value	6 376	5 797
Time value of financial options and guarantees	-2 601	-1 912
Cost of residual non-hedgeable risks	-584	-507
Frictional costs of required capital	-354	-346
<b>MCEV</b>	<b>5 361</b>	4 959

Overall the net asset value increased very significantly by 31% due to the strong operating profit of the year and non-recurring effects. The required capital slightly decreased despite an increase of the balance sheet size. As a result free surplus – after financing new business – increased by CHF 631 million, whereof about one third is driven by non-recurring items including a net capital transfer into covered business. The biggest contribution to this increase results from Switzerland. Goodwill and other intangibles are not included in the net asset value, with the exception of France (see section 4.7).

The value of in-force business decreased by 6%. An increase in certainty equivalent value of CHF 579 million – driven by the new business contribution – was more than offset by the increase of time value of financial options and guarantees. The latter results from a massive increase in interest rate volatilities. The TVOG also includes the cost of credit risk related to investments in corporate bonds. The cost of credit risk on group level amounts to CHF -517 million for 2011 compared to CHF -469 million for 2010.

## 2.3 VALUE OF NEW BUSINESS

### 2.3.1 VALUE OF NEW BUSINESS, PREMIUMS AND MARGINS

Amounts in CHF million

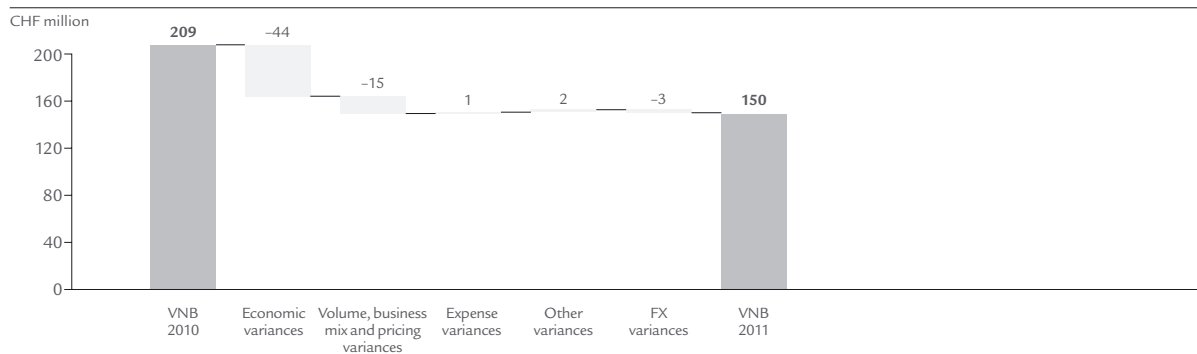
	2011	2010
VALUE OF NEW BUSINESS	150	209
<i>New business strain</i> <sup>1</sup>	-127	-124
<i>Value of new business before new business strain</i>	277	333
Annual premiums	659	706
Single premiums	6 101	7 798
PRESENT VALUE OF NEW BUSINESS PREMIUMS (PVNBP)	12 914	14 607
Average annual premium multiplier	10.3	9.6
New business annual premium equivalent (APE)	1 269	1 486
NEW BUSINESS MARGIN (% PVNBP)	1.2%	1.4%
New business margin (% APE)	11.9%	14.0%

<sup>1</sup> New business strain represents the effect on the net asset value from writing new business.

### 2.3.2 VALUE OF NEW BUSINESS – ANALYSIS OF CHANGE

The following graph and table detail the drivers for the change in new business value and margin of the business sold in 2011 compared to the business sold in 2010.

Value of New Business – Analysis of Change



Amounts in CHF million

	PVNBP	VNB	NBM (% PVNBP)	Change in NBM (% PVNBP)
VALUE OF NEW BUSINESS 2010	14 607	209	1.4%	
Economic variances	91	-44		-0.3%
Volume, business mix and pricing variances	-1 702	-15		0.0%
Expense variances	1	1		0.0%
Other variances	79	2		0.0%
FX variances	-163	-3		0.0%
VALUE OF NEW BUSINESS 2011	12 914	150	1.2%	

The new business volume measured in PVNBP decreased by 12%. Most of this reduction is driven by lower premiums of the PPLI business, which are single premiums only. Despite this reduction in volume, the new business margin remained stable apart from effects from the adverse capital market environment and due to an overall improvement of the new business mix and other operational indicators.

Additional explanations about new business calculations are given in section 4.2 of this report.

## 2.4 GROUP MCEV – ANALYSIS OF EARNINGS

The table below shows the development of Group MCEV split by components from 31 December 2010 to 31 December 2011.

In CHF million	Covered business MCEV	Non-covered business IFRS	Total Group MCEV 2011	Total Group MCEV 2010
OPENING GROUP MCEV	4 959	2 636	7 595	6 877
Opening adjustments	-98	-44	-142	-75
ADJUSTED OPENING GROUP MCEV	4 861	2 592	7 453	6 803
Operating MCEV earnings	710	62	772	2 353
Non-operating MCEV earnings	-405	-20	-424	-929
TOTAL MCEV EARNINGS	305	42	347	1 424
Other movements in IFRS net equity	n/a <sup>1</sup>	-6	-6	1
Closing adjustments	195	-262	-67	-633
CLOSING GROUP MCEV	5 361	2 367	7 728	7 595

<sup>1</sup> n/a: not applicable

The opening adjustment of the Group MCEV represents the dividend payment to shareholders of CHF 4.50 per share or a total of CHF 144 million as shown in the Consolidated Financial Statements (Note 27) and currency exchange rate effects of CHF -2 million.

The following commentaries refer mainly to the non-covered business as the analysis of earnings for the covered business is commented in sections 2.5 and 3.2 in detail.

The operating MCEV earnings for non-covered business increased by 19% compared to 2010 and correspond mainly to results from Swiss Life Holding, AWD, Investment Management and insurance business not within the scope of covered business. The change in operating MCEV earnings compared to 2010 originates almost entirely from the covered business.

The non-operating MCEV earnings relate to borrowing costs and tax effects for the non-covered business. The change in non-operating MCEV earnings compared to 2010 originates almost entirely from the covered business.

The other movements in IFRS net equity (non-covered business only) include the purchase of treasury shares, effects from equity-settled share-based payments and currency exchange rate effects on goodwill.

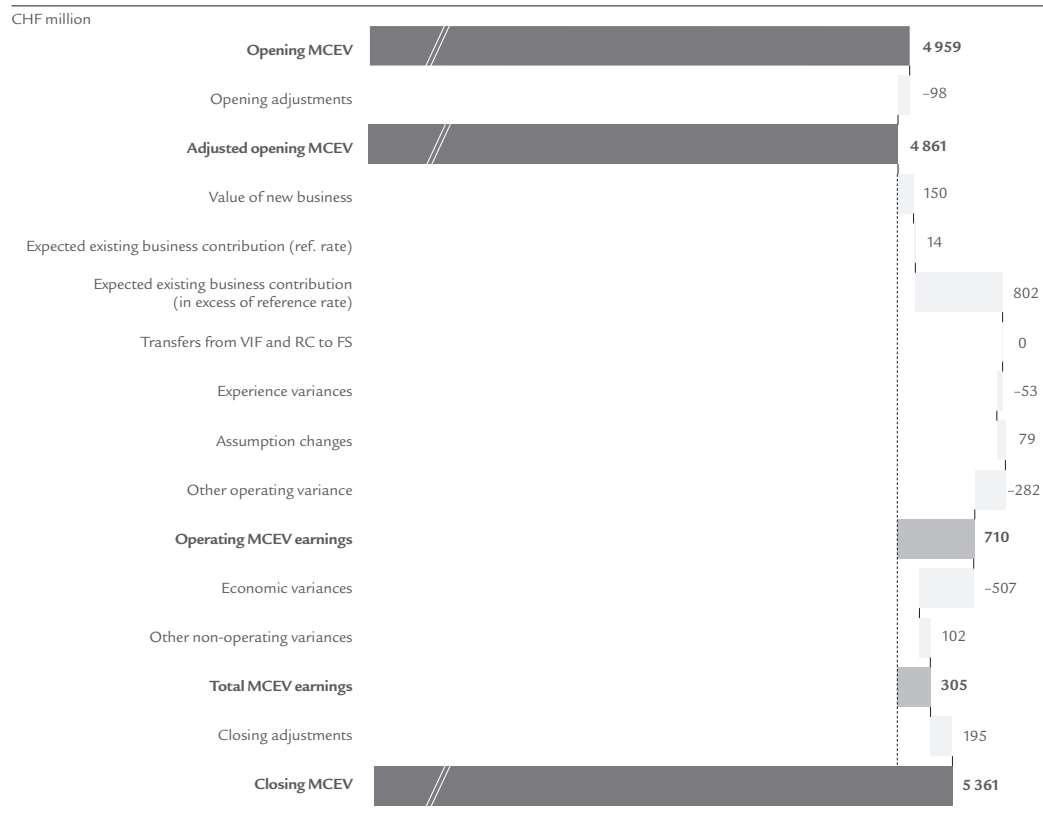
The closing adjustments result mainly from capital transfers between covered and non-covered business and currency exchange rate developments.



## 2.5 COVERED BUSINESS – ANALYSIS OF EARNINGS

The graph and table below show the analysis of earnings for the covered business in 2011:

### Covered Business – Analysis of Earnings for 2011



In CHF million	Free surplus	Required capital	VIF	MCEV	
				2011	2010
OPENING MCEV	35	1 892	3 032	4 959	4 132
Opening adjustments	-98	-	-	-98	-139
ADJUSTED OPENING MCEV	-63	1 892	3 032	4 861	3 993
Value of new business	-343	216	277	150	209
Expected existing business contribution (reference rate)	6	-	8	14	27
Expected existing business contribution (in excess of reference rate)	-9	-	811	802	837
Transfers from VIF and required capital to free surplus	680	-158	-523	-	-
Experience variances	-131	13	65	-53	-271
Assumption changes	5	-1	75	79	1 077
Other operating variance	129	1	-411	-282	421
OPERATING MCEV EARNINGS	337	71	302	710	2 301
Economic variances	157	-85	-578	-507	-979
Other non-operating variances	5	-1	98	102	75
TOTAL MCEV EARNINGS	498	-15	-178	305	1 397
Closing adjustments	230	-18	-17	195	-431
CLOSING MCEV	666	1 859	2 836	5 361	4 959

**OPENING ADJUSTMENTS** represent dividend payments from covered to non-covered business.

**VALUE OF NEW BUSINESS** contributions from free surplus and required capital sum up to the new business strain of CHF -127 million (2010: CHF -124 million). This represents the shareholders' share in acquisition expenses for new business. The VIF-component of CHF 277 million (2010: CHF 333 million) is the value of future profits from new business.

**EXPECTED EXISTING BUSINESS CONTRIBUTION (REFERENCE RATE)** shows the unwinding of discount on all value of in-force components with reference rates as at start of year. Additionally the notional interest on the net asset value is included.

**EXPECTED EXISTING BUSINESS CONTRIBUTION (IN EXCESS OF REFERENCE RATE)** represents the additional contribution to MCEV by taking into account investment returns for the reporting period expected at the beginning of the period over and above the initial reference rates for the period. Also, releases from the period's contribution to the time value of financial options and guarantees and cost of residual non-hedgeable risks are included. The expected business contribution is explained to a large extent by spreads expected to be earned on the corporate bond and real estate portfolio.

**TRANSFERS FROM VALUE IN FORCE AND REQUIRED CAPITAL TO FREE SURPLUS** include the transfer of the results of the preceding step from VIF to free surplus. Also, the required capital is normally reduced after this step, resulting in an equal increase of free surplus. The total effect in this line is zero. In the context of a life insurer's business model, this should be seen in combination of effects from new business which partly reverses this effect by an increase of required capital and a reduction of net asset value.

**EXPERIENCE VARIANCES** aggregate the impact of actual development versus expectations regarding non-economic assumptions such as mortality, expenses, lapses, as well as the deviations in handling of additional reserves. The large part of the experience variances comes from the Swiss business where a variety of effects including reserve strengthening contributed. Noteworthy is also the negative experience variance for International where the investments of the PPLI business contribute negatively.

**ASSUMPTION CHANGES** refer to the impact of the change on assumptions such as future expense, surrender, mortality, morbidity, longevity rates. The overall positive contribution results from very positive persistency experience, predominantly for Swiss group business, positive expense variances due to a further reduced cost base and slightly adverse demographic assumptions.

**OTHER OPERATING VARIANCE** includes effects from strategic management decisions such as risk premium reductions in Swiss group life business and modelling improvements as well as other reassessments especially with regard to hybrid debt.

**ECONOMIC VARIANCES** represent the change in embedded value by replacing the starting economic scenarios by the closing ones. Effects from deviations between actual and expected investment returns are included here. Higher swaption implied volatilities and lower reference rates led to a decrease of the MCEV. This was alleviated by the move to a QIS 5-styled parameterisation of the extrapolation of swap curves and a respective setting of positive liquidity premiums.

**OTHER NON-OPERATING VARIANCES** consist mainly of tax variances.

**CLOSING ADJUSTMENTS** represent the transfer of funds into the covered business and currency exchange rate translation effects resulting from the consolidation in Swiss francs.

## 2.6 SENSITIVITIES

Operational and demographic sensitivities as well as economic sensitivities with regard to equity/property implied volatilities or market values remained overall stable with respect to the ones for 2010. Sensitivities for MCEV with regard to reference rate levels are further reduced. Sensitivities with regard to swaption implied volatilities increased significantly. This is caused by the elevated swaption implied volatilities as at 31 December 2011 and the fact that relative changes to volatilities are determined.

The economic sensitivities are assumed to occur after the new business contracts have been sold, indicating how the value of in-force business and the value of new business written would be affected by the economic shocks.

The table below shows sensitivities of the MCEV and the value of new business to important financial market parameters and to operational and demographic assumptions.

### SENSITIVITIES AS AT 31 DECEMBER 2011

Amounts in CHF million

	Change in MCEV	+/-	Change in value of new business	+/-
<b>BASE VALUE</b>	<b>5 361</b>		<b>150</b>	
<b>Economic</b>				
100 bp increase of interest rates (reference rates)	283	5%	29	19%
100 bp decrease of interest rates (reference rates)	-729	-14%	-75	-50%
10% increase in equity / property market values	746	14%	<sup>1</sup>	<sup>1</sup>
10% decrease in equity / property market values	-814	-15%	<sup>1</sup>	<sup>1</sup>
25% increase in equity / property implied volatilities	-243	-5%	-9	-6%
25% decrease in equity / property implied volatilities	200	4%	8	5%
25% increase in swaption implied volatilities	-709	-13%	-29	-19%
25% decrease in swaption implied volatilities	544	10%	17	11%
<b>Operational</b>				
10% increase in maintenance expenses	-247	-5%	-24	-16%
10% decrease in maintenance expenses	245	5%	26	17%
10% proportionate increase in lapse rates	-134	-2%	-24	-16%
10% proportionate decrease in lapse rates	148	3%	26	17%
<b>Demographic</b>				
5% proportionate increase in mortality rates (death cover)	-17	-0%	-3	-2%
5% proportionate decrease in mortality rates (annuities)	-141	-3%	0	0%
5% increase of longevity driver (annuities)	-37	-1%	0	-0%
5% proportionate increase in morbidity rates	-87	-2%	-8	-5%
5% proportionate decrease in morbidity rates	85	2%	7	5%
<b>Other</b>				
Required capital 100% statutory solvency capital	143	3%	12	8%

<sup>1</sup> not available

## 2.7 RECONCILIATION OF IFRS NET ASSET VALUE TO GROUP MCEV

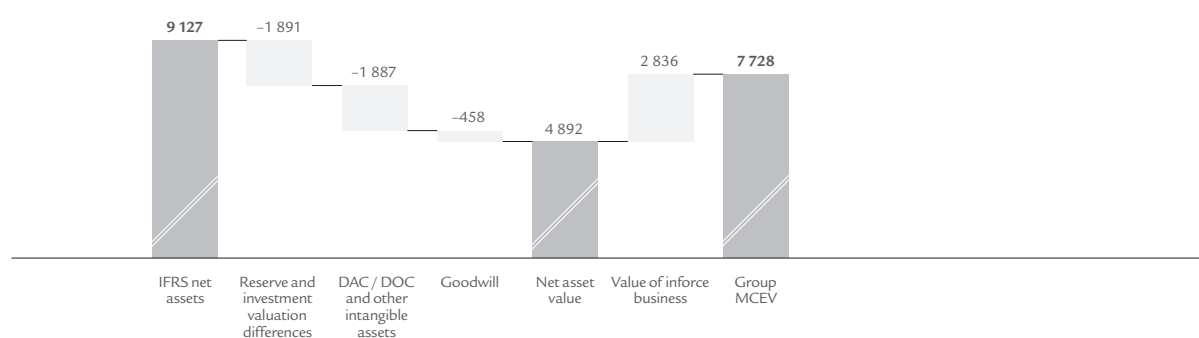
Swiss Life's MCEV for covered business reflects the value of the shareholders' interest in the life, health and pension business as well as assumed external reinsurance of the Swiss Life Group. This value includes the determination of best estimate liabilities for policyholder bonuses and tax payments, which are derived from results based on local statu-

tory accounting rather than on IFRS. Therefore local balance sheets and profit and loss accounts are the starting point for the projections. The net asset value (of assets not backing liabilities) is based on the local balance sheet, but adjusted at market value.

For the other parts of the Swiss Life Group, i.e. the non-covered business, the shareholder value is derived from its contribution to the Group's IFRS net asset value.

#### Reconciliation of IFRS Net Asset Value to Group MCEV

CHF million



#### RECONCILIATION OF IFRS NET ASSETS TO GROUP MCEV AS AT 31 DECEMBER 2011

In CHF million

	2011
IFRS NET ASSETS	9 127
Adjustments	-4 236
Reserve and investment valuation differences	-1 891
DAC / DOC and other intangible assets	-1 887
Goodwill <sup>1</sup>	-458
Net asset value	4 892
Value of in-force business	2 836
GROUP MCEV <sup>2</sup>	7 728

<sup>1</sup> Goodwill adjustments correspond to goodwill of covered business with the exception of CHF 81 million from French operations (see section 3.2).

<sup>2</sup> Group MCEV includes CHF 1 377 million of goodwill and intangible assets as part of the unadjusted IFRS net assets for non-covered business.

Starting with the total IFRS net assets, there are valuation differences between IFRS and MCEV regarding the net asset value for the covered business. In the reconciliation these valuation differences are shown under “adjustments”. The main elements that have been adjusted are deferred acquisition costs (DAC), goodwill and other intangible assets, differences between statutory and IFRS balance sheet items reflecting different reserving bases, and different treatment of the investments and unrealised gains (that form part of the IFRS net assets but are projected on MCEV as part of the value of in-force business in the MCEV calculations).

The adjusted IFRS net asset value corresponds to the MCEV net asset value of the Swiss Life Group. Adding the value of in-force business leads to the Group MCEV.

### 3 Information by Market Unit

#### 3.1 MARKET UNITS

Swiss Life's covered business is subdivided according to market units as follows:

- Life, pension and assumed external reinsurance business in Switzerland
- All businesses in France, mainly life, health and pension business
- Life and pension business in Germany
- Life and pension business in Luxembourg, Liechtenstein, and Singapore (together referred to as International)

This breakdown by market unit essentially coincides with the IFRS insurance segments in the annual report. There are minor differences since the MCEV classification generally follows the legal structure in order to ensure a correct modelling of the profit sharing. A divergence from the IFRS insurance segment reporting is the treatment of Swiss Life Asset Management in France, which is reported for MCEV purposes under France.

**SWITZERLAND** – Swiss Life's main business in the Swiss market is group life business with a full range of offerings. The individual business includes traditional savings, risk and annuity products, as well as modern savings and retirement products with flexible guarantees. Swiss Life's own sales force plays the major role in distribution, followed by brokers and AWD. The business for assumed external reinsurance is included here.

**FRANCE** – Insurance products include savings, annuity, and risk products as well as health insurance products. New business for life insurance focuses on multi-support products, combining traditional savings and unit-linked components. The main distribution channels are brokers, tied agents and own sales force. Additionally, France has developed strong relations with independent financial advisors and private banks.

**GERMANY** – Swiss Life sells traditional and modern products within individual and group life business. Disability insurance plays an important role. The main distribution channel is independent brokers, followed by financial advisors such as AWD.

**INTERNATIONAL** – Swiss Life offers private placement life insurance (PPLI) through its carriers in Liechtenstein, Singapore and Luxembourg. In Luxembourg, Swiss Life also provides group insurance solutions for international and local corporate clients through Corporate Solutions.

#### 3.2 RESULTS BY MARKET UNIT

##### MCEV BY MARKET UNIT FOR THE YEAR 2011

In CHF million					
	Switzerland	France <sup>1</sup>	Germany	International	Total
NET ASSET VALUE	1 096	1 082	353	-6	2 525
Free surplus	637	57	28	-56	666
Required capital	459	1 025	325	50	1 859
VALUE OF IN-FORCE BUSINESS	1 593	815	173	255	2 836
Certainty equivalent value	4 071	1 467	520	318	6 376
Time value of financial options and guarantees	-1 991	-367	-235	-8	-2 601
Cost of residual non-hedgeable risks	-280	-194	-74	-37	-584
Frictional costs of required capital	-207	-91	-37	-18	-354
MCEV	2 689	1 897	526	249	5 361

<sup>1</sup> The value for France includes CHF 81 million in goodwill and intangible assets originating from the non-life and non-health insurance operations.

## MCEV BY MARKET UNIT FOR THE YEAR 2010

In CHF million					
	Switzerland	France <sup>1</sup>	Germany	International	Total
NET ASSET VALUE	557	1 056	335	-20	1 928
Free surplus	103	43	-43	-68	35
Required capital	454	1 013	378	48	1 892
VALUE OF IN-FORCE BUSINESS	1 655	824	271	282	3 032
Certainty equivalent value	3 485	1 431	536	346	5 797
Time value of financial options and guarantees	-1 407	-315	-180	-10	-1 912
Cost of residual non-hedgeable risks	-234	-195	-38	-40	-507
Frictional costs of required capital	-188	-97	-47	-14	-346
MCEV	2 212	1 879	606	262	4 959

<sup>1</sup> The value for France includes CHF 72 million in goodwill and intangible assets originating from the non-life and non-health insurance operations.

**SWITZERLAND** – The increase in net asset value and free surplus is a consequence of the strong annual profit of 2011 and non-recurring items. The time value of financial options and guarantees increased due to increased interest rate volatilities.

Hybrid debt, all of which is allocated to Switzerland, includes the difference between the market value of assets covering the hybrid debt in the statutory balance sheet and the marked-to-model value of the hybrid debt as described in section 4.3. This difference was allocated to the net asset value in 2010 and is allocated to the value of in-force business in 2011.

**FRANCE** – The MCEV of France slightly increased despite the adverse capital market environment. Free surplus increased from the profit of the year despite a considerable new business strain and dividend payment.

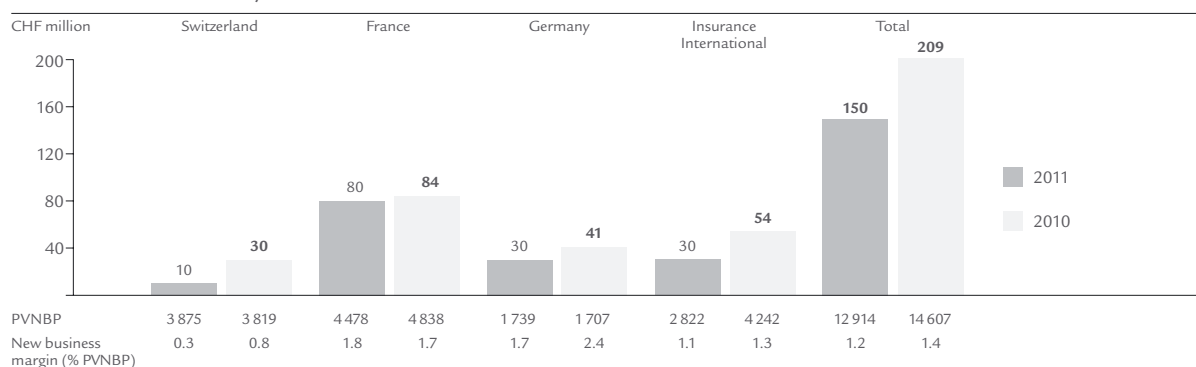
The slightly higher TVOG of France at 31 December 2011 compared to the one reported a year ago, is mainly a consequence of higher interest rate volatilities partly offset by a de-risking of the strategic asset allocation. The health business does not offer financial options and guarantees and therefore does not contribute to the time value of financial options and guarantees.

**GERMANY** – While the net asset value increased in Germany despite a capital outflow, the VIF decreased because of the adverse capital market environment, especially due to the increased interest rate volatilities. Furthermore, an increase in free surplus was achieved for various reasons including lower policyholder bonuses in 2011.

**INTERNATIONAL** – The business of private placement life insurance (PPLI) accounted for 80% of the opening MCEV. While assets under control increased during the reporting period, a revised outlook on future new business volumes for the PPLI business led to a decrease of the MCEV.

The negative free surplus of CHF -56 million is explained by not taking into account the goodwill relating to a past acquisition in Liechtenstein. The low TVOG reflects the absence of substantial financial options and guarantees across most business lines of International and a de-risking of the asset allocation in Corporate Solutions.

## Value of New Business by Market Unit



## VALUE OF NEW BUSINESS BY MARKET UNIT – PREMIUMS AND MARGINS FOR THE YEAR 2011

Amounts in CHF million

	Switzerland	France	Germany	International	Total
VALUE OF NEW BUSINESS	10	80	30	30	150
<i>New business strain</i> <sup>1</sup>	-52	-62	-8	-5	-127
<i>Value of new business before new business strain</i>	62	142	38	35	277
Annual premiums	164	375	117	4	659
Single premiums	1 437	1 550	323	2 791	6 101
PRESENT VALUE OF NEW BUSINESS PREMIUMS (PVNBP)	3 875	4 478	1 739	2 822	12 914
Average annual premium multiplier	14.9	7.8	12.1	7.8	10.3
New business annual premium equivalent (APE)	307	530	150	283	1 269
NEW BUSINESS MARGIN (% PVNBP)	0.3%	1.8%	1.7%	1.1%	1.2%
New business margin (% APE)	3.4%	15.2%	19.8%	10.7%	11.9%

<sup>1</sup> New business strain represents the effect on the net asset value from writing new business.

## VALUE OF NEW BUSINESS BY MARKET UNIT – PREMIUMS AND MARGINS FOR THE YEAR 2010

Amounts in CHF million

	Switzerland	France	Germany	International	Total
VALUE OF NEW BUSINESS	30	84	41	54	209
<i>New business strain</i> <sup>1</sup>	-41	-66	-9	-7	-124
<i>Value of new business before new business strain</i>	71	150	50	61	333
Annual premiums	189	382	129	6	706
Single premiums	1 164	2 099	333	4 202	7 798
PRESENT VALUE OF NEW BUSINESS PREMIUMS (PVNBP)	3 819	4 838	1 707	4 242	14 607
Average annual premium multiplier	14.0	7.2	10.7	6.7	9.6
New business annual premium equivalent (APE)	306	592	163	426	1 486
NEW BUSINESS MARGIN (% PVNBP)	0.8%	1.7%	2.4%	1.3%	1.4%
New business margin (% APE)	9.8%	14.2%	25.0%	12.7%	14.0%

<sup>1</sup> New business strain represents the effect on the net asset value from writing new business.



**SWITZERLAND** – New business consists of new contracts and new coverages on existing contracts. Within group life business, replacements and newly insured persons entering existing group life contracts are not accounted for as new business.

An increase in new business volume of modern products in individual life and single premiums in group life was partly offset by lower production for traditional products in individual life and assumed re-insurance business. The decline in value of new business and new business margin is caused by the low level of risk-free interest rates in combination with high interest rate volatilities and the level of interest rate guarantees. The strongly adverse impacts from the financial market environment could not fully be counteracted by positive operating impacts from re-pricing measures for individual life products, successfully launched new pension products and favourable persistency and expense assumption variances in group life.

**FRANCE** – The new business margin increased due to management actions such as pushing unit-linked and risk business, de-risking the strategic asset allocation and efficiency gains. These actions offset the negative capital market environment as well as the overall volume reduction and increased the new business margin.

The value of new business for the health business increased significantly compared to 2010 as a consequence of the increase of volumes and the higher share of death and disability business sold. In life business, a higher share and volume of unit linked business than in 2010 was achieved.

**GERMANY** – The new business margin of Germany has been negatively affected by economic conditions as well as market pressure on disability business. The share of risk and supplementary disability insurance contracts written remains at a high level, but slightly lower than in the previous year. As a result the value of new business is lower than in 2010.

**INTERNATIONAL** – The PPLI business is the main driver for the value of new business of International which accounts for CHF 30 million. The change in value compared to 2010 can be attributed to the performance of the PPLI business, where the reorientation in private banking led to a weakened demand and lower new business volumes. Pricing pressure and lower persistency assumptions reduced the margin by 20 bp. Because of the weight of PPLI within International, by far the biggest share of new business premiums consists of single premiums.

## ANALYSIS OF EARNINGS BY MARKET UNIT FOR THE YEAR 2011

In CHF million

	Switzerland	France	Germany	International	Total
OPENING MCEV	2 212	1 879	606	262	4 959
Opening adjustments	-46	-30	-22	-	-98
ADJUSTED OPENING MCEV	2 166	1 849	584	262	4 861
New business value	10	80	30	30	150
Expected existing business contribution (reference rate)	3	8	1	3	14
Expected existing business contribution (in excess of reference rate)	517	209	62	14	802
Experience variances	-34	10	-17	-12	-53
Assumption changes	124	-20	-23	-3	79
Other operating variance	-240	7	-7	-41	-282
OPERATING MCEV EARNINGS	379	293	46	-9	710
Economic variances	-166	-217	-95	-29	-507
Other non-operating variances	101	1	-	1	102
TOTAL MCEV EARNINGS	314	77	-49	-37	305
Closing adjustments	209	-29	-10	24	195
CLOSING MCEV	2 689	1 897	526	249	5 361

All market units contributed to the value creation with a positive value of new business.

**SWITZERLAND** – Strong operating earnings of CHF 379 million correspond to 18% of the adjusted opening MCEV.

The observed experience variances are a combination of effects from deviations in persistency and demographic experience relative to opening assumptions as well as reserve strengthening in the light of the low interest rate environment.

The assumption changes are due to a favourable experience-driven update of persistency assumptions in group life and the reduced cost base. This is partly offset by an update of assumptions in respect of policyholder behaviour such as earlier future retirements within group life contracts.

Other operating variances are mainly attributable to group life business, in particular due to a reduction in risk premiums from 2012 onwards. Further negative effects on other operating variances come from an increased real estate share in the strategic asset allocation. With regard to hybrid debt an adjustment and a positive revaluation had a negative impact overall, which is also included in other operating variance.

Negative economic variances are caused by the significant increase of interest rate volatilities. The setting of the liquidity premiums has a positive impact.

Other non-operating variances reflect changes to future taxation.

Closing adjustments are almost fully due to capital transfers to the Swiss market unit.

**FRANCE** – The operating MCEV earnings of CHF 293 million corresponds to 16% of the adjusted opening MCEV. France has a significant contribution from new business production. The expected existing business contribution, combined with a disciplined policyholder profit sharing allowed a strengthening of the bonus fund and an increase in free surplus despite dividend payments.

The expense reductions achieved contributed positively to the assumption variances while other effects, including anticipated increases of health claims ratios more than offset this.

Closing adjustments reflect the lower euro exchange rate in 2011.

**GERMANY** – The operating MCEV earnings of CHF 46 million correspond to 8% of the adjusted opening MCEV. Besides the strong new business contribution, operating expense reductions also contributed positively. This was offset by ongoing investments into new asset management and policy administration systems as well as other measures to strengthen the sustainability of the business.

Germany had a capital outflow of CHF 22 million.

Closing adjustments reflect the lower euro exchange rate in 2011.

**INTERNATIONAL** – The operating MCEV earnings of CHF -9 million represent -4% of the opening MCEV. This is driven by a reassessment of PPLI's volume outlook given the reorientation in private banking and the new business premiums in 2011. On the other hand the business with corporate clients had a stabilising effect on the value.

Despite a substantial volume reduction, the value of new business still contributed strongly to the result with CHF 30 million or 12% of the total embedded value of International.

Experience variances and other operating variances are positively influenced by mortality and disability, while strong negative effects arise from the situation of the PPLI business, which still shows some characteristics of a start-up.

Substantial cost reductions were achieved in the corporate clients business: however, the revised new business outlook for PPLI more than compensated the impact on the MCEV.

Main driver for negative economic variances is the investment performance of assets under control and currency exchange effects, whereas the closing adjustments reflect a capital transfer to PPLI.

## 4 Methodology

### 4.1 MCEV COMPONENTS FOR COVERED BUSINESS

**NET ASSET VALUE (NAV)** – The net asset value is the market value of assets allocated to the covered business, which are not backing liabilities from the covered business.

The net asset value is calculated as the statutory equity capital, adjusted by the unrealised gains or losses on assets covering the equity capital that are attributable to shareholders after taxes. Depending on local regulatory restrictions, equalisation reserves are also included in the net asset value. Intangible assets are not accounted for in the net asset value.

The net asset value is further split between the required capital (RC) and the free surplus (FS).

**REQUIRED CAPITAL (RC)** – The required capital is the market value of assets, attributed to the covered business – over and above that required to back liabilities for covered business – whose distribution to shareholders is restricted. Swiss Life bases the amount of required capital on 150% of the statutory solvency level according to Solvency I, except for assumed external reinsurance where an economic approach is used instead.

The amount of required capital disclosed is presented from a shareholder's perspective and thus is net of funding sources other than shareholder resources (such as subordinated loans or unallocated bonus reserves).

**FREE SURPLUS (FS)** – The free surplus is the market value of assets allocated to, but not required to support, the in-force covered business at the valuation date. The free surplus is calculated as the difference between the net asset value and the required capital.

Under the chosen definition of required capital, the free surplus, unlike the required capital, is supposed to be immediately releasable and hence does not affect the frictional costs of required capital.

**VALUE OF IN-FORCE BUSINESS (VIF)** – The value of in-force business consists of the following components:

1. Certainty equivalent value (CEV)
2. Time value of financial options and guarantees (TVOG), including the cost of credit risk (see below)
3. Cost of residual non-hedgeable risks (CNHR)
4. Frictional costs of required capital (FC)

In the MCEV Principles, the term present value of future profits (PVFP) is used instead of certainty equivalent value.

Certainty equivalent value and time value of financial options and guarantees are items that involve projections encompassing local statutory liabilities and assets in line with:

- local legal and regulatory obligations
- company practice due to commercial and competitive constraints
- local market practice in the calculation of embedded values

**CERTAINTY EQUIVALENT VALUE (CEV)** – The certainty equivalent value is defined as the present value of the future shareholders’ statutory profits (net of tax) under the certainty equivalent scenario.

In this particular scenario, future market returns are determined as the forward rates implied in the reference rates at the valuation date. Discounting is performed at the same reference rates. The certainty equivalent value includes that part of the value of financial options and guarantees which materialises in the underlying scenario.

The rules for anticipated management and policyholders’ actions applied in the certainty equivalent scenario are the same as those for the stochastic projection used to determine the time value of financial options and guarantees.

**TIME VALUE OF FINANCIAL OPTIONS AND GUARANTEES (TVOG)** – The certainty equivalent value does not allow for the risk that the financial outcome for shareholders could differ from the one implied by the certainty equivalent scenario. This is of particular relevance when products or funds include guarantees or options for the policyholder such as:

- guaranteed interest rates
- discretionary profit sharing and regulatory constraints, e.g. “legal quotes”
- maturity guarantees
- guaranteed minimum death benefits
- guaranteed annuity options
- surrender options

For such products or funds, a stochastic projection has been run allowing for the range of possible scenarios for financial markets. The TVOG is calculated as the difference between the average present value of shareholder cash flows (profits or losses) and the certainty equivalent value, plus the cost for credit risk (see remarks on credit risk below). The TVOG therefore represents the additional market consistent value of those financial options and guarantees in excess of the intrinsic value which are already allowed for in the certainty equivalent value.

At the end of the projection, shareholders are assumed to meet any shortfall of assets against liabilities or to receive a share of any residual assets. The same applies to the certainty equivalent value.

The cost of credit risk accounts for the shareholder’s share of credit risk of investments in bonds that would have otherwise been unaccounted for in other MCEV components. It is defined as the present value of charges on the projected economic capital for credit risk.

The initial economic capital for credit risk is defined as the impact on the value of in-force business corresponding to the 99% expected shortfall of the credit loss from the actual bond portfolio over one year, due to the migration and default risk. The underlying credit risk calculations are performed using an internal model based on the Credit-Metrics<sup>®2</sup> methodology.

The economic capital for cost of credit risk has been projected based on mathematical reserves. An annual charge of 4% has been applied to the resulting projected economic capital.

**COST OF RESIDUAL NON-HEDGEABLE RISKS (CNHR)** – The cost of residual non-hedgeable risks for risk factors such as mortality, morbidity, expenses and lapse rates is calculated under a cost of capital approach. It is defined as the present value of annual charges on the projected economic capital for residual non-hedgeable risks.

The initial capital for the CNHR has been calculated in line with Swiss Life’s internal model. The corresponding economic capital is calculated by aggregating the stand-alone economic capital amounts that correspond to non-hedgeable risk factors, notably the following:

- mortality
- longevity
- disability/morbidity
- recovery rates
- capital options
- lapses
- expenses

The drivers for projecting the economic capital for CNHR are generally based on the statutory solvency margin.

An annual charge of 4% has been 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.

In order to be consistent with the CFO Forum Principles, no diversification between hedgeable and non-hedgeable risks has been taken into account. Furthermore no diversification effects between market units have been accounted for.

**FRICTIONAL COSTS OF REQUIRED CAPITAL (FC)** – The frictional costs of required capital for the covered business are defined as the present value of the costs incurred by shareholders due to investment via the structure of an insurance company (compared to direct investment as individuals), such as tax on profits generated by the insurance company or the costs of asset management. Other potential frictional costs such as agency costs or financial distress costs have not been taken into account in the frictional costs of required capital.

#### 4.2 NEW BUSINESS

New business is defined as covered business arising from the sale of new contracts and from new covers to existing contracts during the reporting year, including cash flows arising from the projected renewal of those new contracts. Higher premiums in Swiss group life contracts from wage increases are not considered new business. The value of new business (VNB) reflects the additional value to shareholders created through the activity of writing new business during the reporting period.

The value of new business of a period represents the effect on the MCEV as at end of period from writing new business, i.e., it is the difference between the actual closing MCEV and the closing MCEV which would result if no new business had been written during the period. This is known as the “marginal” approach to value of new business. It applies to every MCEV component: CEV, TVOG, CNHR and FC. Legal constraints – e.g. “legal quotes” – or management rules often apply to books of contracts as a whole instead of individual contracts. That is why the value of new business can be dependent on the business in force before the writing of new business.

A “stand-alone” valuation for value of new business has been performed when the business in force is not affected by writing new business (for example for unit-linked contracts). In this case, the value of new business has been valued independently of the business in force.

The value of new business is generally calculated with economic scenarios and assumptions as at end of period.

#### 4.3 ASSET AND LIABILITY DATA

All assets and liabilities reflect the actual positions as at valuation date.

**ASSETS** – The asset model used for the calculation of the MCEV differentiates three main asset classes:

- cash and fixed income instruments
- equity-type investments (including real estate)
- derivatives

All bonds and bond-like securities (such as mortgages) are modelled as fixed or floating government bonds. For all bonds, coupons and nominals have been recalibrated so that the valuation of the bonds using the reference yields converges to the observed market value.

Equities, real estate, participations and alternative investments (hedge funds and private equities) are modelled separately using appropriate indices for the corresponding currencies.

Current initial market values of assets have been taken where available (“marked-to-market”), or estimated where there is no reliable market (“marked-to-model”), for example by discounting unquoted loan and mortgage asset proceeds. Local regulatory and accounting frameworks (such as the amortisation of bonds or lower of cost or market principle) are reflected.

When a substantial share of the assets is held in foreign currencies, these foreign assets are modelled explicitly (including the foreign currency exchange risk).

**INSURANCE LIABILITIES** – Liabilities are valued in line with local statutory requirements generally using individual policy data. For projection purposes, policies of the same product with similar risk profiles are grouped together to form model points.

**HYBRID DEBT** – In accordance with the MCEV Principles (G3.4), hybrid debt allocated to covered business is valued by discounting the corresponding coupon and nominal payments (liability cash flows) with reference interest rates and spreads that would be used by capital markets for debt with similar characteristics. For the spread used for the closing MCEV see section 5.1.1. The approach is consistent with the fair value disclosed in the Notes to the Consolidated Financial Statements. For the opening MCEV and previous MCEV disclosures no spread was assumed.

#### 4.4 ECONOMIC SCENARIO GENERATOR

The MCEV is calculated using a risk-neutral valuation, based on market consistent and arbitrage-free stochastic economic scenarios. Under this approach, the key economic assumptions are:

- the reference rates
- interest rate and equity-type volatilities
- correlations between the economic risk factors
- inflation rates

The stochastic economic scenarios are generated by the economic scenario generator developed and provided by Barrie & Hibbert, a UK based financial consulting company. For variable annuity products a dedicated economic scenario generator is used.

Since the assets and liabilities within the Swiss Life Group are mostly denominated in Swiss francs, euro or US dollars, the economic scenarios reflect these three economies in a market consistent way. The exchange rates and dividend yields are modelled as additional risk factors, as well as the inflation rates in each economy.

For the calculation of the MCEV and the value of the new business as at valuation date, 2000 economic scenarios (also referred to as simulations) are used, ensuring convergence of the results for all market units. For the calculation of the sensitivities and some steps in the movement analysis, some market units use fewer scenarios in connection with variance reduction techniques.

#### **4.5 DYNAMIC MANAGEMENT ACTIONS AND POLICYHOLDER BEHAVIOUR**

Anticipated dynamic management actions and policyholder behaviour mainly concern the following areas: profit sharing for participating life businesses, asset allocation and realisation of gains and losses, and assumed policyholder behaviour with regards to their contractual options. They are dependent on the economic scenario considered and reflect local regulations and type of business.

The crediting rules for policyholders are consistent with current company practices and local regulatory environments, in particular regarding the existence of a “legal quote”. They ensure that the statutory solvency rules (Solvency I, including stress tests if legally required in the country) and other legal requirements are fulfilled for each projection year.

The rules for future asset allocations are consistent with going-concern assumptions. Asset realignment avoids deviating from the strategic asset allocation by more than a predefined margin and takes place after each projected year.

Lapse rates from policyholders have been dynamically modelled. For traditional business, lapse rates depend on the difference between the credited rate to the policyholders and the anticipated policyholders’ expectations. Lapse parameters depend on the country and product line considered.

#### **4.6 LOOK-THROUGH PRINCIPLE**

MCEV guidance requires that profits or losses incurred in service companies from managing covered business are measured on a “look-through” basis. This principle ensures that all profits and losses incurred in relation to the covered business are passed to the corresponding entity, and consequently incorporated into the value of in-force business.

The look-through principle is applied for the asset management services, corporate centre services and services related to intellectual property management such as branding. The future profits or losses taken into account for these are limited to those linked to the insurance business, after “legal quote” and taxes.

#### **4.7 CONSOLIDATION**

The Group MCEV for Swiss Life comprises MCEV results for covered business and IFRS net asset values for non-covered business.

Covered business comprises all of Swiss Life’s major life, health and pension business as well as assumed external reinsurance with the exception of Swiss Life Insurance Solutions AG, which is not material for MCEV purposes. In the case of France, the remaining operations are sub-consolidated with their IFRS net asset value and also included in the French covered business.



Covered business relates to the operations in:

- Switzerland
- Germany
- France: sub-consolidated
- Luxembourg
- Liechtenstein
- Singapore

The sum of all market consistent embedded values for the market units of the covered business forms the total MCEV for covered business.

Non-covered business comprises all other entities of the Swiss Life Group that are valued at the unadjusted IFRS net asset value on a consolidated level, such as the distribution unit AWD or investment management, financing and holding companies. Non-covered business is added to the MCEV results from the covered business to form the Group MCEV.

#### **4.8 EMPLOYEE PENSION SCHEMES AND SHARE-BASED PAYMENT PROGRAMMES**

Allowance is made for gains or losses arising from the defined benefit pension plans for Swiss Life's own employees. In Switzerland there is a semi-autonomous pension fund with biometric risks covered by an insurance contract. In other units the major part is covered by insurance contracts. The remaining part is modelled as commensurate expenses in the projections.

The costs of share-based payment programmes for employees are not included in the MCEV, other than to the extent that they are allowed for in the local statutory accounts upon which the shareholder net assets are based. Further information on the costs of share-based payment programmes is given in the Group's IFRS financial statements.

## 5 Assumptions

### 5.1 ECONOMIC ASSUMPTIONS

The market consistent calibration of the economic scenarios is based on traded market instruments at the valuation date wherever possible. This includes nominal and real yield curves, interest rate volatility and equity volatilities. Where market data is not available or the market is not liquid enough, the model calibration is based on best estimate assumptions. This notably includes correlations, exchange rate volatilities and real estate volatilities.

**5.1.1 REFERENCE RATES** – Following market practice, the reference rates used for the calculation of the MCEV 2011 are based on the swap rates as at 31 December 2011 and include, where appropriate, a liquidity premium. Extrapolation of the interest curves and determination of liquidity premiums closely follow the QIS 5 framework.

The underlying liquidity premium is determined by applying the formula Maximum (0; 50%\*(corporate credit spread over swap – 40 bp)), where the corporate spreads over swap are measured with appropriate market indices. For the corporate credit spread over swap rates for the two currencies euro and US dollar, we use the quotation from Markit<sup>3</sup> instead of using the two step approach as described in the QIS 5 guidance. For the spread over swap rates for Swiss franc we use a SIX Swiss Exchange Bond Index (SBI® Corporate, introduced in 2011) composed of investment grade, foreign and domestic corporate issues in Swiss franc.

In line with QIS 5 guidance and market practice, we apply no liquidity premium to PPLI, unit-linked, and variable annuities business, 50% of the underlying liquidity premium to health insurance and assumed external reinsurance, and 75% to all participating and other businesses, including traditional annuities. Also according to QIS 5 guidance, liquidity premiums are applied over a term of 10 years for Swiss franc, 15 years for euro and 30 years for US dollar, and phased out over the following five years.

As some of Swiss Life's liabilities are running longer than asset durations are available on financial markets in sufficient depth and liquidity, an extrapolation of yields is needed to assess swap maturities beyond this horizon. In 2011, Swiss Life used the approach for extrapolation prescribed by EIOPA for QIS 5.

The whole yield curve is shifted for the 100 bp increase/decrease in reference rate sensitivity including the extrapolated part beyond terms where market data is used for calibration of the reference rates.

The spread (on swap rates) applied for valuation of the hybrid debt as at 31 December 2011 is 363 bp. For the opening MCEV no spread was assumed.

#### 5.1.1.1 SWAP RATES AS AT 31 DECEMBER 2011

Economy	1 year	2 year	5 year	10 year	15 year	30 year
Switzerland	0.03%	0.09%	0.58%	1.24%	1.48%	1.47%
Euro Zone	1.42%	1.32%	1.73%	2.37%	2.67%	2.56%
United States	0.67%	0.72%	1.22%	2.02%	2.37%	2.59%

<sup>3</sup> Copyright © 2011 Markit Group Limited

## 5.1.1.2 SWAP RATES AS AT 31 DECEMBER 2010

Economy	1 year	2 year	5 year	10 year	15 year	30 year
Switzerland	0.18%	0.52%	1.40%	2.16%	2.41%	2.19%
Euro Zone	1.33%	1.56%	2.48%	3.31%	3.64%	3.50%
United States	0.44%	0.80%	2.15%	3.36%	3.83%	4.10%

The 100% liquidity premiums, relative to swaps rates as of 31 December 2011 amount to 62 bp for Swiss franc, 107 bp for euro and 108 bp for US dollar. For the calculation of the MCEV 2010 Swiss Life had decided to set the liquidity premiums to zero.

**5.1.2 VOLATILITY ASSUMPTIONS** – Volatility assumptions for the year-end 2011 and 2010 calculations are derived from market data as at 31 December 2011 and 2010.

The interest rate volatilities are based on implied volatilities of at-the-money receiver swaptions. The tenors are 20 years for the euro and the US dollar and 10 years for the Swiss franc.

## 5.1.2.1 SWAPTION IMPLIED VOLATILITIES AS AT 31 DECEMBER 2011

Economy	1 year option	2 year option	5 year option	10 year option	15 year option	30 year option
Switzerland	53.3%	47.3%	39.5%	45.3%	45.2%	31.4%
Euro Zone	38.5%	35.3%	30.3%	28.7%	29.3%	23.3%
United States	40.2%	36.9%	32.2%	28.4%	27.4%	32.8%

## 5.1.2.2 SWAPTION IMPLIED VOLATILITIES AS AT 31 DECEMBER 2010

Economy	1 year option	2 year option	5 year option	10 year option	15 year option	30 year option
Switzerland	30.0%	27.8%	26.2%	31.0%	n/a <sup>1</sup>	n/a <sup>1</sup>
Euro Zone	24.1%	22.0%	18.7%	18.2%	20.5%	20.5%
United States	25.1%	23.4%	20.2%	16.3%	15.2%	14.4%

<sup>1</sup> n/a: not available

The equity implied volatilities are derived from the 10-year at-the-money equity put option prices.

## 5.1.2.3 EQUITY OPTION IMPLIED VOLATILITIES AS AT 31 DECEMBER 2011 AND 31 DECEMBER 2010

Economy	Index	Volatility	
		2011	2010
Switzerland	SMI	22.2%	21.0%
Euro Zone	EuroStoxx 50	27.2%	27.3%
United States	S&P 500	30.7%	27.4%

For 31 December 2011 Swiss Life reassessed the property volatilities considering historical data.

#### 5.1.2.4 PROPERTY VOLATILITIES USED FOR THE CALCULATION AS AT 31 DECEMBER 2011 AND 31 DECEMBER 2010

Economy	Volatility	
	2011	2010
Switzerland	8.0%	8.0%
Euro Zone	13.0%	13.0%

**5.1.3 CORRELATION ASSUMPTIONS** – The correlation assumptions between different asset classes are based on historical market data. The correlations between returns on equities and on 10-year zero coupon bonds are assumed to be 13% for 2011 and 16% for 2010.

**5.1.4 INFLATION ASSUMPTIONS** – The inflation assumptions have been derived from inflation-linked bond prices, where inflation-linked bonds are traded. For the Swiss economy, the real interest rate model is calibrated on the inflation forecast by Consensus Economics, an international economic survey organisation.

#### 5.1.4.1 FORWARD INFLATION RATES USED FOR THE CALCULATION AS AT 31 DECEMBER 2011

Economy	1 year	2 year	5 year	10 year	15 year	30 year
Switzerland	0.0%	0.0%	0.8%	1.5%	1.3%	1.2%
Euro Zone	1.6%	0.6%	0.7%	1.6%	1.9%	2.5%

#### 5.1.4.2 FORWARD INFLATION RATES USED FOR THE CALCULATION AS AT 31 DECEMBER 2010

Economy	1 year	2 year	5 year	10 year	15 year	30 year
Switzerland	0.6%	0.6%	1.2%	1.8%	1.4%	1.2%
Euro Zone	2.1%	1.5%	1.7%	2.4%	2.6%	1.9%

**5.1.5 REAL WORLD ASSUMPTIONS** – These assumptions are used for the step “expected business contribution in excess of reference rates” introduced in 2011.

For fixed interest assets, the “real world” investment return assumptions are based on the gross redemption yield on the assets less a rating-dependent allowance for expected defaults derived from historical data.

Fixed risk premiums are used for other risky assets. Return assumptions for equity and property are derived from the 10-year reference rates, plus a risk premium; see table 5.1.5.1 below.

### 5.1.5.1 EQUITY AND PROPERTY ASSUMPTIONS FOR REAL WORLD PROJECTION

Risk premiums by asset class	2011	2010
Equity	400 bp	400 bp
Property (Switzerland and Europe)	200 bp	200 bp

## 5.2 TAXATION AND LEGISLATION

Tax assumptions have been set in line with the local tax regime. Tax losses carried forward are considered in the projections. Taxation rules are based on individual companies' total results. Tax impact of future new business has not been allowed for. The following table 5.2.1 shows the corporate tax rates applied.

### 5.2.1 TAX ASSUMPTIONS

	2011	2010
Switzerland	21.1%	22.3%
France	34.4%	34.4%
Germany	32.6%	32.6%
Luxembourg	22.0%	22.0%
Liechtenstein	13.0%	13.0%
Singapore	18.0%	18.0%

## 5.3 OPERATING ASSUMPTIONS

Non-economic assumptions such as mortality, morbidity and lapse rates have been determined by the respective business units based on their best estimate as at the valuation date. Best estimate assumptions are set by considering past and current experience.

Expense assumptions are reconciled with past and current experience. They do not account for future cost reductions. Projected expenses are subject to inflation. All the expected expense overruns affecting the covered business, such as overhead expenses and development costs in new markets have been allowed for in the calculations. Corporate costs are included in the expenses of market units by means of a "look-through" procedure (see section 4.6).

## 6 External Auditors' Statement

To the Board of Directors of  
Swiss Life Holding Limited  
Zurich

### Auditor's Report on Market Consistent Embedded Value

We have audited the accompanying Market Consistent Embedded Value Report ("MCEV Report") of Swiss Life Holding Ltd for the year ended 31 December 2011. The embedded value information included in the MCEV Report has been prepared in accordance with the Market Consistent Embedded Value ("MCEV") Principles issued by the European Insurance CFO Forum, as described in sections 1 and 4 of the MCEV Report.

The Board of Directors is responsible for the preparation of the MCEV Report, including the applied methodology and the assumptions used. Our responsibility is to express an opinion on whether the MCEV Report has been properly prepared in accordance with the MCEV Principles.

We conducted our audit in accordance with Swiss Auditing Standards as well as the International Standards on Auditing. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the MCEV Report is free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the MCEV Report. An audit also includes assessing the principles used and significant estimates made by the Board of Directors, as well as evaluating the adequacy of the overall presentation of the MCEV Report. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the MCEV Report of Swiss Life Holding Ltd for the year ended 31 December 2011 has been properly prepared in accordance with the MCEV Principles.

This report has been prepared solely for the Board of Directors of Swiss Life Holding Ltd in accordance with the terms of our engagement letter. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown except where explicitly agreed by our prior consent in writing. This report does not extend to any financial statements of Swiss Life Holding Ltd.

PricewaterhouseCoopers AG

Ray Kunz  
Audit expert

Morgan Schaeffer

Zurich, 28 February 2012

## 7 Glossary and List of Abbreviations

**ANNUAL PREMIUM EQUIVALENT (APE)** – Volume measure for new business. Sum of regular premiums from new business +10% of single premiums on business written during the period.

**AVERAGE ANNUAL PREMIUM MULTIPLIER** – The average annual premium multiplier is determined as the difference between PVNBP and the new business single premiums, divided by new business annual premiums.

**BEST ESTIMATE ASSUMPTIONS** – A best estimate assumption should equal the mean estimate (probability weighted average) of outcomes of that risk variable.

**CERTAINTY EQUIVALENT SCENARIO** – Economic scenario under which asset returns are equal to the reference rates.

**CERTAINTY EQUIVALENT VALUE (CEV)** – Certainty equivalent value is defined as the present value of the future shareholders' statutory profits (net of tax) under the certainty equivalent scenario.

**CFO FORUM** – The CFO Forum is a high-level discussion group formed and attended by the Chief Financial Officers of major European listed, and some non-listed, insurance companies. Its aim is to discuss issues relating to proposed new accounting regulations for their businesses and how they can create greater transparency for investors. It published the MCEV Principles together with a detailed Basis for Conclusions on 4 June 2008 and an amendment in October 2009.

**COST OF CREDIT RISK** – The cost of credit risk accounts for the credit risk of investments in bonds that would otherwise have been unaccounted for in other MCEV components.

**COST OF RESIDUAL NON-HEDGEABLE RISKS (CNHR)** – The cost of residual non-hedgeable risks accounts for risk factors such as mortality, morbidity, expenses and lapse rates.

**COVERED BUSINESS** – Covered business includes all of Swiss Life's major life, health and pension business as well as assumed external reinsurance. In the case of France, all business operations are included in the covered business.

**FREE SURPLUS (FS)** – The free surplus is the market value of any assets allocated to, but not required to support, the in-force covered business at the valuation date.

**FRICTIONAL COSTS OF REQUIRED CAPITAL (FC)** – The additional investment and taxation cost incurred by shareholders through investing required capital in the company compared to direct investment as individuals.

**GROUP MCEV** – The Group MCEV for Swiss Life comprises MCEV results for covered business and IFRS net asset values for non-covered business of the Swiss Life Group (as explained above under point 4.7).

**IFRS** – International Financial Reporting Standards

**“LEGAL QUOTE”** – Statutory minimum policyholder participation ratio

**LIQUIDITY PREMIUM** – As stipulated in the MCEV Principles, liquidity premiums are included in swap yield curves in cases where liabilities are not liquid.

**LOOK-THROUGH PRINCIPLE** – Method by which profits or losses from service companies within the Swiss Life Group, which are directly related to managing the covered business, are included in the MCEV and in the value of new business.

**MARKET CONSISTENT EMBEDDED VALUE (MCEV)** – Market consistent embedded value is a measure of the consolidated value of shareholders' interests in the in-force covered business of the Swiss Life Group.

**NET ASSET VALUE (NAV)** – The net asset value is the market value of assets attributed to the covered business over and above that required to back liabilities for covered business.

**NEW BUSINESS MARGIN** – The value of new business divided by the present value of new business premiums (PVNBP) or divided by the annual premium equivalent (APE), respectively.

**NON-COVERED BUSINESS** – All businesses of the Swiss Life Group which are not accounted for under covered business, such as investment management and AWD, are included in the non-covered business of the Group MCEV by means of their IFRS net asset values.

**NON-TRADITIONAL BUSINESS** – Unit-linked-type contracts, with or without additional financial guarantees and policyholder options.

**OPERATING MCEV EARNINGS** – Change in MCEV and in Group MCEV in the reporting period after initial and closing adjustments, economic variances and other non-operating variances, as well as other movements in IFRS net equity.

**PRESENT VALUE OF NEW BUSINESS PREMIUMS (PVNBP)** – Volume measure for new business. It represents the present value of premiums from new business. It is the sum of single premiums and the present value of periodic premiums from new business.

**QIS 5** – EIOPA's fifth quantitative impact study for Solvency II.

**REFERENCE RATE** – The reference rates used for the calculation of the MCEV are based on the swap rates at the valuation date.

**REQUIRED CAPITAL (RC)** – The required capital is the market value of assets, attributed to the covered business over and above that required to back liabilities for covered business, whose distribution to shareholders is restricted based on statutory solvency.

**TIME VALUE OF FINANCIAL OPTIONS AND GUARANTEES (TVOG)** – The TVOG represents the additional market price of those financial options and guarantees in excess of the intrinsic value of options and guarantees which is already allowed for in the certainty equivalent value.

**TOTAL MCEV EARNINGS** – Change in MCEV and in Group MCEV in the reporting period after initial and closing adjustments and other movements in IFRS net equity.

**VALUE OF IN-FORCE BUSINESS (VIF)** – The value of in-force business represents the net present value of future profits emerging from operations and assets backing liabilities, after accounting for TVOG, CNHR and FC.

**VALUE OF NEW BUSINESS (VNB)** – The value of new business reflects the additional value to shareholders created by writing new business during the reporting period.

**VARIABLE ANNUITIES** – Unit-linked contracts with additional guarantees and policyholder options.