
Capital Management Strategies for a Life Company
Solvency Ratio projection and anti-cyclical mechanisms

Rome, 6th of June 2013

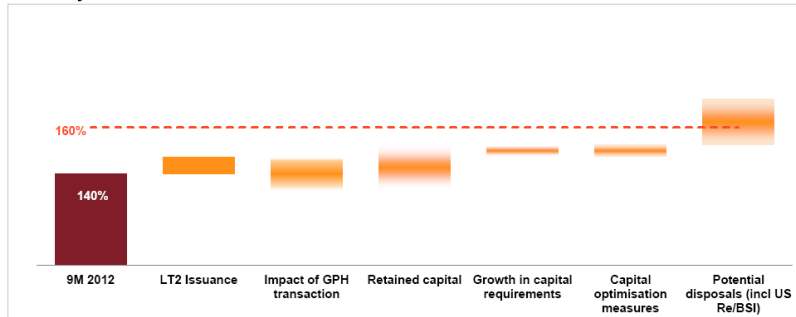
Is the evaluation of effective Solvency Ratio sufficient for managing the business?



1 Strengthen capital: the journey to reach our S1 capital target

25

Solvency 1 ratio: indicative walk to 2015



- The chart does not anticipate mark to market impacts post Q3, which if they remain, will be positive
- We have significant flexibility around disposals (chart = indicative only)
- Working assumption of 40% pay out ratio

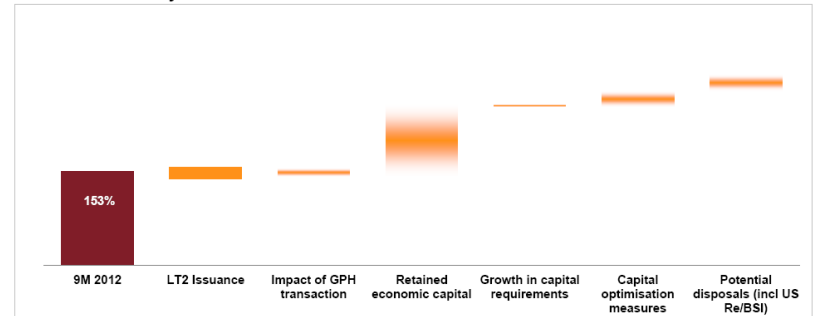
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1 Strengthen capital: economic solvency development

26

Economic solvency: indicative walk to 2015



- The chart does not anticipate mark to market impacts post Q3, which if they remain, will be positive
- More significant impact of retained capital due to VIF accretion
- More than 2x covered (against 99.5% VaR requirement) on these assumptions by 2015



2 Enhance profitability

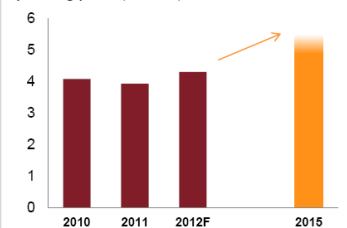
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Operating RoE target > 13% over the cycle

Profitability ambitions

- We will manage the business to achieve operating RoE ⁽¹⁾ of at least 13% over the cycle
- Translates into operating profit of more than Euro 5 bn

Operating profit (Euro bn)



Key Levers

- **Emphasis on P&C**
 - ✓ Strong and resilient earnings
 - ✓ Further focus on technical excellence
 - ✓ Shift of group business mix to P&C
- **Strict profit focus in Life**
 - ✓ We will give up premium volume for profitability if necessary
 - ✓ Ex-ante product approval and post-approval monitoring
- **Cost control**
 - ✓ Exercise constant vigilance on costs
 - ✓ Euro 600 m of savings identified by 2015



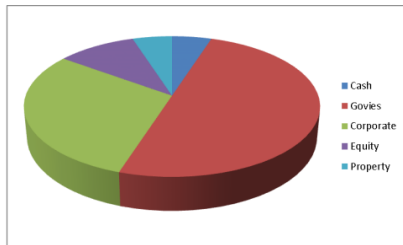
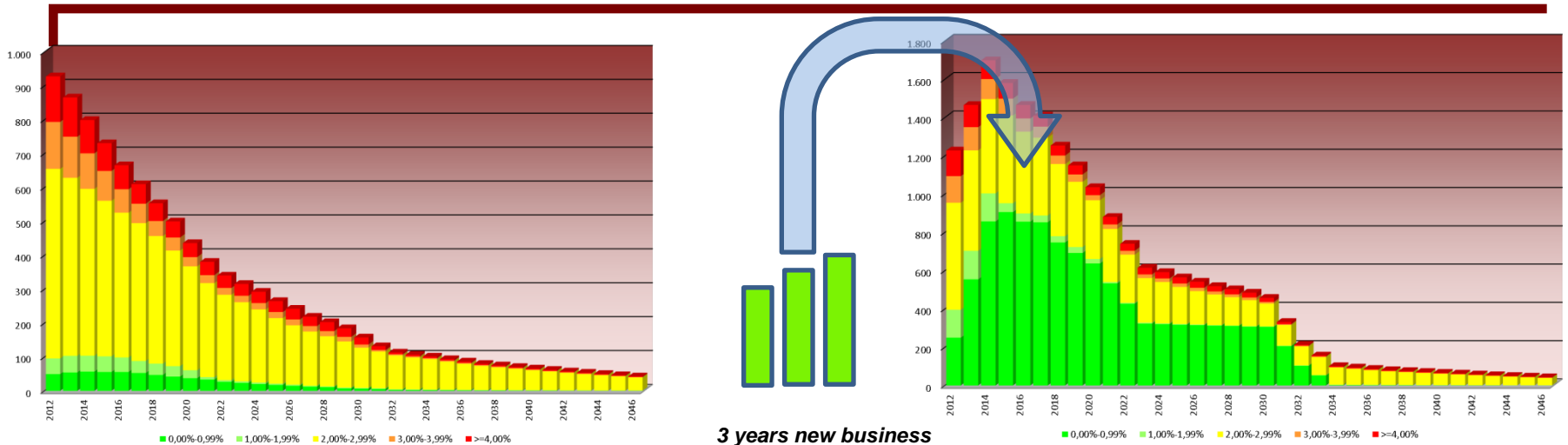
Enhance profitability in a fully Risk Adjusted framework
RoRAC as a Key indicator

(1) Operating profit after interest expense, tax and minorities / average shareholders equity excl. AFS reserves. Over the cycle target.

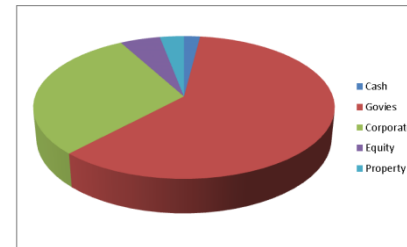
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Key drivers for projected Solvency position in different Solvency frameworks



De-risking procedure










Drivers	S1 – AC	S1- RC	S2-AC	S2 - RC
Guarantee profile	+	+	+	+
Liability duration	-	-	+	+
Mortality profile	+	-	+	+
Policyholder behaviour	+	-	+	+
Reserve amount	+	+	+	+
Asset Allocation	+	-	+	+

Solvency 1 – Capital optimization

Under Solvency I perspective:

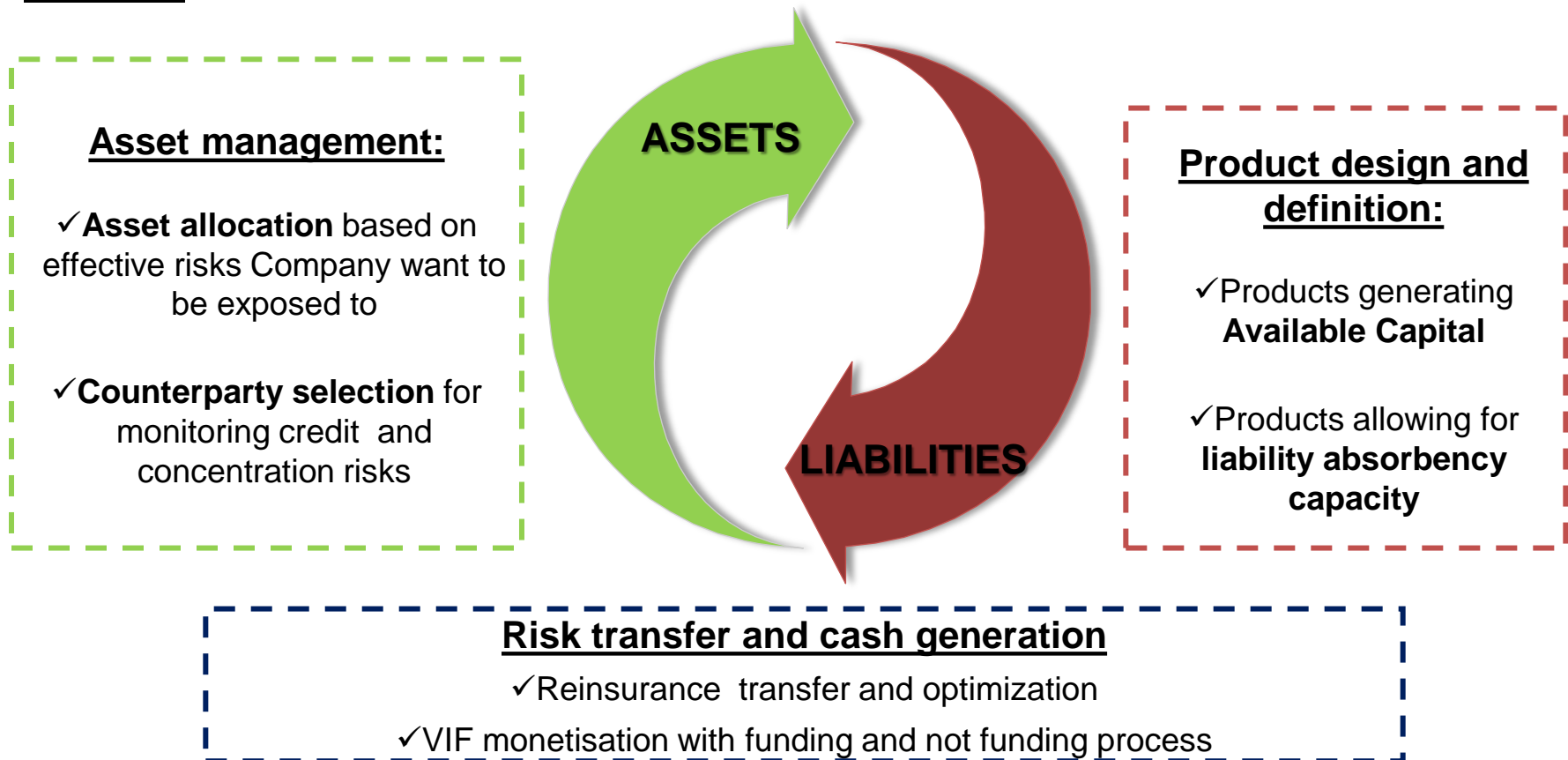
→ **capital management and consequently optimization** can be performed separately on assets and liabilities, without considering any potential interaction between them as Solvency I is a static measure based on static figures

→ **capital optimization** is mainly driven by the potential following actions:

Action	Capital Release	Capital generation
Reinsurance		
Debt issuance		
Capital injection (by SH)		
VIF Monetization		
CAT Bond		

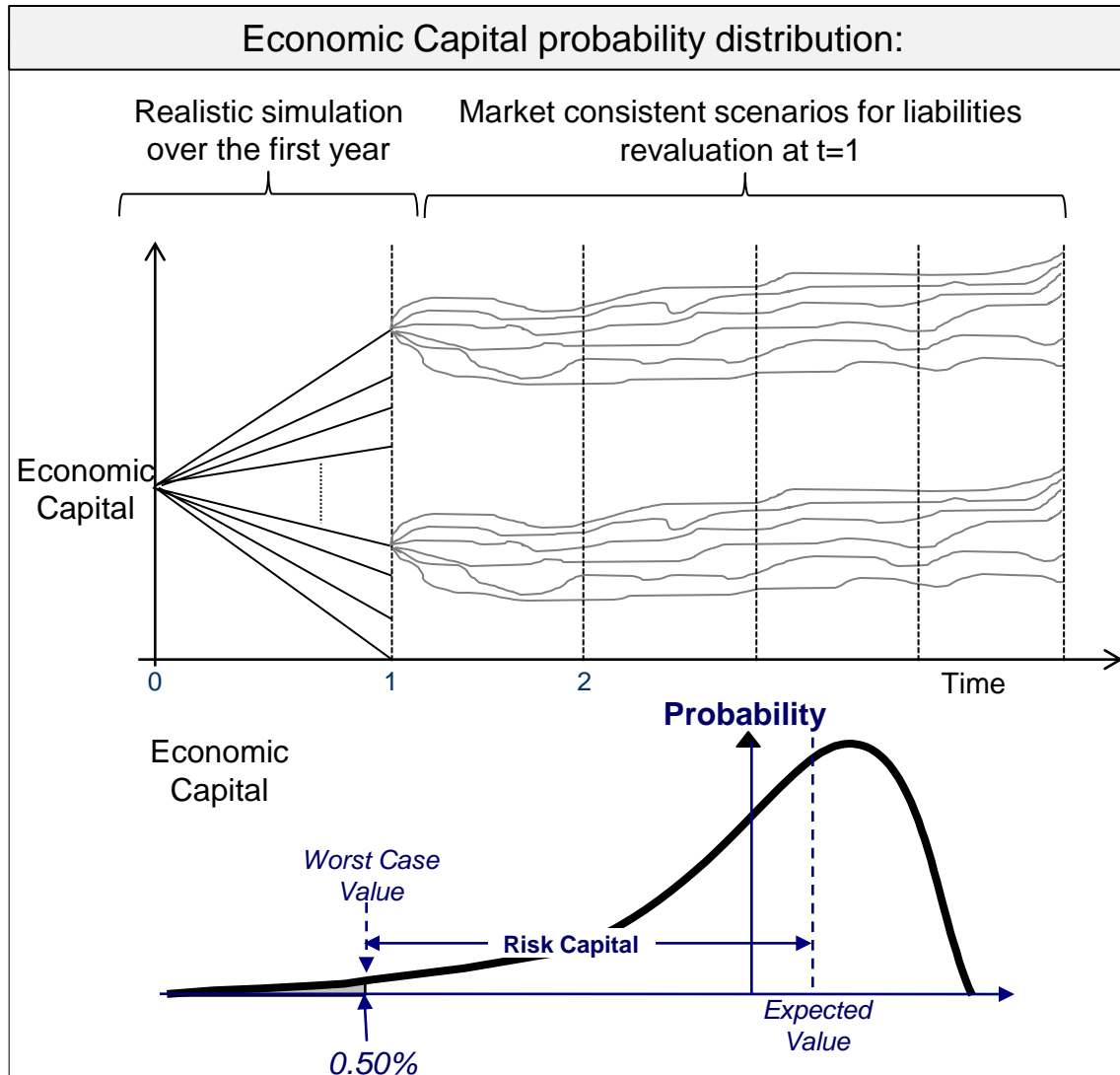
Solvency 2 – Capital optimization

Under Solvency 2 perspective (*but not only*), **Capital management and consequently optimization** can be performed on assets and liabilities, considering both the **impact on Risk Capital and Available Capital** and the **dynamic interaction between assets and liabilities**.



Economic Capital Calculation:

Where were we?: the theoretical framework

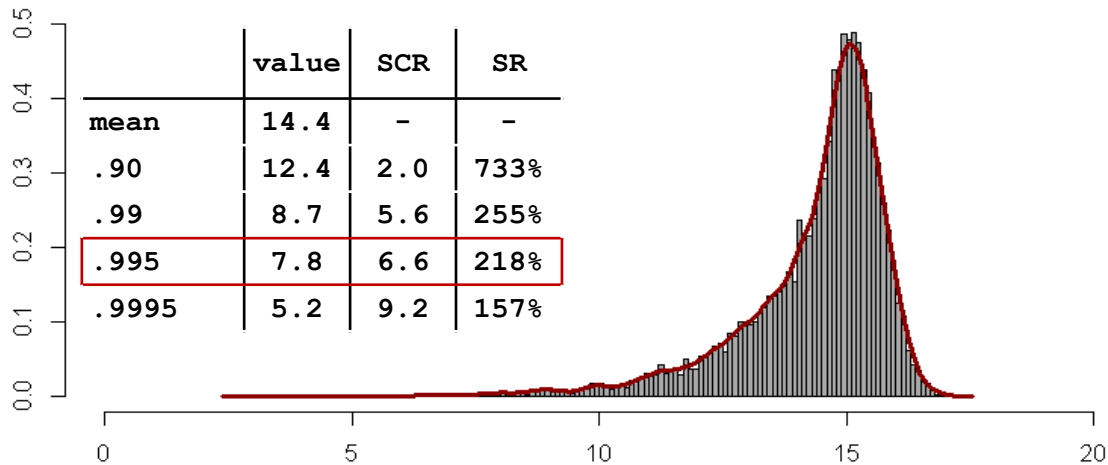


- The Capital management may collide with the technical challenges of “measuring the capital”.
- The methodology for developing the economic capital calculation and its projection is largely driven by the wide adoption of the 1-year VAR metric for the calculation of the Capital Requirement
- 1-year VAR calculation is based on the variability of the 1-year market consistent balance-sheet
- It requires the definition of a set of realistic 1-year risk factor outcomes.
- In each of these «realistic» scenario the MC Balance sheet is estimated using 1.000 risk-neutral scenarios
- Implementation challenges led to models based on «instantaneous» stresses of the risk factor

Economic Capital Calculation:

Year 1: a stochastic simulation approach

Economic Capital: 1% «cliquet» guarantee - 80/20 profit sharing



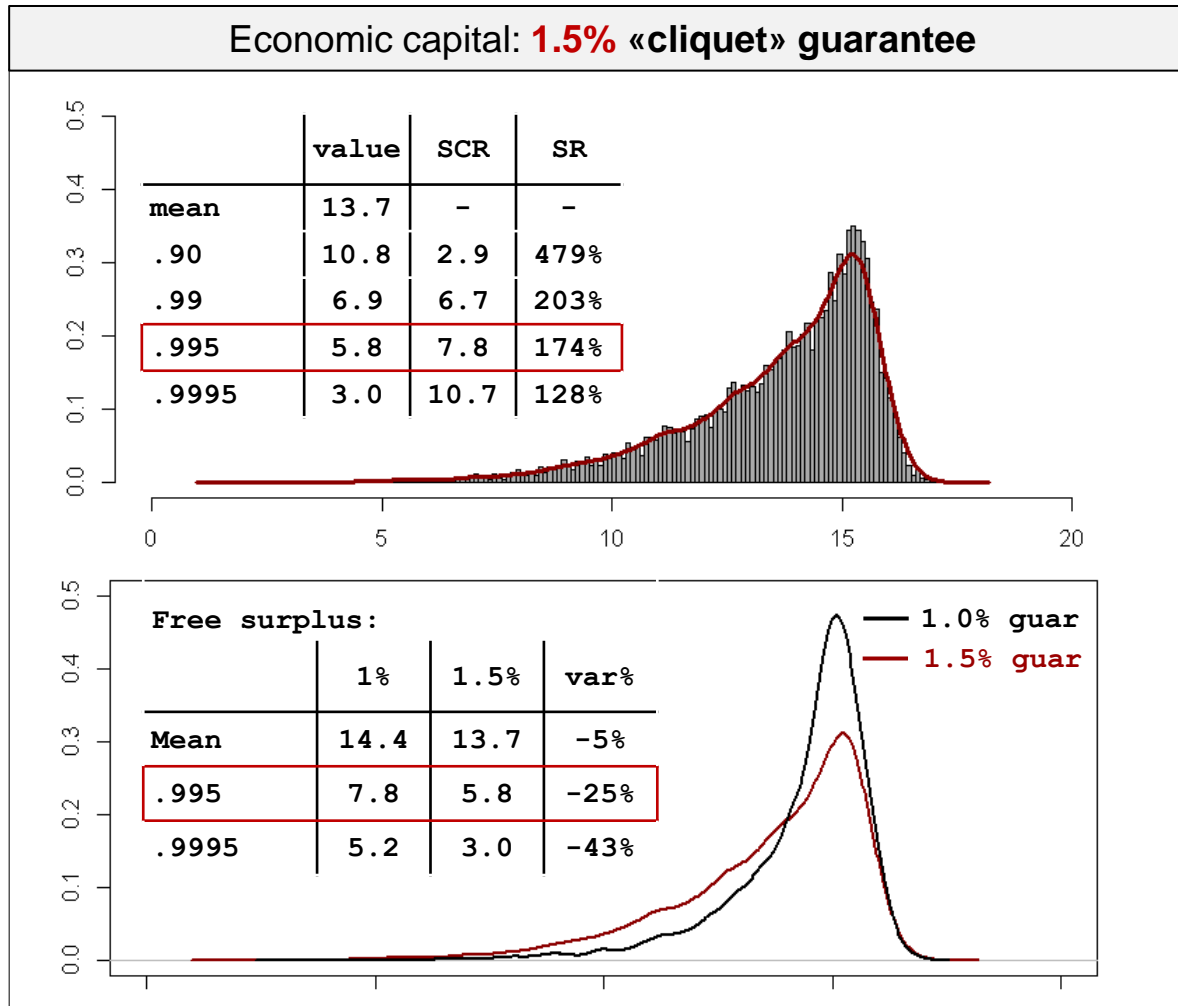
Portfolio features:

- average residual duration of the contracts: 10 years
- minimum guarantee: 1% - yearly consolidated (“cliquet”)
- profit sharing: 80/20 participation, where the fund return exceeds the guarantee

- Definition of a 10.000 1-year “real world” determination of the sources of risk underlying the business.
- Each scenario then gives rise to a set of 1.000 financial market consistent scenarios in which the fund value is calculated.
- This type of calculation provides with the full distribution of the fund value, allowing the VAR calculation for any desired confidence level, in line with the risk-appetite of the shareholder

Economic Capital Calculation:

Year 1: a stochastic simulation approach – PDF and guarantee levels

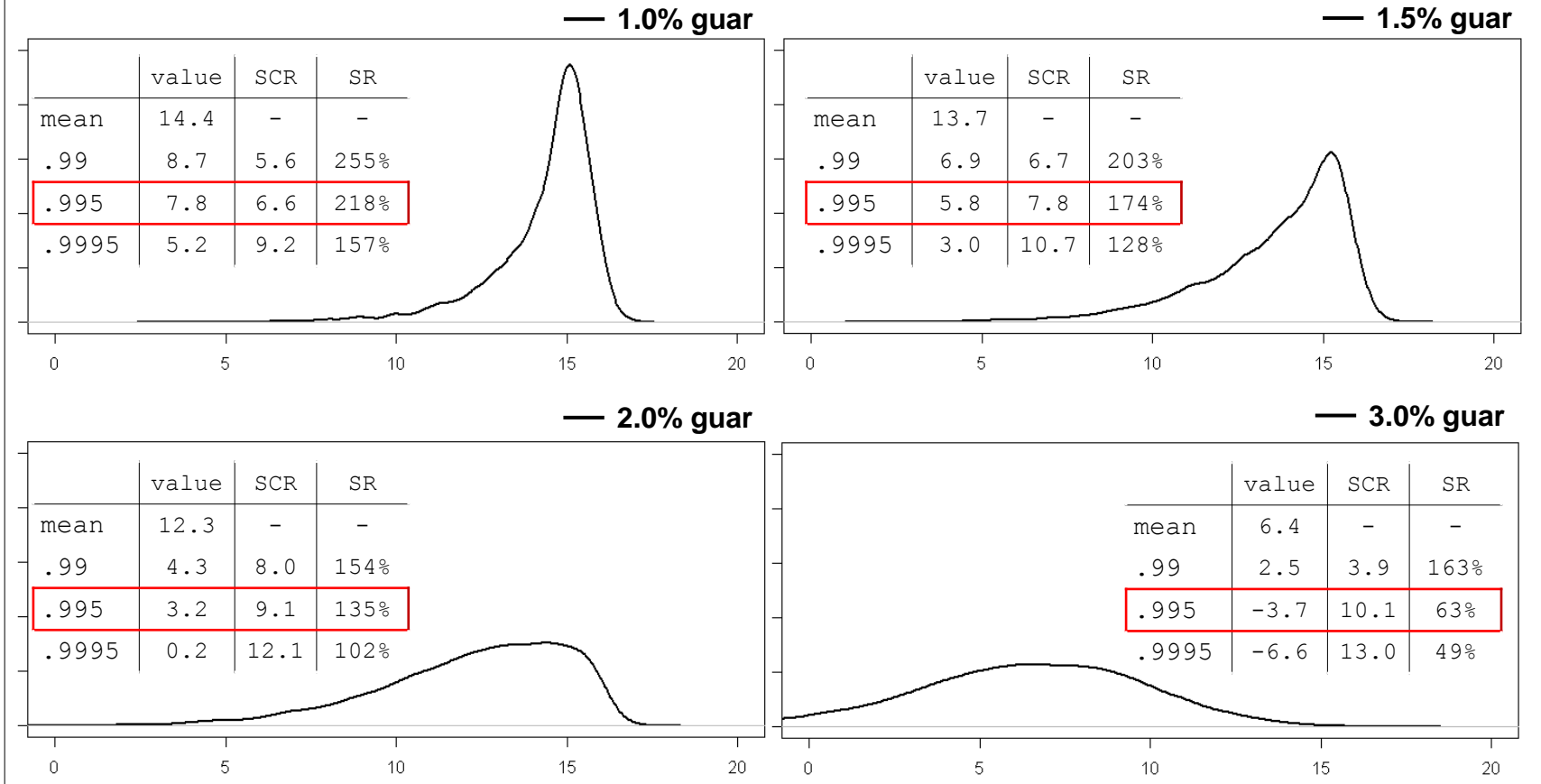


- The calculation is repeated increasing the guarantee level by 50bps.
- The cost of the increased guarantee level is a reduction of 44% of the Solvency Ratio
- The Free Surplus moves from 7.8 to 5.8mln, a reduction of 25%.
- The cost increases with lower percentiles. The Free Surplus at the 99.95% level decreases from 5.2 to 3.0 (-43%)

Economic Capital Calculation:

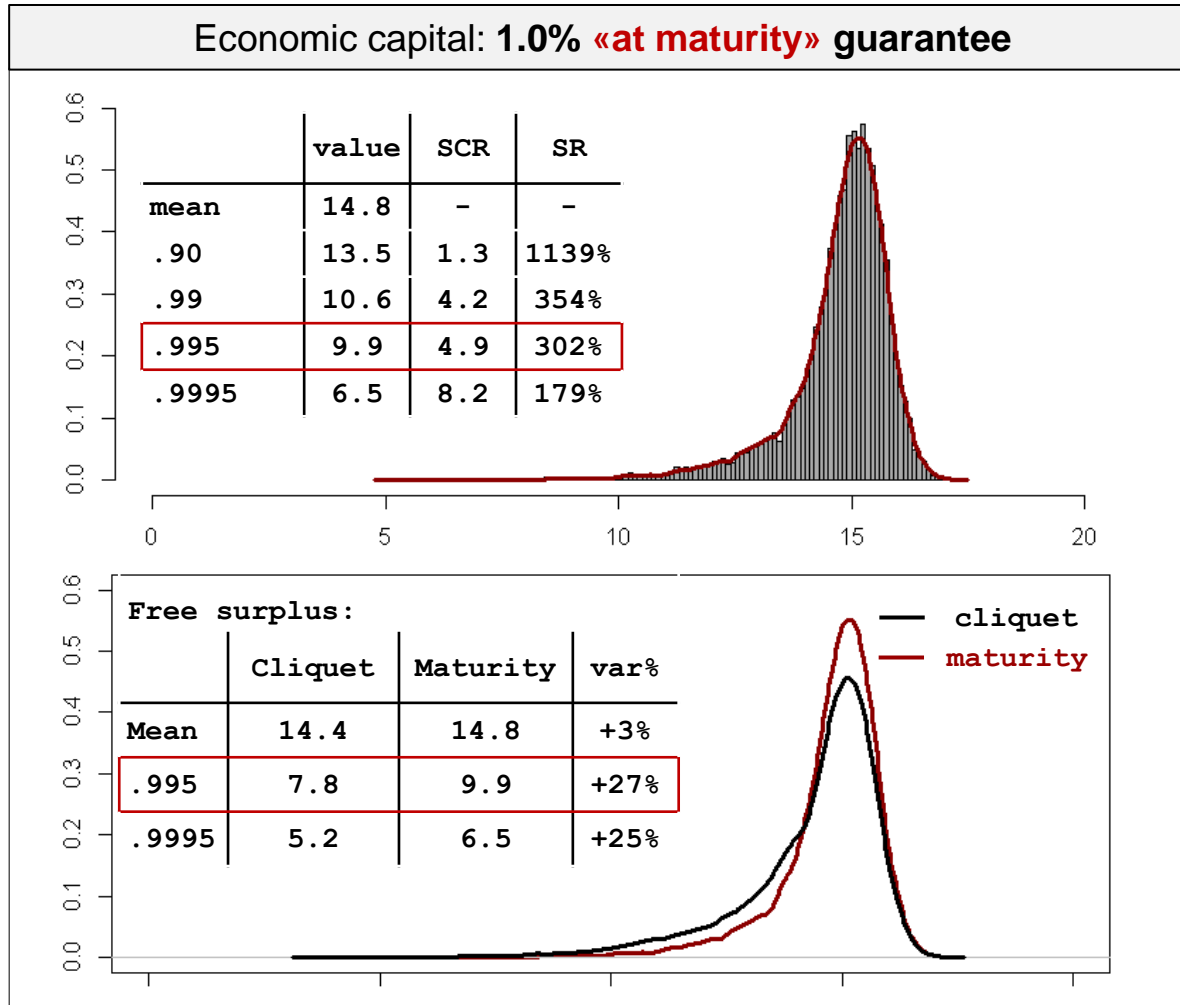
Year 1: a stochastic simulation approach – PDF and guarantee levels

Economic Capital PDF by guarantee level



Economic Capital Calculation:

Year 1: Economic Capital and financial guarantee mechanism

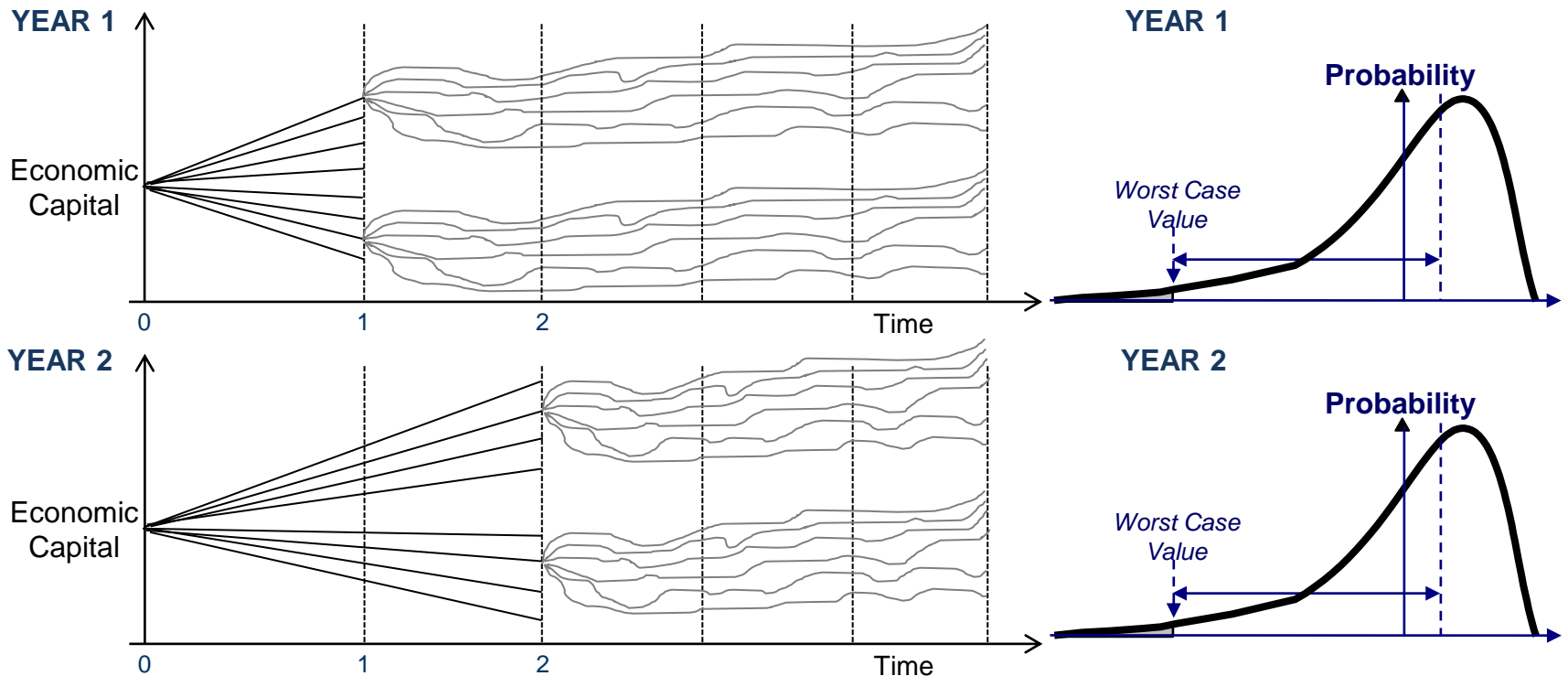


- The focus now is on the guarantee type, moving from a “cliquet” mechanism to a “at maturity” guarantee
- This type of guarantee is “less” onerous, increasing the Fund Value and reducing its volatility
- At the 99.5% confidence level the Solvency Ratio goes up to 302% (218% for the Cliquet type)
- The comparison with the “cliquet” type of guarantee shows an increase in the Free Surplus of 27%

Economic Capital Projection:

From one year to multiple years : the theoretical framework

Economic Capital probability distribution projection:

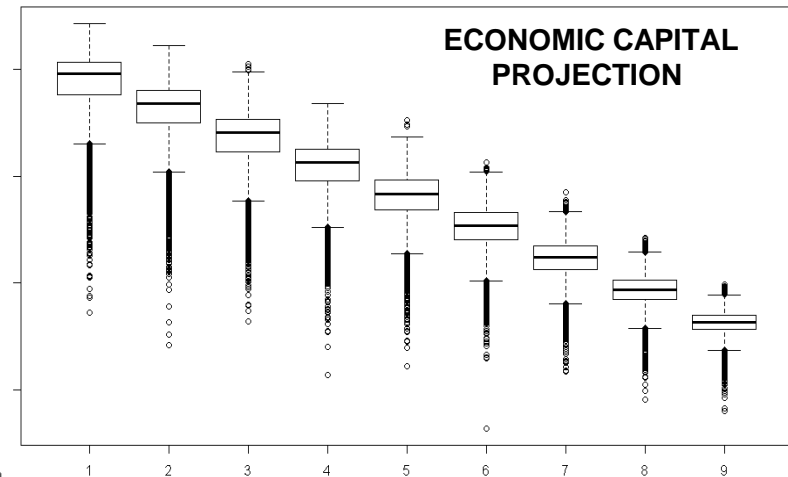
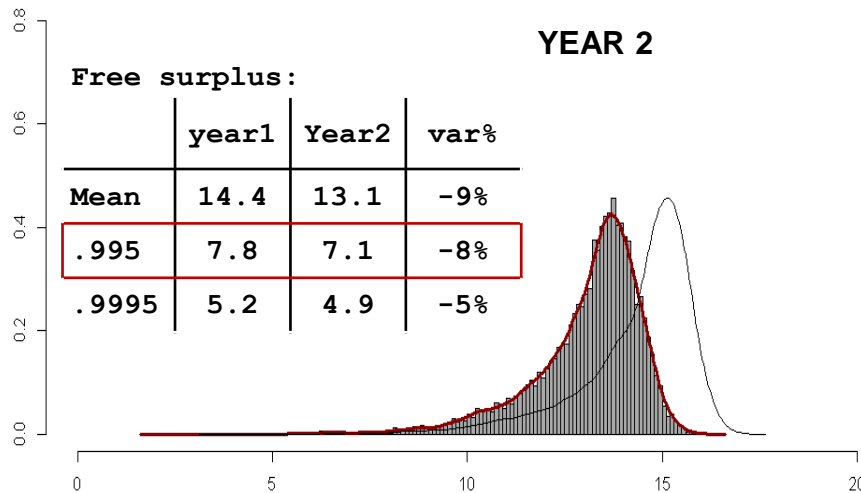


- The calculation approach for the “1-year calculation” can be generalised to multiple years, repeating it in each projection time of interest:
 - Extending the “realistic” simulation (path dependant) till the period of interest
 - In each realistic scenario, starting from the projection year, the MC Balance sheet is estimated using 1.000 risk-neautral scenarios
- While the procedure is «conceptually straighforward», there are big implementation challenges in practice: ranging from big computational demand to actuarial models limitations,

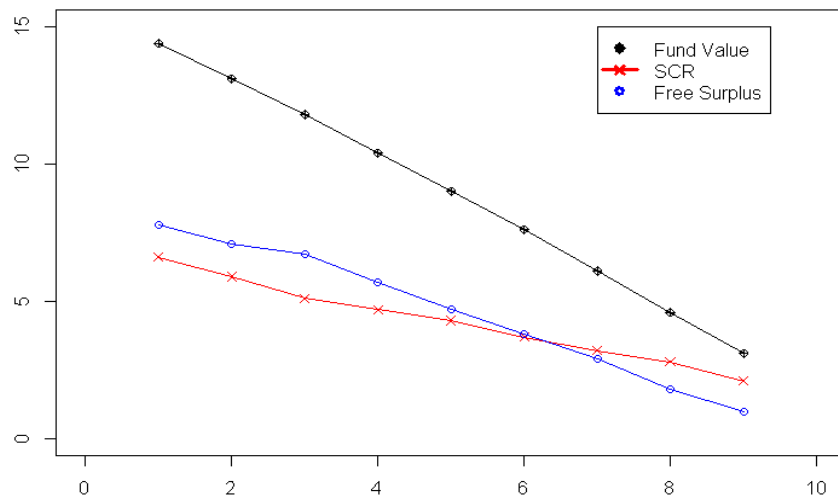
Economic Capital Projection:

Forward projection of economic capital requirements

Probability Distribution Function by year of projection: «**CLIQUET GUARANTEE**»



- The fund value fall over the life of the policy, steadily decreasing as the maturity approaches.
- The decrease of the Fund Value is also characterized by a decrease in the volatility, therefore reducing the “tails” of the distribution and the capital requirement.
- Also the free surplus steadily decreases moving towards zero with the maturity of the contracts

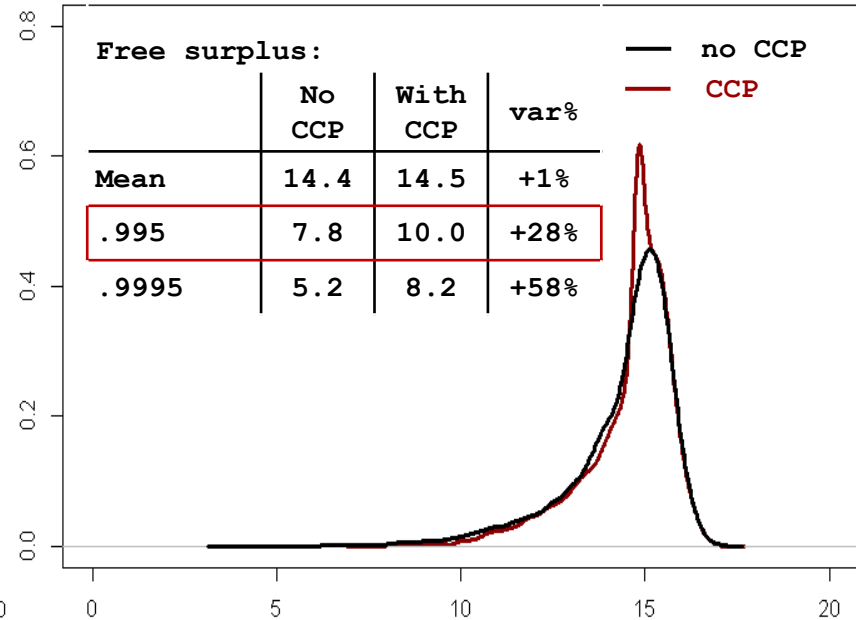
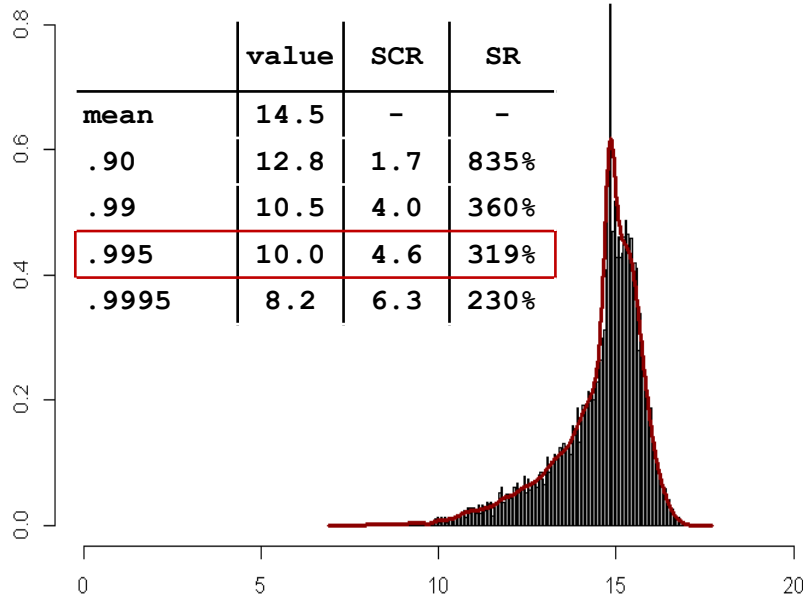


Economic Capital Projection and counter cyclical measures (LTGA):

How does the counter cyclical measure affect the Economic Capital?

CCP EFFECT: 1.0% «cliquet» guarantee – 80/20

WITH CCP

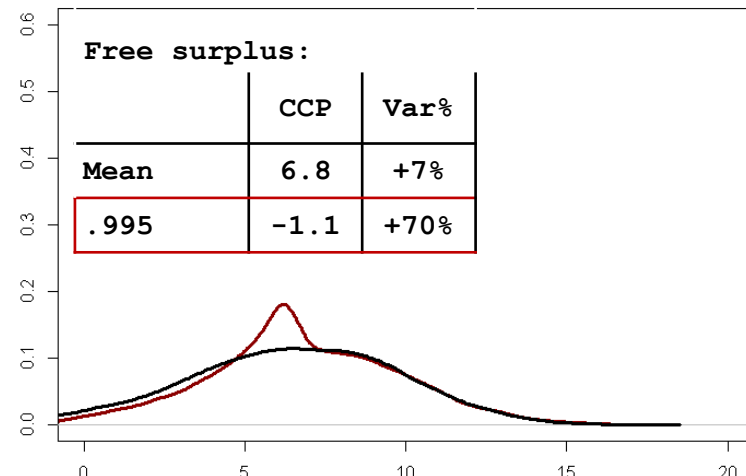
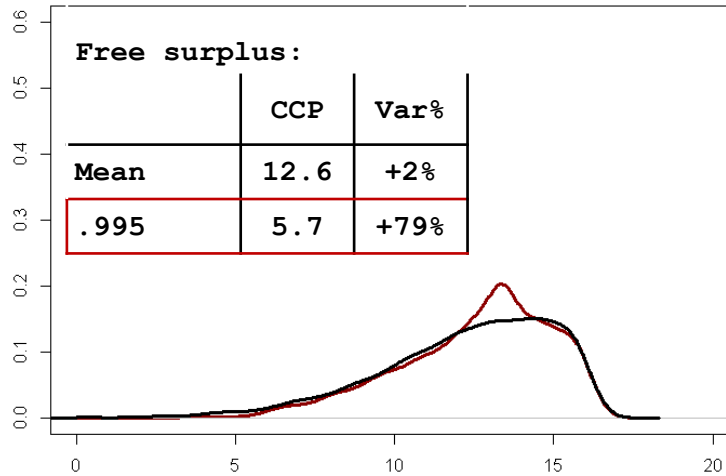
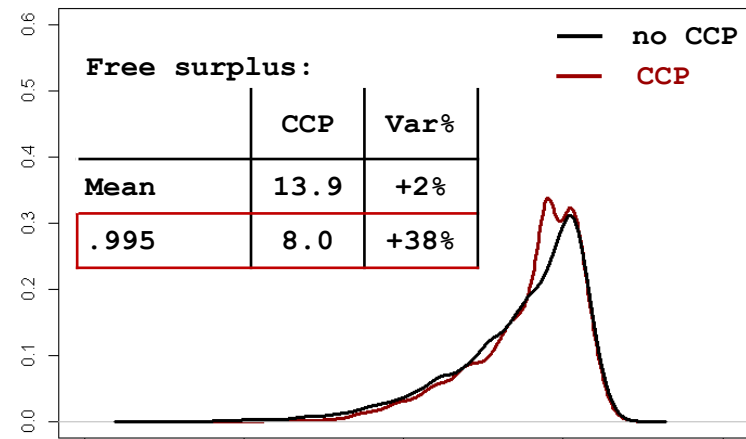
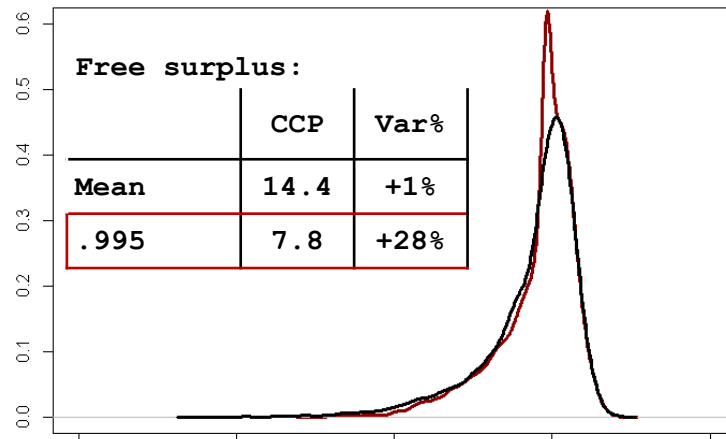


- The inclusion of a “counter-cyclical” mechanism with a trigger linked to the “stressed market conditions”, increases the fund value, also reducing its volatility.
- The free surplus increases from 7.8 mln (without any counter cyclical mechanism) to 10mln (+28%).

Economic Capital Projection and LTGA:

How does the counter cyclical measure affect the Economic Capital?

CCP effect on PDF by guarantee levels

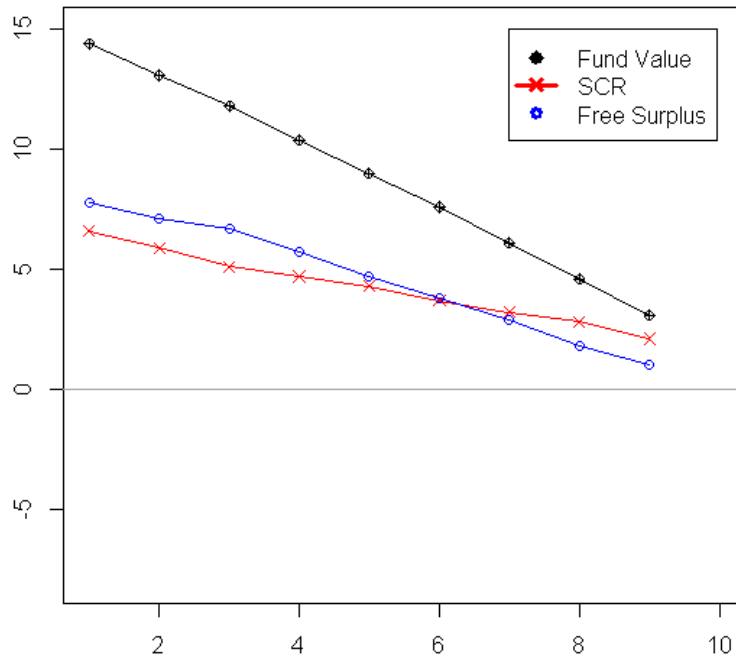


Economic Capital Projection and LTGA:

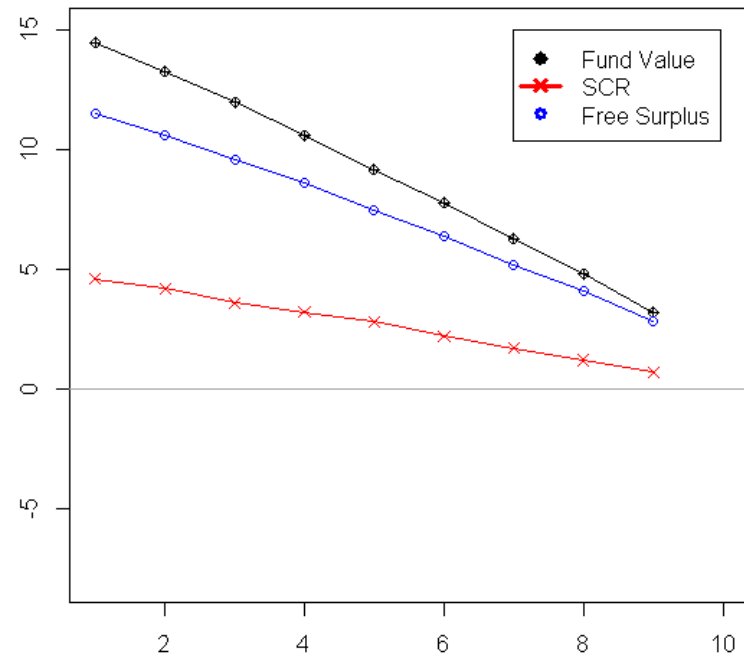
How does the counter cyclical measure affect the Economic Capital?

CCP effect on Economic Capital Projection: «cliquet» guarantee

PROJECTION WITHOUT CCP



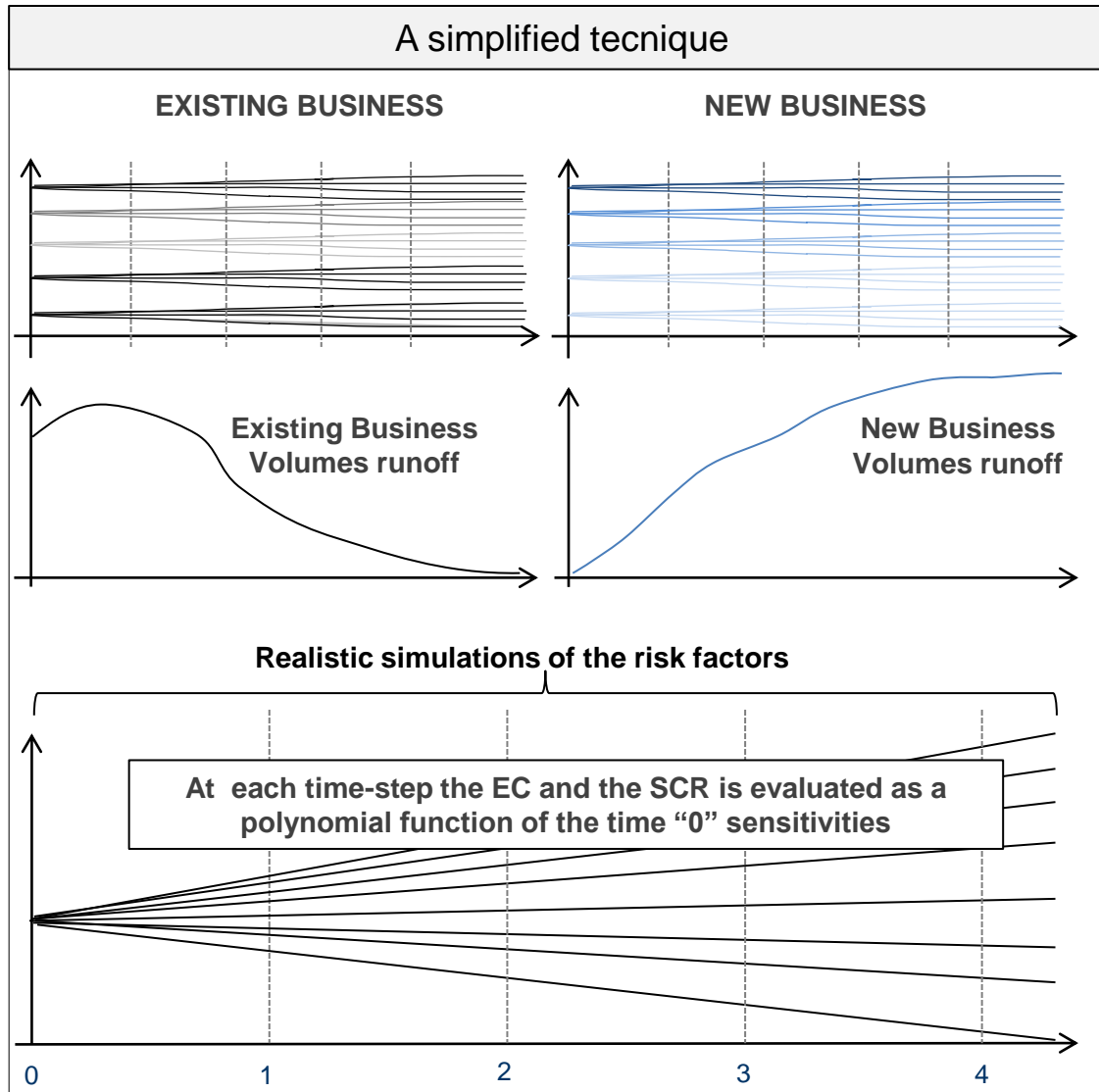
PROJECTION WITH CCP



- The inclusion of a “countercyclical” mechanism reduces the volatility over the lifetime of the contracts
- The reduced volatility decreases the SCR, producing an higher surplus

Solvency Ratio Projection: a simplified approach (1/2)

From theory to practice:



EC projection works in principle, however there are several complications:

- great computational demand;
- difficulties in the definition of the "realistic" scenarios

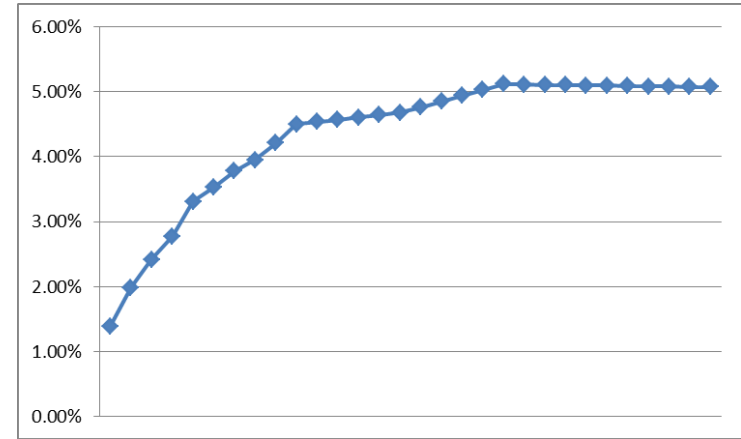
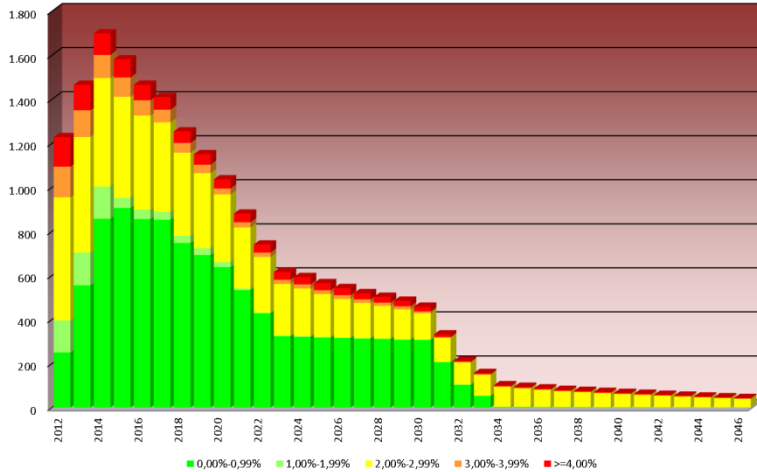
Solutions may vary by type of business, but also by the scope of analysis:

- Generating only a sub-sample of multi year macro stress scenarios (scenarios of particular interests)
- LSMC/Curve Fitting techniques

The simplified technique is based on a set of "time 0" stresses of the main risk factors:

- the risk factors and the levels of the stresses could be "tailored made" at the portfolio level
- the stresses are applied to the existing portfolio but also to the "budget" new business
- The expected run-offs volumes and the time "0" impacts are then combined together, to derive the Economic Capital in each of the projected trajectory.

Solvency Ratio Projection: a simplified approach (2/2)



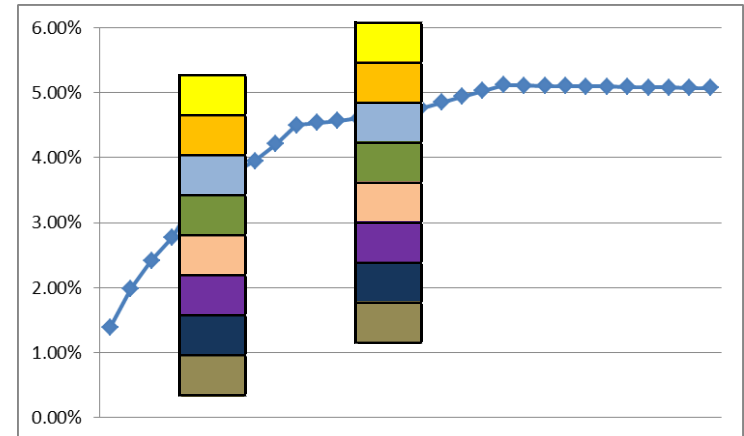
Liability Portfolio in a single REAL WORD projection

A single REAL WORD projection



**MULTI-DIMENSIONAL
DELTA-SENSITIVITIES
FOR EACH DRIVER AND SEGMENT
(e.g. Fund Value variances in
respect of change of asset
allocation
and interest rate for
Delta-variances)**

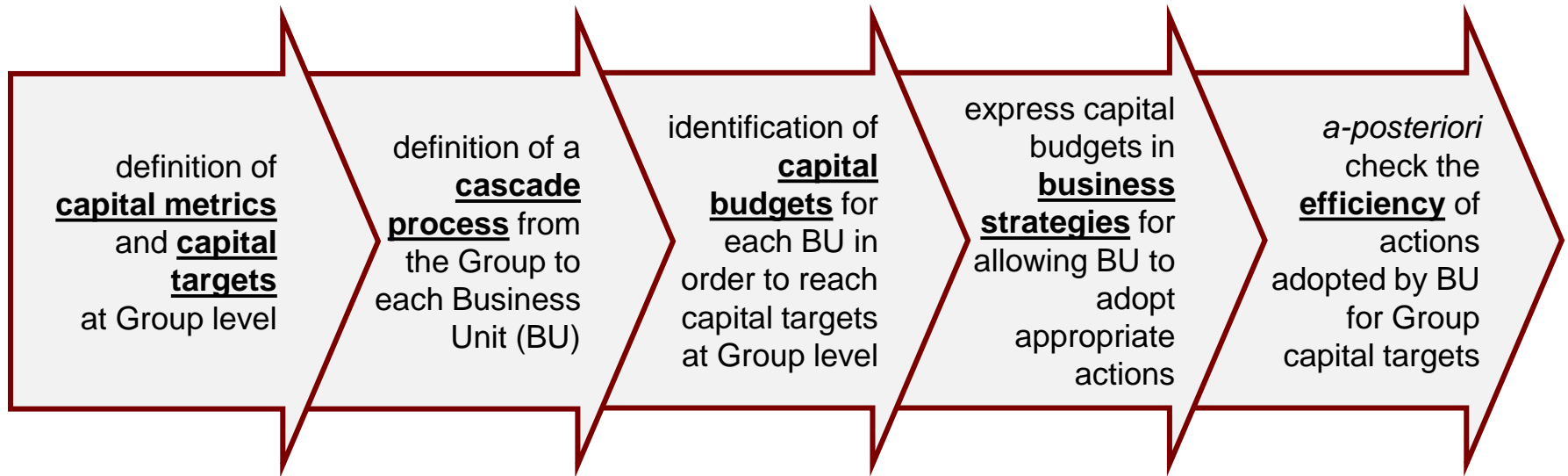
Liability Portfolio split
by multiple DRIVERS in t=0
(e.g. guarantee, duration, EXI/NB,..)



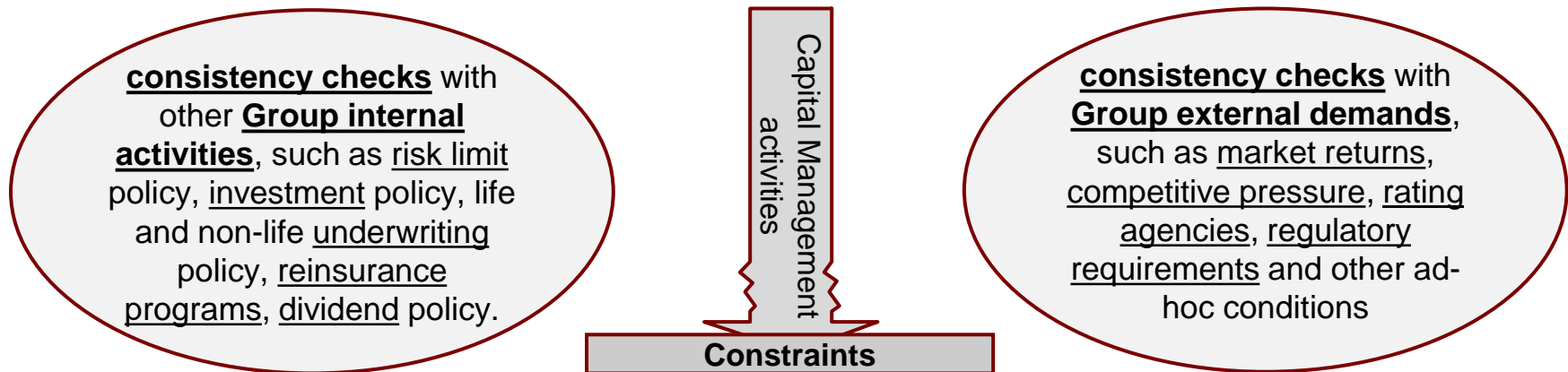
FORWARD LOOKING MEASURE
for evaluating Solvency Ratio
in the next years

Forward looking measures to manage «tomorrow» Solvency ratios

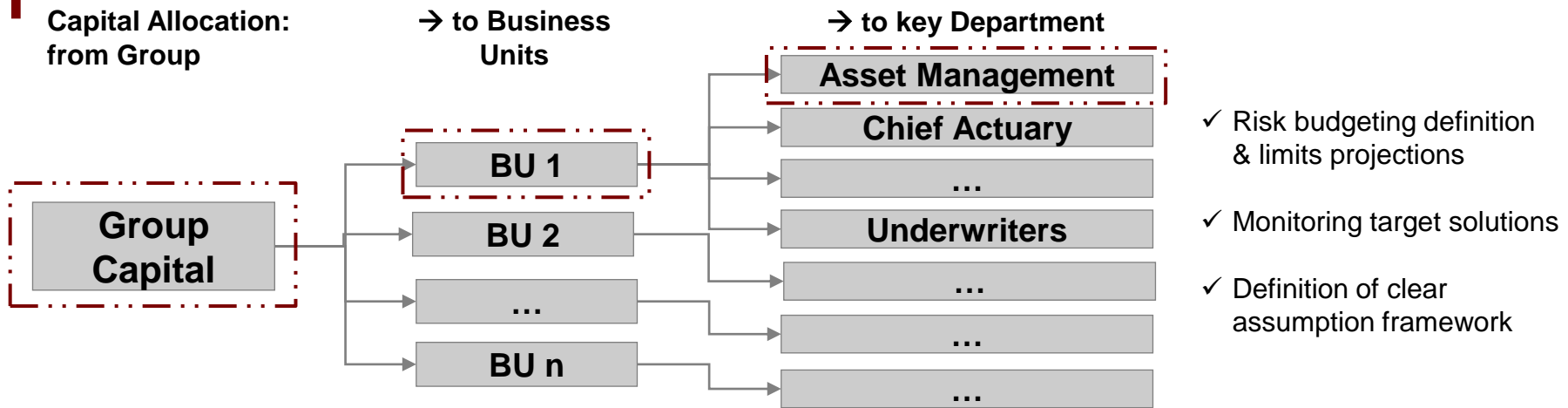
Acting as Capital Management for an Insurance Group implies:



BUT lots of constraints need to be considered:

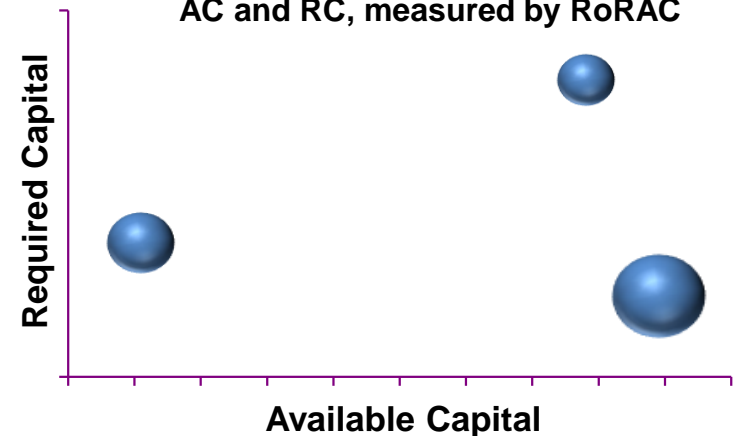


Capital optimization example: strategic asset allocation



SAA Market Values	Target	Lower Band	Upper Band
Liquidity and Govt. FRN Bond	3.9%	1.0%	15.0%
Government FIX Bond + I/L	52.1%	43.0%	62.0%
Corporate FRN Bond + ABS +HY	11.7%	8.5%	15.5%
Corporate FIX Bond	19.0%	12.0%	27.5%
Equity	7.4%	1.5%	10.0%
Alternative Investments	1.5%	0.0%	2.0%
Real Estate	4.2%	2.5%	7.5%
Total	100.0%		
Duration (with deriv.)	6.50	5.00	8.00
% Corp on Tot FI	35.4%		

Efficiency of Asset Allocation in respect of AC and RC, measured by RoRAC



Bands Sensitivity	Lower Risk Allocation	Higher Risk Allocation
Δ% RAC vs. Target	-38.1%	31.8%
Δ Portfolio Assets Volatility	1.2%	-1.1%

