



FINANCIAL REGULATOR  
*Rialtóir Airgeadais*

Irish Solvency II QIS3

Country Report

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# Executive summary

The Committee of European Insurance and Occupational Pensions Supervisors conducted its third Quantitative Impact Study (QIS3) under the Solvency II project in April – June 2007. In this report, we summarise results and issues arising from Irish company participation.

- We had good participation, with 39 full quantitative submissions, which provided very useful data on the likely impact of the Solvency II proposals on the Irish insurance and reinsurance markets.
- While the level of resources and time required to complete QIS3 varied considerably, companies reported no insurmountable difficulties in carrying out the calculations to acceptable standards of accuracy.
- The vast majority of companies can meet the Solvency Capital Requirement (SCR) from existing resources, with just over 50% of companies showing an increase in free assets in comparison with the current Solvency I basis.
- There were some difficulties with the proposals, the primary ones being:
  - 1) The Minimum Capital Requirement (MCR) returned some negative results and generally did not meet objectives.
  - 2) Elements of the SCR clearly need restructure or recalibration, the main ones being:
    - the 75% lapse catastrophe component for linked business;
    - operational risk;
    - with-profits business in general;
    - some elements of the provisions for counterparty default risk, and;
    - the concentration risk part of market risk.

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- 3) The other key item raised by industry as a major concern was the inclusion of free assets in calculating the market risk component of the SCR.

We are very grateful for the strong participation, which has assisted both the Financial Regulator and CEIOPS in further developing proposals for Solvency II and more immediately for QIS4, due to take place from 1<sup>st</sup> April 2008. We hope that this participation continues, and indeed increases for QIS4.

# Introduction

The Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) is advising the EU Commission on the development of the Solvency II framework.

CEIOPS conducted its third Quantitative Impact Study (QIS3) in April – June 2007. The goals of QIS3 were fourfold:

1. To gather further information about the practicability and suitability of the calculations involved
2. To collect quantitative information about the possible impact on the balance sheets, and the amount of capital that might be needed, if the approach and the calibration set out in the QIS3 specification were to be adopted as the Solvency II standard
3. To test the suitability of the suggested calibrations for the calculation of the SCR and MCR
4. To seek information about the effect of applying the QIS3 specification to insurance groups.

The Financial Regulator conducted a number of workshops and liaised with industry during April-June to assist with queries regarding implementation of the detailed specifications. It then collated responses from firms and shared these, via a confidential Country report, with CEIOPS at the end of August 2007. CEIOPS in turn collated the national responses and published its own report during November 2007. It is available on the CEIOPS website.

[http://www.ceiops.eu/media/docman/public\\_files/publications/submissionstotheec/CEIOPS-DOC-19-07%20QIS3%20Report.pdf](http://www.ceiops.eu/media/docman/public_files/publications/submissionstotheec/CEIOPS-DOC-19-07%20QIS3%20Report.pdf)

The purpose of this report is to present the results and feedback received from Irish firms who participated in QIS3.

# Participation

## Response levels

The response from Irish firms was much higher than in previous QIS exercises. The following tables refer to companies that submitted full solo spreadsheets.

**Table 1 - Numbers of respondents**

Type of undertaking	Total
Life undertakings	18
Non-life undertakings	21
Pure reinsurers (included above)	7
Composites	0
<b>All respondents</b>	<b>39</b>
of which Mutual undertakings	0

These companies represented a mix of companies of all sizes, small, medium and large (according to the criteria CEIOPS used in both QIS2 and QIS3)<sup>1</sup>. However, due to possible identification issues, we do not provide any analyses by size of company in this report.

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<sup>1</sup> Life companies with gross technical provisions greater than €10 bn are large, those with less than €1 bn are small. Undertakings with provisions between these bounds are medium.

Non-life companies with annual gross written premiums greater than €1 bn are large, those with less than €0.1 bn are small. Any value in between is considered medium-sized.

**Table 2 - Total market (Direct writers and reinsurers)**

	Total Number of Respondents		Total Market Share
	No.	%	%
Life	18	14	47
Non-life	21	10	37

The market share statistics are based on the CEIOPS criteria i.e. by reference to premium income for non-life business, and by reference to current provisions for life business. Reinsurance market data relies in part on estimates.

Ireland has a large number of small captive insurers and reinsurers, most of which did not contribute directly to the QIS3 exercise. Nevertheless we feel that the general features of such companies in the Irish market are well represented by those companies that did make submissions.

We also include the respondent data for direct insurers only.

**Table 3 - Total market (Direct writers only)**

	Total Number of Respondents		Total Market Share
	No.	%	%
Life	16	30	54
Non-life	16	12	40

## Other information submitted

Of the 39 companies that submitted spreadsheets, 22 also completed the qualitative questionnaire. A further 12 companies submitted their own freeform report addressing many of the same questions. Finally, 2 companies that did not complete the spreadsheet nevertheless submitted a qualitative response, which included some high level financial results. While the numerical results of these two companies are not included in the various quantitative analyses that follow, their results were not unusual and did not identify any new issues.

## Resources and reliability

The number of person months that was required to complete QIS3 ranged from 0.2 months to 4 months with an average of around 6 weeks. Most of the small companies took less than the average time with the larger ones tending to require more time.

Most companies said the input data was reliable, accurate and traceable from their balance sheets and financial statements. Similarly, they were reasonably satisfied with the reliability and accuracy of the results that emerged. For the most part, companies were able to use existing reporting and modelling systems and results were reconcilable to either published or internal financial results. The only significant area where concern about reliability was expressed was in relation to the calculations for the Cost of Capital risk margin on Technical Provisions, and companies clearly would have liked more guidance in this area.

It was also interesting to note that there was very little stated support for simplified approaches to calculating liabilities, some options for which were considered in Annex B of the Technical Specifications.

# Overall financial results

The vast majority of companies can meet their Solvency Capital Requirement (SCR), with only three failing to do so, and each of those comfortably meets the Minimum Capital Requirement (MCR). There is no obvious single factor affecting the three companies in question, having both life and non-life and also direct writers and reinsurers among the three companies. Although the two companies with the lowest SCR coverage are non-life captive companies, the Financial Regulator does not believe this reflects any systemic pattern or flaw in the overall Solvency II approach but rather reflects the calibration of one specific module (non-life catastrophe) and the companies' attempts to identify and measure suitable 1 in 200 year events.

## Solvency coverage

(i.e. available assets divided by solvency requirement)

In all the work that follows, any reference to Solvency 1 required margin should be taken to mean 150% of the underlying legislative requirement. This is the standard requirement applied to all direct writers by the Financial Regulator and is therefore regarded as the most appropriate measure against which to draw comparisons.

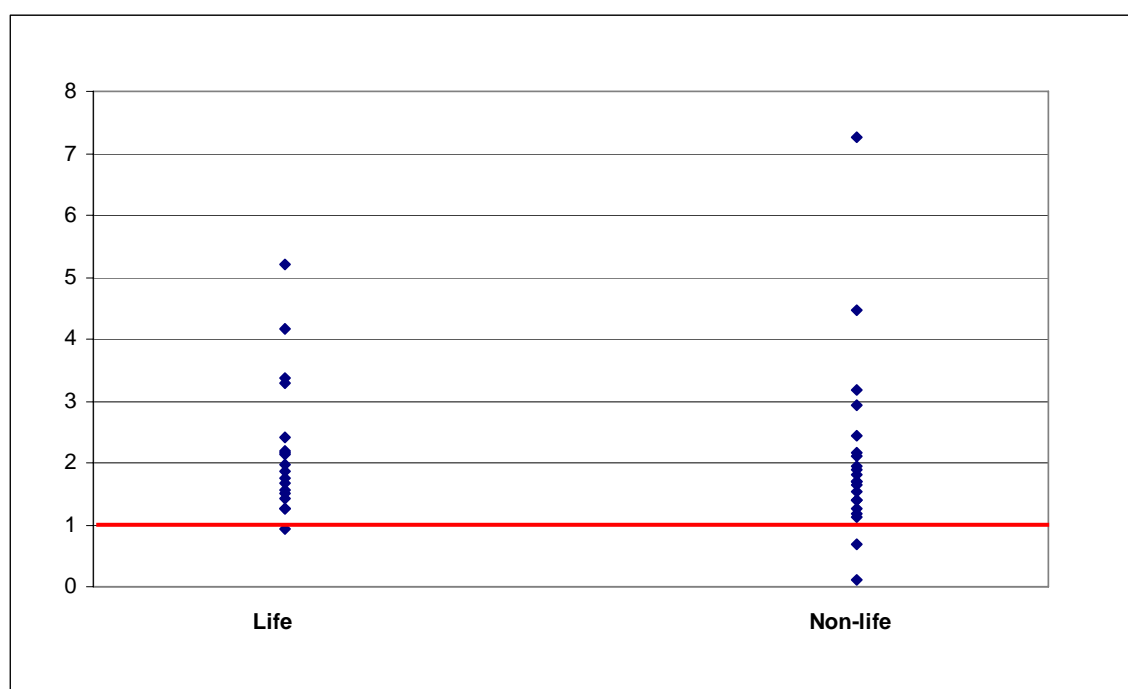
We have decided not to show mean results in most of the analyses. Weighted averages tend to be dominated by the biggest companies and unweighted averages are too easily distorted by an outlying result from a small company. We believe that the median shown in most of the tables included in this report is a satisfactory measure of centrality.

**Table 4 - Change in solvency margin coverage from Solv. I to QIS3**

Type of company	Increase	Decrease	Total
Life	9	9	18
Non-life	6	15	21
<b>Total</b>	<b>15</b>	<b>24</b>	<b>39</b>

The Solvency I basis underlying the above table is Available Solvency Margin / 150% \* Required Minimum Solvency Margin;  
the QIS3 basis is Eligible Capital / SCR.

**Chart 1 – SCR coverage**



**Table 5 - Summary of distribution of coverage ratios – life**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Ratio of Available Capital to SCR	93.4%	158.4%	191.9%	307.4%	521.6%
Ratio of Available Solvency I Capital to 150% * RMSM	*	132.1%	189.0%	276.8%	*

\* not shown for confidentiality reasons

**Table 6 - Summary of distribution of coverage ratios –non-life**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Ratio of Available Capital to SCR	10.3%	139.0%	170.7%	216.9%	726.3%
Ratio of Available Solvency I Capital to 150% * RMSM	*	182.0%	349.7%	663.2%	*

\* not shown for confidentiality reasons

These changes reflect the fact that, of the companies participating in QIS3, non-life companies have higher coverage under Solvency I than life companies. Under Solvency II, the coverage ratios of the 2 types of insurers are much closer together, with life companies actually having slightly higher coverage on average.

## Surplus capital

An alternative measure of the difference between Solvency 1 and Solvency 2 is a comparison of the surplus capital – the excess of eligible capital after the SCR / 150% of Required Minimum Solvency Margin has been met. Even though the solvency ratio might have reduced, it does not mean that surplus assets have also reduced. For most companies, although the solvency requirement has generally increased, the value of liabilities has usually fallen, and the combined effect depends on individual circumstances.

**Table 7 - Change in surplus capital from Solvency I to QIS3**

Type of company	Increase	Decrease	Total
Life	12	6	18
Non-life	8	13	21
<b>Total</b>	<b>20</b>	<b>19</b>	<b>39</b>

### Measure of size of change

**Table 8 – QIS3 surplus capital / Solvency 1 surplus capital**

Type of company	<50%	50%-100%	100%-150%	>150%	Total	Median ratio
Life	1	5	2	10	18	172%
Non-life	6	7	5	3	21	70%
<b>Total</b>	<b>7</b>	<b>12</b>	<b>19</b>	<b>13</b>	<b>39</b>	<b>104%</b>

## Comparison of total capital requirement

(i.e. net technical provisions plus solvency requirement)

Although the application of some differences in asset valuation and admissibility rules has contributed to some of the change in surplus capital, most of the difference arises from changes in the sum of technical provisions and solvency requirements.

**Table 9 - QIS3 to Solvency 1 total capital requirement**

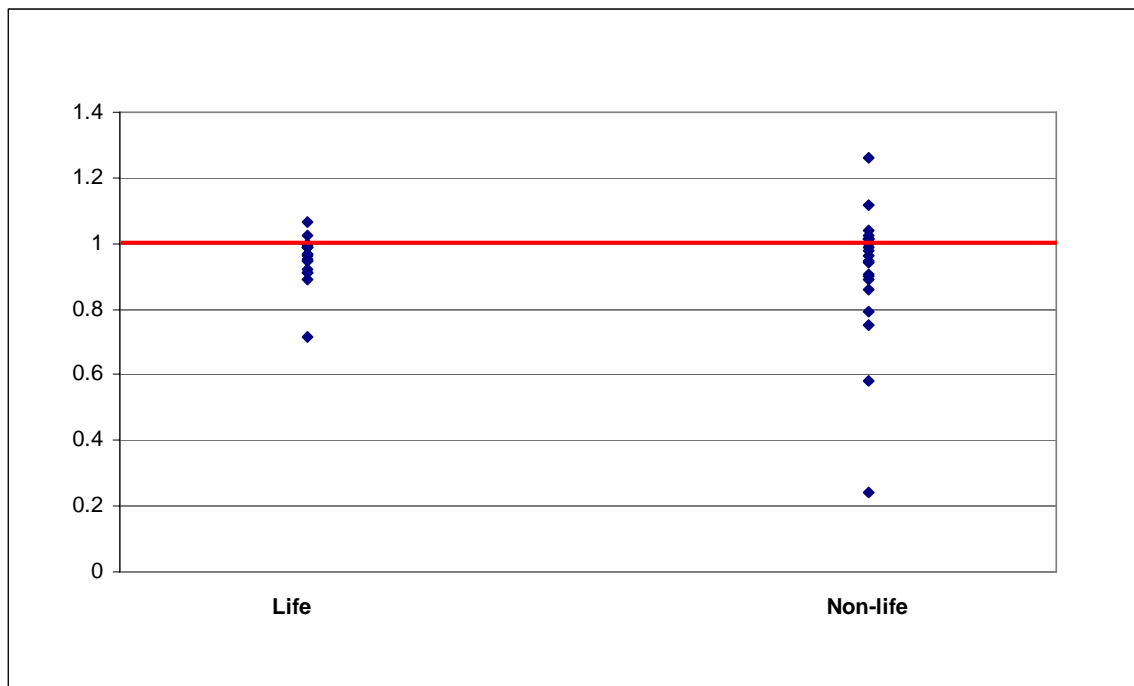
	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	41.5%	97.8%	99.5%	102.0%	114%
Non-life	66.9%	96.2%	110.5%	158.3%	759%

# Detailed financial results

## Technical provisions

Most companies seemed comfortable with the specifications for technical provisions, and the only significant criticisms were reserved for the mechanics of the Cost of Capital approach for the risk margin. Nevertheless companies were in agreement in principle with the Cost of Capital approach for the risk margin.

**Chart 2 - Ratio of QIS3 technical provisions to Solvency I provisions (net)**



**Table 10 - Ratio of QIS3 technical provisions to Solvency I provisions**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	71.6%	92.9%	96.6%	98.9%	106.5%
Non-Life	24.0%	88.8%	96.1%	101.3%	126.1%

These general reductions in technical provisions were expected. The primary reasons are the discounting of non-life reserves (almost always outweighing the introduction of the risk margin) and the use of best estimate rather than prudent assumptions on life business.

The increase in provisions in life business reflects with profits business. All the other extreme values invariably reflect the impact on a company with unique features or products.

**Table 11 - Cost of Capital risk margin to best estimate liabilities**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	0.3%	0.7%	2.5%	7.1%	25.8%
Non-Life	2.7%	5.3%	9.7%	13.7%	30.6%

Although the results for this ratio are unreliable when analysed by line of business (due to the manner in which CoC results were input in spreadsheets by some companies), we believe that median results are similar for the 3 main life groupings (with profit, unit-linked and non-profit) but that results amongst non-life companies for 3<sup>rd</sup> party liability and Accident and Health - workers' compensation show ratios approximately double those of other non-life classes.

Overall, nobody reported significant parts of their liabilities as hedgeable although a number of comments were made to the effect that the definition of hedgeable was too stringent.

## SCR analysis

**Table 12 - Solvency requirement compared to (net) provisions**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life S1	0.3%	1.1%	3.7%	6.7%	106%
Non-Life S1	6.7%	16.0%	36.8%	49.2%	124%
Life SII	1.0%	2.9%	5.1%	21.2%	192%
Non-Life SII	23.7%	42.9%	67.1%	154%	914%

The increase in all ratios from Solvency 1 to QIS3 is to be expected with the general reduction in provisions and the wider scope of the SCR modules. The life ratios are typically much lower than non-life because of large unit-linked provisions with small capital requirements.

### Constituent elements of SCR

#### Analysis of Basic SCR by main modules

Under the QIS3 specifications, the total SCR is the Basic SCR (BSCR) plus the charge for Operational Risk (with no diversification effects allowed between Operational and other risks).

#### Basic SCR

In all of the following tables and graphs, the contribution of a specific risk module is measured by its result divided by the Basic SCR (BSCR). As there are diversification effects from using the correlation matrices, these contributions within a company add to greater than 100% of the BSCR. The excess of the sum of the results for individual risk modules over the BSCR (expressed as a percentage of the BSCR) is shown here as the reduction for diversification.

For simplicity, where a life company does have with profit business included, all calculations shown here are before allowing for any mitigation effects of future profit sharing.

**Table 13 - Composition of BSCR - life**

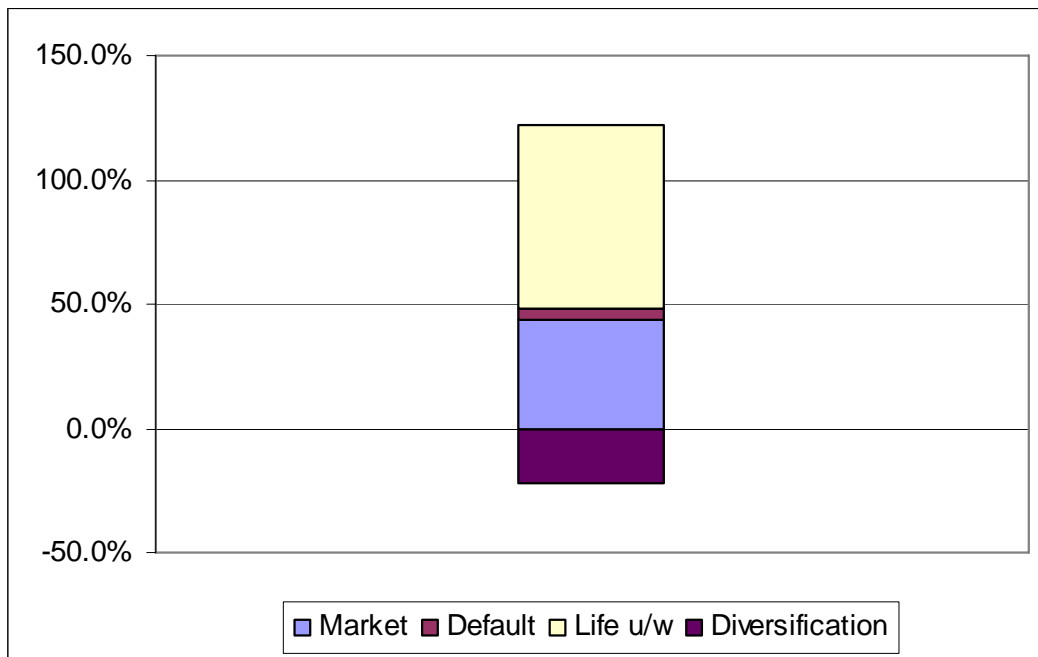
	Minimum	25th Percentile	Median	75th Percentile	Maximum
Market risk	13.0%	33.5%	39.4%	57.3%	85.5%
Counterparty risk	0.0%	0.2%	1.0%	2.3%	42.0%
Life u/w risk	33.2%	59.0%	80.3%	86.2%	95.2%
Reduction for diversification	9.1%	19.7%	22.2%	25.6%	39.3%

**Table 14 - Composition of BSCR – non-life**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Market risk	4.3%	14.3%	25.4%	60.1%	95.2%
Counterparty risk	0.0%	2.0%	3.8%	9.9%	45.0%
Non-life underwriting risk	13.0%	55.5%	84.7%	93.3%	97.8%
Reduction for diversification	4.1%	11.6%	16.9%	26.0%	32.5%

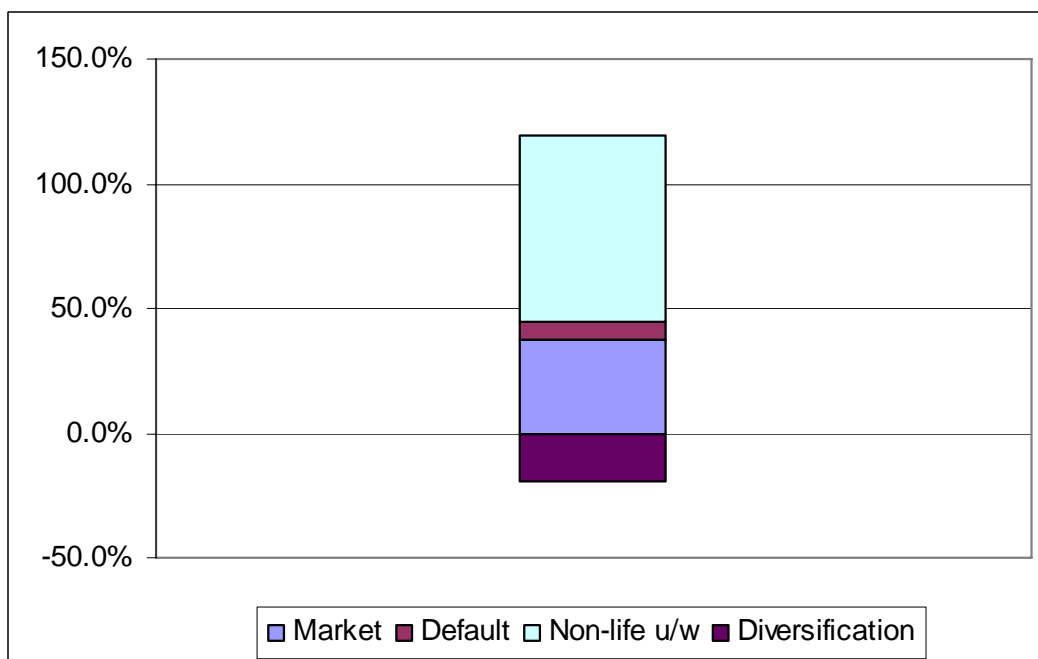
Charts 3 & 4 indicate the unweighted average contribution, across the various companies, of the various modules to the total BSCR. Each bar sums to 100%.

**Chart 3 - Composition of BSCR (life)**



Life underwriting risk dominates, followed by market risk. This reflects the business mix of Irish companies; in contrast, European results tend to illustrate much higher market risk.

**Chart 4 - Composition of BSCR (non-life)**



These results are much more similar to other European results than the Life ones above. Underwriting risk dominates here and in Europe overall, where it averages approximately 75% of BSCR before diversification.

### Operational risk

**Table 15 - Operational risk as percentage of BSCR**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	1.7%	7.5%	17.0%	30.0%	30.0%
Non-Life	0.3%	3.1%	5.5%	10.3%	30.0%

7 life companies had their operational risk result capped at 30% of the Basic SCR. Only 2 non-life companies had.

## Analysis of SCR sub-modules

**Table 16 - Market risk (as % of BSCR) - life**

	Minimum	25th Percentile	Median	75th Percentile	Maximum	Number of Firms with data
Interest rate	0.0%	3.4%	9.0%	20.5%	52.4%	(18)
Equity	0.1%	21.6%	31.3%	39.5%	70.6%	(15)
Property	0.9%	2.7%	4.8%	5.9%	14.2%	(8)
Spread	0.1%	1.2%	1.3%	7.3%	24.5%	(9)
Concentration	1.8%	10.9%	17.9%	21.7%	29.6%	(11)
Currency	7.0%	8.3%	10.6%	34.5%	69.9%	(7)
Reduction for diversification	2.3%	11.2%	16.9%	23.5%	45.5%	(18)

(The distribution of results on any line refers only to those companies who submitted a value for the sub-module.)

**Table 17 - Market risk (as % of BSCR) – non-life**

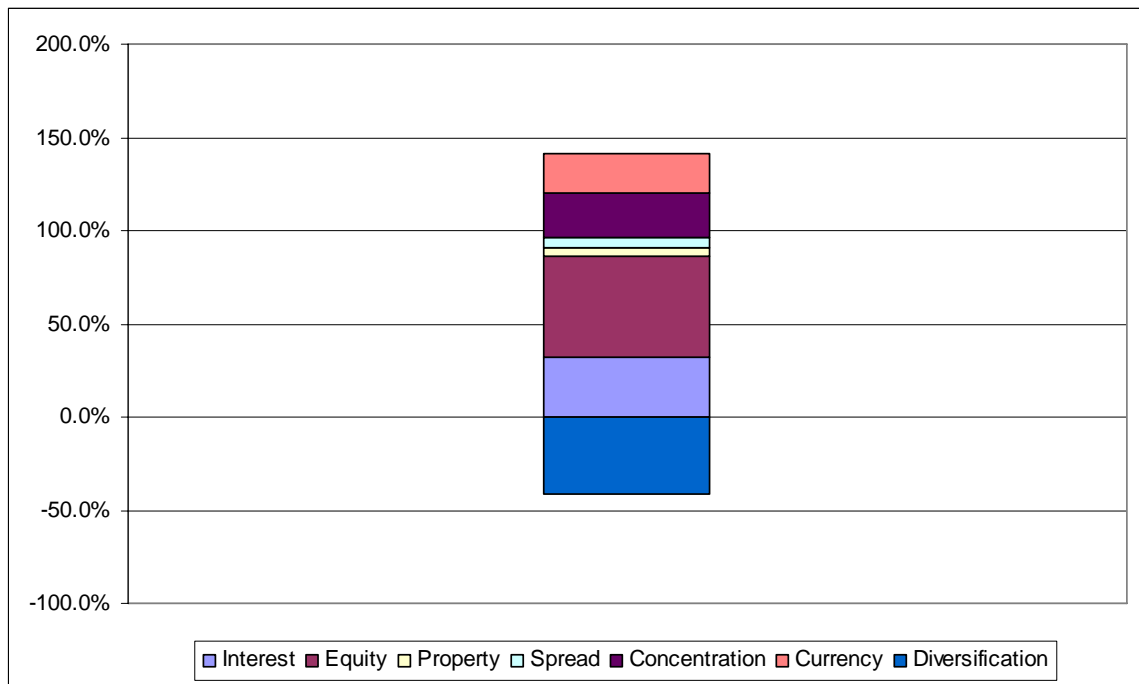
	Minimum	25th Percentile	Median	75th Percentile	Maximum	Number of Firms with data
Interest rate	0.4%	3.1%	8.1%	15.0%	61.4%	(20)
Equity	8.5%	10.5%	13.6%	17.2%	46.7%	(6)
Property	0.1%	1.1%	2.1%	2.3%	2.5%	(3)
Spread	0.0%	1.4%	3.8%	5.6%	6.7%	(12)
Concentration	0.6%	5.7%	18.7%	50.9%	67.3%	(11)
Currency	0.8%	1.7%	4.3%	15.3%	71.8%	(13)
Reduction for diversification	1.8%	4.8%	6.1%	11.9%	31.8%	(20)

Where they exist, equity and concentration risk are the 2 biggest contributors to the BSCR in both life and non-life business, but they are zero in almost half the companies.

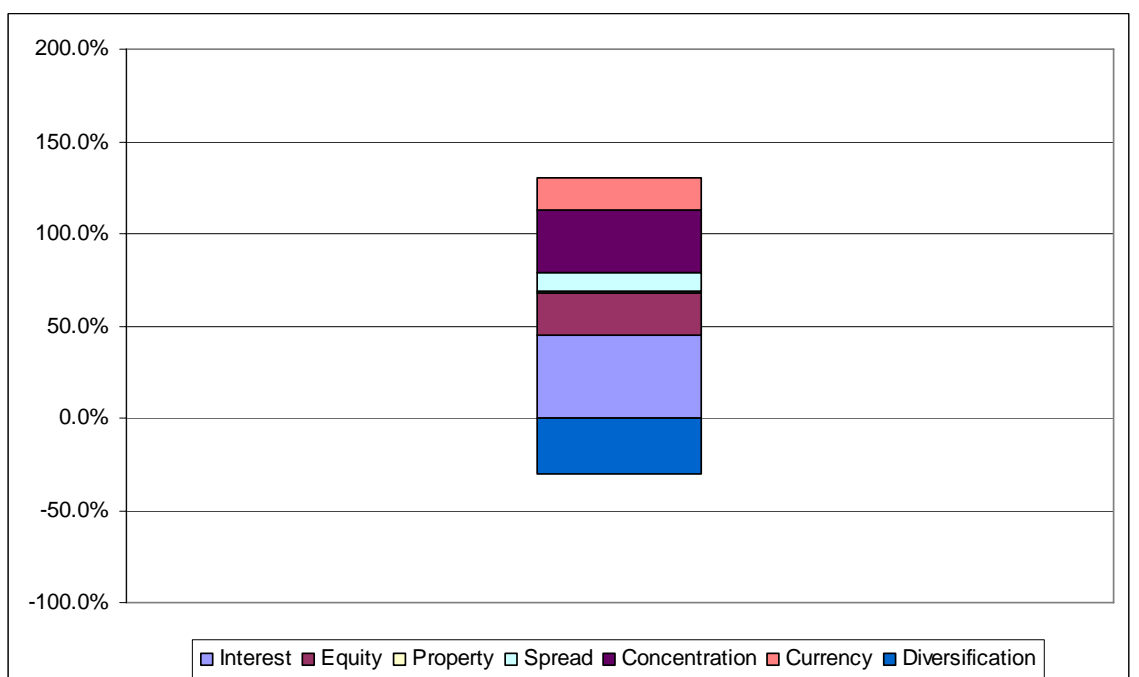
## Composition of market risk (constituent parts)

Charts 5 & 6 examine the unweighted average contribution, across the various companies, of the various sub-modules to the total market risk charge. Each bar sums to 100%.

### Chart 5 - Composition of market risk (life)



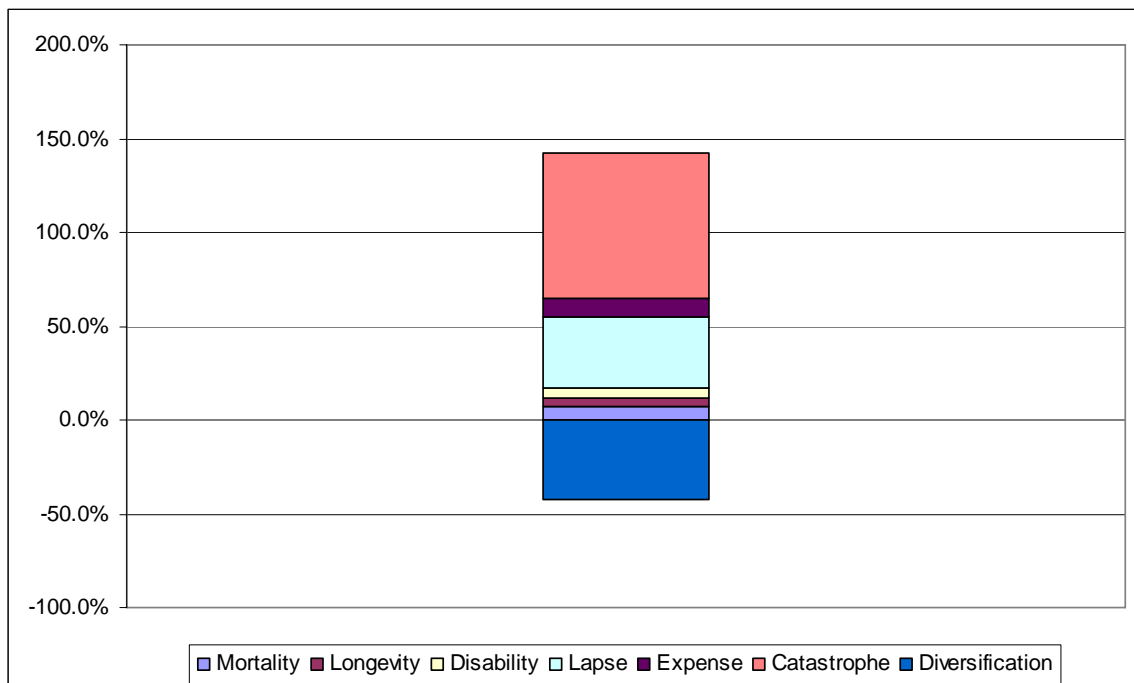
### Chart 6 - Composition of market risk (non-life)



**Table 18 - Life underwriting risk (as % of BSCR)**

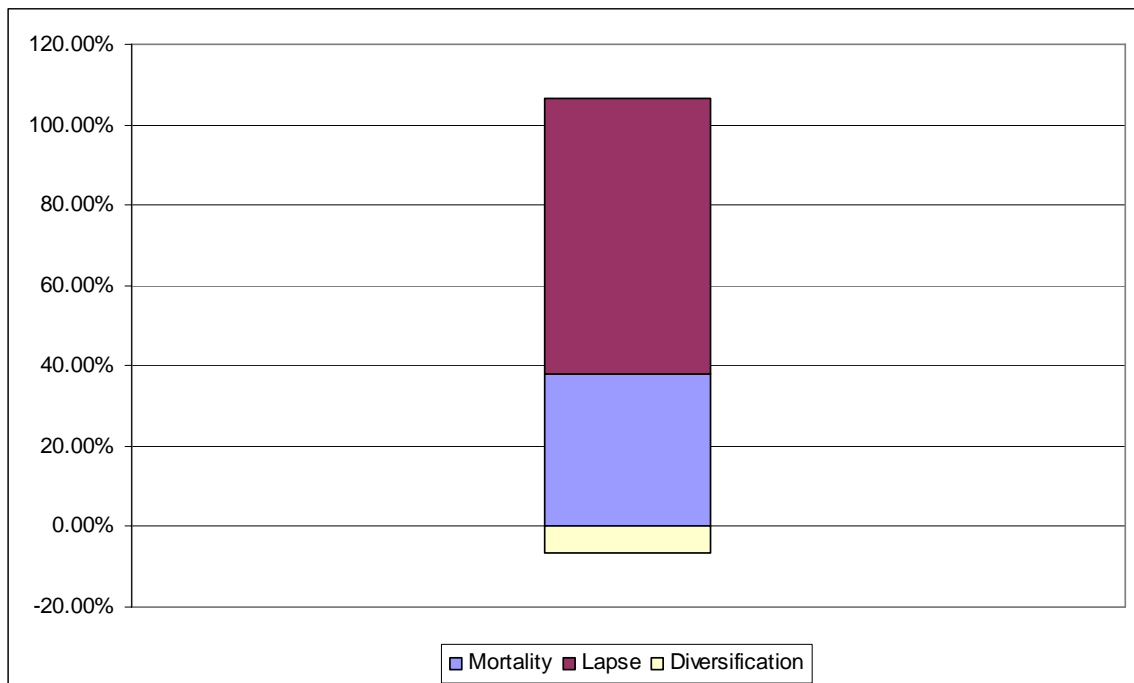
	Minimum	25th Percentile	Median	75th Percentile	Maximum	Number of Firms with data
Mortality	0.4%	1.7%	3.2%	10.0%	27.8%	(16)
Longevity	2.2%	3.1%	4.0%	12.2%	35.2%	(4)
Disability	0.4%	3.1%	7.6%	41.7%	54.3%	(6)
Lapse	6.2%	19.0%	26.7%	36.6%	56.6%	(16)
Expense	0.5%	2.4%	3.7%	9.5%	23.0%	(17)
Revision	0.5%	0.5%	0.5%	0.5%	0.5%	(1)
Catastrophe	5.6%	34.6%	60.8%	75.7%	94.7%	(18)
Reduction for diversification	4.8%	19.4%	28.6%	41.3%	65.2%	(18)

**Chart 7 – Average composition of life underwriting risk**



Lapse and Catastrophe sub-modules (which includes a lapse element) dominate the Life underwriting risk results. The catastrophe lapse element, which addresses a “run on the insurer” by policyholders whose surrender value exceeds the technical provision is a new element introduced in QIS3. It chiefly applies to unit-linked business, where a best estimate approach to setting technical provisions often results in negative non-unit reserves and a surrender strain.

**Chart 8 – Average composition of life catastrophe risk**

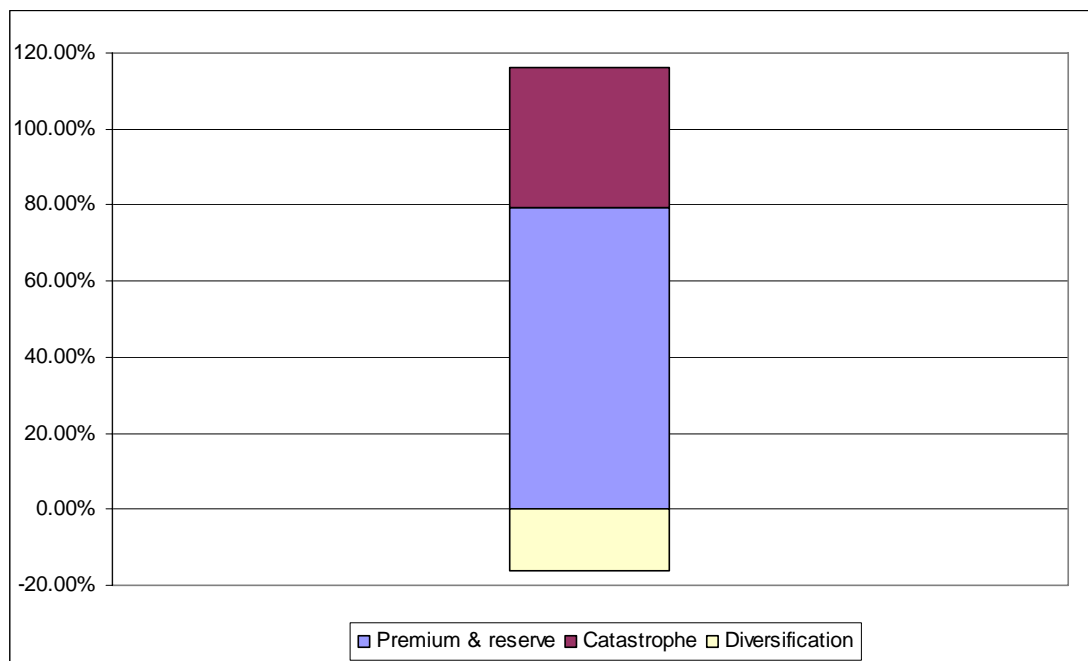


Within the catastrophe module, the lapse element (if relevant) dominates. When this is combined with the earlier strong basic lapse sub-module result, the combined contribution to BSCR from lapses is very large.

**Table 19 – Non-life underwriting risk (as % of BSCR)**

	Minimum	25th Percentile	Median	75th Percentile	Maximum	Number of Firms with data
Premium & Reserve	5.8%	28.5%	68.3%	86.8%	95.6%	(21)
Cat risk	0.7%	6.9%	27.1%	50.0%	97.6%	(17)
Reduction for diversification	0.7%	5.8%	10.0%	17.9%	37.1%	(17)

**Chart 9 – Average composition of non-life underwriting risk**



The overall breakdown of non-life underwriting module seems typical enough of the general results seen from other member states. As can be seen in Table 19, a 1 in 200 catastrophic event (or events) dominates all other results in a small number of cases.

## MCR analysis

2 MCR formulae were tested. In MCR1, the market risk module result was a function of the quantum of different asset types. MCR2 incorporated the average terms of fixed interest liabilities and assets and took the worse result from a specified rise and fall in yields. 35 out of 39 companies submitted results for MCR2, with all computing MCR1.

**Table 20 - Comparison of MCR1 to MCR2**

Type of company	MCR1>MCR2	MCR2>MCR1	Total
Life	12	2	14
Non-life	15	6	21
<b>Total</b>	<b>27</b>	<b>8</b>	<b>35</b>

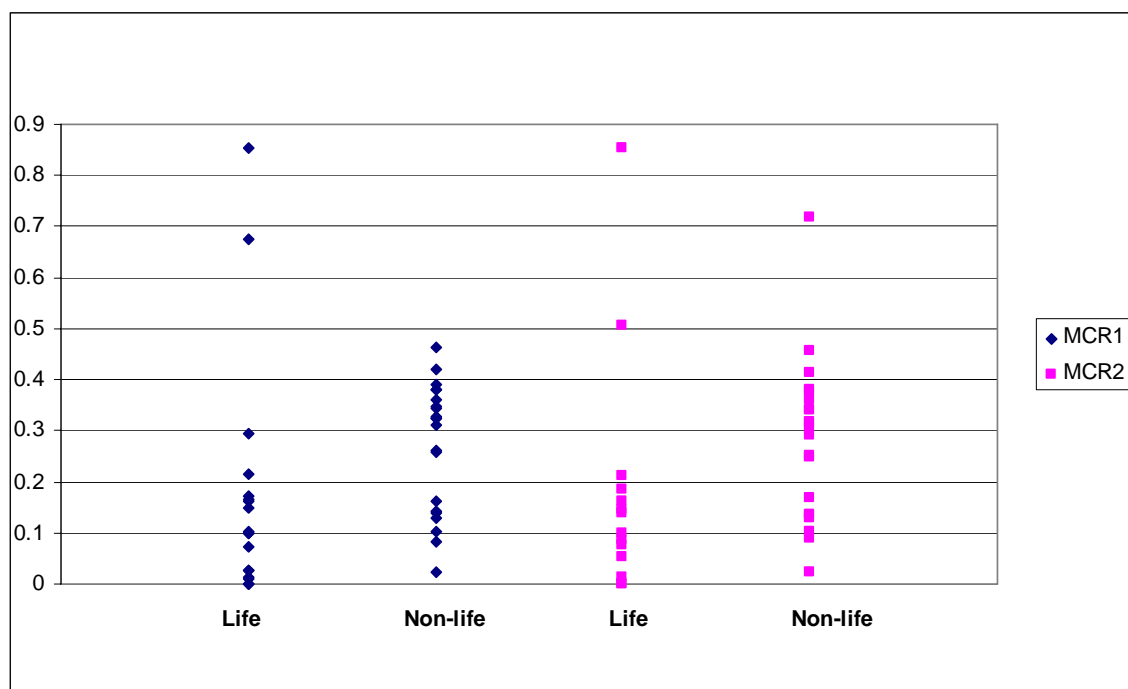
In most cases the extra sensitivity of the MCR2 results in a lower MCR outcome.

**Table 21 - Summary of ratio of MCR1 / MCR2**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	80%	102%	117%	139%	220%
Non-Life	50%	100%	102%	105%	109%

With the exception of one low value, the non-life ratios are very stable and close to 1, but the life values are much more variable between the 2 approaches, reflecting mostly variation in the size of fixed interest bond holdings and the adequacy of matching by term.

**Chart 10 - Ratio of MCR to SCR**



There are 2 life companies whose MCR calculations result in negative answers, due to the inappropriate operation of the Reduction for Profit Sharing (RPS) mechanism. These have been shown as zero in this chart, and removed from Table 22 below.

**Table 22 - Summary of ratio of MCR to SCR**

	Minimum	25th Percentile	Median	75th Percentile	Maximum
MCR1- Life	1%	3%	10%	17%	85%
MCR1 - Non-life	2%	14%	32%	36%	46%
MCR2 - Life	1%	3%	9%	16%	85%
MCR2 - Non-life	2%	14%	30%	36%	72%

The range of results for both MCR formulations within each type of insurance is quite wide. Allied to the negative results produced for some life companies, it is questionable whether these MCR approaches could form the basis of an appropriate “ladder of supervisory intervention”. MCR is discussed further in the section “Issues arising”.

## Numerical analysis of qualitative responses

Some qualitative questions were replied to in the spreadsheets using a numerical grading system.

The fifth question in the QIS3 solo qualitative questionnaire asked participating firms to give an input on their expectations regarding CEIOPS future work. Insurers were asked to state on a scale of 1 to 5 (1 for less and 5 for more) whether they deem appropriate more or less prescriptive rules, guidance for calculation, or simplifications to the methodology proposed in the QIS3 Technical Specifications

The average Irish responses were: -

**Table 23 – Average grades – future guidance**

	Technical provisions	Value of assets	Assessment of eligible capital	Calculation of SCR	Calculation of MCR
<b>Prescriptive rules</b>	2.9	2.9	3.1	2.7	3.0
<b>Guidance for calculation</b>	3.9	3.6	3.7	3.9	3.8
<b>Simplification for methodology</b>	3.2	3.0	3.0	3.2	3.3

Overall, these are broadly indicative that the quality of the specification for QIS3 was adequate, but line 2 indicates that more guidance on the actual calculations is desired. If the Irish table is compared to the CEIOPS overall result, Ireland is below average on lines 1 and 3, but very slightly above average on Line 2. This suggests that, relative to their European counterparts, Irish companies are a little more comfortable with a “principles-based” approach and also have less need for simplified approaches, but at this stage do want clear instruction and guidance for the less familiar calculations needed for the Solvency II regime.

Question 7 asked for the QIS3 approach for the calculation of each component of the SCR and MCR to be ranked for suitability, calibration and practicability using 1(poor) to 5(good).

**Table 24 – Average grades - methodology**

	Market risk	Credit risk	Life u/w risk	Non-life u/w risk	Reduction for Profit-Sharing	Overall
<b><i>Suitability</i></b>						
SCR	3.3	2.9	2.9	3.0	3.0	3.1
MCR	2.7		2.8	2.6	2.0	2.7
<b><i>Calibration</i></b>						
SCR	3.2	2.9	2.8	2.2		2.9
MCR	2.8		2.8	2.6		2.8
<b><i>Practicability</i></b>						
SCR	3.5	3.3	3.2	3.7	3.0	3.5
MCR	3.5		3.2	3.6	3.0	3.7

Most marks are close to mid-range. Most dissatisfaction is expressed for MCR suitability and in particular the treatment of future profits for loss absorbance. The other area with low marks is the calibration of non-life risks. This was echoed by companies in a number of other member states, notably the United Kingdom.

# Issues arising

Following the company submissions to the Financial Regulator, and its examination of the various results and comments, the Irish country report was submitted to CEIOPS at the end of August 2007.

In it, various issues were raised in two main forms. The Financial Regulator, while recognizing that the overall approach in general, including the high-level design of the SCR, seemed to be proving itself suitable and practicable, identified a number of areas of concern. Separately, the Financial Regulator included many of the companies' detailed submissions on almost every topic. Some of these clearly overlapped with our own concerns but others raised points with which we did not necessarily agree. These were submitted to CEIOPS without further comment by us.

## **Issues highlighted by the Financial Regulator**

### **MCR**

- Both approaches lack the risk sensitivity (especially in relation to market risk) necessary to behave in a sensible fashion relative to the SCR and are not even certain to move in the same direction as SCR for some shocks. MCR module results can vary significantly as a proportion of their SCR equivalents and cannot possibly represent a consistent VaR probability for different entities.
- The profit-sharing effects can lead to a negative MCR.
- We favour a margin over liabilities approach for the calculation of the MCR, primarily on the grounds of simplicity. Failing that, a simple proportion of SCR (i.e. the "Compact" approach) is preferable to the existing modular options, but lacks the simplicity of the margin over liabilities approach.

## SCR

### Operational risk

- The treatment of Operational Risk is fundamentally inadequate and needs comprehensive reworking. An approach that will reward effective risk management practices is essential to the credibility of including a Pillar I charge for Operational Risk.
- On top of this, the arbitrary cap for operational risk of 30% of BSCR can result in major understatement of the true risk for some companies, where the BSCR is likely to be small but operational risk will almost certainly be the single largest risk in the undertaking.

### Life underwriting risk

- The 75% lapse assumption under the Life catastrophe risk appears to overstate the risk substantially and also potentially double counts risks.
- The lapse risk within Life underwriting also seems disproportionately high in the final results.
- The calibration of the expense risk charge seems low.
- Varying the mortality sub-risk calibration by duration of contract should be considered.
- The factor-based alternative approaches permitted within Life underwriting module are too crude.

### With-profits business

- The treatment of with-profits business as transacted in Ireland is not well reflected in current specifications and needs considerable further work, including in particular the operation of the KC-factors and the combination of different ring-fenced funds within one legal entity

### **Concentration risk within market risk**

- The thresholds of concentration seem inappropriately small. We propose a much higher threshold for cash deposits or equally secure exposures. Ideally, the concentration risk module should be modified to treat, for example, cash, bonds and equity holdings differently.
- Treating the “withheld funds” of reinsurers as a single asset for market risk concentration is not necessarily appropriate, and we would prefer a modified treatment, perhaps permitting a look-through by the reinsurer to the underlying assets, for example.

### **Non-life catastrophe risk**

- Some companies estimated massive liabilities for 1 in 200 events. Our view is that these estimates might be difficult to justify and could well represent events of less frequent occurrence. We expressed an interest in exploring other options for calculating this sub-module.

### **Calibrations**

In general, all prescribed calibrated parameters and correlations require careful further consideration but the following stood out: -

#### **Life underwriting risk:**

- Disability and mortality on accelerated critical illness type policies are clearly negatively correlated in reality but are currently treated as positively correlated within this sub-module.

#### **Market risk:**

- Interest and equity risk correlation appears understated at 0 but property and equity seems overstated at 75%.

#### **Counterparty risk**

- We would like some alternative introduced for unrated situations that reflects the reality of the risk, and not just an all-encompassing “unrated” category with heavy capital charges.

### **Other points made included:**

- We do not in general support proposals for simplified or proxy approaches to calculations. We expect all undertakings to have the resources and expertise at their disposal to carry out appropriate assessments of the liabilities they are taking on and to be able to quantify the risks they are running.
- We encouraged further consideration to be given to the question of whether different calibrations and treatments for reinsurance business are appropriate, given the wholesale nature of the business.
- Many undertakings valued assets on a mid-market valuation rather than bid basis, so the overall asset position shown by Irish undertakings may be slightly over-stated in this respect. The commonness of this response indicated a strong preference for a mid-market valuation basis, which the Financial Regulator could support.
- Where geographic diversification exists it should be fully recognized based on an economic approach. Insurers with overseas branches should in principle receive the same magnitude of geographical diversification benefit as groups with overseas subsidiaries.

## **Company views**

Most comments in respect of the overall approach to Solvency II indicated by QIS3 were supportive and positive, with the exception of the methodology for the MCR, the application of the SCR's market risk module to free assets and also the treatment of operational risk within the SCR.

The issues listed here, while representing the more common or significant objections to individual elements, should be taken in a context of general agreement with the overall system.

### **MCR**

Almost every company that commented on the MCR was unhappy with the modular approaches, for all the reasons outlined earlier, and stated a clear preference for an MCR that was a fixed proportion of the SCR.

### **SCR**

#### **Free assets**

Companies felt strongly that assets above those required to meet the SCR should not be included in market risk calculation. Very few actually made the optional alternative SCR calculation. Among the few who did, the revised SCR usually fell by 5-10% but by significantly more in one case. (It may be worth mentioning here that the point of breach of SCR is the same whether free assets are included or not in the market risk calculation; obviously differences will arise in the absolute value of the SCR and in the reported level of solvency coverage.)

#### **Operational risk**

Criticism was very consistent concerning

- the general formula
- the lack of sensitivity to a company's own risk management processes
- the lack of diversification with other risks
- the capping of the operating risk charge to 30% of BSCR.

## Calibrations

The following calibrations were typically identified as too high:

- 75% lapse catastrophe parameter
- Some non-life reserve risk and premium risk parameters, especially for third party liability business and reinsurance classes

The following were seen as too low by a number of companies:

- Equity, property and currency stresses. It was also suggested that one parameter could not be correct for all markets or currency combinations.
- Expense risk stress in life underwriting

Comments on correlation factors suggested:

- Correlation between interest and equity risks should be positive not zero.
- Correlation factor of 0.50 between interest and property is too high
- Correlation factor of 0.75 between equities and property is too high
- The lapse and surrender strain sub risks should be negatively correlated
- The correlation between mortality and disability risk should be negative e.g. accelerated critical illness products
- There is no reason why the same correlation matrix should apply in respect of both premium risk and reserve risk.

## Non-life

Specific non-life issues frequently raised were

- A preference for own company experience factors for reserve risk
- Dissatisfaction with the lack of smoothness in the credibility factors, resulting from the seven year threshold
- No allowance for future profits (or losses) or the insurance cycle itself
- Calibration of the catastrophe risk test being inconsistent from one member state to another. CEIOPS's scenarios have an occurrence probability significantly smaller than 0.5% according to the major independent Cat modellers.

## **Reinsurance**

Reinsurance companies had some specific issues.

- Some felt that the natural diversifications within their portfolios, especially geographic, are not given recognition. In particular, it was suggested the following tests should apply a lower stress than for direct insurers: - mortality, lapse, life catastrophe
- SCR calculation makes no allowance for common features of many reinsurance treaties (e.g. epidemic exclusions) that significantly reduce exposure .

## **Counterparty default risk**

A number of comments were submitted.

- There were objections to the use of commercial rating agencies by some companies. Others who accepted the rating agency approach, suggested:
  - a) More differentiation between the grades should be reflected in the specification;
  - b) A specific mapping of the rating categories for the four rating agencies should be provided;
  - c) The factors for the respective rating categories were too high.
- Other comments requested more guidance on possible increased cost of reinsurance in the event of reinsurer default and stated that experience indicates that the entire exposure at time of default is seldom actually lost
- A number of companies, including captives, strongly voiced the opinion that a less punitive treatment was necessary in the case of unrated but creditworthy counterparties.
- The treatment of unrated reinsurers is inconsistent with, and more severe than the treatment of unrated investments in spread risk.
- More guidance on the definition of recoveries and on what can be used to mitigate the default risk calculation (and also concentration risk) was requested.

## **Technical Provisions**

### **Best estimate liabilities**

- A number of undertakings criticised any requirement to assess best estimates using more than one approach.
- Recently established undertakings felt unfairly disadvantaged by the suggested approach on expenses where unrealised economies of scale were not allowed.
- There were a number of comments unhappy with the definition of “hedgeable risks”. The definition requires a perfect hedge to be available which is unlikely to exist in practice for all but very simplistic products.

### **Risk margin**

When considering the risk margin, there was complete agreement with the Cost of Capital approach, but a number of comments challenged the specific method prescribed. In particular, comments suggested that:

- The 6% factor overstated the true cost of capital
- Market risk (and sometimes credit risk) should be excluded at the end of year one
- Diversification between lines of business should be allowed.

### **Assets**

There was criticism that there is no detailed explanation of which categories of assets may be regarded as ‘tradable’ and which are not. ‘Tradable’ assets should not exclude property holdings.

### **Eligible elements of capital**

The comments made welcomed the recognition of subordinated liabilities within all three tiers, depending on fulfilment of the criteria, but also stated that there is still some work needed to ensure consistent interpretation and application. Producing a list of examples, as mentioned in the draft Directive, would assist greatly.

## **Other Issues**

### **Allowance for tax**

Companies felt there were a number of taxation issues not fully addressed by the technical specification and requested a full exploration of these issues and detailed guidance. Key concerns were around uncertainty about taxation on future cashflows in technical provisions in the Solvency II world with liabilities on a realistic basis and also around the loss absorption properties of future tax liabilities in the various stresses.

Other points made by individual companies were included in the country report to CEIOPS but are too specific to individual circumstances to include here.

# Other matters

## **Own funds**

Very few companies had any non-Tier 1 capital or any Tier 1 capital other than shareholders funds and revaluation reserves. If they had any, it invariably consisted of subordinated liabilities or unpaid shares.

These results probably fairly reflect the current capital position in Ireland.

## **Internal models**

Only one company submitted alternative SCR results derived from their own internal model. Clearly therefore we cannot make any general conclusions from this single submission.

Nevertheless it is clear from comments made in various qualitative submissions, most often in relation to various calibrations and correlations used by CEIOPS that a number of other companies are actively using internal models, at least partially, for economic capital purposes.

QIS4 will include more detailed specifications and questionnaires about internal models. The Financial Regulator would like to encourage the maximum possible reporting of internal model results by Irish participants in QIS4, even where those models only address particular risks or are not yet fully up to the very high standards that Solvency II will ultimately demand.

## **Group solvency**

No submissions were made to the Financial Regulator on a Group basis. The majority of our 39 companies are members of insurance “groups” and many of these did contribute to group submissions to other supervisors.

Group results can be found in section 13 of the CEIOPS report.

# Next steps

QIS3 has definitely been a success from the Financial Regulator's perspective in terms of both the participation levels and the general support of the company responses for the proposed Solvency II structure.

The QIS3 results have influenced both the Financial Regulator's inputs into ongoing Solvency II work and CEIOPS work in delivering a completed draft QIS4 specification to the European Commission on 20 December 2007.

The QIS4 specification\* was open for public consultation up to 15th February 2008. Following amendments taking account of the views of all interested parties, QIS4 will be launched on 31<sup>st</sup> March 2008. July 7<sup>th</sup> 2008 has been set as the deadline for solo submissions to be provided to the Financial Regulator, while group submissions must be provided to CEIOPS by July 31<sup>st</sup> 2008.

Many of the issues identified in QIS3 have led to altered proposals being tested within QIS4. In order to ensure that these have the intended impact, it is essential that companies from all sectors of the Irish insurance and reinsurance industry participate to the largest extent possible. The Financial Regulator will co-ordinate the process, engage with industry, offer workshops, provide advice and guidance as appropriate, and generally do all in its power to ensure a successful process.

Ireland has seen a very significant increase in participation since QIS2 and this has finally given us useful and significant data on the likely impact of the Solvency II proposals on the Irish insurance and reinsurance markets. We hope to see this trend continue for QIS4 in 2008.

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[http://ec.europa.eu/internal\\_market/insurance/docs/solvency/qis4/technical\\_specifications\\_en.pdf](http://ec.europa.eu/internal_market/insurance/docs/solvency/qis4/technical_specifications_en.pdf)





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