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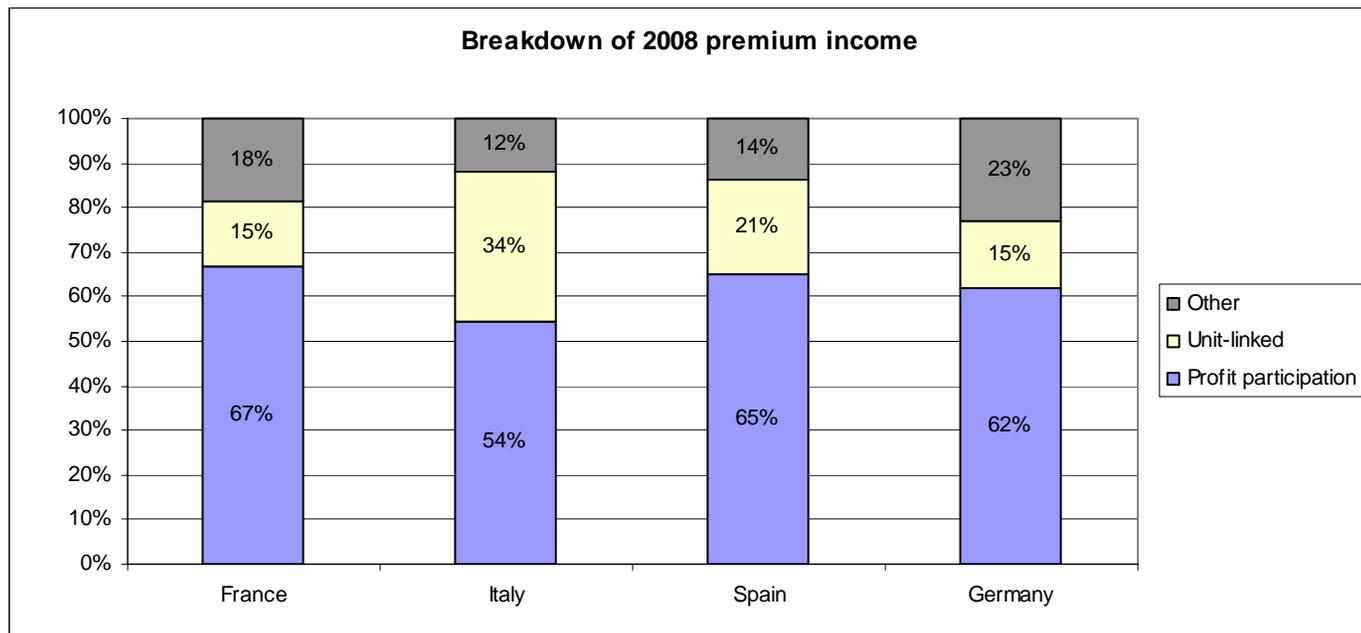
THE ROLE AND STRUCTURE OF PROFIT PARTICIPATION PRODUCTS (PPP) IN THE EUROPEAN LIFE INSURANCE MARKET FOLLOWING SOLVENCY II

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Introduction

- Profit Participation Products (PPP) are the most important line of business in the main Continental European markets.



- This presentation discusses how these products might change in the future, in particular due to the implications of Solvency II.

Agenda

- Summary of PPP
- Implications of Solvency II
- Example Product
- How to design an Optimal Product?
- Conclusion

Main Product Features

- Main common PPP features
 - Minimum guaranteed rate of return
 - Annual bonus based on the level of investment return in excess of the minimum guaranteed rate
 - Annual bonuses normally consolidated once paid
 - Reserves calculated on a “net premium” reserving method
 - Guaranteed minimum surrender values
 - Policyholder returns based on investment returns calculated using book-value accounting
- Details of products vary from country to country

Implications of Solvency II

- Risk based capital requirement
 - Incentive for companies to reduce riskiness of products
 - Financial risks primarily: market and credit risks
 - Life underwriting risk (longevity, mortality, lapses, expenses)
 - Interaction between these risks: dynamic policyholder behaviour
- Valuation of liabilities
 - Best Estimate of Liabilities (including expected future profit sharing) + Risk Margin
 - Need to include valuation of options and guarantees

Implications of Solvency II (ctd)

- Explicit treatment of products with discretionary benefit features
 - May imply significant reductions in the capital requirements
 - But need to demonstrate that discretionary nature of benefits able to absorb losses in various scenarios
- Risk management
 - Effective asset liability management
 - Definition of expected dynamic management actions
 - Adequate product approval process
- Requirements for transparency and information to policyholders

Implications of Solvency II (ctd)

- Illustrative comparison of products
 - „Low risk product“: no consolidation of bonuses, no guaranteed surrender value
 - „High risk product“: bonuses consolidated, surrender values guaranteed

	Solvency I	Solvency II
Liability value	Same mathematical reserve.	Liability value materially higher for the high risk product due to higher best estimate liability (cost of options associated with maturity and surrender guarantees) and higher cost of capital risk margin.
Capital requirement	Same capital requirement	Capital requirement (SCR) based on VAR which can vary significantly between high and low risk products due to the widely different economic risks involved.

Example Product

- Illustration with simple representative product:
 - 10 years duration, 1,000 single premium net of loadings
 - 2% to 4% guaranteed return, 90% profit sharing
 - surrender value: net premium reserve accumulated with past declared bonuses
 - 2008 year end financial conditions, 1000 stochastic scenarios

Guaranteed rate	Solvency Capital under Solvency I	Reserve under Solvency I	Initial Solvency Capital under Solvency II	Initial Market Value of Liability
2%	4.0%	1,000.0	4.0%	987.5
3%	4.0%	1,000.0	9.2%	1,011.3
4%	4.0%	1,000.0	17.1%	1,061.8

Example Product (ctd)

- Previous example ignored dynamic policyholder behaviour (constant lapse rate in all cases)
- Now look at impact of dynamic policyholder behaviour (additionally showing MCEV TVOG):
 - Additional surrenders of a factor of 4 multiplied by the unrealised losses on the assets as a percentage of the asset value

Base case	Solvency Capital under Solvency II	Initial Market Value of Liability	TVOG
No dynamic policyholder behaviour	4.0%	987.5	0.2
Dynamic policyholder behaviour	7.4%	1,010.9	7.5

Example Product (ctd)

- Impact of financial market conditions:
 - 2008 vs 2007 financial market conditions

Base case	Solvency Capital under Solvency II	Initial Market Value of Liability	TVOG
No dynamic policyholder behaviour - 2008 market conditions	4.0%	987.5	0.2
Dynamic policyholder behaviour - 2008 market conditions	7.4%	1,010.9	7.5
No dynamic policyholder behaviour - 2007 market conditions	2.3%	979.1	0.1
Dynamic policyholder behaviour - 2007 market conditions	5.3%	998.1	6.2

How to Optimise Product Design?

- Maximising economic value added
 - Maximising value added by one unit of new business and volume of new business.

Feature	Impact on unit profitability of the product	Impact on commercial attractiveness
Level of maturity guarantee	Important impact if level of guarantee becomes onerous.	Policyholders and distributors likely to attach importance to guaranteed rates.
Definition of maturity guarantee	Definitions allowing greater loss absorption and offsets → important positive impact on unit profitability.	Impact depending on effectiveness of communication. Non-exclusive distributors may be wary if different from market standards.
Definition of surrender values	Definitions reducing product liquidity → important impact on product profitability.	Most policyholders may express preference for high level of liquidity, but might not be critical for a number of potential clients.

How to Optimise Product Design? (ctd)

- Maximising economic value added
 - Impact of applying a Market Value Adjuster (MVA).

Base case	Solvency Capital under Solvency II	Initial Market Value of Liability	New Business Profitability (before tax and cost of capital) as a percentage of premium
No dynamic policyholder behaviour	4.0%	987.5	2.49%
With dynamic policyholder behaviour	7.4%	1,010.9	1.23%
Alternative design with market value adjuster in the case of surrender	3.3%	990.7	1.95%

Favourable designs under Solvency II

- Designs reducing liquidity for customer
 - Market Value Adjuster or other reductions in guarantees on surrender
 - Avoid consolidating bonuses
 - Defer some profit sharing (e.g. use of terminal bonuses)

Favourable designs under Solvency II (ctd)

- Designs to increase loss absorption/offsets
 - Bonus paid if no unanticipated losses above certain amount
 - Paid as a terminal bonus
 - The balance of the level of discretion vs commercial attractiveness needs to be carefully considered. More discretion will give broadest loss absorption.
 - Specific risk offsets (e.g. Longevity versus interest profits)

Example of offsetting risks

Immediate or deferred annuity with profit participation =

$$\text{Reserve} * (\text{Investment income} - \text{Guaranteed Rate}) * F$$

Where F can vary between 75%-95% depending on the progression of longevity experience

		Longevity	
		Profit	Loss
Invest. Income	Profit	Profit Participation	Losses shared
	Loss	Losses shared	Loss Absorbed by insurer

Interaction with existing business

- In most PPP, interaction of the results between different generations of business
 - Allows smoothing of investment returns and fluctuation in results
 - Track record of bonus rates
- But can constrain and complicate asset liability management
- In designing new products it needs to be considered whether and how the product interacts with existing business

Regulatory considerations

- With Solvency II, similar capital requirements and reserving standards will apply throughout Europe.
- But local regulation constraining product design and management will remain in each country.
 - Transparency rules
 - General goods provisions
- There may be cross-border arbitrage opportunities.

Conclusion

- PPP business tends to be well established and stable – we should not expect radical changes overnight with Solvency II...
- ... but this is a very important regulatory change and there are clearly ways to improve the risk/return profile of products
- A well designed product including some of the features we have outlined allows companies to employ capital more efficiently whilst providing higher policyholder returns
- Appropriately adapted for the post Solvency II environment these products will continue to play a key role in the life insurance industry

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