

Ri\$k Minds 2008

Geneva, 8-12 December 2008

Understanding the Use Test

Risk and reward.

Find the right balance.*

James Tuley



*connectedthinking

PRICEWATERHOUSECOOPERS 



Agenda

Use Test in context - Model Approval overview

Use Test in detail

Other key Directive interactions.

Overview of use

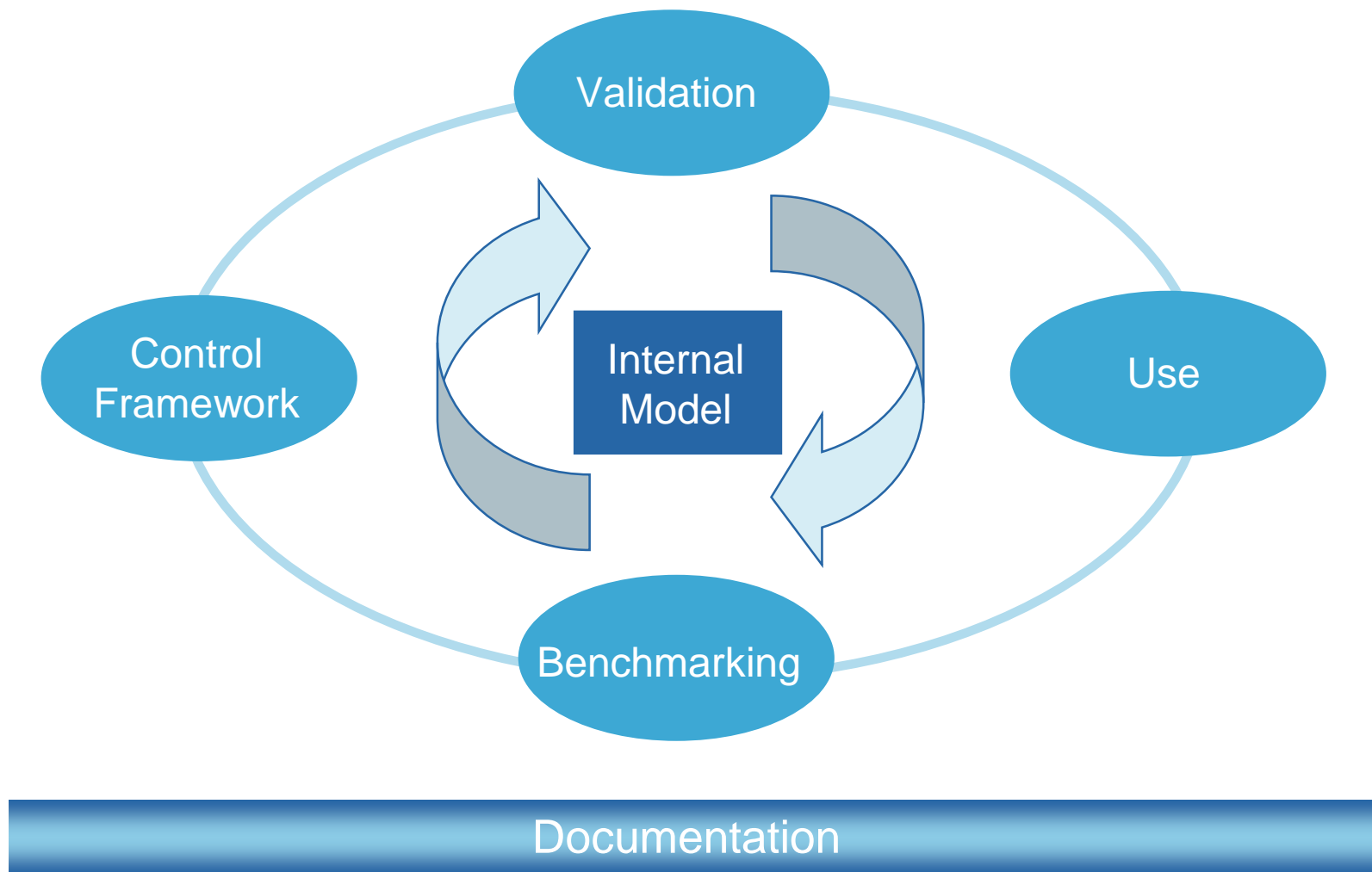


What is the scope of the model being approved?

The IAIS Standard includes a definition of a model

a risk measurement system developed by an insurer to analyse its overall risk position, to quantify risks and to determine the economic capital required to meet those risks.

Model approval process



What is the strategy?

What is the risk and reward payoff for the regulator?

- It is all about risk management
- Own Risk Solvency Assessment is part of the same framework
- Pillar 2 needs to be the focus
- Use at all levels of the organisation

What is the risk and reward payoff for the company?

What questions should you be able to answer?

- What is the true profitability of my products?
- How can I allocate capital accurately to my lines of business?
- How does my risk appetite translate into capital usage?
- What is contributing to my performance and how can I influence that?
- How can I compensate my underwriters based on this performance?
- How should I plan for the business cycle?
- How sensitive are the assumptions in my strategy?

Approval process by regulator



Use

- Sufficiency of MI used to support risk governance
 - Including aggregation of positions
- Consistency of risk distributions used in pricing with those used in capital modelling
- Consistency between metrics used by management with capital risk distributions
 - Profit variability, business planning, investment criteria, reporting breaches

Approval process by regulator



Use

- Sample project proposals and integration of other models in use e.g. reinsurance, reserving etc
- Test standard of risk reporting and model results for completion of ORSA and public disclosures
- ORSA is part and parcel of Use Test

Other key interactions to Use Test

Profit and Loss

- Assess profits and losses, by business unit, to model risk buckets
 - Plots the reality to the theoretical risk distributions
 - Builds Board's comfort with probabilistic process
- Assess dependencies between risks in recent past
- Detect risks that exacerbate other risks (non-linearity)
- Possible to construct a 'revenue account' for the capital?

Other key interactions to Use Test

Back Testing

- Data is unlikely to be independent, so unsuitable for back testing
- However, can compare initial model build of distributions to recent events
 - Tests model but may also ‘validate’ weak model if past is benign
 - Builds Board’s comfort with probabilistic process
- Can use past to rehearse capital management – unused resource?

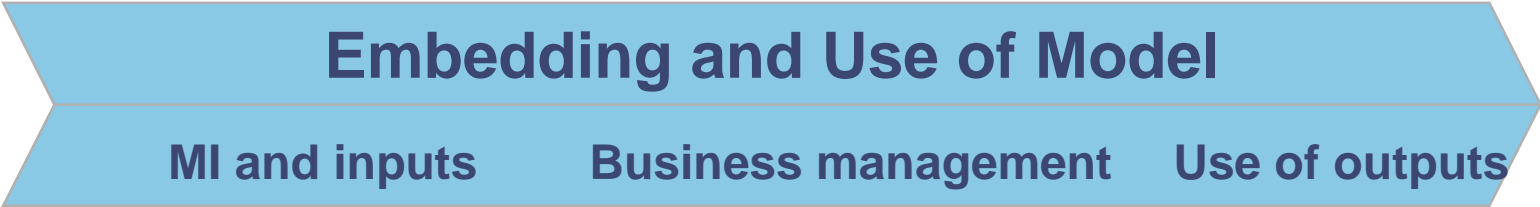
Other key interactions to Use Test

Public Disclosure

Public “Solvency and Financial Condition Report” to contain information on

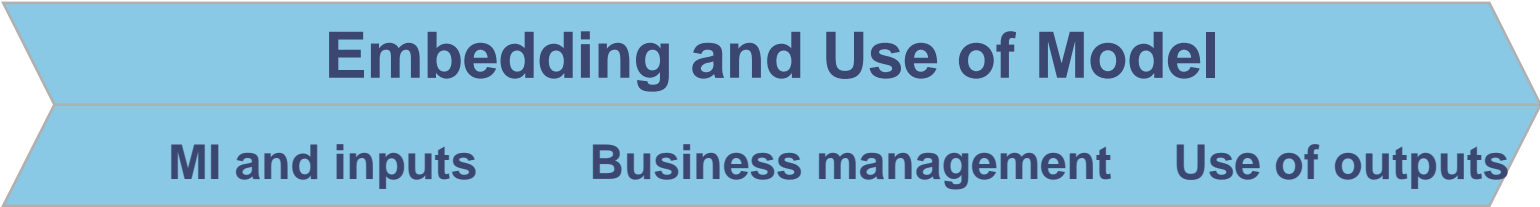
- The nature and performance of the business
- Governance systems
- Risk management approach and risk profile
- Valuation basis for assets and liabilities
- Capital management including structure and quality of own funds, MCR and SCR
- Non-compliance with MCR and SCR during reporting period

Overview of Use



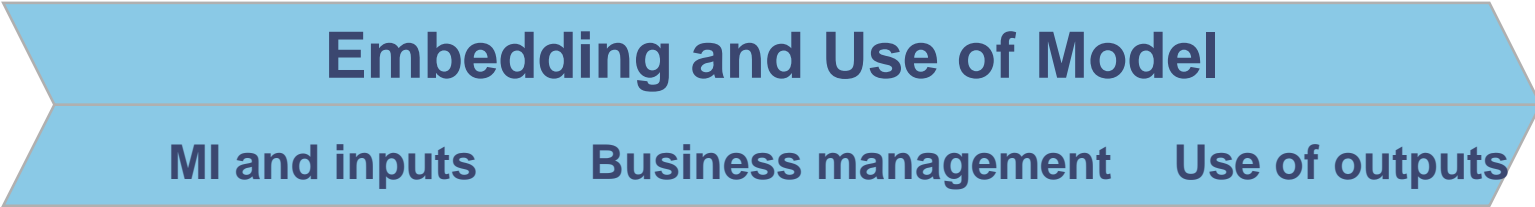
MI and inputs	Business management	Use of outputs
<ul style="list-style-type: none"> • Assess sufficiency of MI used to support risk governance, including aggregation of positions. • Assess use of external data sets to challenge and test model MI. • Review granularity of MI for subsidiary business units or entities • Compare MI to industry leading practices 	<ul style="list-style-type: none"> • Review formal documentation of the use of risk capital within risk decisions. • Sample project proposals and pricing proposals and the consistency of use of risk capital. • Test risk management governance procedures at major business unit level for consistency to group. 	<p>Risk management</p>

Overview of Use



MI and inputs	Business management	Use of outputs
<ul style="list-style-type: none"> • Review allowance for cost of capital in products, in internal reinsurance • Review diversification sharing between subsidiaries and group 	<ul style="list-style-type: none"> • Validate consistency of risk distributions used in pricing with those used in capital modelling • Review sharing of diversification 	<p>Pricing</p>

Overview of Use



<ul style="list-style-type: none"> • Assess consistency of finance data used to support profit reporting with the data used to inform models. • Assess internal challenge process 	<ul style="list-style-type: none"> • Evaluate Finance MI to Risk and senior management 	Finance
<ul style="list-style-type: none"> • Assess depth of asset identification to test recognition of asset's substance over form. 	<ul style="list-style-type: none"> • Validate consistency of risk distributions used in investment decisions with those used in capital modelling 	Investments

It is all about risk management

Use is at all levels of the organisation

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What can we learn from QIS 4

Risk and reward.

Find the right balance.*

Mark Train



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Agenda

Background to QIS 4

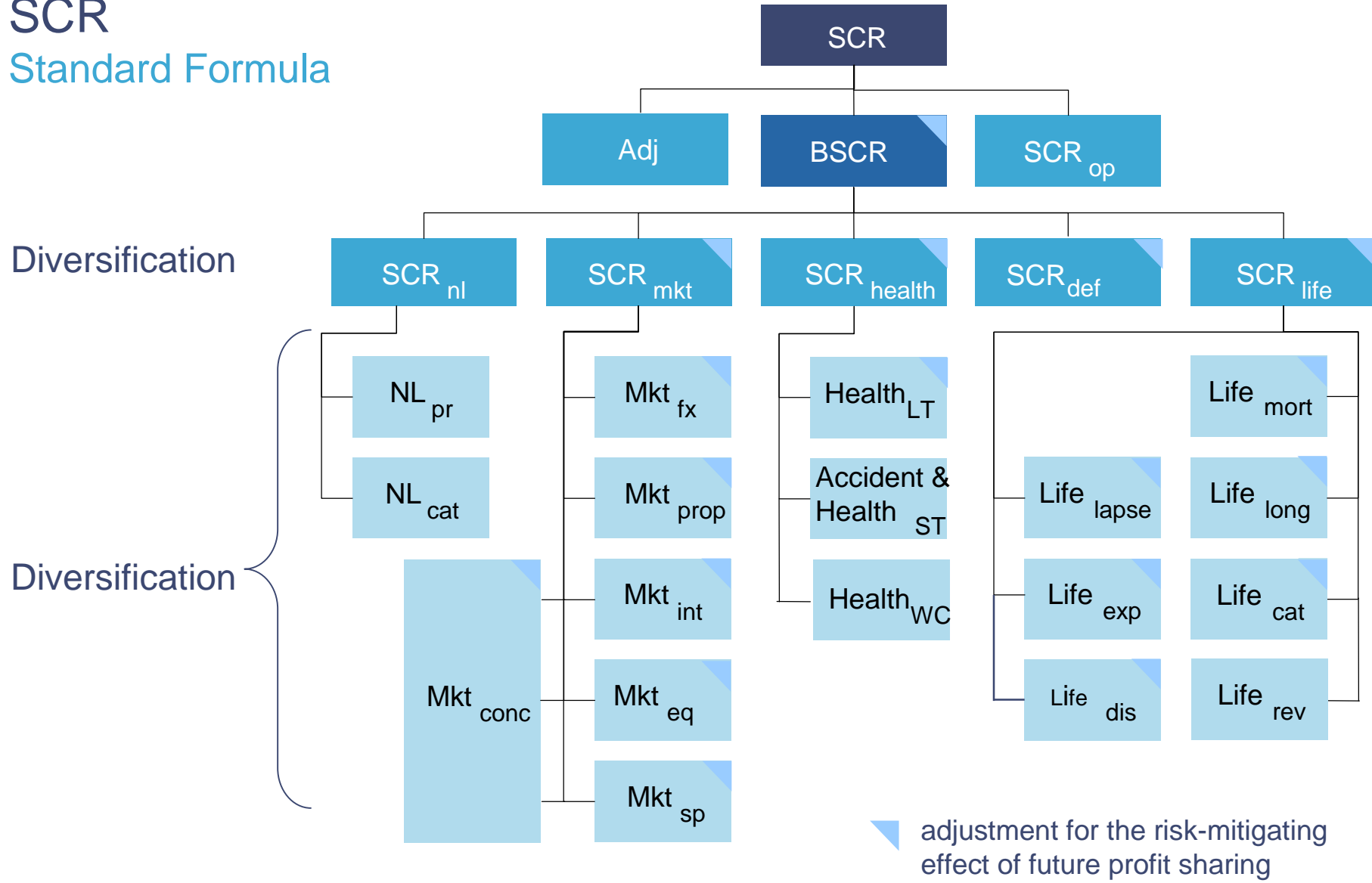
Issues and implications for insurance industry

QIS 4 objectives

- Data obtained to be used to adjust calibration of standard formula
- Consider issues including:
 - Diversification effects
 - Proportionality
 - New linear approach for MCR
 - Group calculations
- Provide all stakeholders with information on detailed impact of the potential future level 2 measures on Solvency balance sheets
- Encourage all stakeholders to start preparing for the introduction of Solvency II

Background

SCR Standard Formula



Issues and implications

Background to QIS 4

Issues and implications for insurance industry

QIS4: What have firms learnt from participating?

Factual

- SCR under standard formula higher than current regulatory capital
- Time and resource intensive
 - Difficult to obtain accurate data
 - Multi-departmental project
- Formula not fit for niche players

Behavioural

- Has raised awareness within firm at Board and Senior Management level

Annuities

- Higher technical provisions for annuity business due to:
 - the lack of liquidity premium;
 - lack of diversification allowance;
 - high cost of capital;
 - prudence of the longevity shock.
- Annual improvement in longevity rather than an immediate shock
- Consistency of capital requirements with recent reinsurance deals
- Possible need to re-price annuity business due to this provision.
- The end of annuities?

Lloyd's/London Market Business

- Standard formula not fit for Lloyd's / LM business.
 - For Lloyd's the standard formula on average was 77% higher than ICAs
- This is largely due to the underwriting risk charge. Problems include:
 - No allowance for underwriting cycle and expected profits on future business
 - Use of historical data tends increases volatility
 - Catastrophe risk double count
 - Granularity of QIS4 classes - e.g. Marine, Aviation, Transport grouped as one class, thus reducing diversification effects
- Significantly more data required e.g. accident year data

SCR result vs Internal model

- For most, formulaic SCR results significantly lower than internal model.
- Likelihood that companies in countries where internal models are not commonly used will hold less capital.
- Reasons for difference:
 - Equity stress
 - Operational stress being higher in the internal model,
 - Some stresses in the internal model but not in the Std SCR
- Many consider the operational risk calculation in the formulaic SCR to be too simplistic, seen as a backward step.
- There is some non-linearity that is covered in the internal model but not in the SCR

Issues arising from results

Dysfunctional market conditions

- Concern about what should happen when markets are dysfunctional.
- Is mark to model more appropriate to avoid pro-cyclicality?
- What is the definition of the risk-free rate when markets are not deep and liquid?

Groups

- Diversification is a significant issue:
 - Large differences in the degree of diversification benefits;
 - Proportion of EU and Non EU businesses.
- And will drive future strategy:
 - Benefits from future acquisitions;
 - May require structural change.
- Large diversification benefit under the unrestricted calculation, but restrictions for the transfer of capital under the WP schemes are applied, this benefit reduces significantly.
- Insurance Groups Directive restricts the transfer of capital, but ignored for QIS 4.

Issues arising from results

Other issues (1)

- Interpretation of the specification.
- Data not sufficiently granular.
- Look through was difficult.
- Tight timescales – concern for year end reporting timescales.
- Op Risk approach not sufficiently sensitive
- Counterparty default risk is overly complex to calculate and disproportionate to the resulting capital

Other issues (2)

- Current split of data between third party and own damage for motor insurers is quite onerous and not practical
- Some companies experienced difficulty in performing the interest rate stress as some liabilities are currently modelled using a flat interest rate rather than the full curve.
- Another company found that they were not able to perform the calculations without management actions.
- Some companies were unable to perform the lapse stress at the individual policy level as specified. Instead they performed the two scenarios specified and took the most onerous - but this was at an aggregate level.

Questions?

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