

**The Actuarial Profession**

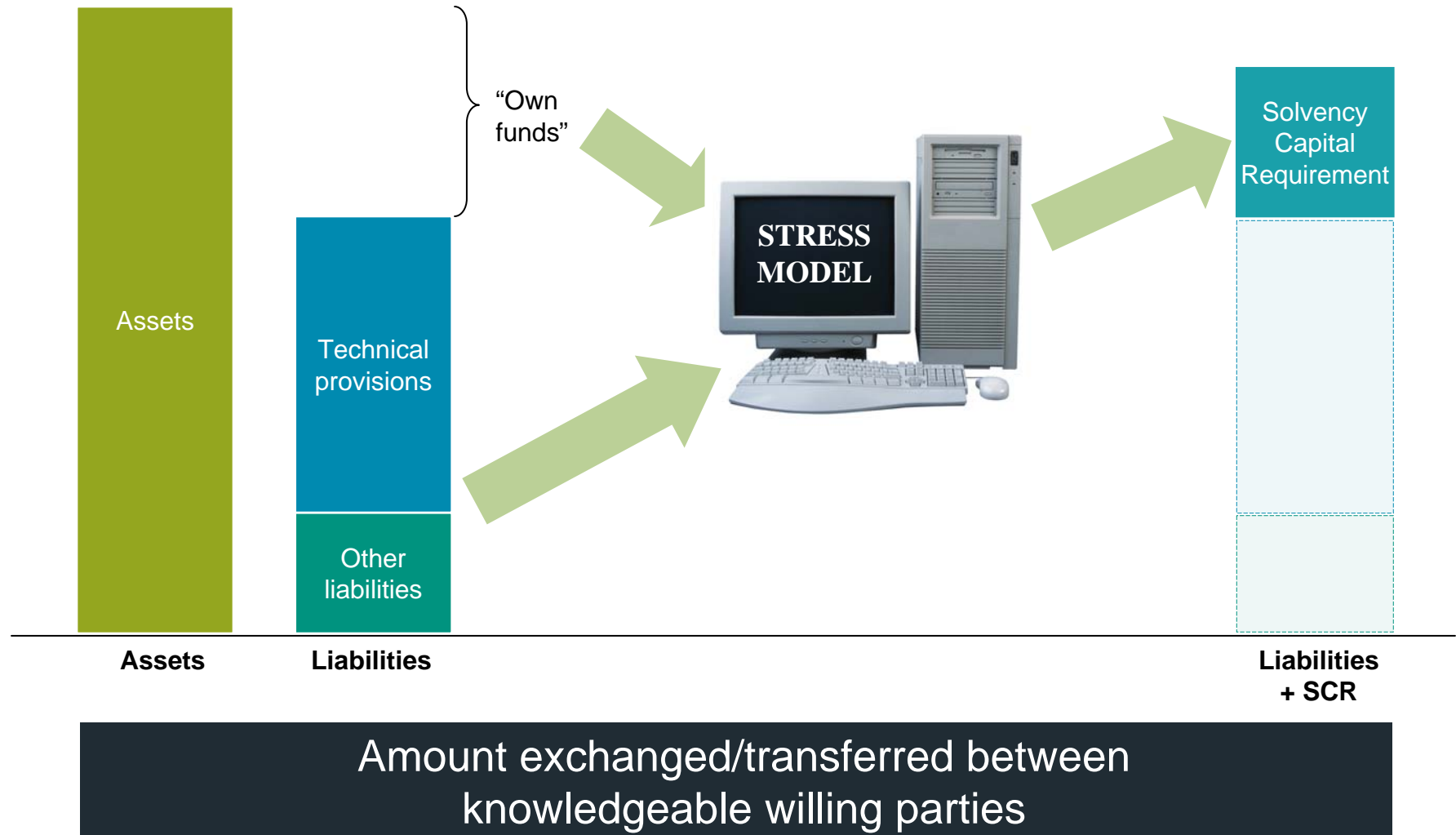
making financial sense of the future

Open Forum 16 September 2010, Staple Inn  
Kamran Foroughi

**Market-consistent valuations and Solvency II:  
implications of the recent financial crisis**

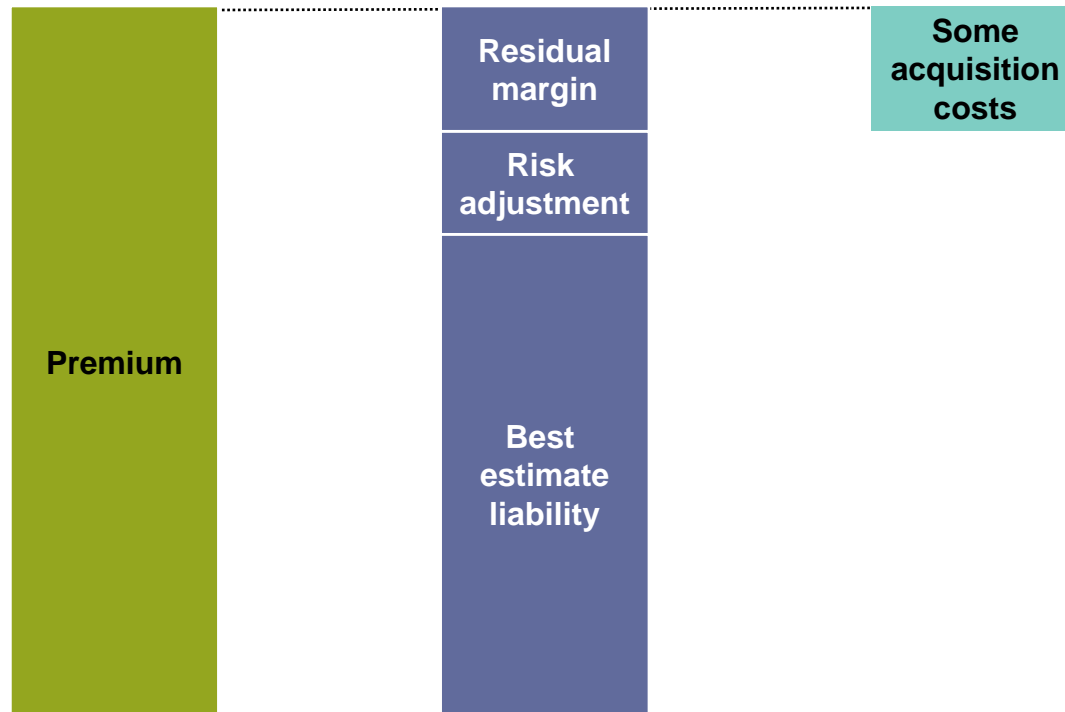


# Solvency II FD: “economic risk-based approach ... so companies properly measure/manage risks”



# IASB Phase II Insurance Contracts: “provide relevant information to users for economic decision-making”

Building block  
approach



Consistent with current observable market prices

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# Advantages of MCV

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- Easier value comparison
- More objective
- Better consistency
- Link with ALM and risk management

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# Some commercial challenges

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1. Increased volatility
2. Procyclicality and other macroeconomic effects
3. How to price in certain markets?
4. Where is the capital information?

# A wider reporting pack

## Balance sheet, earnings, new business impact and sensitivities

Solvency II regulatory reporting

IFRS

MCEV / MCV

## Cash flow and capital

Distributable earnings (RW)

Implied MCV  
Discount Rate

Net fund flows

## New business metrics

Volumes

Initial Strain

Internal Rate of  
Return

Payback period

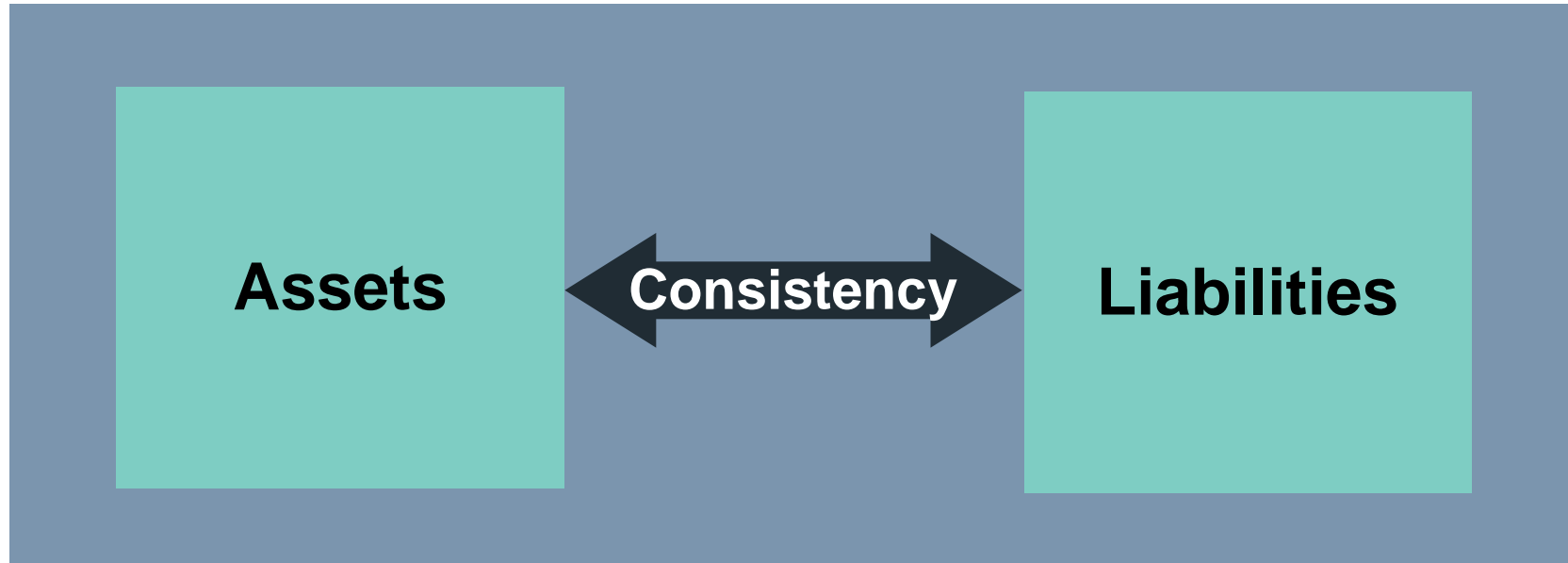
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# Revisiting technical issues

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- Allowance for risk approach
- How to value financial instruments in illiquid markets?
- Selecting a reference rate (“risk-free” rate)
- Liquidity premium adjustments?
- Calibrating stochastic models
- Allowance for Non-Hedgeable Risk
- Allowance for own credit risk?
- Valuation of other assets and liabilities.

# Overall allowance for risk



Key issues:

- “Assets and liabilities separately” or “Blocks of business”?
- Transfer value / Going concern value?
- Which market to calibrate to?



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# Asset valuation developments

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Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date

Source: Fair Value Measurement Exposure Draft, IASB May 2009

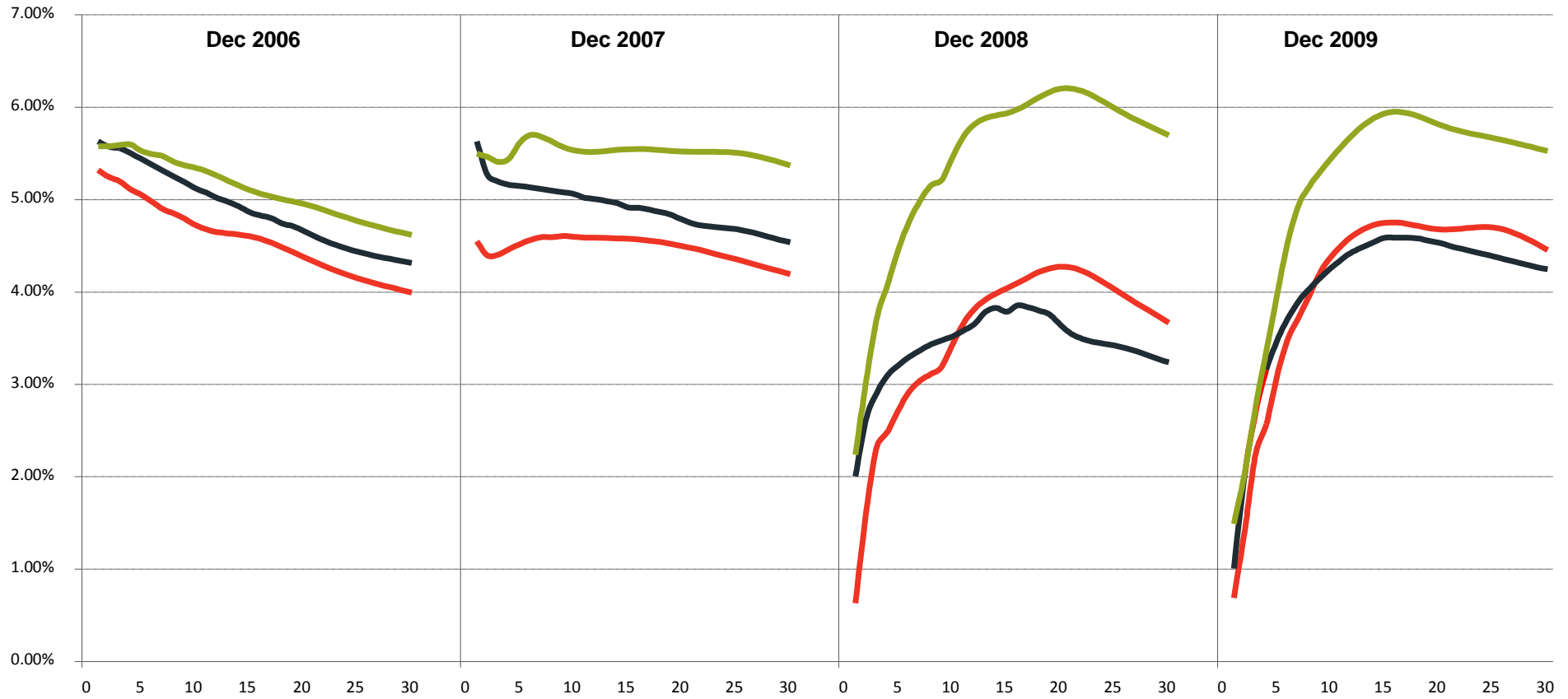
## Key issues:

- Orderly transaction
- Mark-to-model
- Bid or mid price?

# Candidates for the reference rate (pre-liquidity premium)

## UK GBP: Zero Coupon Yields

— Gilts — Swaps — AA



Source: Towers Watson analysis of Bloomberg data

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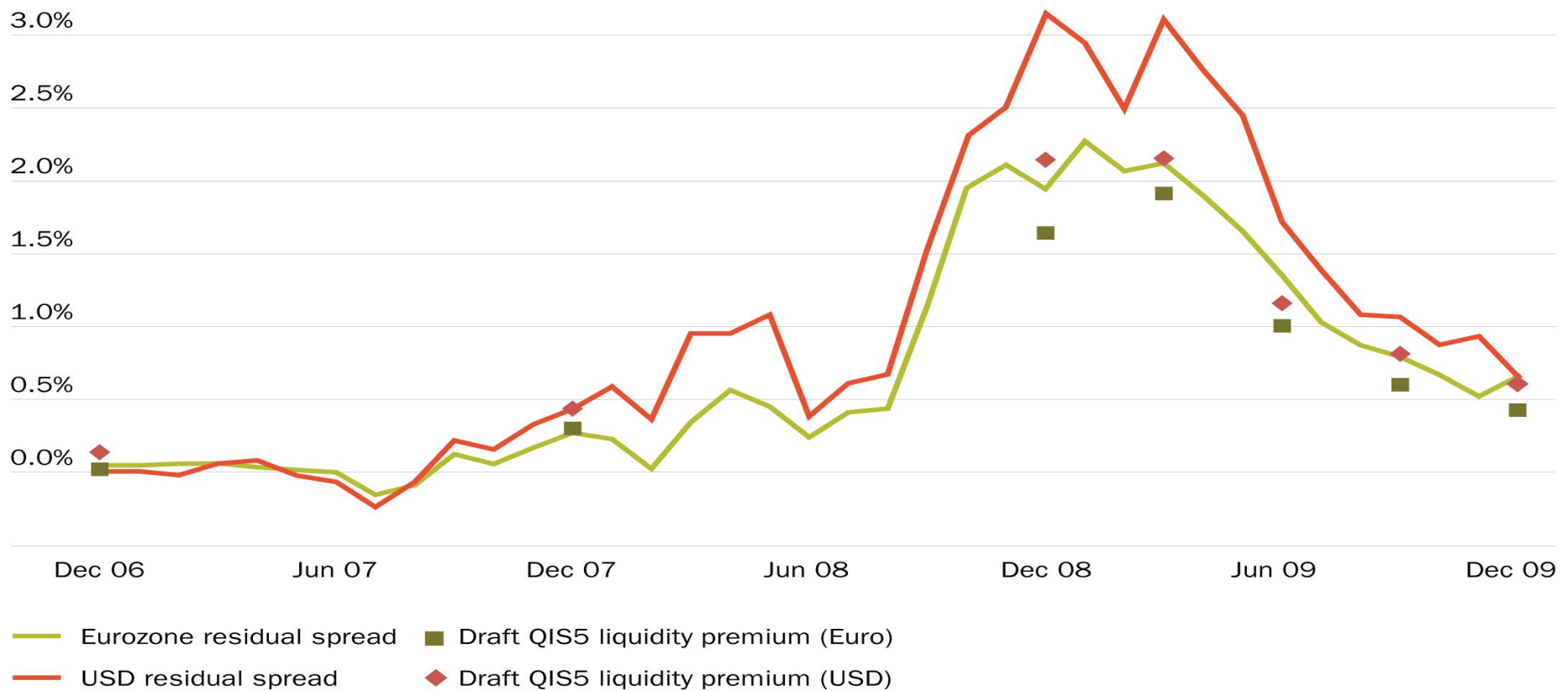
# Reference rate: key issues

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- “Risk-free” rate plus liquidity premium
  - Trend within MCEV, Solvency II and IFRS Phase II
- 100%-credit-risk-free versus suitably low credit risk matching asset
  - Theory versus practice
- Swaps versus government bonds versus high quality corporate yield
  - Solvency II and MCEV trend towards swaps
  - Eurozone issues with government bonds
  - Accounting mismatch issues with corporate debt
- How to calibrate the corporate bond liquidity premium?
  - Residual spread approach
  - Solvency II QIS 5 formula:  $50\% * (\text{corp. bond yield} - \text{swap yield} - 40\text{bp})$
- How much liquidity premium in the valuation?

# Level of liquidity risk premium in illiquid assets

**Eurozone and USD illustrative residual spreads (average up to 10 years) and draft QIS5 liquidity premium relative to swaps**



Sources: Towers Watson analysis of Bloomberg and Markit data; April 2010 draft QIS5 technical specification including CFO Forum/CRO Forum paper on risk-free rates

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# Liquidity premium in the valuation: key issues

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- Liability-only restrictions
  - “LP should be independent of the investment strategy adopted by company” (Task force report LP principle 2)
  - Efficient market hypothesis in an illiquid and inefficient market?
- Liability, assets and ALM strategy restrictions
  - What viable investment strategies are available to insurer?
  - “LP ...should not exceed extra return which **can be earned by insurer holding illiquid assets free of credit risk, available** in the financial markets and matching the cash flows of the liability” (Task force report LP principle 3, CFO/CRO Forum paper)

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# Valuation of embedded financial options

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“Implied volatility is the wrong parameter in the wrong model to get the right price”

# Adjustments to option market prices

## My preferred reasons

- Disorderly option markets
  - Valuation of option assets?
- Non-existent option markets
  - Fair value principles
- Liquidity premium only for non-option sub-block

## Other reasons

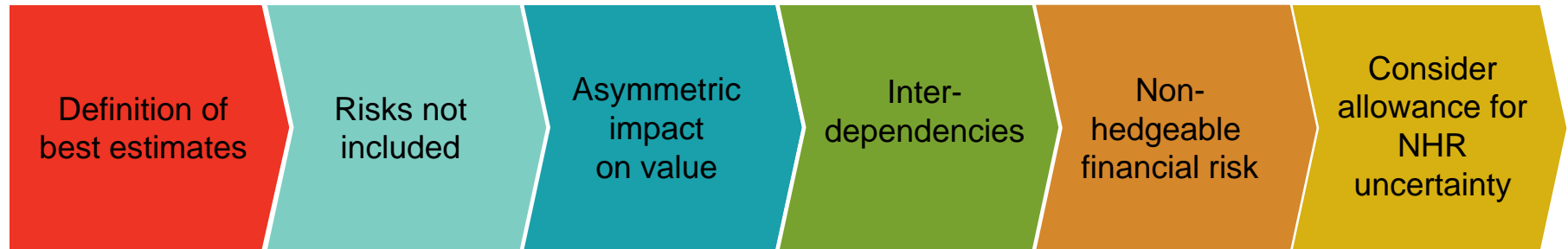
- Remove credit risk within market prices
- ESG cannot handle high prices
- Prices much higher than last year
- Historic volatilities “better”

# Risk adjustment/margin

	Solvency II	IASB Phase II
Purpose	To ensure that the value of the technical provisions is equivalent to the amount insurers would be expected to require in order to take over and meet their obligations	The maximum amount the insurer would rationally pay to be relieved of the risk that the ultimate fulfilment cash flows exceed those expected
Measurement technique	Cost of capital	Cost of capital, or Confidence level, or Conditional tail expectation (Confidence level has to be disclosed)
Cost of capital	QIS 5: 6% p.a. CEIOPS: At least 6% p.a.	Not prescribed
Diversification allowed between portfolios	QIS 5: Yes CEIOPS: Potentially not	No



# Allowance for NHR – recommended process



Can be used across reporting measures

# Allowance for own credit risk

“value assets and liabilities as follows:

(a) assets....

(b) liabilities shall be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm's length transaction

When valuing liabilities under point (b), no adjustment to take account of the own credit standing of the insurance or reinsurance undertaking shall be made.”

Source: Framework Directive Article 75 Valuation of assets and liabilities (extract)

- QIS 5 specification: “subsequent”

# Valuation of other assets and liabilities

	IASB	Solvency II QIS 5
Corporate debt	IAS 39 <i>Financial Instruments</i> Typically amortised cost or fair value	Entry value updated for new risk-free rate
Pension Scheme valuation	IAS 19 <i>Employee Benefits</i>	Follow IAS 19
Valuation of tax assets and liabilities	IAS 12 <i>Income Taxes</i>	Follow IAS 12

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# Preferred valuation metric?

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1. Traditional non-MCV
2. MCV developed pre-financial crisis
3. MCV revised post-financial crisis

**Different metrics  
encourage different behaviours**