Groupama

2009 European Embedded Value Report

CONTENTS

INTRODUCTION

Groupama has been calculating its European Embedded Value (EEV) for the Group's France and International Life and Health Insurance since 31 December 2006 in line with the CFO Forum principles.
EEV includes the following two components:

- **Adjusted Net Asset Value (ANAV)**

  The ANAV corresponds, under CFO guidelines, to the market value of assets backing the shareholders' net equity and other reserves attributable to Groupama's shareholders. As at 31 December 2009, the ANAV includes the tangible net asset based on the local statutory account, a share of the unrealised capital gains/losses backing shareholders' net equity, a share of the unrealised capital gains/losses backing non modelled non participating products, and the cost related to the holding expenses. These correspond to the present value of Groupama SA's holding expenses attributable to the Group's Life business.

- **Value of Business in Force (VIF)**

  The VIF corresponds to the present value of future profits for the in-force portfolio, net of financial options and guarantees costs, cost of capital and cost of non-financial risks.

  VIF includes the following components:

  - **The value of the in-force portfolio without risk premium,** also called the Certainty Equivalent Value (CE), corresponding to the present value of future profits generated by policies in force at valuation date and calculated using the following methods:
    - *use of best estimate assumptions for all the non-economic assumptions. These best estimate assumptions have been derived for the most part from Groupama's portfolio;*
    - *determination of the projected rates of return without allowance of any risk premium;*
    - *discounting all the future cash flows using a reference interest rate curve derived from the interest rate swap curve plus a liquidity premium.*

  - **The time value of options and financial guarantees** corresponding to the "risk cost" of financial deviation compared to the scenario used to calculate the intrinsic value, calculated by the difference between:
    - *the stochastic value of the future margins within the contracts ("Portfolio Market Value"), and*
    - *the Certainty Equivalent or value in force without risk premiums (CE)*

  - **Cost of capital.** Groupama has locked-in a capital representing 100% of the minimum solvency margin required by European regulations currently in force (Solvency I). This capital requirement generates a frictional cost for the shareholders in that locking in the capital will cause the company to incur financial management costs and pay corporate tax on the financial revenues generated.

- **Cost of non-financial risks**

  In terms of operational risk, an additional risk premium has been taken into account in the calculation of the cost of locking in the solvency margin.

  In addition, some blocks of business presenting technical risks are also exposed to risk factors not taken into account elsewhere. These risk factors consist of, among other things, risk of adverse deviation of claims assumptions (mortality, morbidity, longevity, etc.). An additional risk premium has thus been added to take into account these non-financial risks.

  The total of these two risk premiums (for operational risks and technical risks) constitutes the additional risk premium included in the cost of capital calculation in order to assess the cost of non-financial risks.

1. MAIN CHANGES COMPARED TO THE 2008 EEV

Groupama calculates an EEV on the Life and Health business in France and abroad.

The model covers 96% of the Group's life technical reserves, and 97% of the Group's premiums.

Formation of Groupama Gan Vie

Since 31 December 2009 – retroactive to 1 January 2009 – all the Group's Life portfolios in France are held in a single company: Groupama Gan Vie.

As a major feature of the Group's strategy in France, Groupama Gan Vie covers individual and group insurance markets, Health, Prévoyance, Savings and Retirement products. In practice, it was formed from Gan Assurances Vie's "merger-absorption" of Groupama Vie and Gan Eurocourtage Vie and from the transfer of the portfolios of Gan Patrimoine and Gan Prévoyance.
Groupama Gan Vie markets its products via a network including the "Caisses Régionales Groupama", Gan assurance, Gan Eurocourtage, Gan Patrimoine and Gan Prévoyance.
The valuation of the consolidation for France therefore includes the entire Life France business, which largely consists of the following:

- The new entity Groupama Gan Vie
- The distribution companies Gan Prévoyance and Gan Patrimoine stated at shareholders' net equity adjusted for the holding in Groupama Gan Vie
- Life business costs of other entities

At 1 January 2009, the formation of Groupama Gan Vie resulted in a new segmentation of assets and liabilities

Expansion of the model's scope

In 2009, the international business model was expanded in relation to 2008 to include the Romanian and Hungarian subsidiaries. The costs of options and financial guarantees were calculated for the Greek subsidiary bearing in mind that a valuation based on a traditional approach was applied for the 2008 EEV.

The Romanian subsidiary's portfolio was valued using a traditional approach given that its products do not include any financial and options guarantees.

The costs of unit-linked policies' options and financial guarantees were calculated for the Hungarian subsidiary. For euro-denominated policies, in view of the low asset values involved, the portfolio was valued based on a traditional approach with the discount rates including risk premiums to cover financial risks.

For the valuation of both these entities, the discount rates include risk premiums to cover financial risks.

Lastly, according to principle 2.3 of the CFO Forum, Groupama Asset Management has been included in the French valuation perimeter, in respect of the Group's 95.1% equity share of assets relating to Groupama's Life and Health business.The value has been calculated by applying the business margin rate to projected technical reserves, net of cost of capital.

An analysis of movement was carried out on the Group consolidation scope except on the Hungarian and Romanian subsidiaries and on Groupama Asset Management, which this year were included in the EEV perimeter.

Adjustment of the risk-free rate curve

The 2009 EEV calculations, like the 2008 EEV calculations, include a liquidity premium. The purpose of adding a liquidity premium to the swap rate curve is to take account of a discount due to low liquidity on bond valuations in the calculations. This liquidity premium was applied to all subsidiaries except Hungary, Romania, Turkey and Greece for which local governments bonds curves were applied.

The methods for calculating and applying the liquidity premium are the same as those used for the 2008 EEV.

The liquidity premium was estimated based on the difference between the following two indicators to cover the risk of issuer default:

- An indicator of the spread on the bond market, which therefore includes the illiquidity discount
- An indicator based on CDS premiums which does not include this discount

This “market” liquidity premium is then weighted for the proportion of corporate bonds in the portfolio.
The resulting liquidity premium that was applied in the 31 December 2009 EEV calculations amounted to 25 basis points.

2. RESULTS

▪ Analysis of movements - Aggregated figures

(France and international, excluding the Hungarian and Romanian subsidiaries and Groupama Asset Management)

In millions of euros	**ANAV**	**VIF**	**EEV**
Value as at 31 December 2008	**2,023.8**	**718.5**	**2,742.3**
Model changes and opening adjustments	-10.2	47.3	37.1
Adjusted value as at 31 December 2008	**2,013.6**	**765.8**	**2,779.4**
New business contributions	-105.2	164.8	59.6
Expected contributions	256.0	-7.7	248.3
Non-economic adjustments	544.8	-52.1	492.7
Changes in non-economic assumptions	0.0	123.0	123.0
Contribution from operating businesses	**695.5**	**228.1**	**923.6**
Economic environment contribution	**414.4**	**-59.2**	**355.2**
EEV contribution	**1,109.9**	**168.9**	**1,278.8**
Capital movements	-227.6	0.0	-227.6
Exchange rate movements	-0.1	0.0	-0.1
Groupama Asset Management business	0.0	190.2	190.2
Business acquired/sold during the period	109.5	45.6	155.1
Value as at 31 December 2009	**3,005.3**	**1,170.6**	**4,175.9**

Operating return	**34.5%**	**29.8%**	**33.2%**
EEV contribution	**55.1%**	**22.1%**	**46.0%**

The total return on EEV in 2009 was 46% before capital movements, after exchange rate movements and the EEV of the entities integrated in the 2009 calculation.

The movement due to the change in scope and model amounts to 37.1 million euros. The difference largely comes from the Groupama Gan Vie merger, the expansion of the models scope for France and to a lesser extent changes in the model.

The contribution of new business corresponds to the value of new business excluding entities included in 2009.

The expected contribution corresponds to the effect of a one-year delay calculated using the implied risk discount rate.

The non-economic adjustments of 492.7 million euros are mainly explained by the positive impact from the merger of Groupama Gan Vie's Life entities and the restructuring of the bond portfolio.

The bond portfolio restructuring had a major positive impact on the ANAV with the corresponding deduction posted against the portfolio's EEV.
However, the impact of this transaction comes out strongly positive on the 2009 EEV for two main reasons as follows:

▪ The capitalisation reserve resulting from the ANAV transactions is before tax whereas the reduction in return on the portfolios is after tax.

▪ The restructuring performed reduced the asset/liability mismatch by extending the duration, such that the reduction in return on the bond portfolio remained limited.

Furthermore, the merger of the Group's Life entities led to an increase in the portfolio's EEV of about +210 million euros due to a better mutualisation.

Lastly, to a lesser extent, positive experience differences on claims for the Prévoyance business were observed resulting in a transfer of value between the portfolio's EEV and the ANAV (generating a surplus).

The 123 million euros change in non-economic assumptions is explained by policy adjustments.

The operating results including new business of 59.6 million euros (excluding entities included in the 2009 scope), were therefore 923.6 million euros and correspond to an operating return of 33.2%.

The economic environment results had a limited impact on the VIF of -59.2 million euros, since the increase in equity and interest rates volatility and the reduction in interest rates were overall offset by the rise in equity markets during 2009. On the ANAV, the economic environment results of 695.5 million euros arose due to write-backs to the provision for contingent payment risk posted in 2009.

Capital movements largely relate to 2008 dividends paid out in 2009.

The businesses acquired during the period relate to including the Hungarian and Romanian subsidiaries in the valuation.

▪ European Embedded Value – Aggregated figures (France and International)

In millions of euros	**31 December 2009**	**31 December 2008 initial adjustments**	**31 December 2008**	**Change (euros)**	**% Change**
Adjusted Net Asset Value	**3,005.3**	**2,013.6**	**2,023.8**	**991.7**	**49.3%**
Certainty equivalent value (CE)	2,441.7	1,889.4	1,790.6	552.2	29.2%
Time value of financial options and guarantees	-763.3	-598.9	-547.6	-164.4	-27.4%
Cost of Capital (100% of solvency margin)	-388.9	-420.7	-418.3	31.9	7.6%
Cost of non-financial risks	-118.8	-103.9	-106.2	-14.9	-14.3%
VIF	**1,170.6**	**765.8**	**718.5**	**404.8**	52.9%
Embedded Value	**4,175.9**	**2,779.4**	**2,742.3**	**1,396.6**	**50.2%**

▪ European Embedded Value – Aggregated figures (France and International)

In millions of euros	**31 December 2009**	**31 December 2008 initial adjustments**	**31 December 2008**	**Change (euros)**	**% Change**
Adjusted Net Asset Value	**2,904.4**	**2,013.6**	**2,023.8**	**890.9**	**44.2%**
Certainty equivalent value (CE)	2,193.1	1,889.4	1,790.6	303.7	16.1%
Time value of financial options and guarantees	-755.2	-598.9	-547.6	-156.3	26.1%
Cost of Capital (100% of solvency margin)	-383.9	-420.7	-418.3	36.9	-8.8%
Cost of non-financial risks	-118.1	-103.9	-106.2	-14.2	13.7%
VIF	**935.9**	**765.8**	**718.5**	**170.0**	22.2%
Embedded Value	**3,840.3**	**2,779.4**	**2,742.3**	**1,060.9**	**38.2%**

▪ European Embedded Value – France

In millions of euros	**31 December 2009**	**31 December 2008 initial adjustments**	**31 December 2008**	**Change (euros)**	**% Change**
Adjusted Net Asset Value	**2,566.7**	**1,714.7**	**1,726.2**	**852.0**	**49.7%**
Certainty equivalent value (CE)	2,190.3	1,703.6	1,606.6	486.6	28.6%
Time value of financial options and guarantees	-691.5	-548.3	-509.1	-143.2	-26.1%
Cost of Capital (100% of solvency margin)	-370.2	-399.6	-396.2	29.5	7.4%
Cost of non-financial risks	-111.7	-98.2	-101.2	-13.5	-13.8%
VIF	**1,016.8**	**657.5**	**600.2**	**359.3**	54.6%
Embedded Value	**3,583.6**	**2,372.2**	**2,326.3**	**1,211.3**	**51.1%**

▪ *European Embedded Value – International*

In millions of euros	**31 December 2009**	**31 December 2008 initial adjustments**	**31 December 2008**	**Change (euros)**	**% Change**
Adjusted Net Asset Value	**438.6**	**298.9**	**297.6**	**139.7**	**46.7%**
Certainty equivalent value (CE)	251.4	185.8	183.9	65.6	35.3%
Time value of financial options and guarantees	-71.8	-50.7	-38.5	-21.2	-41.8%
Cost of Capital (100% of solvency margin)	-18.7	-21.1	-22.1	2.4	11.5%
Cost of non-financial risks	-7.1	-5.7	-4.9	-1.4	-24.0%
VIF	**153.8**	**108.3**	**118.3**	**45.5**	42.0%
Embedded Value	**592.4**	**407.1**	**416.0**	**185.2**	**45.5%**

The 2009 consolidated *European Embedded Value* was 4,175.9 million euros, of which 3,005.3 million euros corresponds to ANAV and 1,170.6 million euros to VIF. EEV increased by 50% between 2008 and 2009 (after capital movements, exchange rate movement and increase in scope).

The expansion in scope led to an increase in EEV of 336 million euros (+12%), 235 million euros to VIF, and 101 million euros to ANAV.

Excluding the expansion in scope:

EEV increased by 1,060.9 million euros, up +38%.

ANAV increased by 44%. This change is largely due to the following:
- *Movements in the capitalisation reserve for the France scope*
- *Growth in results between 2008 and 2009*
- *An increase in unrealised capital gains*

VIF increased by 170 million euros (up +22% between 2008 and 2009).

- *The certainty equivalent increased by 16% following the movements in the equity markets.*
- *The cost of capital for the solvency margin, which corresponds mainly to tax effects, was down due to the lower interest rates.*
- *The cost of options increased by 26%, largely following the increase in equity and interest rate volatility.*

The France 2009 *European Embedded Value* amounted to 3,583.6 million euros, including 2,566.7 million euros on the ANAV and 1,016.8 million euros on the VIF, up 51% between 2008 and 2009. On a like-for-like basis excluding Groupama Asset Management, France 2009 *European Embedded Value* was up 43% despite the increase in equity and interest rate volatility.

Apart from the growth in the equity markets and the restructuring of the portfolio, the sharp rise in EEV is explained by the founding of Groupama Gan Vie and adjustments to policies.

The 2009 *European Embedded Value – International* was 592.4 million euros, up 45%, of which 438.6 million euros correspond to the ANAV and 153.8 million euros to the VIF. On a like-for-like basis excluding the new subsidiaries included for the first time in 2009, the international EEV rose by 9.8% between 2008 and 2009, and VIF remained virtually the same.

▪ New Business value – Consolidated Companies[1] (France and international)

In millions of euros	31 December 2009	31 December 2008	Change	Change %
New business value without risk premium (CE)	130.2	113.7	16.5	14.6%
Time value of financial options and guarantees	-15.4	-39.4	24.1	61.0%
Cost of Capital (100% of solvency margin)	-32.2	-27.9	-4.3	-15.4%
Cost of non-financial risks	-7.4	-5.3	-2.1	-38.8%
New Business value (NBV)	**75.3**	**41.0**	**34.2**	**83.5%**

APE	739.2	555.3	183.9	33.1%
NBV/APE	**10.2%**	**7.4%**	**2.8%**	
PVNBP	6,175.1	4,265.7	1,909.4	44.8%
NBV/PVNBP	**1.2%**	**1.0%**	**0.3%**	

▪ New Business value – France

In millions of euros	31 December 2009	31 December 2008	Change	Change %
New business value without risk premium (CE)	121.7	106.6	15.1	14.1%
Time value of financial options and guarantees	-10.5	-35.9	25.3	70.6%
Cost of Capital (100% of solvency margin)	-29.4	-25.1	-4.3	-17.1%
Cost of non-financial risks	-6.4	-4.7	-1.7	-36.1%
New Business value (NBV)	**75.3**	**40.9**	**34.4**	**83.9%**

APE	577.5	436.9	140.6	32.2%
NBV/APE	**13.0%**	**9.4%**	**3.7%**	
PVNBP	5,247.5	3,569.2	1,678.3	47.0%
NBV/PVNBP	**1.4%**	**1.1%**	**0.3%**	

[1] Annual Premium Equivalent (APE): 10% of the single premiums and 100% of the regular premiums.
APE ratio: value of new business divided by the APE premiums.
PVNBP: NPV of premiums corresponding to the present value of the future premiums generated by the new business.

▪ New Business value – International[2]

In millions of euros	31 December 2009	31 December 2008	Change	Change %
New business value without risk premium (CE)	8.6	7.1	1.5	20.9%
Time value of financial options and guarantees	-4.8	-3.6	-1.2	-34.5%
Cost of Capital (100% of solvency margin)	-2.8	-2.8	0.0	0.1%
Cost of non-financial risks	-1.0	-0.6	-0.4	-59.4%
New Business value (NBV)	**-0.1**	**0.1**	**-0.1**	

APE	161.7	118.4	43.3	36.5%
NBV/APE	**0.0%**	**0.0%**	**-0.1%**	
PVNBP	927.6	696.5	231.2	33.2%
NBV/PVNBP	**0.0%**	**0.0%**	**0.0%**	

The 2009 value of new business on the Group amounted to 75.3 million euros (1.2% of NBV/PVNBP, 10.2% of NBV/APE), representing a sharp rise compared to 2008 for France reflecting the surge in volumes.

This change arose due to two major effects as follows:

- The increase in volumes resulted in economies of scale thereby diluting the acquisition expenses.
- New business benefited from the positive effect of the merger of the Life entities within Groupama Gan Vie.

▪ Sensitivities

Definition of sensitivities

These sensitivities highlight what would have been 2009 New Business Value if market conditions at the time of sale had been those corresponding to the sensitivity scenario studied.

The sensitivities carried out throughout the entire perimeter are as follows:

- ***Financial Sensitivities***

  - Yield curve of +/- 100bp:
    This sensitivity corresponds to a parallel increase/decrease of the yield curve of 100 basis points at the beginning of the projection. This sensitivity implies a recalculation of the market value of bonds, re-investment rates of all asset classes of 100 basis points and, in accordance with CFO Forum guidelines, adjustment to the discount rate.

  - Decline in equity and property values of -10%:

[2] 55% of the PVNBP on 2009 new business for Turkey corresponds to policies distributed by Ziraat Banque. The distribution agreement has been cancelled in 2010.

This sensitivity corresponds to a sudden decrease in the projected level of equity and property value indices of 10%.

- Increase in the volatility of equity and property yields of 25%
  This sensitivity corresponds to a sudden increase at the start of the projected level of equity and property volatility of 25%.

- Increase in the interest rate volatility of 25%
  This sensitivity corresponds to a sudden increase at the start of the projected level of swaption volatility.

▪ ***Non-financial sensitivities***

- Mortality rate –5%
  Mortality sensitivity is presented by separating mortality sensitivity on annuities policies and on other policies (term insurance).

- Other claim ratios –5%
  This sensitivity shows the changes in value under a scenario in which the ratio of claims to premiums on Prévoyance (other than term insurance) and health decline by 5%.

- Rate of decline –10%
  This sensitivity corresponds to a decline in the policy surrender rate of 10%.

- Costs –10%
  This sensitivity corresponds to a decrease in administrative and management costs (other than commissions and acquisition costs).

EEV financial sensitivities – France

Groupama EEV financial sensitivities as at 31 December 2009				
In millions of euros	**ANAV**	**VIF**	**EEV**	
Central value	**2,566.7**	**1,016.8**	**3,583.6**	
	(A) Δ ANAV	**(B) Δ VIF**	**(A+B) Δ EEV**	**Δ EEV (%)**
Impact of a 100bp increase in the interest rate curve	-139.6	211.6	72.0	2.0%
Impact of a 100bp decrease in the interest rate curve	70.1	-521.6	-451.5	-12.6%
Impact of a 10% decline in equity and property values	-86.6	-443.4	-530.0	-14.8%
Impact of a 25% increase in interest rate volatility	-	-61.4	-61.4	-1.7%
Impact of a 25% increase in equity and property values volatility	-	-175.5	-175.5	-4.9%

EEV financial sensitivities – International

Groupama EEV financial sensitivities as at 31 December 2009				
In millions of euros	**ANAV**	**VIF**	**EEV**	
Central value	**438.6**	**153.8**	**592.4**	
	(A) Δ ANAV	**(B) Δ VIF**	**(A+B) Δ EEV**	**Δ EEV (%)**
Impact of a 100bp increase in the interest rate curve	-12.6	-4.9	-17.5	-2.9%
Impact of a 100bp decrease in the interest rate curve	8.2	-1.6	6.6	1.1%
Impact of a 10% decline in equity and property values	-7.6	-7.8	-15.3	-2.6%
Impact of a 25% increase in interest rate volatility	-	-12.1	-12.1	-2.0%
Impact of a 25% increase in equity and property values volatility	-	-2.1	-2.1	-0.4%

ANAV sensitivity to different market scenarios derives from sensitivities of unrealised capital gains/losses registered on assets backing shareholders' net equity.

A decline in interest rates creates a decline in the EEV. The decrease in investments yields implies margins contraction. The latter is not offset by the increase in unrealised capital gains on bond assets backing shareholders' net equity.

The sensitivity to the equity market level (yield and volatility) shows Groupama's exposure to the equity markets. This sensitivity was down compared to 2008.

EEV non-financial sensitivities – France

France – EEV financial sensitivities as at 31 December 2009		
In millions of euros	**EEV (value of holdings)**	
Central value	**3,583.6**	
	Δ EEV	**Δ EEV (%)**
Administrative expenses -10%	151.0	4.2%
Lapse rates -10%	47.2	1.3%
Mortality (annuities) -5%	-33.9	-0.9%
Mortality (other products) -5%	85.1	2.4%
Other claim ratios - 5%	170.0	4.7%

EEV non-financial sensitivities – International

International – EEV financial sensitivities as at 31 December 2009		
In millions of euros	**EEV (value of holdings)**	
Central value	**592.4**	
	(A+B) Δ EEV	**Δ EEV (%)**
Administrative expenses -10%	19.7	3.3%
Lapse rates -10%	1.9	0.3%
Mortality (annuities) -5%	-0.5	-0.1%
Mortality (other products) -5%	6.7	1.1%
Other claim ratios -5%	19.5	3.3%

New Business Sensitivities – France

Groupama – France – 2009 EEV new business sensitivities	
In millions of euros	**NBV**
Central value	**75.3**
	Δ NBV
Risk-free rate +100 bp	35.1
Risk-free rate -100 bp	-49.2
Decrease in equity and property values of 10%	-0.1
Interest rate volatility +25%	-12.6
Shares and real estate return volatility +25%	0.0
Administrative expenses +10%	18.9
Lapse rates -10%	4.1
Mortality (annuities) -5%	-0.3
Mortality (other products) -5%	4.6
Other claim ratios -5%	24.7

New Business Sensitivities (NBV) – International

Groupama – International – 2009 EEV new business sensitivities	
In millions of euros	**NBV**
Central value	**-0.1**
	Δ NBV
Risk-free rate +100 bp	5.2
Risk-free rate -100 bp	-7.8
Decrease in equity and property values of 10%	0.0
Interest rate volatility +25%	-1.4
Shares and real estate return volatility +25%	0.0
Administrative expenses +10%	3.1
Lapse rates -10%	1.3
Mortality (annuities) -5%	0.0
Mortality (other products) -5%	1.3
Other claim ratios -5%	3.3

3. EEV ADJUSTMENT/CONSOLIDATED NET EQUITY

The table below shows the adjustments to be made to value the items not accounted for in the consolidated shareholders' equity.

The following adjustments do not take into account Goodwill.

	2009			**2008 pro forma[3]**	**2008/2009 spread**
€m	**International**	**France**	**TOTAL**	**TOTAL**	
VIF	154	1,017	**1,171**	**718**	452
Additional elements included in VIF	-45	-122	**-167**	-387	220
Amortization of acquisition costs	-6	-46	**-52**	**-45**	-6
Unrealised capital gains entered in consolidated shareholders' net equity	-7	194	**187**	**658**	-471
Unrealised capital gains entered in ANAV	4	-30	**-26**	**-128**	101
Intangible assets	-35	-64	**-99**	**-36**	-63
Other adjustments	-6	-13	**-19**	**37**	-56
Additional value not taken into account in the IFRS shareholder's net equity	**59**	**936**	**995**	**818**	**177**

The adjusted additional elements included in VIF are the tax deficits that have been capitalised in the consolidated financial statements and other specific reserves not allowed for under IFRS.

Except for unrealised property value gains, the share of unrealised capital gains or losses attributable to the shareholder is allowed for in the consolidated shareholders' net equity and in the portfolio value. Thus the unrealised gains or losses entered on the books in the net consolidated accounts, after profit sharing and tax, are cancelled out.

The share of unrealised gains or losses in equity, included within the ANAV and not within the portfolio value, is included in the adjustments.

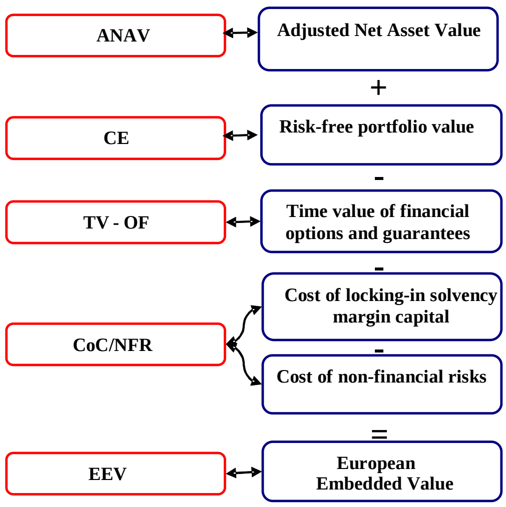
The adjusted intangible assets comprise the VOBA and capitalised software.

Other adjustments arise from differences between the net book value of the company (EEV view) and the consolidated net book value, specifically in the property assets class, as well as the allowance of holding costs attributable to the Life business of the Group in the EEV.

[3] In 2008, the adjustments to provisions akin to reserves were divided between the headings "Additional elements included in VIF" and "Other adjustments". In 2009, these adjustments were combined under the heading "Additional elements included in VIF".

4. METHODOLOGY AND ASSUMPTIONS

Groupama presents the following European Embedded Value:



ANAV

Adjusted net asset value (ANAV), in line with CFO Forum Guidelines, corresponds to the market value of the assets backing the equity and other shareholders' reserves. The Group's ANAV was calculated by consolidating restated company net assets for each entity.

In summary, the ANAV as at 31 December 2009 is comprised of the following individual elements:

- Retained shareholders' net equity before dividends distributed in 2010 for fiscal year 2009. The capitalisation reserve was calculated for the shareholder without any tax adjustments.

- The amount of the unrealised gains or losses backing the net equity and mathematical provisions not linked to any profit-sharing distribution (from a contractual or regulatory point of view).

- Holding costs
  These holding costs correspond to the share of holding costs attributed to the Group Life insurance business (France and international).

- Intangible assets
  Intangible assets consisting of post-tax software costs have been deducted from the ANAV.

Certainty Equivalent

The certainty equivalent value (CE) corresponds to the present value of future profits generated by policies in force at valuation date and is calculated using the following methods:

The result is defined as being:

- Credit:

    - *collected premiums,*
    - *financial products.*

- Debit:
    - *claims,*
    - *commissions,*
    - *costs: acquisition, administrative and other costs,*
    - *increase/release of technical provisions (including profit-sharing and general provisions),*
    - *and corporate taxes.*

- Non-economic best estimate assumptions arising from statistical studies carried out on Groupama's policy portfolios.

- Determination of the projected yield rates based on the following principles:
    - **for bonds in force at valuation date**: projection of real actuarial yields, after elimination of spreads rewarding default risk by assuming each bond will be held until maturity,
    - **for all other assets and new investments**: the reference risk-free curve rate used exceeds the swap rate at 21 December 2009 by a liquidity premium of 0.25%.

- All future cash flows discounted on the basis of the swap rate curve as at 21 December 2009, with the addition of a liquidity premium of 0.25%.

The result of this approach is that the unrealised gains of assets represented by the mathematical provisions are taken into account in the projected future yields.

The Certainty Equivalent includes the intrinsic value of financial options and guarantees, which is the cost generated by these options and financial guarantees in the estimated economic scenario.

Cost of options and financial guarantees

Most of French policies in euro include financial options and/or guarantees: the Minimum Guaranteed Rate (TMG) together with profit sharing (profit-sharing option), guaranteed surrender amount taking into account the dynamic behaviour of the policyholder (surrender option). These policies are characterised by an asymmetry of profits and losses share between shareholders and policyholders following changes in financial markets.

On the other hand, the majority of unit-linked policies sold by Groupama do not include any financial option or guarantee except for certain a guaranteed minimum death benefit (GMDB) for which, under French regulations, a specific reserve has already been booked. No specific treatment was therefore made for these guarantees, considering that the liability is already covered under this provision.
For the Greek and Hungarian subsidiaries, the cost of the financial options was included in the unit-linked assets with guarantees.

Prévoyance policies also do not include any material financial option (no asymmetry between shareholders and policyholders).

Insurance liabilities are not in principle traded in an organised market; the Portfolio Market Value can therefore only be theoretical. Groupama's approach assumes that the only source of risk that would influence the Portfolio Market Value is market risk, which is the risk linked to changes in the main macro-economic variables. Specifically, any impact of the following sources of risk has not been taken into account: credit risk, liquidity risk, or risk linked to adverse changes in Best Estimate assumptions used to calculate the outgo of the policies. The risk linked to these Best Estimate assumptions has been taken into account elsewhere in the cost of non-financial risks.

The main financial options and guarantees calculated are the following:
- *the rules of profit sharing* (contractual or regulatory), which, combined with guaranteed rates, create an asymmetry between policyholder return and the shareholder return,
- *dynamic surrenders* that may occur during unfavourable market conditions for the insurer.

Groupama's option calculations cover the profit-sharing option (arising from the asymmetric distribution of financial returns between the shareholder and the policyholder) and the surrender option of the following policies:
- *individual savings policies in euro,*
- *individual retirement pension policies in euro,*
- *traditional policies for which profit sharing and surrender have been considered significant,*
- *policies covered by Article 83 of the General Tax Code,*
- *policies covered by Article L.441 of the Insurance Code.*

Neutral risk approach

Since market risk is the only risk influencing the in-force value, we naturally use calculation techniques currently used in financial theory, and specifically the neutral-risk approach. According to this approach, the in-force value is equal to the current probable value of cash flows allocated to the shareholder during the entire projection period. These cash flows are projected in a neutral risk probability universe, which means that the projected returns do not include any risk premium and that the cashflows are discounted using an instantaneous risk-free rate for each economic scenario (equivalent to the one year rate).

Probable current values are calculated using Monte-Carlo simulations technique. Future cash flows are projected for 5,000 scenarios generated by the Barrie & Hibbert economic scenario generator; the expected value of an element is estimated by the arithmetic average of the values of this element observed on the 5,000 simulations.

The in-force value calculated in this way corresponds to a "Market Consistent" type of valuation, which is estimated using a financial model that allows a valuation of the assets of reference in keeping with the prices observed on the actual financial markets. However, adjustments were specifically performed on the reference rate curve as well as on the volatility assumptions. In the traditional Embedded Value, the discount rate is estimated as the sum of the risk-free rate and a risk premium representing the totality of risk factors potentially influencing the profitability of the company. CFO Forum guidelines require this risk premium adjustment depending on the level of exposure to risk and especially assure a consistency between the discounted rate and the other economic assumptions.

The time value of financial options and guarantees is calculated as the difference between the following amounts:
- *the stochastic value of the future margins within the contracts ("Portfolio Market Value"), and*
- *the Certainty Equivalent or risk-free portfolio value (CE).*

The Portfolio Value is equal to the sum, throughout the whole projection, of the present value of the following items:
- *dividends paid to the shareholder net of corporate taxes,*
- *the shareholder's portion of the capitalisation reserve before tax (measured at the end of the projection horizon) and consistent with the adjustment to the ANAV,*
- *the shareholder's portion of the residual provision for contingent payment risk after tax (measured at the end of the projection horizon),*

- *the shareholder's portion in the unrealised capital gains or losses after tax (measured at the end of the projection horizon).*

Cost of Capital (CoC) and cost of non-financial risks (CNFR)

Groupama has locked-in a capital representing 100% of the minimum solvency margin required by European regulations currently in force (Solvency I). This capital requirement generates a friction cost for the shareholders in that locking in the capital will cause the company to incur financial management costs and above all taxes (corporate taxes on financial revenues generated).

Under operational risks, an additional risk premium of 25 bp has been included in the cost of holding the solvency margin.

Furthermore, the contracts having technical risks are exposed to risk factors that are not taken into account elsewhere. These consist notably in adverse changes in claims assumptions (mortality, morbidity, longevity, etc.). An additional risk premium of 50bp has therefore been added to all these policies.

The cumulative value of these two risk premiums (25bp for operational risks and 50 bp for technical risks) represents the additional risk premium included in the cost of capital and used to calculate the cost of non-financial risks.

For the subsidiaries in Greece, Turkey and Romania, risk premiums of 50bp for operational risks and 100bp for technical risks have been retained.

New Business Value

The value of a year of New Business aims at assessing the contribution of a year of business to the result of the company.

With the exception of future returns, the methodology and assumptions used are the same as those used to calculate the in-force value.

It should be noted that the New Business Value has been calculated using assets made of new investments (the so-called "stand alone" approach), that is without use:
- *of initial unrealised capital gains or losses (whatever their nature),*
- *of the profit-sharing fund at the time of the calculation date.*

The profit-sharing strategy was adapted to this financial environment (no initial underlying wealth). The underlying assumption is that Groupama's competitive environment would experience the same constraint of lack of initial underlying wealth.

The projections used to estimate the value of a year of New Business correspond to the business profile underwritten during 2009 with premium volumes achieved for 2009 new business.

Regarding the allocation of payments between new business and in-force, the following rules have been applied:
- for *savings policies in euro and unit-linked policies*, only regular premiums were included in the in-force business (all future payments on existing policies are considered as new business).
- for *Prévoyance policies* (covering individual Prévoyance contracts, health and traditional policies), loan-insurance policies, regular premiums were included in the value of the in-

force business. Thus only the new policies (or policyholders in case of loan-insurance) are considered as new business.

- for *group retirement policies Article 83, and policies of the L.441* type, regular premiums have been included in the value of the in-force business (i.e., only new group contracts are considered as new business).
- for *group retirement policies standard Article 39*, no future premium has been projected for the in-force business (i.e., all future payments on existing policies are considered as new business).

Analysis of movements

Following the guidelines of the CFO Forum, Groupama has created a reporting to analyse and explain the change in European Embedded Value between 2008 and 2009.

The main items of this reporting are described below:

- **Coverage and methodological changes**
  This item includes all the initial adjustments corresponding to changes in model and methodology.

- **Operational activity result**
  The item "Operational activity result" measures the following effects between the initial adjusted value and the final value before closing adjustment:

  - *new business part,*

  - *expected contribution (effect of a one-year delay on the EEV of the previous year).* This item measures the mechanical effect of the passage of time on the EEV, which corresponds to the unwinding of the discount rate. This discount rate used to calculate this effect is the implicit discount rate calculated on the basis of the 2008 EEV.

  - differences in non-economic experience. These are the differences observed during the reporting period with respect to the differences between the assumptions used to calculate the 2008 EEV concerning non-economic factors (such as costs, morality, morbidity, falls, etc.) and actual observations of these factors over the same period,

  - *changes in non-economic assumptions*. This effect measures the impact of the portfolio value with respect to the changes in the prospective assumptions concerning all the non-economic factors.

- **Result linked to the change in the economic environment**
  The item "Economic environment result" measures the impact on the EEV of:
  - *on one hand, the change of experience between projected financial returns and tax rates, respectively, for the past year and the actual ones,*
  - *on the other hand, the variations of the projected assumptions in the evolution of the economic risk factors (projected future returns, economic stochastic scenarios).*

- **Closing adjustments**
  These items indicate the effects of capital movements (dividends, recapitalisation, etc.), the impact of the fluctuation of the foreign exchange rates and the EEV of valuated entities included in the scope of calculation at the end of 2009.

Assumptions

- **Reference rate curve and calibration of the interest rate model**
  The reference risk-free rate curve is the swap rate curve as at 21 December 2009 increased by a liquidity premium of 0.25%:

Maturities	Swap rates curve shifted by 25bp EEV 2009
1	1.43%
2	1.90%
3	2.30%
4	2.61%
5	2.88%
6	3.11%
7	3.32%
8	3.49%
9	3.63%
10	3.76%
15	4.19%
20	4.29%
25	4.20%
30	4.04%

  The reference risk-free rate curve was used to calibrate the nominal rate model. Inflation was calibrated based on inflation swaps as at 21 December 2009.

  The volatility parameters were estimated using the implied observable volatility based on the price of swaptions as at 21 December 2009. The swaptions used for the calibration are comprised of options expiring from 1 to 30 years and based on swaps of 5, 10 and 20 years.

  The volatility rate assumptions considered for calibrating the economic scenarios are the following:

		Swap length		
		5	10	20
Maturity	1	27%	23%	22%
	10	14%	14%	16%
	30	18%	19%	18%

- **Assumption of discount rate and rate of return**

  Guidelines of the CFO Forum suggest companies should retain coherent economic assumptions to value future returns and the time value of financial options and guarantees. Groupama has applied this guideline in the following manner:

  - *for calculating the Certainty Equivalent*, no risk premium with respect to the swap rate curve as at 21 December 2009 increased by the liquidity premium of 0.25% has been applied to the financial returns of the futures market,

- *for calculating the time value of financial options and guarantees*, the swap rate curve as at 21 December 2009 increased by the liquidity premium of 0.25% was used to calibrate the economic model.

The stochastic simulations used the 5,000 scenarios provided by the Barrie & Hibbert economic scenarios generator.

The economic scenarios generator used to produce these simulations allows production over 40 years of:

- the stock index and dividend rate evolution: the return of this index is described using a log-normal model with a determinist volatility structure,
- the consumer price index,
- the risk-free swap rate curve for integer maturities from 1 to 30 years: this curve is described using the Black-Karasinski model with two factors,
- the change in the real estate index and in the associated rental rate: the return on this index is described using a constant volatility log-normal model.

- **Calibration of the securities model**

The volatility parameters for the securities model were calibrated as at 21 December 2009 based on the following volatility structure:

Maturities	Securities volatility EEV 2009
1	25%
2	27%
5	28%
30	29%

- **Calibration of the real estate model**

In the absence of liquidity in real-estate derivatives products, the volatility parameters used to calibrate the real estate model were based on the historical volatility of the IPD of a set of European countries. Real estate volatility is considered constant at 15%.

- **Profit-sharing and financial margin policies**

Profit-sharing policies are in accordance with the objectives and practices of each of the entities. Thus, the distributed financial returns correspond to share of financial profits historically distributed to the policyholders without this amount being less than the technical interest or the contractual or regulatory required amounts.

In order to calculate the options value within the model, a profit-sharing sales target is defined for each product. This profit-sharing target reflects the rate expected by the policyholders in various market environments. When the target is not reached, this triggers additional surrenders. This additional component takes into account policyholders' ability to surrender their policies if the payments received do not seem satisfactory.

- **Asset allocation**

  The initial allocation corresponds to the allocation as at 31 December 2009 of each of the calculated asset portfolios.

  The allocation of equities was modified to take into account the market conditions as at 31 December 2009 and the correlation between the investment policy in high-risk assets and the level of unrealised gains. This allocation decreases in function of the duration of the liabilities.

  The initial market value allocation of the portfolios is 80%/17%/4% in France and 94%/5%/1% abroad for bonds/equity/property respectively.

- **Costs**

  Following CFO Forum guidelines, no productivity gain has been taken into account in the portfolio values.

- **Holding costs**

  A proportion of these costs are attributed to the Group Life Insurance business (France and international). Allocation rules are based on the gross margin generated by the various businesses.

- **Tax treatment**

  For total projections of in-force and new business profits, Groupama applied a tax rate of 34.43% for France and local rates for Italy of 32.31%, Turkey of 20%, Portugal of 26.5%, Spain of 30%, Greece of 25%, England of 28%, Hungary of 19% and Romania of 16%.

  Adjustments were made in order to take into account the specific tax rates not taken into account elsewhere in EEV calculations. These adjustments are of two orders:

  - *Taking into account the tax system allowing for strategic interests:* a significant part of the R.332-20 net unrealised gains or losses arises from a specific tax treatment for strategic participations. This system allows a reduction of the tax rate used in projections to 0% on unrealised losses and 1.72% on unrealised gains.

  - *Report on corporate tax deficits*: Groupama Gan Vie's corporate tax deficits were recognised.

  - *Other tax adjustments*: since certain non-deductible provisions (stability funds, overall management provisions, revaluation funds) and other unrealised gains or losses have already been taxed, they were included in EEV and taxed at the rate of 34.43%. In order to avoid counting taxes twice, an adjustment was made.

5. MILLIMAN OPINION

" Milliman, an independent actuarial firm, has reviewed the European Embedded Value of Groupama as of December 31, 2009. In this context we have reviewed the methodology, the assumptions used and the calculations done internally by the Company according to the directives and under the responsibility of the management. Our review has covered the European Embedded Value (EEV) as of December 31, 2009, the 2009 New Business Value (NBV), the analysis of movements and the calculation of sensitivities.

Milliman has concluded that the methodology and the assumptions used comply with the CFO forum EEV Principles and that the calculations have been produced in accordance with the methodology and the assumptions.

The calculation makes allowance for the financial risks through a market consistent approach. The reference rate used was based on the swap rate curve with the inclusion of a liquidity premium of 25bp. This liquidity premium was applied to all subsidiaries except Hungary, Romania, Turkey and Greece for which the reference rate was based on the local government bonds.

The implied volatility applied for the equity and interest rate markets were calibrated based on market data as at 21 December 2009.

In addition, the calculations performed for the Romanian and Turkish subsidiaries (Groupama Asigurari and Groupama Emeklilik) and for a portfolio of the subsidiary in Hungaria (Groupama Garancia) have been carried out according to a Traditional Embedded Value approach which allows for the risks through the use of a risk premium.

In arriving at these conclusions, we have relied on data and information provided by Groupama without undertaking an exhaustive review of them. We have performed limited high-level checks and reconciliations as well as more detailed analyses on some specific portfolios. We have confirmed that any issues discovered do not have a material impact at the group level

The calculations of Embedded Value necessarily make numerous assumptions with respect to economic conditions, operating conditions, policyholder behaviours, taxes and other matters, many of which are beyond the control of Groupama's management. The valuations depend on actual results matching assumptions applied; actual future experience may vary from that assumed in the calculation of the Embedded Value results. Such deviation may materially impact the value calculated.

This opinion is made solely to Groupama in accordance with the engagement letter between Groupama and Milliman. Milliman does not accept or assume any responsibility, duty of care or liability to anyone else than Groupama for or in connection with its review, the opinion Milliman has formed or for any statements sets forth in this opinion".