



INSURANCE SOLUTIONS

Workshop in Israel
QIS 4 in Practice:
Experiences
and Data Requirements
Tel Aviv, 25th June 2008

Catherine Cernesson, Dr. Thorsten Wagner

ADVISORY

ADVISORY

QIS 4 : Your opinions so far

- **Where are you now in respect of Solvency assessments?**

(Israel solvency I rule reflects a factor on obligations (2%) and other factors on asset held by the company)

- **What kind of (partial) internal models are already implemented in Israel, non-life and life?**

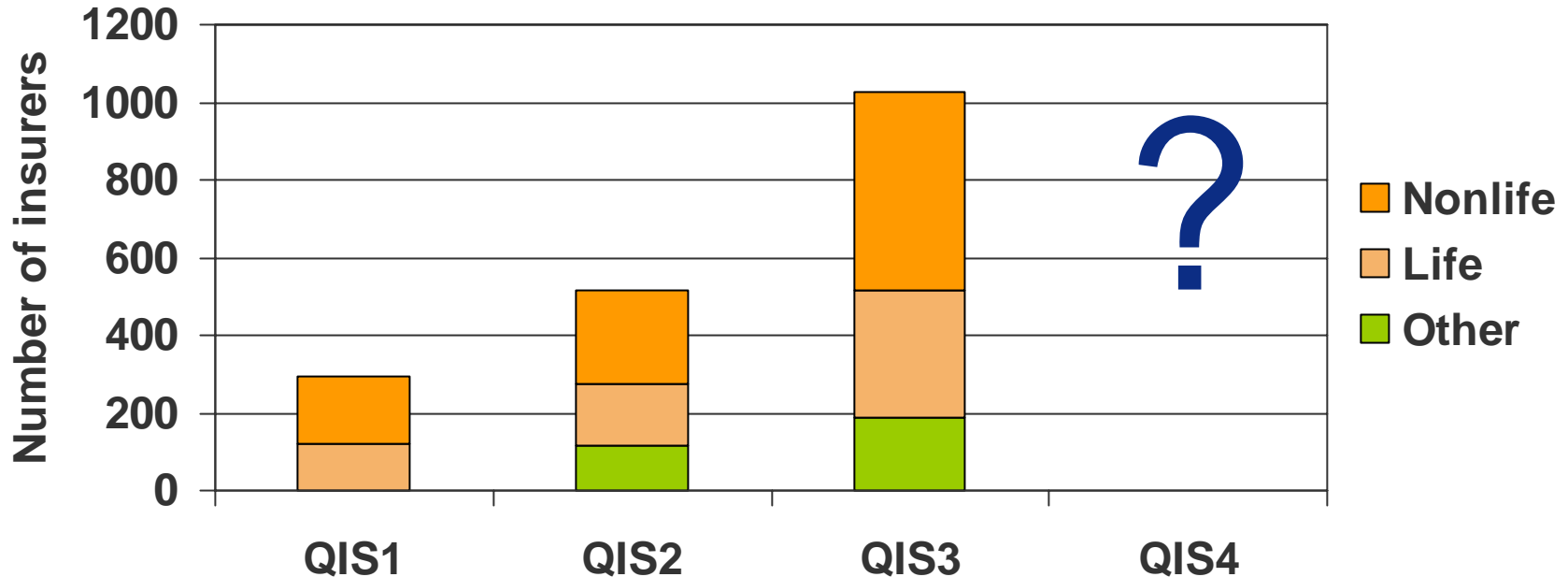
- **Is there an aspect of QIS4 you are concerned with?**

- **What do you think would make sense for Israel?**

QIS 4 : Benefits to participants

- **There is evidence that the supervisors will listen to arguments from the industry and hence there is a benefit for all to participate and send strong messages back to stakeholders where the approach under Solvency II may be flawed.**
- **Being involved in Solvency II ahead of the formal launch in 2012 will help build internal expertise in time and also make the transition to Solvency II that much easier and cost effective.**
- **Opportunity to consider the commercial implications of Solvency II**
- **Understand the areas of the proposed Solvency II principles that could lead to IT, regulatory, finance, data gathering challenges and issues**

Participation in Quantitative Impact Studies



Sources: QIS1 - Summary Report CEIOPS-FS-01/06
QIS2 - Summary Report CEIOPS-SEC-71/06S
CEIOPS' Report on its Third Quantitative Impact Study (QIS3) for Solvency II, CEIOPS-DOC-19/07

**...increasing level of participation from the insurance industry
in preparation for final implementation**

Historical Issues and Areas affected

- **QIS2:**

Results coming out were either too high or looked non-sensical

- **QIS 3:**

Issues relate to areas that have seen quite a lot of change since QIS2.

- **Range of areas affected:**

- **Interpretation of “Best estimate” in some countries**
- **With Profit Funds - hedgeability**
- **Risk Margin for non hedgeable risks**
- **Minimum Capital Requirement – modular vs compact**
- **Operational Risk – volume based**
- **Market risk modules for equity and property risk**

Good participation by Irish Firms:

- 16 life insurers (30% with 54% market share)
- 16 non life insurers (12% with 40% market share)
- 2 life reinsurers
- 5 non life reinsurers
- Captive submission prepared by DIMA looking at representative entities

Effort involved ranged from 2 weeks to 4 months, with average of 6 weeks

From our work on QIS3:

- overall capital effects generally positive for life insurers
- mixed for international based non life insurers and reinsurers depending on the specific lines of business written

Observations from QIS3 Process

Summary Results for Irish participants

- Majority have sufficient assets to meet SCR, except for 3 participants
- Surplus Capital (excess capital after SCR/ Solv I requirements met):
 - Life: 12 increased/ 6 decreased
 - Non Life: 8 increased/ 13 decreased
- Technical provisions generally lower than Solv I provisions
- Ratio of QIS3 cost of capital (i.e. risk margin) to best estimate liabilities:
 - Life median 2.5% [0.3%-25.8%]; Non Life median 9.7% [2.7% - 30.6%]
- Composition of SCR (median):

	Life	Non Life	Comment
Market	39%	25%	Equity and Concentration risk key contributors
Underwriting	80%	85%	Life: lapse and catastrophe
Counterparty	1%	4%	
Diversification	22%	17%	

- Operational Risk as % of SCR: Life 17%, Non Life 6%

- **Proportionality principle for smaller undertakings and test of simplified methods**
- **Group capital requirement with respect to intra-group diversification and intra-group transactions**
- **Comparability of results derived from the Standard Model, partial models, and internal models**
- **Design and calibration of the new MCR formula**
- **Further guidance for the three tier systems adopted for own funds – Tier 1/ 2/ 3 – quality of information poor arising from QIS3**
- **More guidance on how to reflect with-profit business, especially surplus funds; furthermore, the "lower boundary SCR" has been introduced.**
- **Additional guidance on valuation of technical provisions including:**
 - **Attempt to provide more guidance on best estimate**
 - **Risk free rate based on gilts not swaps**
 - **Criteria for simplifications and proxies that can be used**
 - **Cost of capital calculation excludes market risk**

QIS4 Changes – Key Issues Highlighted in QIS 3

Issues highlighted in QIS3	Change for QIS4
<p>Methodology/Calibration for</p> <p>Non-life u/w risk</p> <p>Annuity business</p> <p>Linked business</p>	<p>Reduction in capital for some LOB</p> <p>No real change</p> <p>Removal of lapse cat scenario</p>
<p>Application of KC factor</p> <p>Reduction for profit sharing causing issues</p>	<p>Development of Scenario test</p>
<p>Design of MCR</p> <p>Modular approach works for non-life but for life $SCR < MCR$</p>	<p>Testing linear approach</p> <p>Factor based model; applied to technical provisions/ capital at risk and non life premiums</p>
<p>Use of Internal models</p> <p>Internal models coming out at 71% of QIS 3</p> <p>High level of conservatism within QIS 3 but not evenly distributed across all risk types</p>	<p>No real change</p>
<p>Group Diversification effects</p> <p>Considerations needed for geographical boundaries</p> <p>Any restraints on fungibility of capital</p>	<p>Included for testing QIS4</p>

QIS4 Changes – Other Issues

Issue highlighted in QIS3	Change for QIS4
<p>Counterparty credit risk Reinsurance – unrated reinsurers</p>	<p>Move from a “replacement cost” to a “effect on SCR” basis. Effect removal of credit risk to your own subsidiary. Credit risk to other intra-group reinsurance based on credit standing</p>
<p>Operational risk Calc is objective and based on volume measures rather than something which provides an incentive for good risk management</p>	<p>Minor change for unit- linked business Extra capital loading for unit linked business of 25% of expenses</p>
<p>Hedgeable vs Non Hedgeable Split is subjective, With Profit business is not hedgeable</p>	
<p>Calculation of the Risk Margin for Non Hedgeable risks Cost of holding this capital is then set at 6% above the risk free rate Consistent with the Swiss Solvency test 6% overstates the COC for diversified co’s</p>	<p>No change</p>
<p>Exclusion of free assets from SCR</p>	<p>No change</p>

QIS4 Changes – Other Issues

Issue highlighted in QIS3	Change for QIS4
Treatment of inter-fund transfers	Little recognition of ring-fenced funds. Highlighted as outstanding issue in introduction.
Valuation of subsidiaries	Value in assets based on equity method. Value in SCR based on (sub-)consolidation.
<p>Calibration of market risk for SCR – Equity/Property Risk</p> <p>Scenario vs fall in value dependant on average outstanding term of liabilities</p> <p>2nd approach effectively allows for mean reversion and moving away from one of the key principles of S2 which is market consistency</p>	<p>No change.</p> <p>Removal of alternative method.</p>

Changes to non highlighted issues from QIS 3 to QIS 4

- **Cost of capital calculation excludes market risk.**
- **Non-life catastrophe based on a three tier approach.**
- **Allowance for geographical diversification for non-life non-catastrophe risks.**
- **Undertaking specific parameter approach tested for SCR non-life underwriting.**
- **Definition of future premiums based on IASM consultation paper.**
- **Inclusion of the IAS19 deficit as a liability for an insurer.**
- **Introduction of a separate health module.**
- **Consistent treatment of investments in securitisations with banks.**

Estimated Impact of changes to QIS 4 on Life lines of business

Line of business	Likely effect
Unit-linked	Fall in SCR – removal of lapse cat stress Rise in Operational Risk – new capital charge
Annuities	Increase in TP – reduction in risk discount rates
With -profits	Fall in Risk Margin – removal of market risk from calculation

Estimated Impact of changes to QIS 4 on Non Life lines of business

Module	Likely effect
Recalibration of u/w risk	Fall in SCR – charge in reduced or same for all lines of business
U/w Risk – geographical diversification	Fall in SCR for firms writing in more than one region (e.g. each EEA state is a region)
Catastrophe risk	More realistic charge (no systematic shift in all SCRs)
Undertaking specific parameters in u/w risk	No systematic shift in all SCRs

Technical Provisions

- **Risk Margin**
 - No allowance for diversification between lines of business which is harsh
 - 6% cost of capital regarded as high
- **Allowance for default risk in derivation of reinsurance asset (double count with SCR)?**
- **Treatment of with-profits business still being refined (risk mitigants and different funds within entity)**

SCR

- **Issues with different correlations and calibrations e.g. Interest/ equity; mortality/ disability**
- **Market Risk**
 - Free assets subject to market risk test (QIS3 provided an option)

Non Life underwriting Risk

- Interaction of standard and undertaking specific information in standard formula i.e. make use of own standard deviation for premium and reserve risk

Concentration Risk

- Treatment of funds withheld assets as single asset (issue for reinsurers)
- Thresholds/ limits applied low

Counterparty Risk

- Treatment of unrated reinsurers (for external reinsurance)

Operational Risk

Will it stay in its present format/ arbitrary cap of 30% of BSCR
Where is the reward for effective operational risk management?

- Limited guidance on tax effects which can be significant for life entities

QIS 4 - Data Requirements

To get the most out of QIS 4, participants are encouraged to apply the ‘best effort’ basis and focus on material risks.

- **Complete the spreadsheet(s) on a “best effort” basis in the time available;**
- **Using sensible approximations where appropriate for the less material items;**
- **Many of the data items that will be required are readily available from industry data sources like the FSA returns in the UK**
- **Need to consider the mapping of company segmentation compare to that required for QIS 4;**
- **Results of the calculations for QIS 4 are presented at the QIS 4 segmentation level but it can be appropriate to perform some of the valuations in more granular and homogenous classes leading to further data requirements:**
- **Comments on data and a list of the key data items required for completion of QIS 4 have been included in the following pages.**

QIS 4 - Data Requirements - Practically

Input data tabs in the Solo spreadsheets are split as follows:

- **General information**
- **Premiums provisions**
- **Life**
- **Health and Non-Life**
- **Scenario outputs**
- **General questionnaire**
- **Operational risk questionnaire**
- **Internal Model questionnaire**

Proxies can be used if lack of company data.

Helpers tabs:

Spreadsheets can be used to calculate intermediary results for inputs to the main spreadsheet. QIS4 helper tabs are intended to assist QIS4 participants in retrieving input data for the core spreadsheet.

QIS 4 – Data Requirements – Qualitative input

In addition to providing figures, it is very important that companies provide qualitative feedback via the QIS 4 questionnaires on the structure, calibration, difficulties encountered and suggested improvements.

Some of the key considerations include:

- the suitability of the methodology and calibration**
- recognition of risk mitigation instruments**
- the basis of valuation for assets and liabilities**
- the suitability of the capital definition**

KPMG at the level required and will consider the important issues for Company X and provide appropriate comments.

QIS 4 - Data Requirements – General Information

General information is split into:

- **Participant information**
- **Balance sheet - Assets**
- **Balance sheet - Liabilities**
- **Current solvency I position**
- **Detail of assets**
- **Detail of liabilities**