

Implications of Solvency II & Are all risks created equal?

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SOLVENCY II IMPACT

“Constraints will be reduced making it easier for companies to manage business the ‘right’ way”

“It is market consistent valuation that will drive behavior - more so then the SCR”

“Financial risk will decline in the industry”

“Transfer of insurance risk to the capital markets will accelerate”

Market consistent valuation	The heart of Solvency II and companies' economic frameworks
Consistently applied group wide	One framework, one methodology, one result throughout the group
Internal models	Required capital custom fit to a companies risk profile and targeted ratings
Risk mitigation	Proper recognition facilitates alignment of incentives
Recognized diversification	Will strengthen risk management and improve industry competitiveness
Lead supervisor	Streamlined and more advanced group supervision

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- ◆ **Assets and liabilities blended together to get an expected outcome (expected or average net cash flow)**
- ◆ **Many assumptions needed**
 - Expected asset returns, interest rates, reinvestments, etc
- ◆ **Cost of regulatory capital deducted**
 - Changes expected net cash flow to distributable earnings
- ◆ **Adjust premiums to ensure acceptable IRR**

Advantages

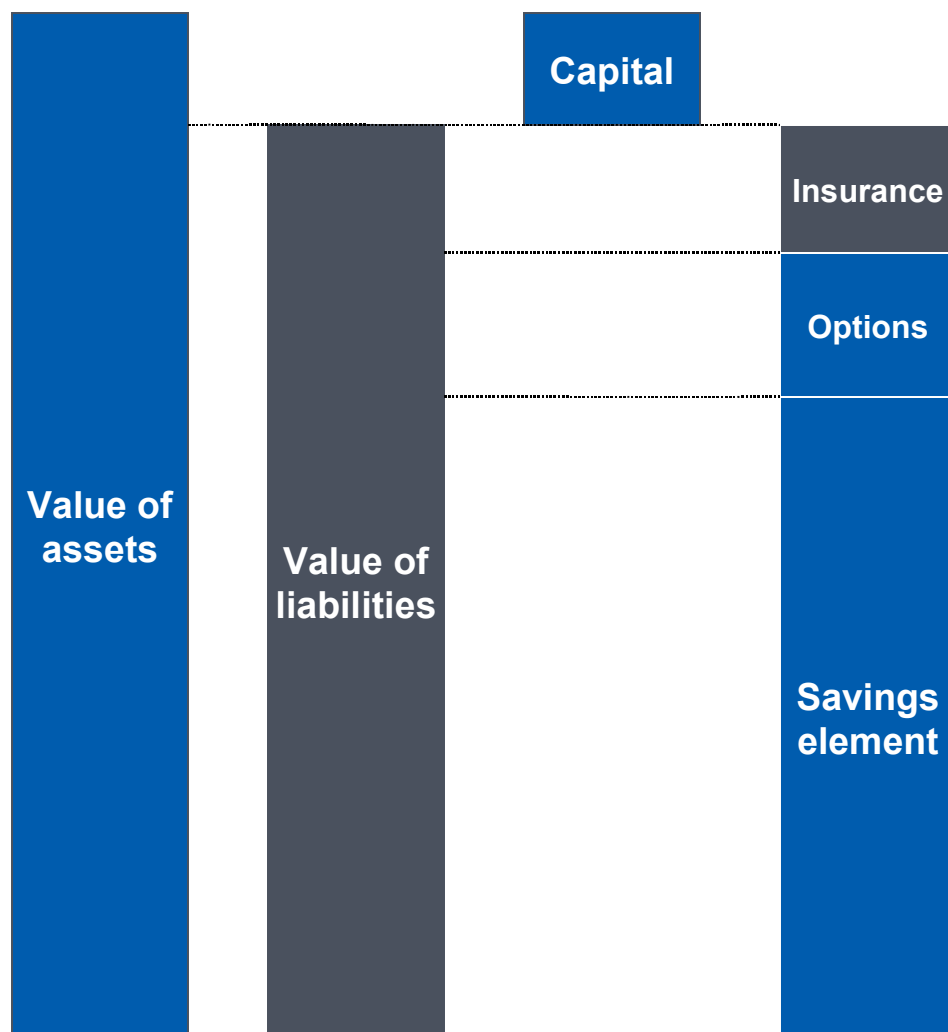
“If management assumptions bear out, targeted returns on capital will be achieved”

“Allows pricing for expected returns based on external benchmarks of capital adequacy, such as S&P 165% or regulatory models”

Risk of biased valuation	If view on risk determines value, it is tempting to change view to change value. Make decisions based on view – keep valuations objective.
Hedge cost disconnect	Decision to hedge risk should not cause a gain or loss on value and hence performance.
Pricing for capital instead of risk	Force comprehensive analysis of risk and influencing product design. Price for risk – not someone else's definition of capital, retain risks we want, hedge or sell risks we don't.
Focus on returns rather than value	Focus on value, not return on artificial capital definitions. Tendency to price to minimum hurdle rather than strive for value target.

Market consistent value of liabilities is based on observable market prices or extension of market prices when possible and lastly estimates of the market consistent value for remaining un-hedgeable risks

Market consistent value of liabilities is based on transfer value assuming sale of each asset and liability today under current conditions and a rational and deep, liquid market



- ◆ In a life and pensions company, a great majority of the balance sheet can be marked to market
 - These are called the capital market's risks
- ◆ All that is left is to estimate the market value of the insurance piece
 - How should we approach this?

- ◆ The market value of a simple asset can be decomposed as

$$\begin{array}{ccccccc}
 \text{Market Value} & = & \text{Value of} & - & \text{Market Value} & - & \text{Expected} & - & \text{MVM for} \\
 \text{of Assets} & & \text{Contractual} & & \text{of Options} & & \text{Credit} & & \text{Credit} \\
 & & \text{Pieces} & & & & \text{Losses \&} & & \text{Risks} \\
 & & \text{(coupons \&} & & & & \text{Expenses} & & \\
 & & \text{amortization)} & & & & & &
 \end{array}$$

- ◆ In practice the market price is quoted
- ◆ In theory, the market price is comprised of expected elements less a charge for option value (if exists), a charge for expected credit losses, cost to manage the asset and lastly a charge for credit risk uncertainty
- ◆ The charge for credit risk is called the Market Value Margin (MVM) for credit risk
- ◆ Under traditional valuation (EV) all of these elements are estimated via internal assumptions and we may arrive at a value that differs from MV

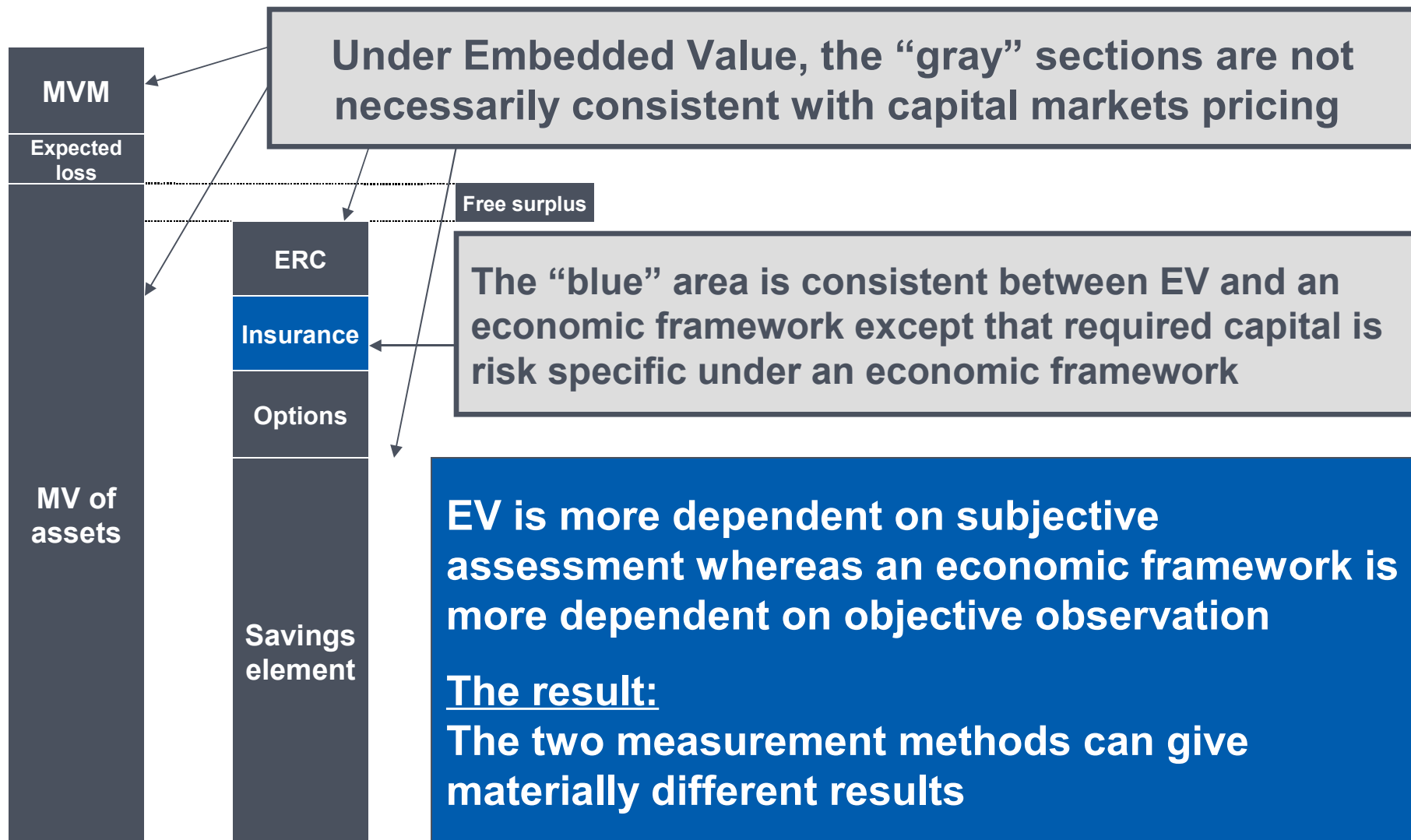
- ◆ The market consistent value of the liability can be decomposed similar to an asset

$$\begin{array}{ccccccccc}
 \text{Market Value of Insurance Liability} & = & \text{Market Value of Savings Element} & + & \text{Market Value of Options} & + & \text{Best Estimate Value of Insurance Risks \& Expenses} & + & \text{MVM for Unhedgeable Financial Risks} & + & \text{MVM for Unhedgeable Non-financial Risks}
 \end{array}$$

- ◆ The first 3 elements of the liability value can be marked to market by developing a portfolio of assets that closely matches these pieces

$$\begin{array}{ccccccc}
 \text{Market Value of Insurance Liability} & = & \text{Market Observable Prices (via replicating portfolio)} & + & \text{MVM for Unhedgeable Financial Risks} & + & \text{MVM for Unhedgeable Non-financial Risks}
 \end{array}$$

- ◆ The last two elements are similar to the MVM for credit risk of bonds
 - However we can not observe these prices or replicate them with assets. We therefore use a Market Cost of Capital approach to estimating the market consistent value of MVM's (similar to EV but with ERC as the capital requirement rather than S&P 165%)



Objective valuation	Objectivity in valuation is maximized paving the way for unbiased management decisions
Cost to hedge reflected in value	Decisions to retain or hedge risk no longer impacted by reported value
Directly pricing for risk	At the core of market consistent pricing is a comprehensive assessment of risk
Focus on returns rather than value	Return dependencies are removed facilitating the focus on value added
Competitive advantage	Market consistent pricing will allow a company to focus on risks that are relatively attractive. A company's competitive advantage until the market moves in the same direction.

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<p>Step 1</p>	<p>Capital requirements will be high</p>
<p>Step 2</p>	<p>Required margin will also be high to get targeted returns</p>
<p>Step 3</p>	<p>Realization that it does not work in many situations</p>
<p>Step 4</p>	<p>Analysis on how to reduce the positions</p>
<p>Step 5</p>	<p>Execution</p>

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Solvency II will help these pieces come together faster, causing acceleration in the willingness and demand for insurance risk transfer

Consistency

Comparability

Transparency

Understanding

Comfort

Attraction

**Are all risks created
equal?**

Ability to price

Which risks are you most comfortable with in your ability to price accurately? How many assumptions and approximations are you making?

Size of carry

Which risks to you get paid well while bearing it? Larger premiums (after payment) is similar to a bird in the hand being better than two in the bush!

Quick exit

Which risks can you exit quickly (liquidity) at a fair price (marketability) if you no longer want to bear it? Regimes can shift.

Track record

What experience do you have with the risk and what is your track record? Scale accordingly.

Correlation

When things go badly does this risk go with them?
How correlated is this risk to other risks?

Speed of risk

When things go bad, how quickly? Is your organization as fast as the risk? How quickly will it hit financials?

Risk versus return

Of course we need to compare risk to return. Choose many views of risk including some of the preceding ways to score.

Size of tail

What is the distribution of the risk? What is the size of the tail and from who's perspective are we concerned?

Thank you!