

# EMBEDDED VALUE REPORT AT 31 DECEMBER 2012



## Contents

<b>1.</b>	<b>Introduction .....</b>	<b>3</b>
<b>2.</b>	<b>Results .....</b>	<b>4</b>
2.1	<i>MCEV<sup>®</sup> as of the 31<sup>st</sup> December 2012.....</i>	4
2.2	<i>VNB as of 31st December 2012.....</i>	5
2.3	<i>Sensitivities .....</i>	7
2.4	<i>Group analysis of earnings .....</i>	8
2.5	<i>Operating Free Cash Flow .....</i>	10
2.6	<i>IDR Implied Discount Rate .....</i>	10
<b>3.</b>	<b>Detailed results by country .....</b>	<b>11</b>
3.1	<i>VIF per country at 31<sup>st</sup> December 2012 .....</i>	11
3.2	<i>VNB at 31 December 2012 .....</i>	11
3.2.1	<i>APE volume .....</i>	11
3.2.2	<i>VNB by country at 31 December 2012 .....</i>	12
3.3	<i>Sensitivities .....</i>	14
3.3.1	<i>VIF sensitivities .....</i>	14
3.3.2	<i>VNB sensitivities .....</i>	14
3.4	<i>Variance analysis by country .....</i>	15
<b>4.</b>	<b>Methodology .....</b>	<b>19</b>
4.1	<i>Scope covered .....</i>	20
4.2	<i>Adjusted Net Asset Value .....</i>	21
4.2.1	<i>Required Capital .....</i>	21
4.2.2	<i>Free Surplus .....</i>	21
4.3	<i>Value of In-Force .....</i>	22
4.3.1	<i>Present Value of Future Profits (PVFP) .....</i>	22
4.3.2	<i>Frictional Costs of Required Capital .....</i>	22
4.3.3	<i>Time Value of Options and Guarantees .....</i>	22
4.3.4	<i>Costs of residual non-hedgeable risks .....</i>	23
4.4	<i>New Business Value .....</i>	24
4.4.1	<i>Definition of New Business .....</i>	24
4.4.2	<i>Methodology .....</i>	24
4.4.3	<i>APE Annual Premium Equivalent .....</i>	25
4.5	<i>Sensitivities .....</i>	25
<b>5.</b>	<b>Assumptions .....</b>	<b>26</b>
5.1	<i>Financial assumptions .....</i>	26
5.1.1	<i>Reference interest rate curve .....</i>	26
5.1.2	<i>Calibration of the interest rate model .....</i>	27
5.1.3	<i>Calibration of the equity model .....</i>	27
5.1.4	<i>Financial Assumptions for Brazil .....</i>	27
5.2	<i>Tax rate .....</i>	28
5.3	<i>Cost of capital for residual non-hedgeable risks .....</i>	28
5.4	<i>Non-economic assumptions .....</i>	28
5.4.1	<i>Expenses .....</i>	28
5.4.2	<i>Claims and persistency assumption .....</i>	28
<b>6.</b>	<b>MCEV<sup>®</sup> trend since 31/12/2007 .....</b>	<b>29</b>
6.1	<i>Historical MCEV<sup>®</sup> values .....</i>	29
6.2	<i>Historical VNB values .....</i>	29
<b>7.</b>	<b>Milliman's Opinion.....</b>	<b>30</b>

## 1. Introduction

Since 1999, CNP Assurances Group financial reporting has included disclosures of the embedded value of portfolio contracts as well as the value of new business. The scope covers the group's entities that have a significant impact on the value; CNP Assurances and its subsidiaries in France and abroad.

These indicators provide a picture of the present value of future profits expected from insurer's stock portfolio. The New Business value offers a more detailed view of the new businesses sold during the current year.

The disclosed values are based on a "Market Consistent" approach. The CNP Assurances Group's calculations comply with MCEV<sup>®</sup> standards<sup>1</sup>, as set out in the "The European Insurance CFO Forum Market Consistent Embedded Value Principles", with the exceptions of the valuation of Caixa Seguros, which is based on the traditional embedded value method.

These valuations are methodologically reviewed and the coherence of the results is verified. The verifications lead to the certification by the Milliman firm.

The MCEV<sup>®</sup> sensitivities have been integrated into the IFRS 7 notes to the financial statements, and as such are subject to review by the auditors.

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## 2. Results

### 2.1 MCEV<sup>®</sup> as of the 31<sup>st</sup> December 2012

MCEV <sup>®</sup> Standards -M€ -	MCEV <sup>®</sup> 2012 before payment of 2012 dividends		MCEV <sup>®</sup> 2011 after payment of 2011 dividends and dilutive effects		Variance before payment of 2012 dividends		MCEV <sup>®</sup> 2011 before payment of 2011 dividends	
	M€	€ per share <sup>2</sup>	M€	M€	M€	%	M€	€ per share <sup>2</sup>
<b>ANAV – Adjusted Net Asset Value</b>	<b>10,671</b>	<b>16.6</b>	<b>9,344</b>	<b>14.6</b>	<b>1,327</b>	<b>14%</b>	<b>9,411</b>	<b>15.8</b>
Required Capital	8,288	12.9	7,844	12.2	444	6%	7,844	13.2
Free Surplus	2,383	3.7	1,500	2.3	883	59%	1,567	2.6
<b>VIF – Value of In Force</b>	<b>3,184</b>	<b>5.0</b>	<b>2,448</b>	<b>3.8</b>	<b>736</b>	<b>30%</b>	<b>2,448</b>	<b>4.1</b>
Present Value of Future Profits	6,134	9.6	5,793	9.0	342	6%	5,793	9.7
Time Value of Options and Guarantees	-1,275	-2.0	-1,664	-2.6	389	-23%	-1,664	-2.8
Frictional Costs of Required Capital	-1,075	-1.7	-1,080	-1.7	5	-1%	-1,080	-1.8
Costs of Non-Hedgeable Risks	-601	-0.9	-601	-0.9	0	0%	-601	-1.0
<b>MCEV<sup>®</sup> - Market Consistent Embedded Value</b>	<b>13,855</b>	<b>21.6</b>	<b>11,792</b>	<b>18.4</b>	<b>2,063</b>	<b>17%</b>	<b>11,859</b>	<b>20.0</b>

The 2012 MCEV<sup>®</sup> value of CNP Assurances is €13,855m, 17% up on the 2011 value after dividends. This change is based on a 14% increase in the ANAV, driven by the results achieved in 2012, and by the increase in unrealized gains of assets as a representation of shareholders' equity.

The value of the portfolio has grown by 30%, benefiting from the upturn in financial markets: the surplus gains associated with diminishing volatility has resulted in a rise in expected profits combined with a fall in the cost of the surrender option.

A detailed analysis of the main factors explaining observed changes is provided in the following sections. Chapter 3 presents a breakdown of in-force values by country.

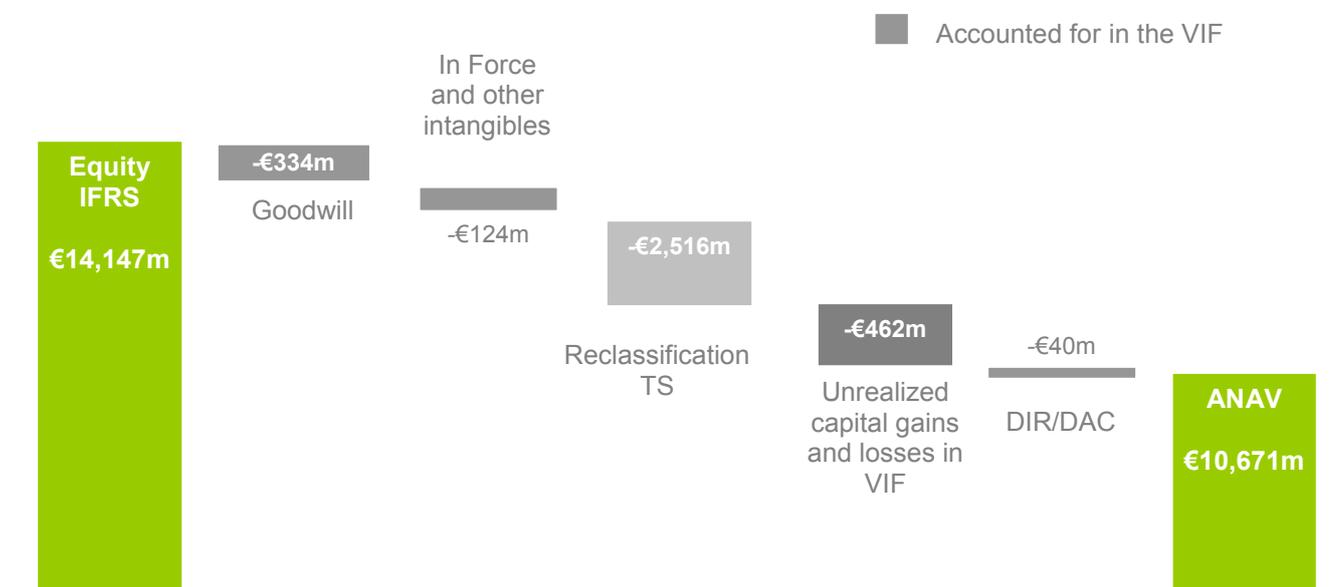
- **Adjusted Net Asset Value**

The Adjusted Net Asset Value is calculated on the basis of IFRS Equity, after adjusting for the following elements:

- elimination of intangible assets, such as Goodwill and distribution agreements, In-Force values and DACs,
- deduction of the share of revalued policyholder portfolios already accounted for in the In-Force value, and reintegration of shareholders' interest in unrealized gains not accounted for in the IFRS Framework (property and held-to-maturity bonds),
- and the reclassification of subordinated debt.

<sup>2</sup> Number of shares at 31/12/2012: 641,508,774 (594,151,292 shares at 31/12/2011).

The following diagram shows the reconciliation between the IFRS Equity and the Adjusted Net Asset Value at 31 December 2012:



## 2.2 VNB as of 31st December 2012

MCEV <sup>®</sup> standards -M€ -	2012		2011		Change	
	M€	€ per share	M€	€ per share	M€	%
Present Value of Future Profits	491	0,8	631	1,1	-140	-22%
Time Value of Options and Guarantees	-87	-0,1	-117	-0,2	30	-26%
Frictional Costs of Required Capital	-54	-0,1	-83	-0,1	29	-35%
Costs of Non-Hedgeable Risks	-53	-0,1	-69	-0,1	17	-24%
<b>New Business Value</b>	<b>297</b>	<b>0,5</b>	<b>362</b>	<b>0,6</b>	<b>-64</b>	<b>-18%</b>
APE (Annual Premium Equivalent) <sup>3</sup>	2,573		2,938		-365	-12%
PVNBP <sup>4</sup>	22,804		25,491		-2,686	-11%
APE ratio	<b>11.6%</b>		<b>12.3%</b>		<b>-0.7%</b>	<b>-6%</b>
PVNBP ratio	<b>1.3%</b>		<b>1.4%</b>		<b>-0.1%</b>	<b>-8%</b>

The value of new business in 2012 totalled €297m, down 18%. As it does not benefit from the initial stock of gains (unrealized gains and future policy benefits reserves), on account of the stand-alone methodology, it suffers from falling interest rates and dwindling revenues in a shrinking European market.

The APE reflects the downturn in revenues on the European markets where Group subsidiaries operate.

<sup>3</sup> APE, a sales volume indicator, equals one tenth of the sum of single premiums and flexible premiums written during a given year plus the annualized amount of regular premiums written during that same year.

<sup>4</sup> PVNBP is the present value of new business premiums.

The detail by country is presented in section 3.2 of this report.

The Group's APE ratio has fallen to 11.6%. The international share now represents 21.9% of APE volume in 2012 against 22.8% in 2011.

The following table shows the detail of the evolution of the Value of New Business:

	VNB	Change	APE ratio
<b>New Business 2011</b>	<b>362</b>		<b>12.3%</b>
Updated model	364	3	12.4%
Change in the APE volume	324	-40	12.4%
Change in the Product Mix	332	8	12.7%
Change in the experience	387	54	14.8%
Change in financial market conditions	320	-66	12.2%
Updated taxation	314	-7	12.0%
Change in the foreign exchange rate	297	-16	11.6%
<b>New Business 2012</b>	<b>297</b>	<b>-64</b>	<b>11.6%</b>

The updated APE volume per entity has had a negative impact of €40m on the value of new business.

The 2012 product mix effect proves to be virtually neutral on the value, but results from two offsetting effects:

- firstly, the falloff in unit-linked savings contracts in France combined with the decline in mortgages adversely affecting credit life insurance in all European entities;
- secondly, the buoyant protection contract business throughout the Group and the credit life insurance business in Brazil.

The updated experience data results in a growth in value of €54m, notably in France, due to the revised collective protection tariffs, and guaranteed rates granted on certain savings products, as well as a better apprehension of risk in credit life insurance.

The major impact is of an economic nature: the updating of financial markets has led to a 2.6 point drop in the APE ratio, essentially due to lower interest rates.

The updating of tax and exchange rates has led to a €23m fall in cumulative value.

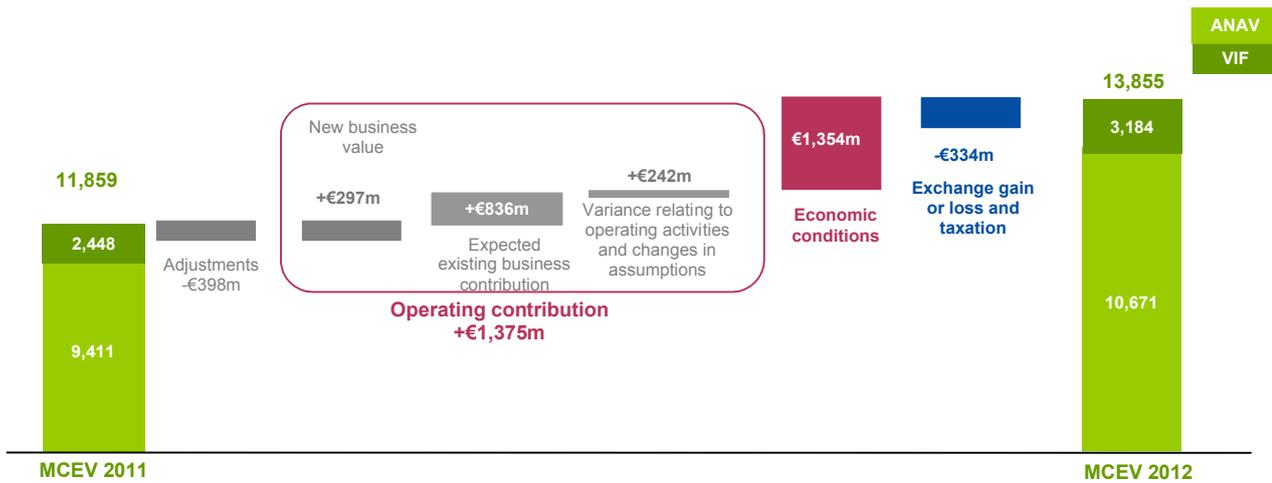
## 2.3 Sensitivities

The sensitivities presented below are in compliance with the requirements of the CFO Forum.

<i>MCEV<sup>®</sup> standards</i> -M€ -	<b>ANAV</b>	<b>VIF</b>	<b>MCEV</b>	<b>VNB</b>
<b>MCEV - Market Consistent Embedded Value</b>	<b>10,671</b>	<b>3,184</b>	<b>13,855</b>	<b>297</b>
+100 bp change p.a. in the interest rate environment	-332	46	-286	39
- 100 bp change p.a. in the interest rate environment	326	-582	-256	-161
+10 bp change in the liquidity premium		63	63	8
10% decrease in equity/property capital values	-306	-341	-647	
10% proportionate decrease in lapse rates		154	154	29
10% decrease in maintenance expenses		412	412	33
Required Capital equal to regulatory solvency margin		96	96	4
Claims rates - 5% - Risk of longevity		-92	-92	-5
Claims rates - 5% - Risk of mortality & disability		141	141	57
25% increase in swaption implied volatilities		-546	-546	-31
25% increase in equity/property implied volatilities		-258	-258	-20

The method for applying sensitivities is explained in detail in part 4.5 of this report.

## 2.4 Group analysis of earnings



The variance analysis highlights the significant contribution of **operating earnings** in the change in MCEV<sup>®</sup> between 2011 and 2012. Albeit in decline, it remains robust at €1,375m and breaks down as follows:

- €297m ascribed to new business,
- a contribution of €836m derived from existing business at 31/12/2011,
- and €242m of operational experience variances and changes in assumptions.

The trend in financial markets in 2012 translated into an increase of €1,354m, allocated to "**economic conditions**". The narrowing spreads of sovereign securities combined with the bullish equity market reflects a rise in the unrealized gains of asset portfolios. The surplus gains associated with diminishing volatility has resulted in a rise in expected profits combined with a fall in the cost of the surrender option.

The other items contributing to an MCEV<sup>®</sup> value of €13,855m are the updated euro/real exchange rate for a negative amount of €196m and the updated tax rate for a negative amount of €138m.

The following table shows the analysis of earnings split between the Value of In-Force and the ANAV, the latter being broken down into Required Capital and Free Surplus. These last two concepts stem from the MCEV<sup>®</sup> publication standards as defined by the CFO Forum. The Required Capital corresponds to the capital that is required for the insurance business according to each insurer's criteria. CNP Assurances has set its capital requirement at 110% of the regulatory solvency margin requirement (as per Solvency I), 39.4% of it being funded by subordinated debt. The Free Surplus is the remaining capital once the Required Capital has been deducted.

-M€ -	ANAV	Free Surplus	Required Capital	VIF	MCEV
<b>MCEV 2011</b>	<b>9,411</b>	<b>1,567</b>	<b>7,844</b>	<b>2,448</b>	<b>11,859</b>
Opening adjustments	-332	-340	9	-67	-398
<b>Adjusted MCEV 2011</b>	<b>9,079</b>	<b>1,226</b>	<b>7,853</b>	<b>2,382</b>	<b>11,461</b>
New business value	-106	-906	800	404	297
Expected existing business contribution	46	46	0	790	836
Transfers from the VIF and required capital to free surplus	883	1,494	-611	-883	0
Experience variances	138	-38	176	81	219
Changes in assumptions relating to operating activities	0	0	0	23	23
Other operating variance	0	0	0	0	0
<b>Operating MCEV<sup>®</sup> Earnings</b>	<b>960</b>	<b>596</b>	<b>364</b>	<b>414</b>	<b>1,375</b>
Economic variances	891	806	85	463	1,354
Other non-operating variance	-115	-115	0	-22	-138
<b>Total MCEV earnings</b>	<b>1,735</b>	<b>1,286</b>	<b>449</b>	<b>855</b>	<b>2,591</b>
Closing adjustments	-144	-129	-14	-53	-196
<b>MCEV 2012</b>	<b>10,671</b>	<b>2,383</b>	<b>8,288</b>	<b>3,184</b>	<b>13,855</b>

The "initial adjustments" item essentially includes payment of the 2011 dividend, the changeover to the swap rate as reference curve in Southern Europe and improvements to the model on VIF.

New business contributed +€297m to the change in MCEV<sup>®</sup>. This value includes the net income loss of -€106m in new business in 2012. The increase in Required Capital pertaining to this new business amounted to €800m.

The expected contribution of existing business (+€836m) consists in the combined effects of the capitalization of the Value of In-Force (+€790m) and of the expected return on the Free Surplus (+€46m). Furthermore, the 2012 expected profits generated in the VIF at 31/12/2011 were transferred to the ANAV without affecting the MCEV<sup>®</sup>.

The observed variances in operating activities had an impact of €81m on VIF, mainly due to the longer duration of certain credit life insurance contract portfolios and the drop in surrenders in Brazil and Italy. At ANAV level, they amount to €138m and stem primarily from non-recurring income and a more favourable actual experience than expected, generating a positive difference between actual and projected results. This variance has led the CNP Group to update its operational business assumptions by €23m.

The observed experience variance relating to operating activities at Required Capital level lead to a €176m increase in capital requirements further to a reduction in the proportion of subordinated debt funding Required Capital from 41.4% to 39.4%.

The other items contributing to an MCEV<sup>®</sup> value of €13,855m are:

- a -€196m impact of the updated exchange rate,
- -€138m of other movements unrelated to operating activities, primarily changes in French taxation: the rise in corporation tax from 34.43% to 36.1%, confirmed for 2013 and 2014, the supplementary charge payable for 'exit tax' on the capitalization reserve, and the rise in social contributions on savings contracts.

A detailed analysis per country is presented in section 3.

## 2.5 Operating Free Cash Flow

The "Operating Free Cash-Flow" indicator materializes the capacity of the CNP Assurances Group to generate Free Surplus for:

- paying its dividends
- expanding by new business sales or through external growth operating activities.

-M€ -	Group 2011	Group 2012
VIF transfers to Free Surplus	835	883
Financial income from Free Surplus	48	46
Release of required capital to Free Surplus	523	611
Experience variances	332	-38
<b>Expected contribution of In-Force</b>	<b>1,738</b>	<b>1,502</b>
Capital required for new business	-843	-800
Earnings attributable to new business	-27	-106
<b>Capital required for new business</b>	<b>-870</b>	<b>-906</b>
<b>Operating Free Cash Flow</b>	<b>868</b>	<b>596</b>

Operating Free Cash Flow remains robust at €596m. The fall results from the reduction in the proportion of subordinated debt in the funding of required capital and a smaller difference between projected and actual income than in 2011 due to non-recurring items such as the future policy benefits reserves.

-M€ -	Group 2012	France	International	<i>including Brazil</i>	<i>including Italy</i>	<i>including Spain</i>
VIF transfers to Free Surplus	883	640	242	179	43	15
Financial income from Free Surplus	46	10	36	23	6	4
Release of required capital to Free Surplus	611	553	58	29	21	7
Experience variances	-38	-141	103	60	27	9
<b>Expected contribution of In-Force</b>	<b>1,502</b>	<b>1,063</b>	<b>439</b>	<b>292</b>	<b>98</b>	<b>35</b>
Capital required for new business	-800	-717	-82	-60	-15	-7
Earnings attributable to new business	-106	-53	-53	-32	-18	-3
<b>Capital required for new business</b>	<b>-906</b>	<b>-771</b>	<b>-135</b>	<b>-92</b>	<b>-32</b>	<b>-10</b>
<b>Operating Free Cash Flow</b>	<b>596</b>	<b>292</b>	<b>304</b>	<b>200</b>	<b>66</b>	<b>25</b>

## 2.6 IDR Implied Discount Rate

The IDR stands at 6.3% at CNP Assurances Group level at 31/12/2012 against 8.1% at 31/12/2011 after initial adjustments have been factored in. This change in IDR is mainly attributable to the fall in interest rates, the liquidity premium and the cost of options. It is calculated on the basis of a 20 bp spread on the reference rate curves. Shares and property benefit from a risk premium of 200 bp.

### 3. Detailed results by country

The following chapter provides an analysis of the main indicators and trend vectors per country.

#### 3.1 VIF per country at 31<sup>st</sup> December 2012

The table below shows a breakdown of In-Force values per country:

-M€ -	Group	France	International	including Brazil	including Italy	including Spain <sup>5</sup>
MCEV <sup>®</sup> 2012	Present Value of Future Profits	6,134	5,342	793	647	55
	Time Value of Options and Guarantees	-1,275	-1,272	-3	0	-6
	Frictional Costs of Required Capital	-1,075	-1,034	-41	-35	-3
	Costs of Non-Hedgeable Risks	-601	-580	-20	0	-5
	<b>Value of In-Force</b>	<b>3,184</b>	<b>2,455</b>	<b>729</b>	<b>612</b>	<b>44</b>
MCEV <sup>®</sup> 2011	Present Value of Future Profits	5,793	4,957	835	575	89
	Time Value of Options and Guarantees	-1,664	-1,588	-76	0	-3
	Frictional Costs of Required Capital	-1,080	-1,033	-47	-28	-7
	Costs of Non-Hedgeable Risks	-601	-541	-59	0	-16
	<b>Value of In-Force</b>	<b>2,448</b>	<b>1,795</b>	<b>653</b>	<b>547</b>	<b>62</b>
Δ	M€	<b>736</b>	<b>660</b>	<b>76</b>	<b>65</b>	<b>-21</b>
	%	<b>30%</b>	<b>37%</b>	<b>12%</b>	<b>12%</b>	<b>-34%</b>

VIF, which is up 30%, benefits from the upturn in financial markets in Europe. The narrowing spreads in Italy and Portugal and an improved product mix are in part cancelled out by the valuation at the swap rate on 31/12/12<sup>6</sup>. Brazil for its part continues to grow with business up 12% (+25% at constant exchange rates).

#### 3.2 VNB at 31 December 2012

##### 3.2.1 APE volume

-M€ -	Group	France	International	including Brazil	including Italy	including Spain
IFRS 2012 Revenue	<b>26,460</b>	<b>21,487</b>	<b>4,973</b>	<b>2,877</b>	<b>1,160</b>	<b>577</b>
IFRS 2011 Revenue	30,005	23,864	6,141	2,764	1,699	900
Revenue progression rate	-12%	-10%	-19%	4%	-32%	-36%
<b>APE 2012</b>	<b>2,573</b>	<b>2,010</b>	<b>563</b>	<b>384</b>	<b>131</b>	<b>44</b>
APE 2011	2,938	2,268	670	453	147	64
APE evolution rate	-12%	-11%	-16%	-15%	-11%	-31%
<b>PVNB 2012</b>	<b>22,804</b>	<b>19,641</b>	<b>3,163</b>	<b>1,845</b>	<b>860</b>	<b>432</b>
PVNB 2011	25,491	21,875	3,616	2,019	948	587
Evolution rate of the PVNB	-10%	-10%	-12%	-9%	-9%	-26%

<sup>5</sup> The "Spain" item includes BVP Barclays Vida y Pensiones and CNP Vida.

<sup>6</sup> At 31/12/2011, the Italian, Spanish and Portuguese entities were valued on the basis of the government bond yield curves.

- **France**

The APE volume showed a 11% fall compared with 2011, standing at €2,010m. On a French life insurance market in sharp decline, the APE volume of euro contracts shrank by 12%, and there was a sharp drop in unit-linked business receipts (-44%). Underwriting of individual protection contracts remains robust (+13%).

- **Brazil**

The APE of Caixa Seguros is down 15% (5% at constant exchange rates). The credit life insurance class of business (15% of total APE) however remains particularly dynamic, showing 38% growth over the year.

- **Italy**

In a context of slow economic growth, the APE volume of CNP Unicredit Vita and the Italian branch fell by 11% at €131m in 2012, more particularly due to a decrease in unit-linked premium income. The trend in the product mix towards individual protection products remains firm.

- **Spain**

The APE volume is down 31% in a depressed life insurance market in Southern Europe (shrinking revenues from euro and unit-linked products and mortgages).

### 3.2.2 VNB by country at 31 December 2012

-M€ -	Group		France		International		including Brazil		Including Italy		including Spain	
	NB	APE ratio	NB	APE ratio	NB	APE ratio	NB	APE ratio	NB	APE ratio	NB	APE ratio
<b>New Business 2011</b>	<b>362</b>	<b>12.3%</b>	<b>201</b>	<b>8.9%</b>	<b>160</b>	<b>23.9%</b>	<b>119</b>	<b>26.2%</b>	<b>18</b>	<b>12.2%</b>	<b>20</b>	<b>32.1%</b>
Updated model	364	12.4%	210	9.3%	154	22.7%	115	25.4%	19	12.3%	17	27.0%
Change in the APE volume	324	12.4%	186	9.3%	138	22.7%	109	25.4%	16	12.3%	11	25.8%
Change in the Product Mix	332	12.7%	158	7.8%	175	28.7%	150	34.9%	18	13.8%	5	10.3%
Change in the experience	387	14.8%	208	10.3%	179	29.4%	153	35.5%	19	14.6%	5	10.9%
Change in the financial markets	320	12.2%	154	7.7%	166	27.3%	153	35.5%	11	8.0%	1	1.3%
Updated taxation	314	12.0%	147	7.3%	166	27.3%	153	35.5%	11	8.0%	1	1.3%
Change in the foreign exchange rate	297	11.6%	147	7.3%	150	26.7%	136	35.5%	11	8.0%	1	1.3%
<b>New Business 2012</b>	<b>297</b>	<b>11.6%</b>	<b>147</b>	<b>7.3%</b>	<b>150</b>	<b>26.7%</b>	<b>136</b>	<b>35.5%</b>	<b>11</b>	<b>8.0%</b>	<b>1</b>	<b>1.3%</b>
<b>Variance</b>	<b>-64</b>	<b>-0.7%</b>	<b>-54</b>	<b>-1.6%</b>	<b>-10</b>	<b>2.8%</b>	<b>18</b>	<b>9.3%</b>	<b>-7</b>	<b>-4.2%</b>	<b>-20</b>	<b>-30.8%</b>

- **France**

With an APE ratio of 7.3%, France's 2012 product mix was characterized by diminishing receipts on unit-linked and credit life insurance products. The fall in interest rates has contributed to that VNB, bearing in mind the stand-alone methodology used, which does not factor in unrealized gains on the portfolio or the future policy benefits reserves. These effects are partially offset by adjusted collective protection tariffs and guarantees granted in certain savings contracts in euros, and also by a better appraisal of credit life insurance risks.

- **Brazil**

Brazil's VNB is up 15% at current exchange rates over the year (29% at constant exchange rates). The drop in APE is considerably offset by a product mix oriented towards credit life insurance and risk protection, thanks to the marketing of retirement savings products that include protection guarantees. The APE ratio continues to grow to a remarkably high level at 35.5%.

- **Italy**

Italy's VNB is down 41% over the year of 2012 (VNB steady based on constant methodology<sup>7</sup>) for an APE ratio of 8%. The subsidiary is suffering from the bleak economic environment and falling interest rates, assessed on the basis of the swap rates as part of the VNB valuation at 31/12/12. The APE ratio on unit-linked business is growing, driven by the good performance of the Uniplan range.

- **Spain**

Spain's VNB is decreasing significantly (97%, or 63% based on constant methodology<sup>7</sup>). While the changeover to a swap curve penalizes individual annuities and the savings range in euros, the decline in credit life insurance revenues also reduces the value of new business.

The following table shows the Value of New Business per country:

-M€ -		Group	France	International	including Brazil	including Italy	including Spain
2012	PVFP	491	325	166	147	12	4
	TVOG	-87	-85	-2	0	0	-2
	FCRC	-54	-42	-12	-11	-1	0
	CNHR	-53	-51	-2	0	-1	-1
	<b>VNB</b>	<b>297</b>	<b>147</b>	<b>150</b>	<b>136</b>	<b>11</b>	<b>1</b>
	<b>VNB/APE ratio</b>	<b>11.6%</b>	<b>7.3%</b>	<b>26.7%</b>	<b>35.5%</b>	<b>8.0%</b>	<b>1.3%</b>
	VNP/PVNB ratio	1.3%	0.8%	4.7%	7.4%	1.2%	0.1%
2011	PVFP	631	441	190	127	31	28
	TVOG	-117	-109	-8	0	-6	-3
	FCRC	-83	-70	-13	-8	-3	-2
	CNHR	-69	-61	-8	0	-5	-3
	<b>VNB</b>	<b>362</b>	<b>201</b>	<b>160</b>	<b>119</b>	<b>18</b>	<b>20</b>
	<b>VNB/APE ratio</b>	<b>12.3%</b>	<b>8.9%</b>	<b>23.9%</b>	<b>26.2%</b>	<b>12.2%</b>	<b>32.1%</b>
	VNP/PVNB ratio	1.4%	0.9%	4.4%	5.9%	1.9%	3.5%

<sup>7</sup> At 31/12/2011, the Italian, Spanish and Portuguese entities were valued on the basis of the government bond yield curves. At 31/12/2012, these entities were valued on the basis of the swap rate curve.

### 3.3 Sensitivities

#### 3.3.1 VIF sensitivities

-M€ -	Group	France	International	including Brazil	including Italy	including Spain
<b>Value of In-Force</b>	<b>3,184</b>	<b>2,455</b>	<b>729</b>	<b>612</b>	<b>44</b>	<b>41</b>
+100 bp change p.a. in the interest rate environment	46	51	-5	-2	0	-4
- 100 bp change p.a. in the interest rate environment	-582	-568	-14	1	-4	-9
+10 bp change in the liquidity premium	63	56	7	0	4	2
10% decrease in equity/property capital values	-341	-334	-6	0	-6	0
10% proportionate decrease in lapse rates	154	123	32	24	0	6
10% decrease in maintenance expenses	412	393	19	7	4	6
Required Capital equal to regulatory solvency margin	96	95	1	0	0	0
Claims rates - 5% - Risk of longevity	-92	-88	-3	0	0	-3
Claims rates - 5% - Risk of mortality & disability	141	108	34	20	4	9
25% increase in swaption implied volatilities	-546	-543	-3	0	-3	0
25% increase in equity/property implied volatilities	-258	-257	0	0	0	0

#### 3.3.2 VNB sensitivities

-M€ -	Group	France	International	including Brazil	including Italy	including Spain
<b>New Business Value</b>	<b>297</b>	<b>147</b>	<b>150</b>	<b>136</b>	<b>11</b>	<b>1</b>
+100 bp change p.a. in the interest rate environment	39	31	8	1	5	2
- 100 bp change p.a. in the interest rate environment	-161	-154	-7	-1	-4	-2
+10 bp change in the liquidity premium	8	7	1	0	0	0
10% proportionate decrease in lapse rates	29	20	10	9	0	1
10% decrease in maintenance expenses	33	28	5	3	1	1
Required Capital equal to regulatory solvency margin	4	4	0	0	0	0
Claims rates - 5% - Risk of longevity	-5	-5	0	0	0	0
Claims rates - 5% - Risk of mortality & disability	57	48	9	8	1	1
25% increase in swaption implied volatilities	-31	-31	-1	0	-1	0
25% increase in equity/property implied volatilities	-20	-20	0	0	0	0

### 3.4 Variance analysis by country

- France

-M€ -	ANAV	Free Surplus	Required Capital	VIF	MCEV <sup>®</sup>
<b>MCEV<sup>®</sup> 2011</b>	<b>8,214</b>	<b>734</b>	<b>7,480</b>	<b>1,795</b>	<b>10,009</b>
Opening adjustments	-272	-269	-3	51	-221
<b>Adjusted MCEV<sup>®</sup> 2011</b>	<b>7,942</b>	<b>465</b>	<b>7,477</b>	<b>1,846</b>	<b>9,788</b>
New business value	-53	-771	717	201	147
Expected existing business contribution	10	10	0	623	633
Transfers from the VIF and required capital to free surplus	640	1,194	-553	-640	0
Experience variances	45	-141	187	50	96
Changes in assumptions relating to operating activities	0	0	0	-15	-15
Other operating variance	0	0	0	0	0
<b>Operating MCEV<sup>®</sup> Earnings</b>	<b>643</b>	<b>292</b>	<b>351</b>	<b>219</b>	<b>861</b>
Economic variances	839	755	85	412	1,251
Other non-operating variance	-114	-114	0	-22	-136
<b>Total MCEV<sup>®</sup> earnings</b>	<b>1,368</b>	<b>933</b>	<b>436</b>	<b>609</b>	<b>1,977</b>
Closing adjustments	-59	-59	0	0	-59
<b>MCEV<sup>®</sup> 2012</b>	<b>9,251</b>	<b>1,339</b>	<b>7,912</b>	<b>2,455</b>	<b>11,706</b>

The "initial adjustments" item includes the 2011 dividend payment, improvements to methods and models and dividends transferred from subsidiaries for financial year 2011.

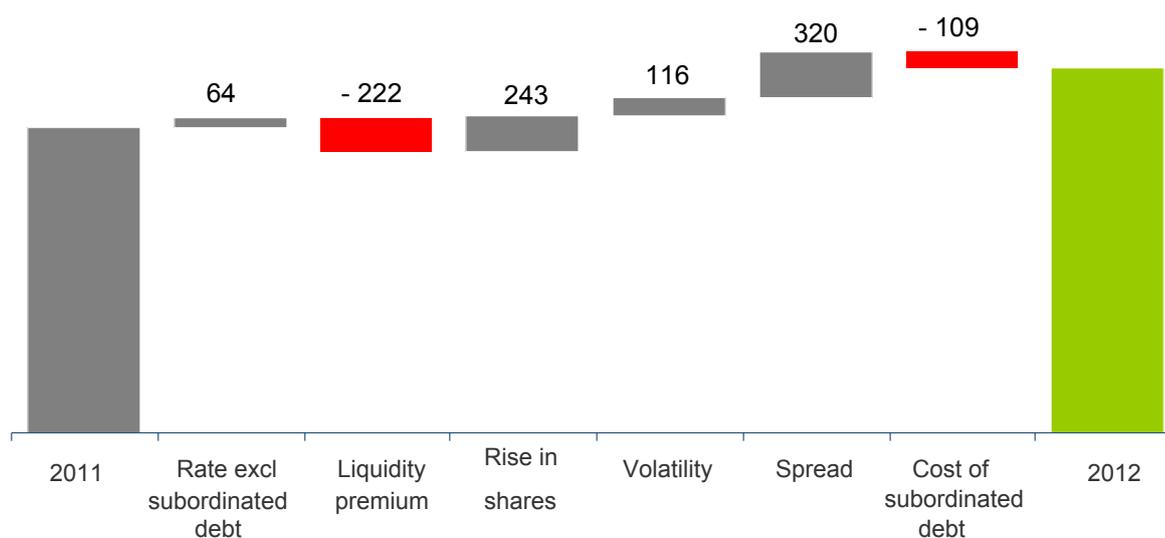
In 2012 the new business value contributed +€147m to the change in the MCEV<sup>®</sup>. The increase in Required Capital pertaining to this new business amounted to €717m.

The observed variances in operating activities had an impact of €50m on VIF, chiefly due to the longer period of certain credit life insurance contract portfolios. At ANAV, they amount to €45m. They result essentially from non-recurring items that create a difference between the actual result and the expected one, as well as of a more favourable actual experience than expected. Moreover, the CNP Assurances Group has revised certain assumptions relating to operating activities, such as the conservative assumptions made regarding surrenders of retirement savings portfolios. These revised assumptions generate an overall impact of -€15m.

The experience variances from operating activities affecting the Required Capital amounted to €187m, mainly due to the relative reduction of subordinated debt in the funding of Required Capital from 41.4% to 39.4%. This reduction also translated into a loss in the VIF.

Economic conditions had a positive effect of €1,251m in a context of narrowing spreads, rising share prices and lower volatility. The effects of economic conditions chiefly resulted in an increase in initial gains combined with a significant drop in credit risk that is deducted from future yields. The cost of the surrender option in the euro savings range has thus fallen considerably.

A breakdown of the effects of economic conditions highlights the major impact of narrowing spreads on the bond portfolio, the rise in share values and the decreasing volatility of rates



The increase in the rate of corporation tax from 34.43% to 36.1%, confirmed for 2013 and 2014, the additional charge payable for 'exit tax', combined with the rise in social contributions charged on savings contract yields has impacted the value by -€136m.

- **Brazil**

-M€ -	ANAV	Free Surplus	Required Capital	VIF	MCEV <sup>®</sup>
<b>MCEV<sup>®</sup> 2011</b>	<b>672</b>	<b>512</b>	<b>161</b>	<b>547</b>	<b>1,220</b>
Opening adjustments	-53	-53	0	-22	-75
<b>Adjusted MCEV<sup>®</sup> 2011</b>	<b>619</b>	<b>459</b>	<b>161</b>	<b>525</b>	<b>1,145</b>
New business value	-32	-92	60	168	136
Expected existing business contribution	23	23	0	86	109
Transfers from the VIF and required capital to free surplus	179	209	-29	-179	0
Experience variances	61	60	1	24	86
Changes in assumptions relating to operating activities	0	0	0	37	37
Other operating variance	0	0	0	0	0
<b>Operating MCEV<sup>®</sup> Earnings</b>	<b>232</b>	<b>200</b>	<b>32</b>	<b>136</b>	<b>368</b>
Economic variances	33	33	0	5	37
Other non-operating variance	9	9	0	0	9
<b>Total MCEV<sup>®</sup> earnings</b>	<b>273</b>	<b>241</b>	<b>32</b>	<b>140</b>	<b>414</b>
Closing adjustments	-85	-71	-14	-53	-138
<b>MCEV<sup>®</sup> 2012</b>	<b>808</b>	<b>629</b>	<b>179</b>	<b>612</b>	<b>1,420</b>

The MCEV<sup>®</sup> adjusted for the 2011 dividend, improvements in method and model, stands at €1,145m. New Business contributed €136m at current exchange rates to the increase in the MCEV<sup>®</sup>: new business decreases ANAV by €32m and increases VIF by €168m.

Observed variance relating to operating activities result:

- at VIF level (€24m), from fewer surrenders than anticipated,

- at ANAV level (€61m), from a lower claims rate than anticipated, especially on the credit life insurance portfolio, movements of provisions and productivity gains.

This has led the CNP Assurances Group to revise its assumptions for the projection, leading to a positive impact of €37m on the VIF.

The effects of the economic situation have impacted the value of Caixa Seguros by €37m, driven by the actual performance of the account compared with its projected performance and the increase in unrealized gains on shareholders' equity. The €9m amount included in the "other non-operating variance" is the difference between the real amount of tax paid and the amount based on the standard tax rate.

The updated exchange rate has led to a €138m decrease in the MCEV<sup>®</sup>.

- **Italy**

-M€ -	ANAV	Free Surplus	Required Capital	VIF	MCEV <sup>®</sup>
<b>MCEV<sup>®</sup> 2011</b>	<b>281</b>	<b>153</b>	<b>127</b>	<b>17</b>	<b>298</b>
Opening adjustments	0	-12	12	-80	-80
<b>Adjusted MCEV<sup>®</sup> 2011</b>	<b>281</b>	<b>142</b>	<b>139</b>	<b>-63</b>	<b>218</b>
New business value	-18	-32	15	28	11
Expected existing business contribution	6	6	0	63	70
Transfers from the VIF and required capital to free surplus	43	64	-21	-43	0
Experience variances	18	27	-9	10	28
Changes in assumptions relating to operating activities	0	0	0	-2	-2
Other operating variance	0	0	0	0	0
<b>Operating MCEV<sup>®</sup> Earnings</b>	<b>50</b>	<b>66</b>	<b>-16</b>	<b>55</b>	<b>106</b>
Economic variances	2	2	0	51	54
Other non-operating variance	-11	-11	0	0	-11
<b>Total MCEV<sup>®</sup> earnings</b>	<b>42</b>	<b>58</b>	<b>-16</b>	<b>106</b>	<b>148</b>
Closing adjustments	0	0	0	0	0
<b>MCEV<sup>®</sup> 2012</b>	<b>323</b>	<b>200</b>	<b>123</b>	<b>44</b>	<b>366</b>

The "initial adjustments" item includes improvements to the model and the use of the swap rate as the base rate.

The value of new business has contributed +€11m to the change in MCEV<sup>®</sup>. This value includes a net loss of -18m of new business in 2012 due to the discounted commission paid to the network. The increase in Required Capital pertaining to this new business amounted to €15m.

The observed variances on operating activities affect ANAV mainly through activation and amortization of DAC and DIR and provision movements, thereby generating a difference between the actual and the expected result and on the VIF of the decline in surrenders.

The effects of the economic situation (€54m) reflect a rise in the unrealized gains of asset portfolios further to the narrowing spreads of Italian government borrowing rates observed in 2012. Tax-related effects amount to -€11m.

- Spain

-M€ -	ANAV	Free Surplus	Required Capital	VIF	MCEV <sup>®</sup>
<b>MCEV<sup>®</sup> 2011</b>	<b>173</b>	<b>103</b>	<b>70</b>	<b>62</b>	<b>235</b>
Opening adjustments	0	0	0	-16	-16
<b>Adjusted MCEV<sup>®</sup> 2011</b>	<b>173</b>	<b>102</b>	<b>70</b>	<b>47</b>	<b>219</b>
New business value	-3	-10	7	4	1
Expected existing business contribution	4	4	0	15	19
Transfers from the VIF and required capital to free surplus	15	22	-7	-15	0
Experience variances	6	9	-3	0	6
Changes in assumptions relating to operating activities	0	0	0	-3	-3
Other operating variance	0	0	0	0	0
<b>Operating MCEV<sup>®</sup> Earnings</b>	<b>22</b>	<b>25</b>	<b>-3</b>	<b>0</b>	<b>22</b>
Economic variances	12	13	0	-5	7
Other non-operating variance	0	0	0	0	0
<b>Total MCEV<sup>®</sup> earnings</b>	<b>35</b>	<b>38</b>	<b>-3</b>	<b>-5</b>	<b>30</b>
Closing adjustments	0	0	0	0	0
<b>MCEV<sup>®</sup> 2012</b>	<b>208</b>	<b>140</b>	<b>67</b>	<b>41</b>	<b>249</b>

The use of swap rate curves as the reference curve has led to an adjustment of -€16m. Therefore, the adjusted MCEV<sup>®</sup> stands at €219m after initial adjustments.

New Business contributed €1m to the MCEV<sup>®</sup>, breaking down as follows:

- a contribution to the 2012 result impacting ANAV by -€3m,
- €4m of growth in the VIF.

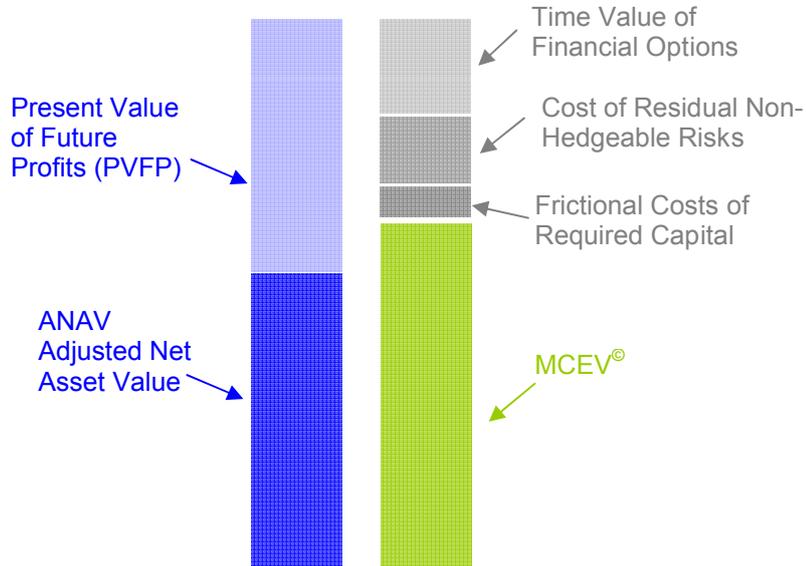
Observed variances relating to operating activities primarily stem from lower gains from actual claims than the model's estimates on credit life insurance products.

Changes in assumptions relating to operating activities mainly consist in updated assumptions on surrenders.

Economic conditions had a positive impact of €7m on the value, more particularly further to the decrease in credit spreads. It breaks down as follows:

- a €12m increase in the ANAV,
- a €5m decrease in VIF.

## 4. Methodology



The Embedded Value is the consolidated value of shareholders' interests generated by the portfolio's insurance activities as of the date of measurement. This value does not take into account future New Business. The methodology adopted by the CNP Assurances Group is based on the MCEV<sup>®8</sup> calculation standards as set out in "The European Insurance CFO Forum Market Consistent Embedded Value Principles" in October 2009. This chapter details the principles adopted by the CNP Group.

<sup>8</sup> Copyright © Stichting CFO Forum Foundation 2008.

## 4.1 Scope covered

The scope covers all CNP Assurances Group entities that have a significant impact on the value, in France and abroad. This represents 99% of the technical provisions at 31/12/2012:

Geographic area	Entities	Shares owned
France	CNP Assurances	Consolidating entity
	CNP IAM	100%
	Préviposte	100%
	ITV	100%
	CNP International	100%
	MFPrévoyance	64.72%
	La Banque Postale Prévoyance	50%
Italy	CNP Unicredit Vita	57.5%
	Italian branch of CNP Assurances	100%
Brazil	Caixa Seguros	51.75%
Spain	CNP Vida	94.47%
	EstalVida	75.85%
	Barclays Vida y Pensiones <sup>9</sup>	50%
Cyprus	Marfin Insurance Holding	50.1%

The other entities were valued in compliance with IFRS principles.

### Group activities:

The CNP Assurances Group's activities are primarily centred on personal insurance:

- Individual Savings in Euros and Unit-linked
- Individual retirement savings
- Individual and Collective Protection
- Collective Retirement Savings
- Credit Life Insurance

All calculations are stated as Group share, net of reinsurance and external co-insurance.

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<sup>9</sup> Including business in Portugal and Italy.

## 4.2 Adjusted Net Asset Value

The Adjusted Net Asset Value (ANAV) reflects the market value of the assets backing shareholders' equity after deduction of intangible assets, subordinated liabilities and other elements used to measure In-Force business.

The ANAV is calculated on the basis of IFRS Equity, after restating the following elements:

- elimination of intangible assets, such as Goodwill and distribution agreements, In-Force values and DACs,
- deduction of unrealized capital gains and losses already accounted for in the In-Force value, and reintegration of shareholders' interest in unrealized gains not accounted for in the IFRS Framework (property and held-to-maturity securities),
- and the reclassification of subordinated debt.

Analytically, the ANAV is determined as the consolidated group share at the date of valuation and it breaks down into Required Capital and Free Surplus.

### 4.2.1 Required Capital

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.

The Required Capital is the level of capital a company sets itself to achieve a targeted credit rating and to control its own risks. The capital level set by the CNP Assurances Group to manage its risk equals 110% of the regulatory solvency margin requirement (Solvency I standard) net of all other sources of funding such as subordinated debt. Subordinated debt covers 39.4% of the margin requirement as of 31/12/2012.

### 4.2.2 Free Surplus

The Free Surplus is the market value of any assets allocated to, but not required to support in-force covered business at the valuation date.

## 4.3 Value of In-Force

### 4.3.1 Present Value of Future Profits (PVFP)

The PVFP is the present value of future profits net of tax generated by in-force policies at the valuation date.

This value is calculated using a Market Consistent methodology except for Caixa Seguros, for which the traditional methodology is maintained.

This value reflects the embedded value of financial options and guarantees in the portfolio, their time value being accounted for separately in the TVOG to determine the VIF.

According to the MCEV<sup>®</sup> methodology, no risk premium is included in the projected returns and in the discount rates. The reference interest rate curve is based on the swap rate curve plus a liquidity premium.

### 4.3.2 Frictional Costs of Required Capital

The need to back Required Capital for covered business entails allocating a frictional cost to the Embedded Value and to New Business Value. In a Market Consistent model, the frictional cost reflects the taxation and investment costs on assets backing Required Capital.

The frictional cost of Required Capital takes also into account the cost of financing a portion of Required Capital with subordinated debt; this cost is calculated as the difference between the economic value and the face value of subordinated debt. CNP Group defines this economic value as the net present value of the future cash-flows paid to the debt's holders, based on a discount rate which takes into account every security's spread at inception. For New Business, Required Capital is assumed to be financed by subordinated debt to the same extent as for In-Force; this financing is ensured by newly issued subordinated debt, whose economic value is equal to the face value.

### 4.3.3 Time Value of Options and Guarantees

CNP Assurances has chosen a Market Consistent approach to value the main financial options and guarantees stipulated in the contracts.

The main options and guarantees include:

- minimum guaranteed interest rate,
- profit sharing option,
- guaranteed annuity option,
- guaranteed minimum death benefits,
- guarantee of technical rate for annuity business and guaranteed acquisition premium associated with the Préfon portfolio,
- guarantee on the surrender values, surrender option.

The time value of financial options and guarantees (TVOG) is generated by the asymmetric nature of the distribution of profits between the shareholders and the insured according to the different movements of financial markets. Broadly speaking, a financial loss is fully incurred by the shareholders, whereas financial gains are shared according to regulatory and contractual profit-sharing provisions. On the basis of multiple simulations, the use of stochastic calculations covers all possible trends in financial markets and therefore captures the cost associated with unfavourable market deviations.

### Method for calculating risk-neutral valuation

Valuation implements a stochastic model based on a risk-neutral approach. This approach defines the price of an asset as the expectancy of present value of future cash flows discounted at the risk-free rate. The scenarios are taken from the generator developed by Barrie & Hibbert. This generates 1,000 equiprobable scenarios that forecast:

- Changes in a share index,
- Changes in a property index,
- The real rates' curve for maturities between 1 and 50 years,
- The nominal rates' curve for full maturities between 1 and 50 years.

Inflation is obtained as the difference between actual and nominal rates. Share and property dividend rates (set at 2.5%) are assumed to be constant.

The techniques the Group uses to calibrate this economic scenario generator are described in the "Assumptions" section of this report.

In addition, the projection model includes a dynamic surrender component, which factors in the tendency of insured parties to surrender their contracts when their return underperforms compared with a market reference.

Given the economic and financial context in Brazil, the CNP Assurances Group has opted for a traditional valuation method for its Brazilian subsidiary Caixa Seguros. This approach is motivated by the lack of market parameters needed for a valuation consistent with the principles of the CFO Forum. Moreover, the activities of Caixa Seguros mainly consist in hedging insurance risks; the financial options are considered marginal at Group level.

#### 4.3.4 Costs of residual non-hedgeable risks

In accordance with principles 6 and 9 of the CFO Forum, a cost must be allocated for non-hedgeable financial and non-financial risks. This cost results from:

- risks not measured in the PVFP or in the TVOG,
- the asymmetrical effect of some non-hedgeable risks on the value,
- the underlying uncertainty inherent in "Best Estimate" assumptions for non-hedgeable risks.

CNP Assurances uses a cost-of-capital approach to measure residual non-hedgeable risks. The capital allocated for these risks is the capitalization target CNP Assurances must achieve to comfortably absorb exceptional shocks, not included in other respects in the TVOG and the PVFP. It thus equals the level of capital required to reduce the probability of ruin to 0.5% within a one-year time frame on each of the specified risks.

- Risks not modelled in the TVOG and PFVP

The following is a list of non-valued risks:

- default risk,
- concentration risk,
- operational risk,
- catastrophe risk.
- Asymmetrical Risks

The asymmetrical nature associated with the sharing of risk between policyholders and shareholders, depending on various trends in non-financial parameters, generates a cost that must be factored into the valuation of the

portfolio. The asymmetrical impact of the mortality/longevity/morbidity risk is the result of contracts that include profit sharing clauses containing a component that is based on the technical result.

- Uncertainty

Embedded Value calculations are based on several so-called "best estimate" assumptions: claims rate, surrender risk, expenses risk. An additional cost, related to the underlying uncertainty inherent in making such assumptions, has been included in the value.

## **4.4 New Business Value**

### **4.4.1 Definition of New Business**

The projections used to estimate the value of one year's New Business are based on the profile of the business and the volume of premiums written during 2012.

- Individual Savings and retirement in Euros and Unit-linked :

New business is defined as the business generated from the sale of new contracts and in some cases increases to existing contracts during the reported period. Without an assumption of premium recurrence over the periodic premiums, the later payments are considered as unique premiums.

- Individual risk:

New Business only includes new policies. Future regular premiums on existing contracts are included in the Value of In-Force.

- Group retirement savings:

The New Business volumes of L.441 contracts include new policies and ad hoc single premium contributions on existing contracts. On the rest of the segment, future regular premiums on existing contracts are included in the Value of In-Force.

- Collective risk:

As future premiums on existing policies are not valued in In-Force contracts, new business volumes for collective protection products are equal to the 2012 accounting premiums.

- Credit life insurance:

New Business only includes new policies. Future regular premiums on existing contracts are included in the Value of In-Force.

### **4.4.2 Methodology**

The approach used to value the New Business is identical to the one used for the valuation of the In-Force. The value of New Business is the present value of projected profits of policies written during the year less the frictional costs of required capital, the time value of financial options and guarantees and the cost of residual non-hedgeable risks.

The New Business value is based on projected cash flows from the date of issue. The economic assumptions are based on prevailing market conditions at 31/12/2012.

In accordance with the "standalone" method used by CNP Assurances, no unrealized gains are allocated to the New Business. The New Business premiums are invested in new assets available at valuation date according to the acquisition strategy observed during the year. Therefore there is no sharing of unrealized gains and losses between In-Force and New Business.

#### 4.4.3 APE Annual Premium Equivalent

The APE, a sales volume indicator, equals one tenth of the sum of single premiums and flexible premiums written during a given year plus the annualized amount of regular premiums written during that same year. Unlike IFRS revenue, the APE generated through New Business is defined as the Group share of written premiums net of reinsurance and co-insurance. Furthermore, the exchange rate is that at 31/12/2012, not the average rate used to determine IFRS revenue.

#### 4.5 Sensitivities

The sensitivities presented below are those required by CFO Forum standards:

- Rates curve +/-100 bp:

This sensitivity corresponds to a parallel shift in the swap rates curve of plus or minus 100 bp (with a floor value of 0%). This among other things entails:

- a revaluation of the market value of bonds,
- a 100 bp adjustment of the reinvestment rate of all asset classes,
- and updated discount rates.

The impact on the initial mathematical provision for unit-linked business is not valued.

- Shares -10%:

This sensitivity measures the impact that an immediate 10% fall in equity and property indexes would have on the value. This shock implies a 10% fall in the market value of equities and property assets, as well as a decrease in the mathematical provisions of unit-linked business by the proportion invested in equity and property.

- Surrenders -10%:

This sensitivity measures the impact of a 10% decrease in total and partial surrender rates.

- Costs -10%:

This sensitivity measures the impact of a 10% drop in all expenses: acquisition, management, claims and overheads costs.

- Claims rate -5%:

This sensitivity measures the impact of a decrease in the claims rate: incidence rates, loss ratios, disability rates, and mortality rates are reduced proportionately by 5%. The risks of longevity and mortality/disability are measured separately.

- Swaption implied volatility +25% / Equity implied volatility +25%:

This sensitivity measures the impact of a 25% increase in the volatility of interest rates and equities on the time value of financial options and guarantees.

- Required Capital:

This sensitivity consists in defining a required capital equal to the regulatory solvency margin assuming the proportion of subordinated debt remains constant, and in measuring the impact of this change on the value.

- Interest rates curve with a liquidity premium +10 bp:

This sensitivity corresponds to a 10 bp increase in the liquidity premium. This entails an adjustment of the reinvestment rate of all classes of assets and an updating of discount rates.

## 5. Assumptions

### 5.1 Financial assumptions

The Embedded Value calculations are based on economic conditions as at 31/12/2012.

#### 5.1.1 Reference interest rate curve

The data used for all Group subsidiaries in the eurozone to describe the initial state of the reference rates curve is taken from the smoothed and zero-coupon swap rate curve<sup>10</sup>. The extrapolation method was adjusted in 2012 to be consistent with the approach currently developed in connection with the Solvency 2 reform. The rate curve is extrapolated with a point of entry at 20 years converging over 10 years according to the Smith-Wilson technique towards an ultimate forward rate of 4.2%.

Maturity	Swap rate 31/12/12	Swap rate 31/12/11
1	0.33%	1.42%
2	0.37%	1.31%
5	0.78%	1.73%
10	1.61%	2.46%
15	2.10%	2.70%
20	2.28%	2.73%
30	2.84%	2.61%
<b>Ultimate forward rate</b>	4.20%	6.20%
<b>Point of entry of the extrapolation</b>	20 years	50 years

In compliance with Principle 14 of the MCEV<sup>®</sup> principles, CNP Assurances integrates a liquidity premium into the reference rate curves. The market liquidity premium corresponds to the Maximum [0; 50% \* (Spread of corporate bonds –40 bp)], the spread of corporate bonds being determined as the margin on the swap rate of the iBoxx € Corporates bond index. The liquidity premium (37 bp at 31/12/2012) is added to the swap rate curve at 100% on the non-extrapolated portion then decreases as the curve converges towards the ultimate forward rate. Moreover, only a fraction of this premium is allocated to different groups of contracts according to the degree of illiquidity of the underlying liabilities. The following table summarizes the liquidity premium selected for the main categories of products, in reference to the swap rate curve:

Category	2011	2012
Unit-linked savings	49bp	18bp
Individual risk	49bp	18bp
Credit life insurance	79bp	27bp
Group risk	79bp	27bp
Euro savings	79bp	27bp
Individual retirement savings	79bp	27bp
Group retirement savings	79bp	27bp

<sup>10</sup> At 31/12/2011, the Italian, Spanish and Portuguese entities were valued on the basis of the government bond yield curves. At 31/12/2012, these entities were valued on the basis of the swap rate curve.

### 5.1.2 Calibration of the interest rate model

The economic scenario generator used for nominal rates is the Libor Market Model (LMM) with two factors. The at-the-money swaption market volatilities adopted for the calibration are as follows:

Terms	1 year	2 years	5 years	10 years	20 years
MCEV <sup>®</sup> 31/12/2011	38.5%	35.3%	30.3%	28.7%	29.2%
MCEV <sup>®</sup> 31/12/2012	30.1%	29.1%	25.9%	23.5%	20.9%

The real rates are generated using the Vasicek model with two factors, which has been calibrated on inflation-indexed treasury bonds.

### 5.1.3 Calibration of the equity model

A different level of volatility for each projection term between 1 and 10 years was used to generate the share index (deterministic volatility model). The resulting levels are given in the table below.

Maturity	1 year	2 years	5 years	10 years	20 years
MCEV <sup>®</sup> 31/12/2011	29.3%	28.0%	27.5%	27.9%	27.9%
MCEV <sup>®</sup> 31/12/2012	22.3%	23.7%	24.6%	24.7%	25.2%

The volatility parameters are calibrated using implicit at-the-money forward volatilities on the Eurostoxx 50 index at 31/12/2012.

The correlation coefficient between the various factors (share, actual rates and nominal rates) are determined by Barrie Hibbert on the basis of econometric tests and expert opinion.

Likewise, property volatility is fixed at 15%.

### 5.1.4 Financial Assumptions for Brazil

		2012	2013	2014	2015	2016	2017	Post 2017
MCEV <sup>®</sup> 11	Discount rate	12.5%	12.9%	12.6%	12.5%	11.9%	11.6%	11.3%
	Yield of the assets	10.0%	10.7%	10.2%	10.0%	9.0%	8.5%	8.0%
	Inflation	5.5%	5.1%	4.9%	4.7%	4.7%	4.7%	4.7%
	Risk Premium	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
MCEV <sup>®</sup> 12	Discount rate	11.5%	10.8%	11.6%	11.8%	11.7%	10.8%	10.8%
	Yield of the assets	8.3%	7.1%	8.5%	8.8%	8.6%	7.1%	7.1%
	Inflation	5.4%	5.4%	5.5%	5.0%	5.0%	5.0%	5.0%
	Risk Premium	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

The euro-to-real (EUR/BRL) exchange rate rose from 2.4159 on 31/12/2011 to 2.7036 on 31/12/2012.

## 5.2 Tax rate

The tax rate used to calculate Embedded Value is the standard corporate tax rate applied in countries where the CNP Assurances Group operates:

	FRANCE	Italy	Spain	Portugal	Brazil
MCEV <sup>®</sup> 31/12/2011	36.10%	34.32%	30%	29%	40% <sup>11</sup>
MCEV <sup>®</sup> 31/12/2012	36.10% <sup>12</sup>	34.32%	30%	29%	40% <sup>11</sup>

The tax credits observed in France that reduce the standard corporate tax rate are valued elsewhere.

## 5.3 Cost of capital for residual non-hedgeable risks

A rate of 5% is applied to the capital relating to non-modelled and asymmetrical risks. The capital allocated for uncertainty in assumptions is subject to the frictional costs of holding that capital.

The average rate applied to the capital was 2.4% on 31/12/2012 (2.8% on 31/12/2011).

## 5.4 Non-economic assumptions

### 5.4.1 Expenses

At each year-end closing, CNP Assurances carries out a functional cost analysis: acquisition, management, claims, investment costs and other technical and non-technical expenses, as well as a breakdown by company, product group and network. The expenses basis resulting from this analysis has been lowered by €9 million for exceptional expenses, as observed in the accounts at 31/12/2012.

An annual inflation rate of 2% is applied to unit costs for European entities.

### 5.4.2 Claims and persistency assumption

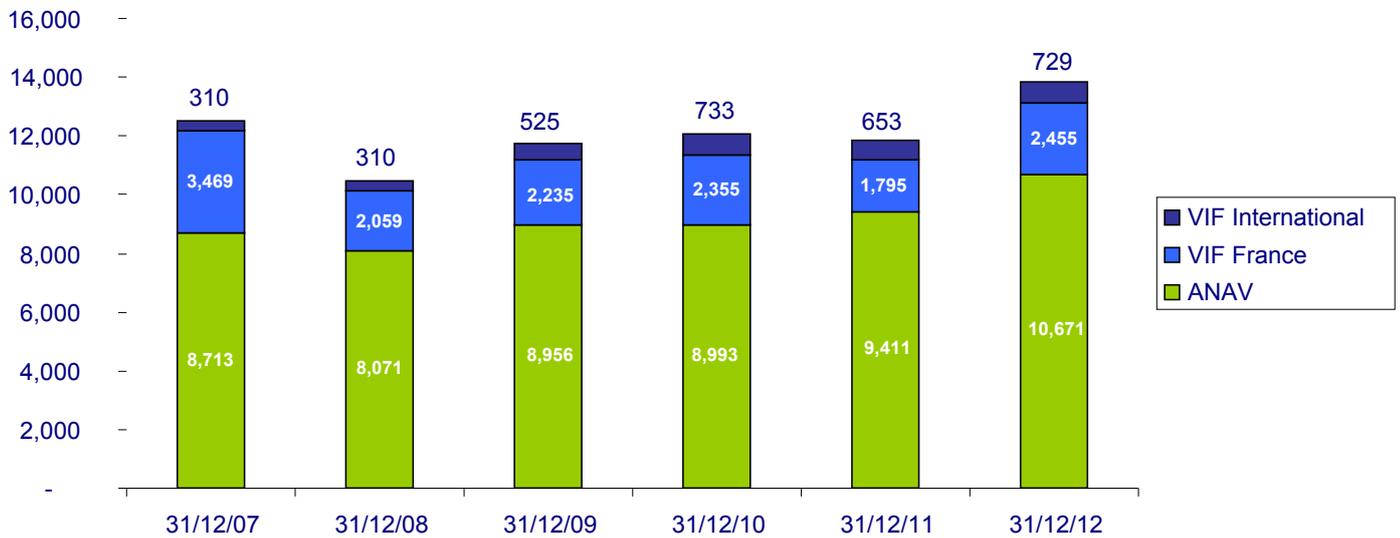
The non-economic assumptions, the experienced mortality and morbidity, the lapse rates and claim rate assumptions are determined by each entity on the basis of their best estimate at the date of valuation. They stem from an analysis of current and past experience observed in each valued portfolio.

<sup>11</sup> With the exception of CAIXA Consorcio, for which the tax rate has been maintained at 34%.

<sup>12</sup> Exceptional surcharge on tax paid in 2013 and 2014. After 2014, the tax rate is 34.43%.

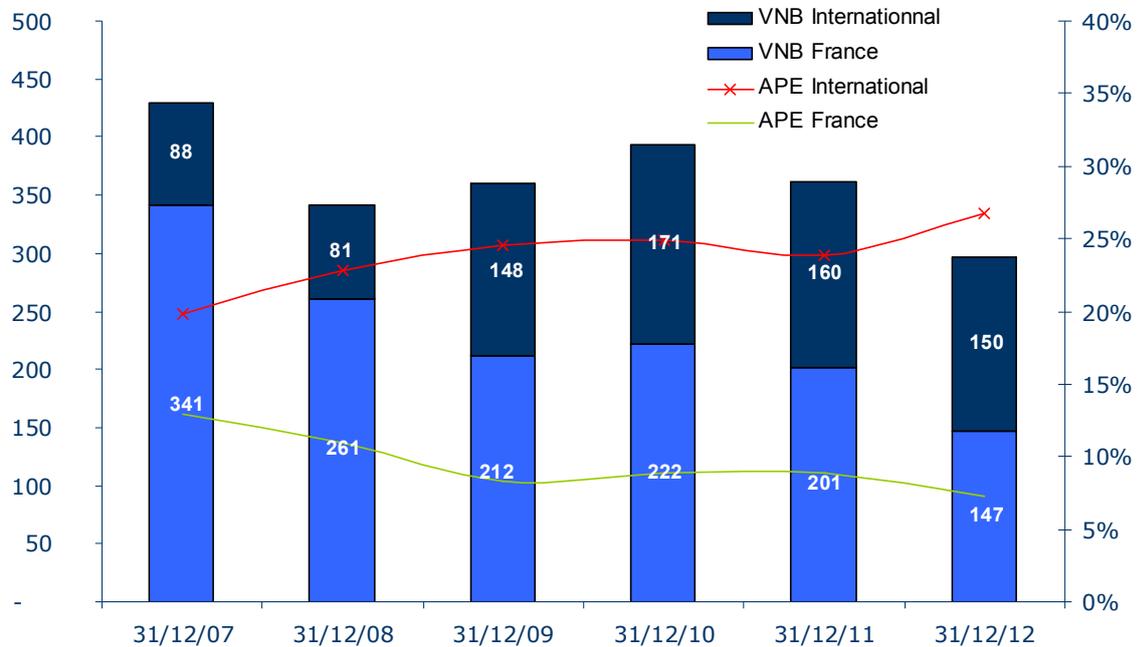
## 6. MCEV<sup>®</sup> trend since 31/12/2007

### 6.1 Historical MCEV<sup>®</sup> values



Historical MCEV<sup>®</sup> values, drawn up in accordance with CFO Forum principles, show the resilience of the Group's MCEV<sup>®</sup> and that the international market's share of VIF is growing.

### 6.2 Historical VNB values



## 7. Milliman's Opinion

*Milliman, independent actuarial firm, has reviewed the Embedded Value figures of CNP Assurances Group as at 31 December 2012. In the course of our work, we have reviewed the methodology, the assumptions used and the calculations performed internally by the company according to the directives and under the management responsibility. Our review has covered the Embedded Value as at 31 December 2012, the 2012 New Business Value, the analysis of earnings between the Embedded Value as at 31 December 2011 and as at 31 December 2012 and the sensitivities.*

*Milliman has concluded that the methodology used complies with principles 1 to 16 of "The European Insurance CFO Forum Market Consistent Embedded Value Principles" and that the calculations have been made in conformity with this methodology.*

*CNP Assurances Group considered a 37 bp market liquidity premium in excess of the swap rate to derive the reference rate. Only a fraction of this premium is allocated to the different lines of business, depending on the liquidity of the underlying contracts. The calculations performed for the Brazilian subsidiary (Caixa Seguros) have been carried out according to a Traditional Embedded Value approach which allows for the risks through the use of a risk premium.*

*Moreover, the information disclosed in "CNP Assurances – Embedded Value report 31/12/2012" complies with the current CFO Forum European Embedded Value principles.*

*In arriving at these conclusions, we have relied on data and information provided by CNP Assurances Group without undertaking an exhaustive review of them. We have performed limited high-level checks and reconciliations as well as more detailed analysis on some specific portfolios. We have checked that all the issues brought forward during our review had no material impact at the group level.*

*The calculation of Embedded Value necessarily relies on numerous assumptions with respect to economic conditions, operating conditions, policyholders' behaviour, taxes and other matters, most of which are beyond the management's control. Although the assumptions used represent estimates which CNP Assurances Group and Milliman believe are altogether reasonable, actual future experience will vary from that assumed in the calculation of the Embedded Value results.*