



SOCIETY OF ACTUARIES

**Global Best Practices in ERM for
Insurers and Reinsurers Webcast
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**Session # 1E: Market-Consistent Risk
Management**

Doug Caldwell, FSA, CERA
Hans Wagner
Tom Wilson

Moderator
Mark Chaplin, FIA



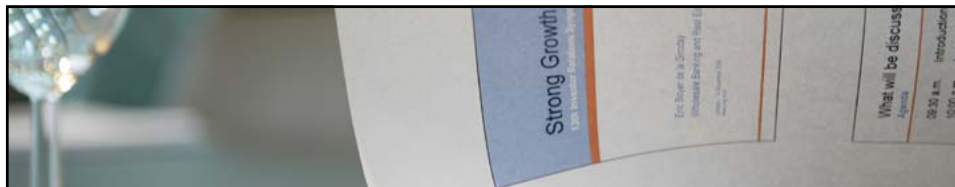
Session 1E: Market Consistent Risk Management

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Market Consistent Risk Management at ING

Doug Caldwell
10 December 2008

ING use of Market Consistent Measurement

ING Risk and Capital management is already based on Market Consistent principles

MC pricing will receive greater emphasis in 2009 for new product approval process

Management of **MV Balance Sheet** is increasingly important for managing shareholder value

Public Disclosure of EV will transition to Market Consistent basis during 2009/2010



Benefits of Market Consistent Management

- Separate valuation of assets and liabilities
 - Consistency with capital markets including option/guarantee costs
 - Reduces reliance on management investment assumptions
 - Clearer picture of the impact from asset/liability management choices: allows separate analysis of investment decision whether or not to hedge market risk
- Risk-based pricing
 - Clear identification of market price of individual risks enables product pricing to reflect specific risks
 - Improved comparison across different products than approaches which set top-down discount rates
- Convergence of reporting measures creates efficiencies
 - Fewer metrics to manage
 - Resource synergies
- Strategic link to capital management
 - Moving EV to MC basis allows strategic planning to be more closely linked to risk and capital management



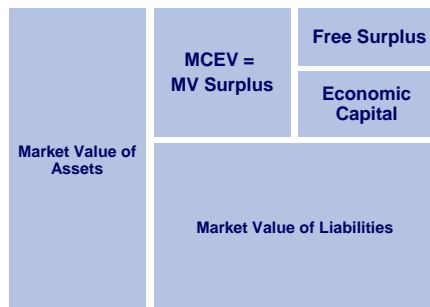
MCEV : a Balance Sheet approach



- MCEV is the difference between the market value of the assets and the market value of the liabilities
- MCEV is the largest component of the Available Financial Resources (AFR) which ING uses to manage capital and is published since year-end 2007
- The Market Value Balance Sheet is the way ING manages risk (EC) and capital (AFR) of our insurance business
- The approach fits in with the CFO Forum's MCEV Principles as well as the principles underlying Solvency II and IFRS Phase II



Interaction with AFR, Economic Capital, and Risk Dashboard



Economic Capital is defined as the amount of capital required to protect the market value of the liabilities within a 99.95% confidence interval based on shocks that could occur over a 1-year time horizon

Available Financial Resources (AFR) is equal to MCEV + (pre) tax adjustment + Tier-1 hybrid capital.

- Economic Capital represents the "worst case" loss of MCEV over a year period
- EC reporting already includes a calculation and movement analysis for EC and MV Balance Sheet
- Risk Dashboard reporting for Executive Board includes "Capital at Risk" based on a 1 in 10 annual loss scenario – used to set risk appetite
- Risk sensitivity reports are easily available to further understand exposure of MCEV to changes in financial markets
- When traditional EV reporting is discontinued in 2009/10, all value and risk reporting for insurance will be aligned



MC valuation important for new product approval

- Improved valuation methodology for financial products
 - ING's insurance products are 80%+ financial risk
 - MC valuation directly assesses whether ING receives adequate value for risk in new products
 - MC valuation accurately values options and guarantees
- Traditional valuation metrics are not as reliable at product level
 - Inability to set correct capital and risk discount rates at product level leaves too much room for error
 - Internal Rate of Return (IRR) does provide a useful assessment of expected return on invested capital which is also helpful for management
- MC valuation improves transparency of new product value creation and provides more comparable basis for product/business strategy
- Since 2006, ING has used both IRR and MC VNB to analyse new products. Beginning January 2009, MC VNB will be further emphasised for approving new products



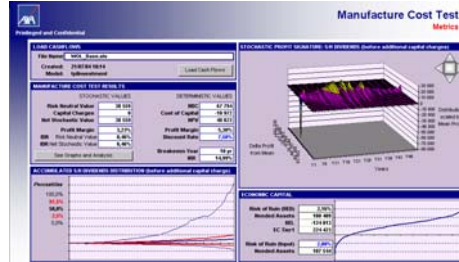
Why Market Consistent Value?

■ Market Consistency

- No-arbitrage principle: MC gives view of product value if all financial risks were hedged
 - Allows separate analysis of investment decision whether to hedge or not
 - Eliminates manipulation of liability value through choice of asset return assumptions
- Less subjectivity in valuation and greater comparability between companies
- MCEV provides granular financial risk analysis
 - Better comparisons across different products than approaches which set top-down discount rates
- Approaches for risks without observable market prices are emerging (but have not converged yet!)

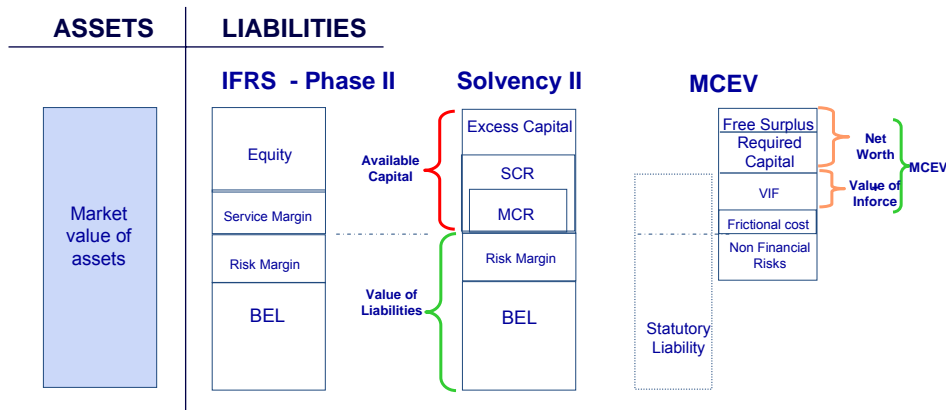
Product Management Risk adjusted profitability key to product pricing

- It is essential that, as part of product development pricing, the costs of risks can be assessed, particularly where there are significant embedded options (e.g., VA with guaranteed living benefits, or highly volatile commercial business for P&C)
- AXA has centrally developed and cascaded locally a methodology with supporting tools
 - Consistent across the Group
 - Applied locally
- The key element is that the framework supporting this analysis should be transversal across product development, financial reporting, management information systems and remuneration key performance indicators



Product management aligned with financial reporting

Possible alignment of solvency, general reporting, and value!



But lots of hurdles between now and then!

In closing...



■ Market Consistency

- Aligns with our views of how to manage the business (although other perspectives continue to be used internally, as well)
- Permits alignment of general purpose, solvency, and value reporting
- Eliminates debates about financial assumptions
- Separates valuation methodology from ALM choices

■ But is not Nirvana!

- No convergence yet on providing for non-hedgeable risks
- Issues on defining what is hedgeable!
- Cash flow information still needed in the marketplace