Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Presentation to Society of Actuaries in Ireland on the Irish Industry Submissions for QIS5

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Agenda

- Introduction
- Participation
- Valuation
- Technical Provisions
- Own Funds
- SCR
- MCR
- Internal Models
- Overall Financial Impact
- Next Steps

Introduction

Introduction
QIS 5 Objectives

- To provide another test of the system being developed for Solvency II
- To achieve a high level of participation from solo undertakings (60%) and groups (75%), with a particular emphasis that more small undertakings participate than had been the case in previous studies
- The main issues to be covered were:
  - Calibration of Standard Formula
  - Groups Calculations
  - Internal Models
  - Test Complexity
- To increase the level of preparedness of both industry and supervisors
- QIS5 Results will be used to calibrate the Level 2 Implementing Measures
- Results will also be used to assess the needs and contents of the Level 3 guidance relating to Pillar 1 requirements

Introduction
Considerations

- This presentation is based on the results and feedback received from Irish firms who participated in QIS5
- Views expressed in this report are those of the individual companies and not the Central Bank of Ireland
- This presentation contains only a snapshot of the large number of comments received
- The feed-back provided by the Central Bank of Ireland to EIOPA reflected the majority of the companies' detailed submissions on almost every topic
- QIS5 was only a test at a point in time and did not purport to represent or pre-judge final calibrations
- This presentation does not necessarily indicate the impact that Solvency II will have on the Irish industry when Solvency II is implemented on 1st January, 2013

Participation

Participation

- 220 Submissions to Central Bank of Ireland
- 81% of entities that will be subject to Solvency II

- 2,520 submissions Europe wide
- 68% of entities that will be subject to Solvency II

Participation

The Central Bank of Ireland would like to express its gratitude to all companies who participated in this exercise

Valuation

Valuation of Assets and Other Liabilities |Comments

- International Accounting Standards
- More guidance on deferred taxes

Technical Provisions

Technical Provisions

- In general there was a reduction in the level of technical provisions from Solvency I to QIS5. This arose due to:
  - Best estimate against possibly prudent assumptions
  - Discounting for non-life business
  - Removal of surrender value floor for Life Business (i.e. can hold negative provisions)
- Offsetting this to some extent was:
  - Inclusion of Risk Margin
  - Different cash-flows included in provisions due to contract boundary used in QIS5
  - Discounting using risk-free rates for life business.

Technical Provisions

Ratio of QIS5 Technical Provisions to Solvency I

	Minimum	25th Percentile	Median	75th Percentile	Maximum
Life	-622.4%	86.5%	95.4%	99.1%	345.9%
Non-life	-2.1%	79.5%	93.4%	99.7%	156.7%

Technical Provisions
Risk Margin

- Some companies complained that the full calculation was too complex so that simplifications would always be needed
- Most companies reported that they used one of the simplifications allowed
- Unavoidable market risk was too difficult to define

	25th Percentile	Median	75th Percentile	EEA Mean
Life	0.4%	1.4%	4.9%	2.7%
Non-life	4.1%	6.8%	9.7%	6.8%

Technical Provisions
Contract Boundary

- Many unit linked contracts were determined to have a zero boundary because they were deemed to have unlimited ability to vary contract terms
- There was inconsistency in the technical specification between single premium and regular premium contracts in this regard
- Many thought that the definition of contract boundaries was unclear
- The overwhelming view was that the QIS5 definition was out of line with IFRS/IASB, uneconomic, inconsistent with the risk profile of the contract and unrealistic
- Some non-life comments looked for clarification on “bound but not incepted” policies

Technical Provisions
Segmentation

- Several companies commented that the segmentation was too broad and needed to be more granular as too much business was ending up in the miscellaneous category for non-life
- Against this many companies complained that the split of motor business between property and liability did not match practice in the Irish market, which is to have one contract covering both risks
- Many life companies thought that the second level of segmentation was too detailed and led to unnecessary complication

Own Funds

Own Funds
Tiering

	Tier 1	Tier 2	Tier 3
Ireland	95.7%	1.8%	2.5%

- Tier 1
  - EEA Solo 91.9%
  - EEA Group 81.5%

Own Funds
Expected Profits in Future Premiums

- The majority of comments received in relation to Own Funds were in respect of Expected Profits In Future Premiums (EPIFP)
- In general there was support from companies for the concept of EPIFP and its inclusion as Tier 1 Capital, but not for its method of calculation
- Many companies complained that models were unable to do the calculations without significant modification
- The calculation should be unnecessary if EPIFP is to be treated as Tier 1
- The majority of companies reported a zero EPIFP. As a percentage of Own Funds, the highest figure for EPIFP was 90%, with a median of 12% for those companies reporting a non-zero value
- It should be noted that the size of EPIFP is directly linked to the definition of the Contract Boundary

Solvency Capital Requirement

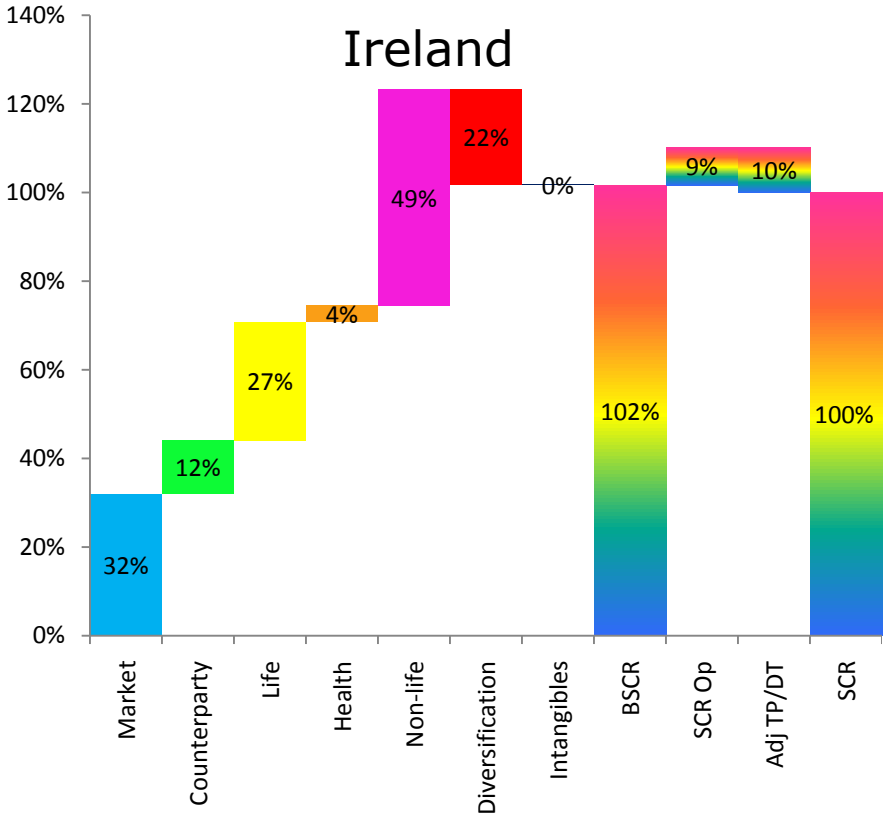
SCR

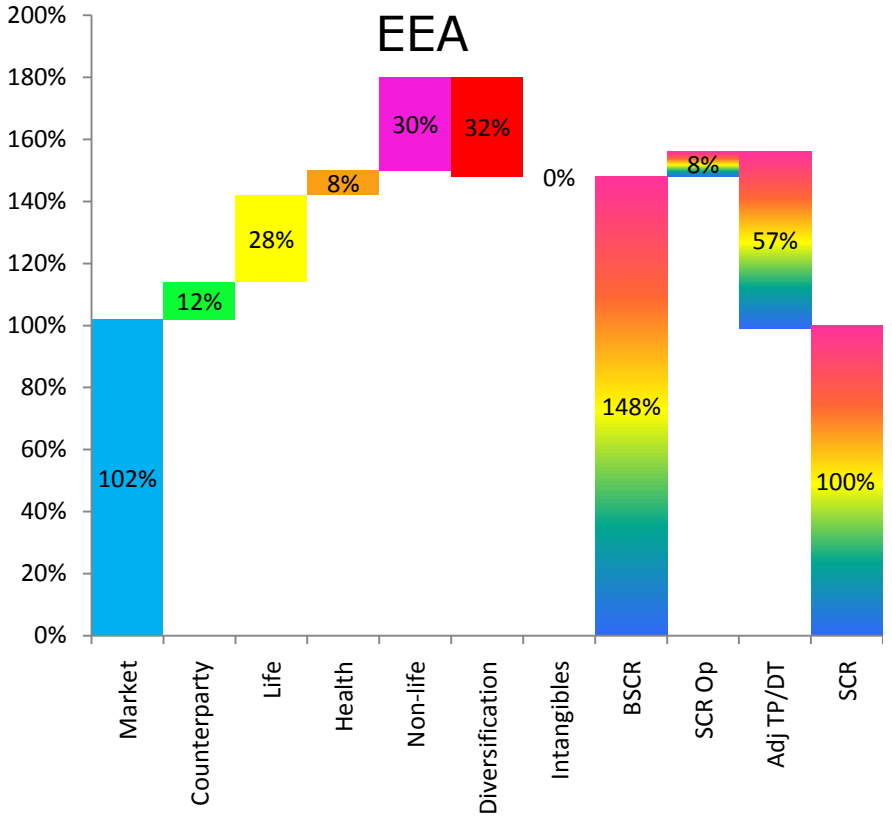
- Most companies saw an increase in SCR over RMSM
- Increase was generally greater for non-life companies than life companies

Table: Required capital to net provisions

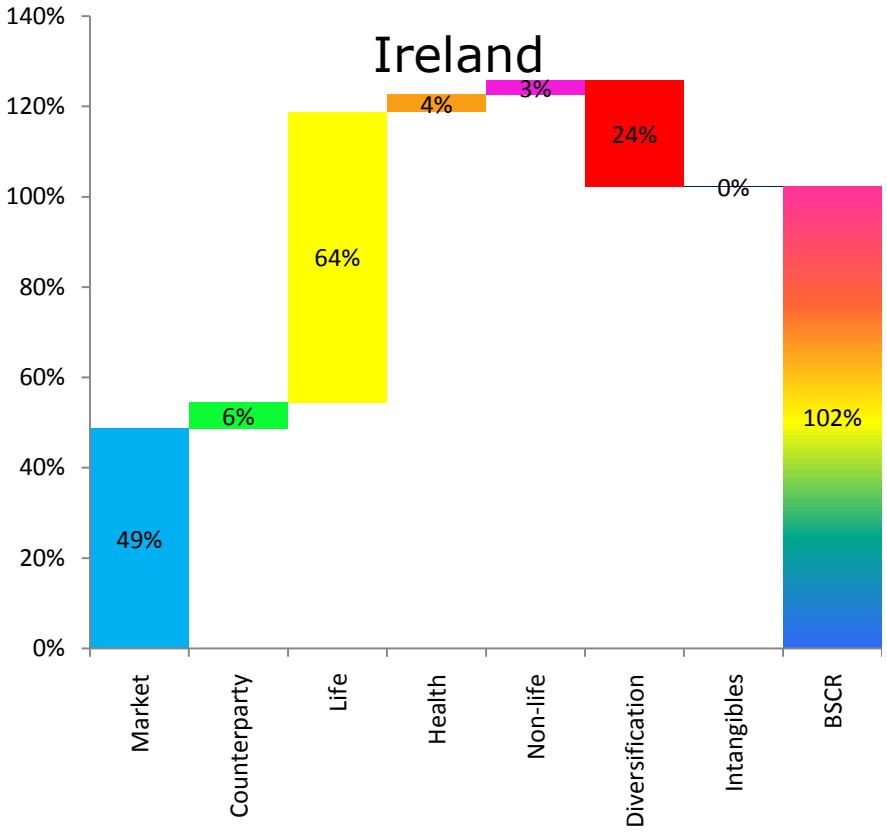
	25th Percentile	Median	75th Percentile
Life SI	0.6%	2.2%	6.8%
Life QIS5	1.5%	3.5%	21.4%
Non-Life SI	4.3%	9.9%	22.2%
Non-Life QIS5	28.4%	53.7%	115.6%

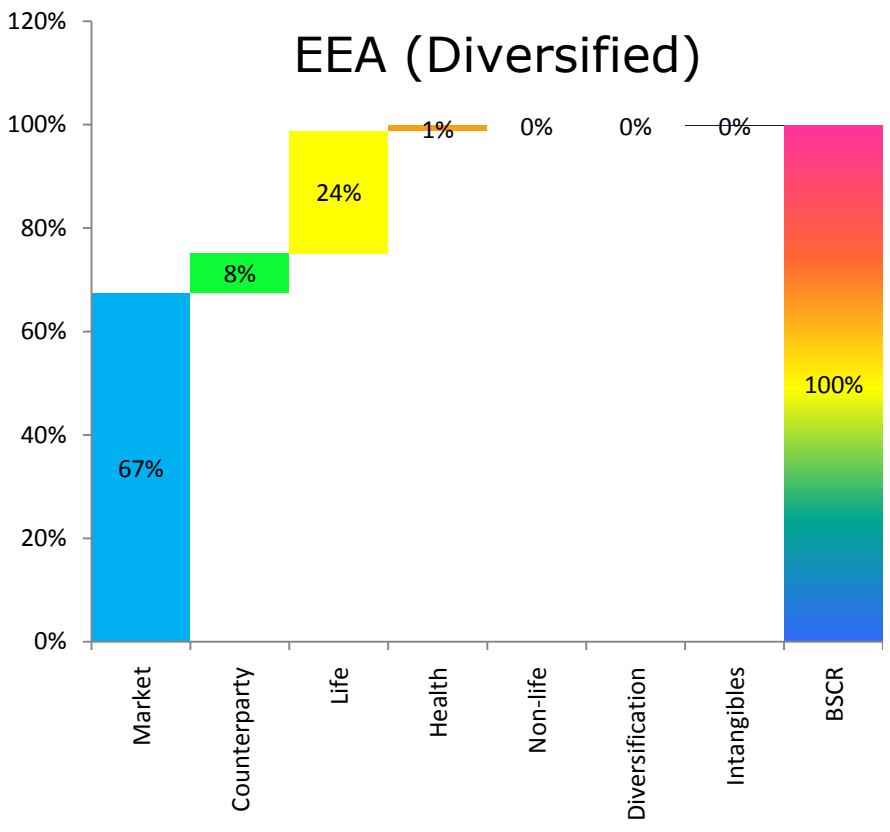
SCR
Composition (All undertakings)





BSCR
Composition (Life undertakings)

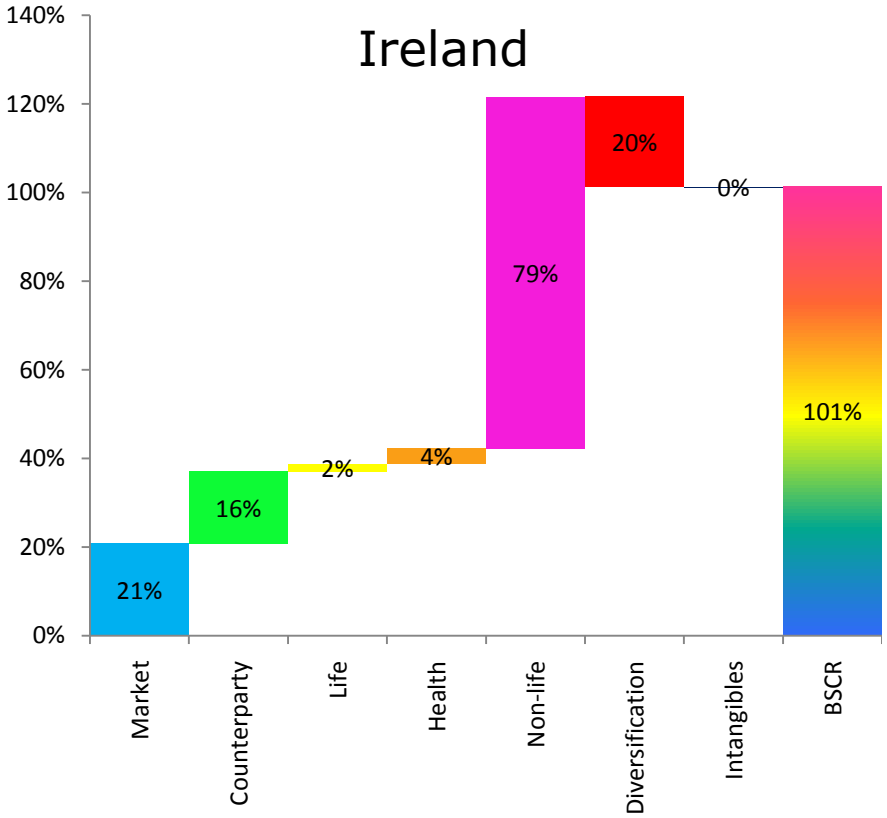


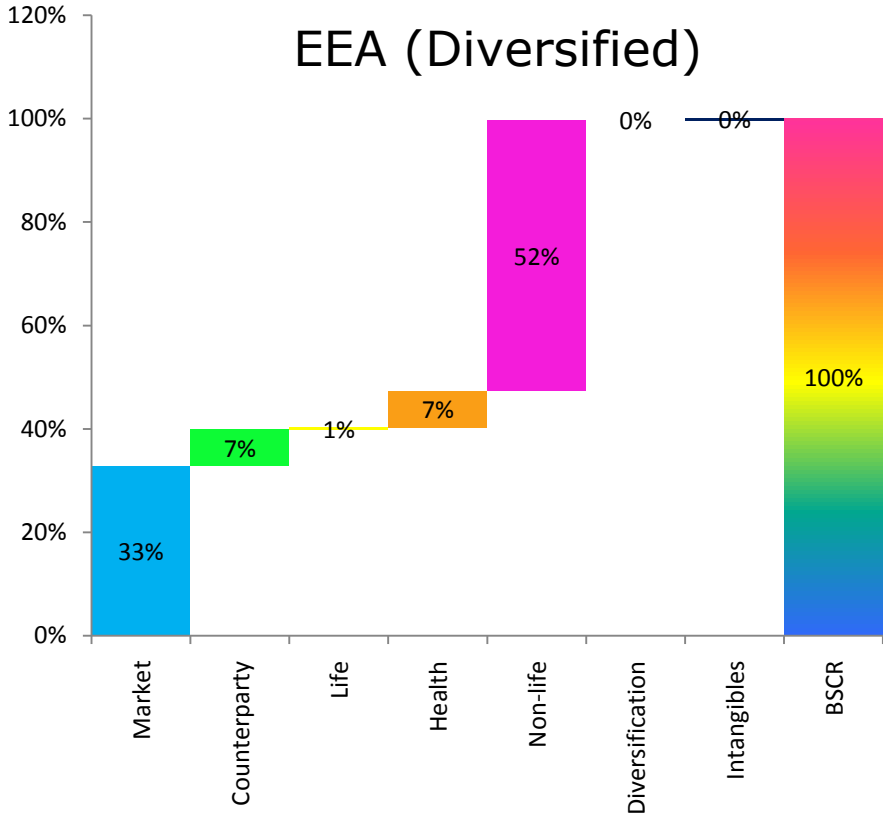


BSCR
Composition (Life undertakings)

	25th Percentile	Median	75th Percentile	Mean
Intangibles	0.0%	0.0%	0.0%	0.2%
Market	29.4%	49.9%	71.7%	47.6%
Default	2.0%	8.2%	19.9%	5.7%
Life Underwriting	30.1%	51.2%	73.1%	62.8%
Health Underwriting	0.0%	0.0%	1.7%	3.0%
Diversification	(22.2%)	(29.1%)	(35.5%)	(23.0%)

BSCR
Composition (Non-life undertakings)

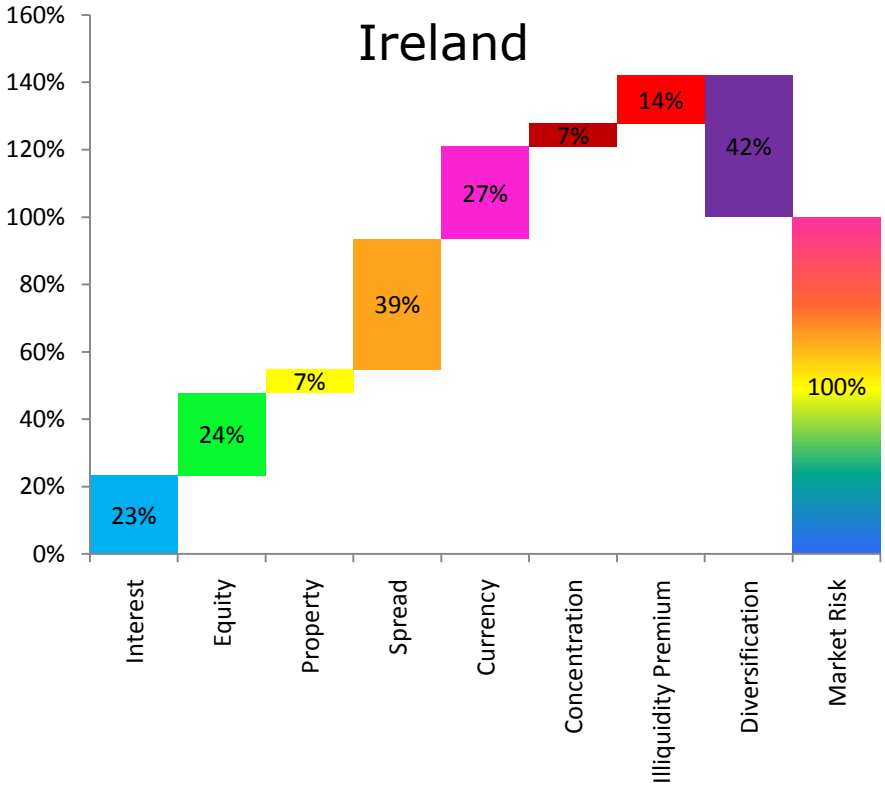


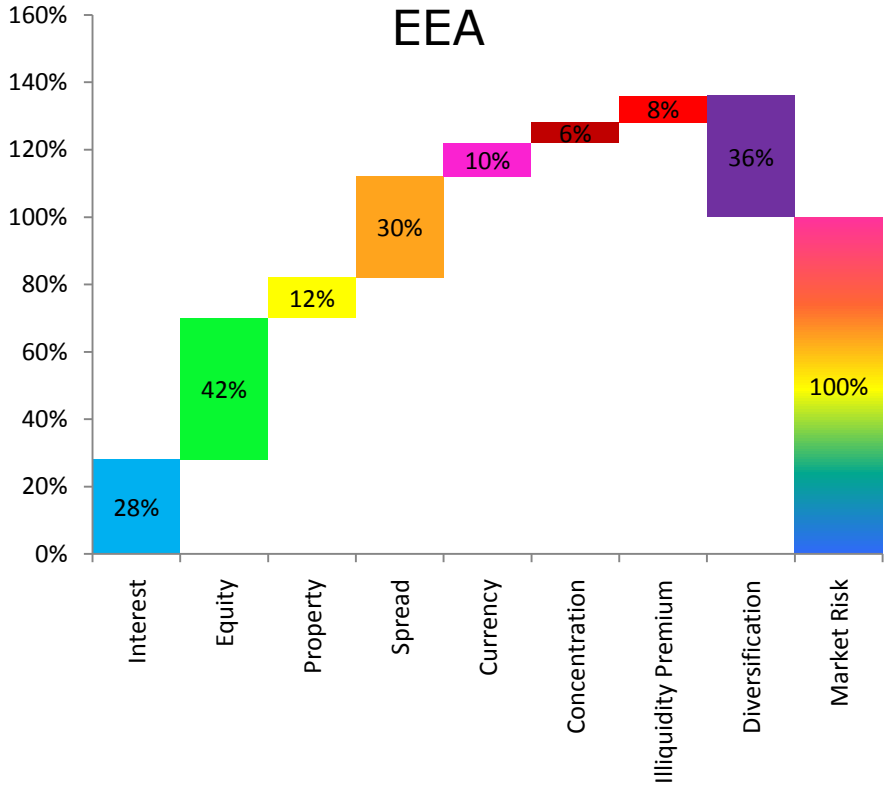


BSCR
Composition (Non-life undertakings)

	25th Percentile	Median	75th Percentile	Mean
Intangibles	0.0%	0.0%	0.0%	0.0%
Market	4.5%	15.2%	29.7%	20.5%
Default	7.3%	17.3%	40.6%	16.1%
Health Underwriting	0.0%	0.0%	0.5%	3.5%
Non-Life Underwriting	51.9%	73.6%	89.9%	78.4%
Diversification	(10.5%)	(19.9%)	(26.9%)	(20.1%)

Market Risk
Composition (All undertakings)





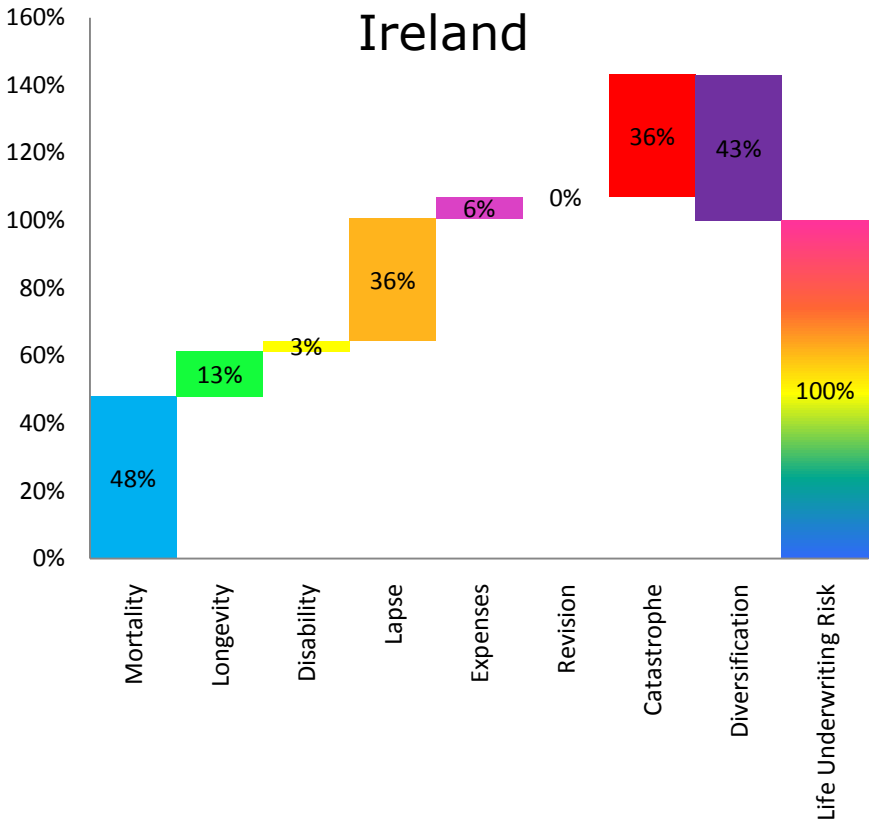
Market Risk
Composition (All undertakings)

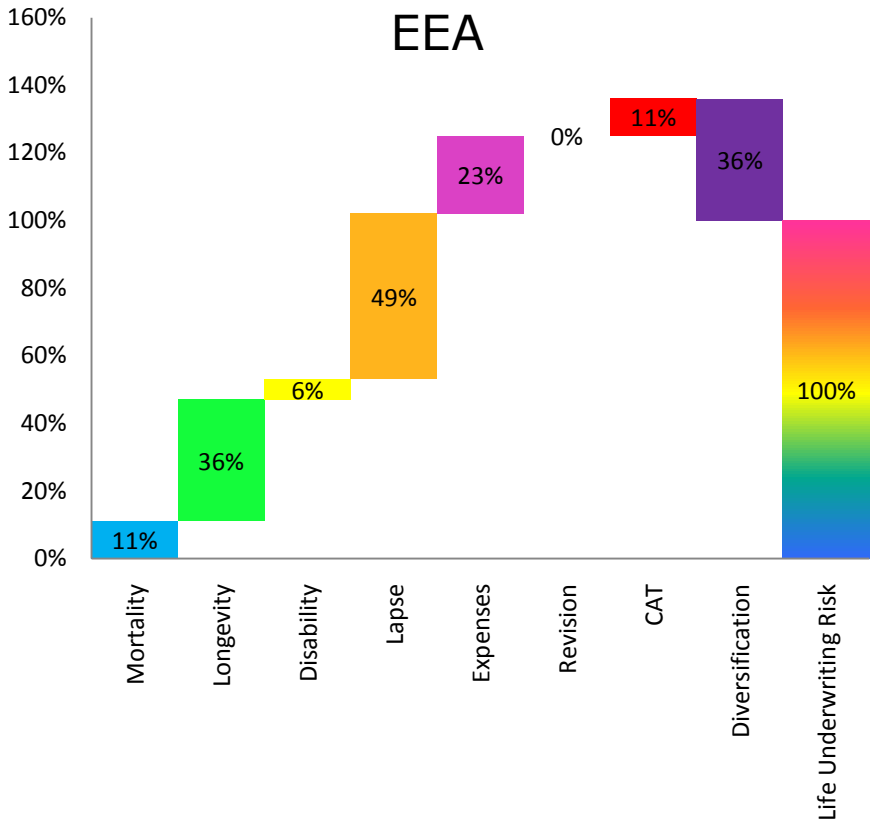
	25th Percentile	Median	75th Percentile	Mean
Interest	5.4%	25.4%	60.6%	23.3%
Equity	0.0%	0.0%	28.4%	24.4%
Property	0.0%	0.0%	0.0%	7.0%
Currency	0.0%	22.6%	54.4%	38.8%
Spread	0.0%	0.3%	16.8%	27.3%
Concentration	0.0%	0.0%	42.6%	6.9%
Illiquidity	0.0%	1.6%	6.0%	14.3%
Diversification	(16.3%)	(32.9%)	(48.2%)	(42.1%)

Market Risk
Comments

- Problems looking through to underlying assets for unit funds, especially when investing via unit trusts/UCITS
- No allowance for dynamic hedging overstated risk
- Further work required to assess basis risk (i.e. improve fund mapping)
- For unit linked business it was too complicated to do the full calculation for each market risk shock (e.g. spread risk)

Life Underwriting Risk Composition





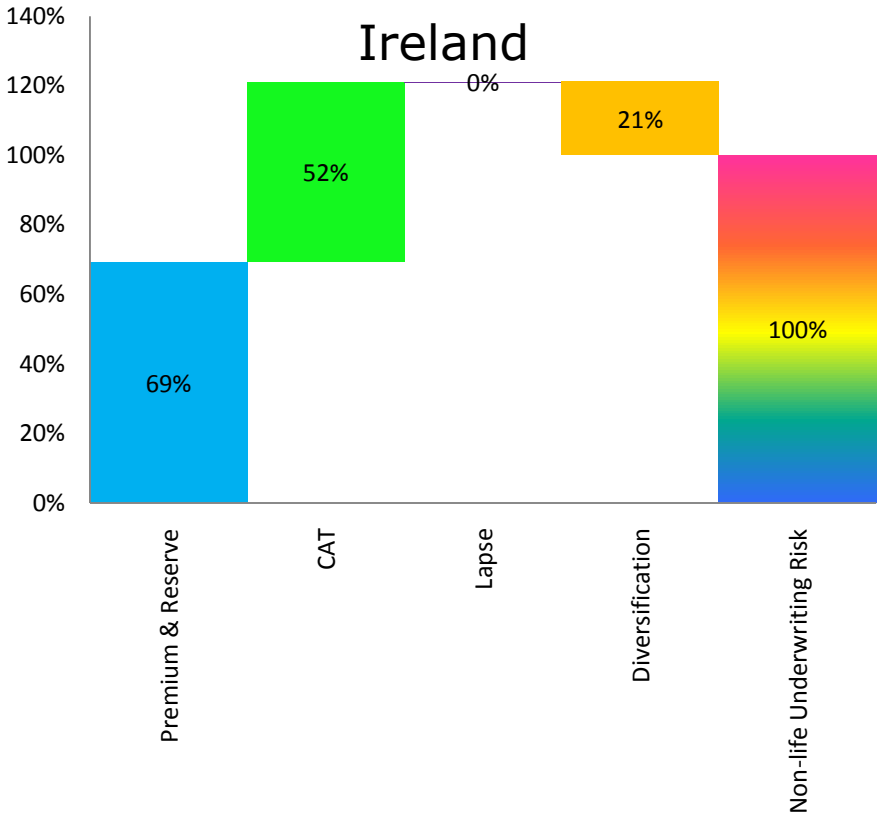
Life Underwriting Risk Composition

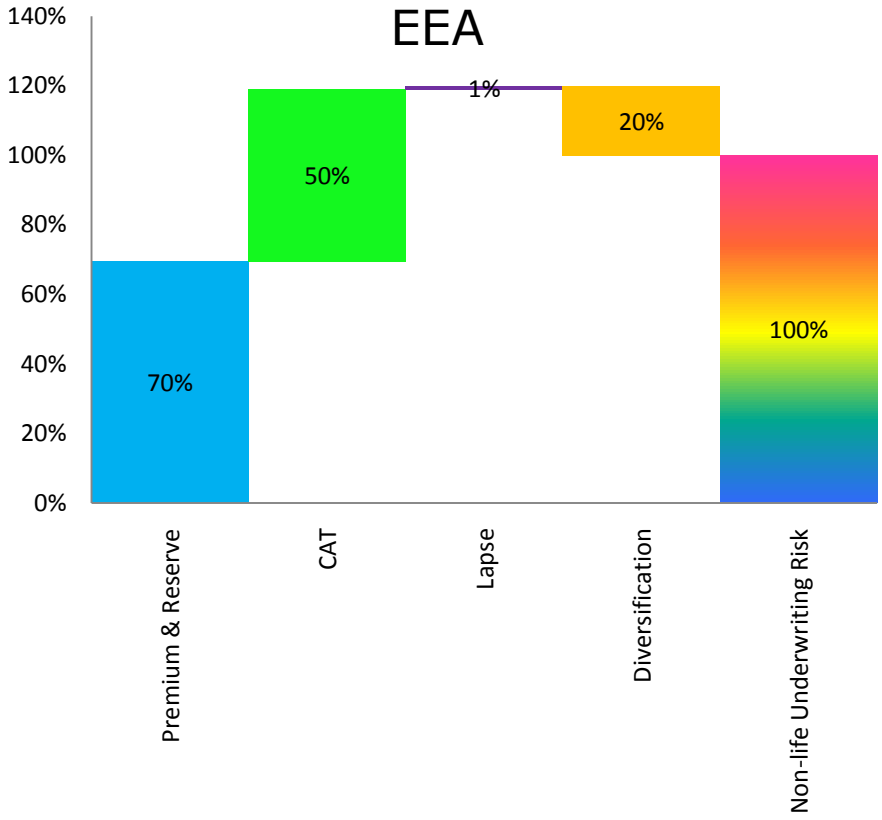
	25th Percentile	Median	75th Percentile	Mean
Mortality	1.5%	6.6%	19.1%	47.9%
Longevity	0.0%	0.0%	2.0%	13.5%
Disability	0.0%	0.0%	0.8%	3.0%
Lapse	24.0%	63.0%	82.8%	36.2%
Expenses	2.5%	12.6%	35.5%	6.3%
Catastrophe	0.4%	4.1%	30.9%	36.2%
Diversification	(14.6%)	(22.1%)	(35.4%)	(43.1%)

Life Underwriting Risk
Comments

- The most commented on aspect was the longevity risk. All companies who commented felt that this risk should be an improving mortality trend rather than a once off improvement
- Many companies commented that assessing the lapse risk at policy level was difficult and not intuitive: lapse risk should be done at product rather than policy level
- Some companies said that mass lapse rates were too high in general, while some specified that it was too high where policies had large surrender penalties
- For reinsurance contracts there was a difficulty in determining the policy level lapse risk, since there is only an indirect link with the ultimate policyholder

Non-Life Underwriting Risk Composition





Non-Life Underwriting Risk Composition

	25th Percentile	Median	75th Percentile	Mean
Premium & Reserve	37.4%	63.0%	86.5%	69.3%
Catastrophe	30.2%	62.7%	81.2%	51.7%
Lapse	0.0%	0.0%	0.0%	0.3%
Diversification	(11.5%)	(21.2%)	(24.9%)	(21.2%)

Non-Life Underwriting Risk
Comments

- CAT Risk Method 1 too complex
- CAT Risk Method 2 overly penal
- Premium and Reserve risk over calibrated
- Non proportional reinsurance not well catered for
- Difficult to apply reinsurance programmes, particularly to CAT module
- Data requirements too onerous
- Lapse module generally ignored

Counterparty Default Risk Comments

- Nearly all comments related to the complexity of the calculation, in particular to the calculation of the risk mitigating effect within the Loss given Default (LGD). Companies complained that this required them to recalculate the SCR for each counterparty with and without reinsurance, which is very onerous even with a low number of counterparties. Comments were made that the complexity of the calculations led to simplifications or approximations being used
- In addition, the complexity of the formula means that it was difficult to anticipate or sense check the results or explain the results to management
- Type 2 default rates were too penal
- Inclusion of cash inconsistent as it is not a risk mitigant. Also no allowance for recovery rate means it is more penal to hold cash than derivatives
- Many companies complained of the difficulty in understanding how to distinguish between Type 1 and Type 2 exposures

Minimum Capital Requirement

MCR

- About 5% of companies failed to meet the MCR
- The MCR generated few comments though some companies did comment that it was not risk based
- Whilst there was a corridor for the MCR of 25% to 45% of SCR, the absolute floor for the MCR did push some companies above this corridor, including some for whom the calculated SCR was less than the absolute floor for the MCR

Internal Models

Internal Models

- Internal Model review is an on-going process
- Models vary in design from each other and from the format of the standard formula
- QIS5 happened early in the Internal Model process
- Difficult to draw too many meaningful conclusions about quantitative results

Internal Models

- Of the Irish companies which gave internal model results the majority used a group model
- The majority of companies already used internal models for a variety of purposes
- The majority of models required further refinement to meet Solvency II requirements
- Expert judgement was widely used

Internal Models
Differences to Standard Formula

- The internal model included an equity volatility risk and an interest rate volatility risk
- The internal model reflected concentration risk implicitly through spread risk and explicitly by managing the risk through a Credit Name Limit Policy ensuring that no additional capital charges applied
- The internal model did not explicitly identify claims revision risk separately from the Underwriting Risk around the underlying claims driver
- Internal model credited full tax benefits in the SCR
- No capital was held for non-reporting currency risk
- A different approach or calibration was taken to aggregating risks

Internal Models
Differences to Standard Formula

- Internal model allowed for full diversification benefit between all legal entities and EEA and non-EEA countries
- The internal model had significantly more risk factors than the standard model
- Mortality risk was split into trend uncertainty, level uncertainty, volatility and calamity. Level, trend and volatility were combined into life non-catastrophe and calamity was separated. Same for morbidity. Disability was placed under morbidity risk. Non-life was split into prior, current non-catastrophe and current catastrophe
- Insurance risk was assessed but catastrophe risk was not split out
- The loss of the risk mitigating benefit associated with reinsurer default was not considered in the Standard Formula
- The lines of business in the internal model were generally at a much more granular level than those of the standard formula

Overall Financial Impact

Overall Financial Impact

- Most companies saw an increase in Own Funds due to lower technical provisions
- Most companies saw an increase in required capital
- Hence the impact on surplus and solvency ratio depends on the change in Own Funds versus change in required capital
- Overall there is no simple pattern although far more companies saw a reduction in surplus capital than saw an increase
- The majority of those that did see an increase write life business
- In tables below Solvency I required capital is based on 150% of RMSM or 100% of MGF

Overall Financial Impact
Surplus Capital

- Surplus capital is defined as the available capital in excess of the capital requirement

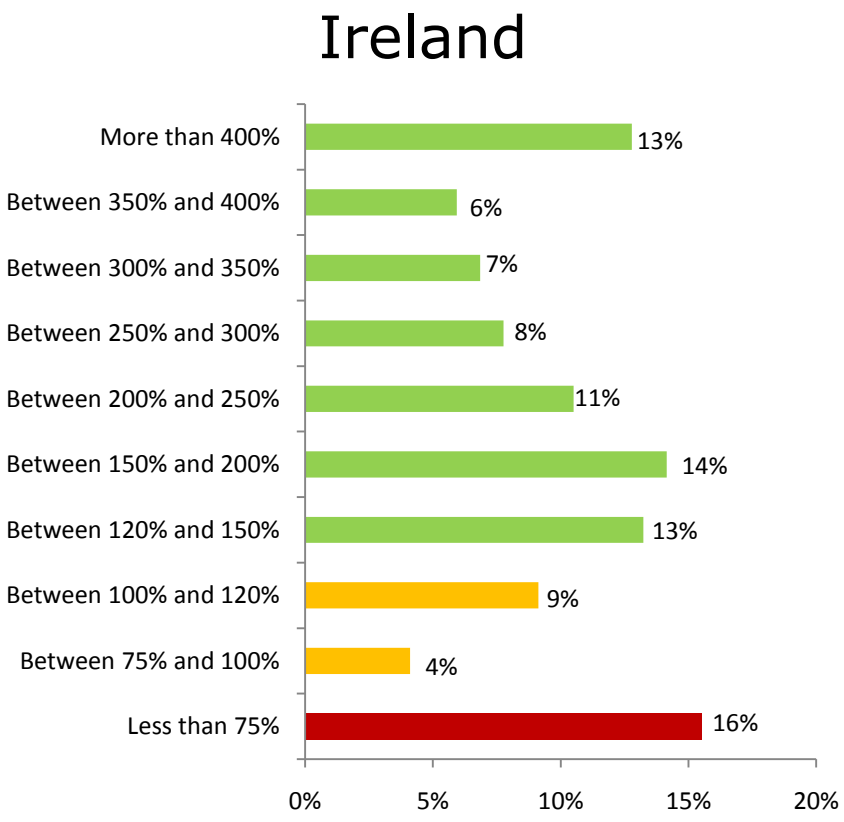
Type of company	Decrease more than 50%	Decrease up to 50%	Increase up to 50%	Increase more than 50%	Total
Life	10	9	12	45	76
Non-life	72	37	20	14	143
Total	82	46	32	59	219

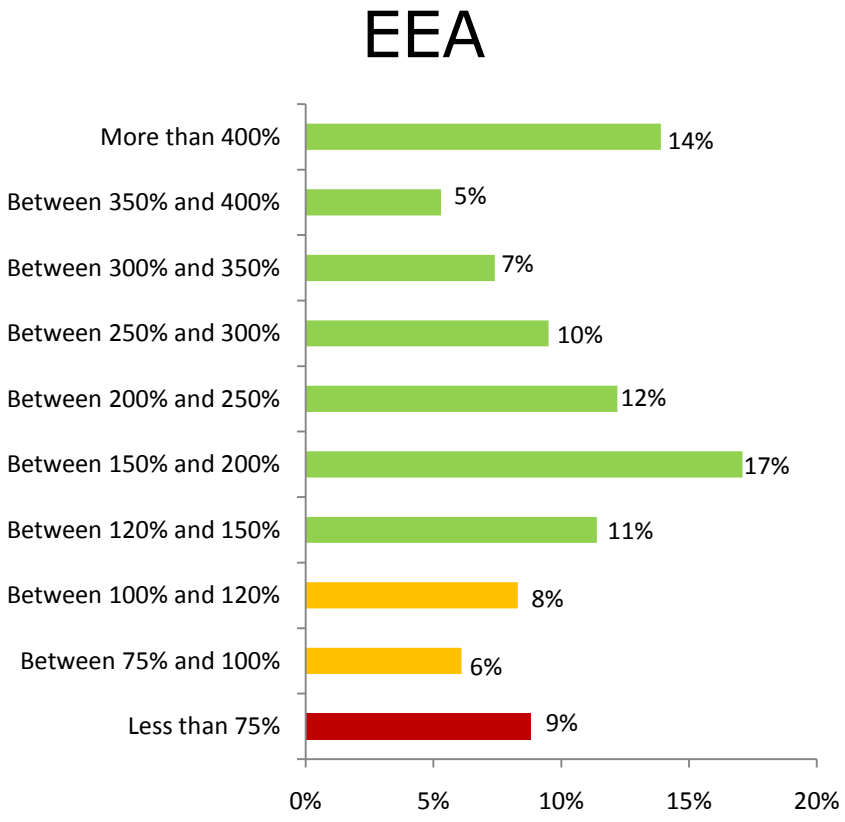
Overall Financial Impact
Solvency Ratio

- Solvency ratio is defined as available capital/required capital for Solvency I and eligible Own Funds/SCR for QIS5

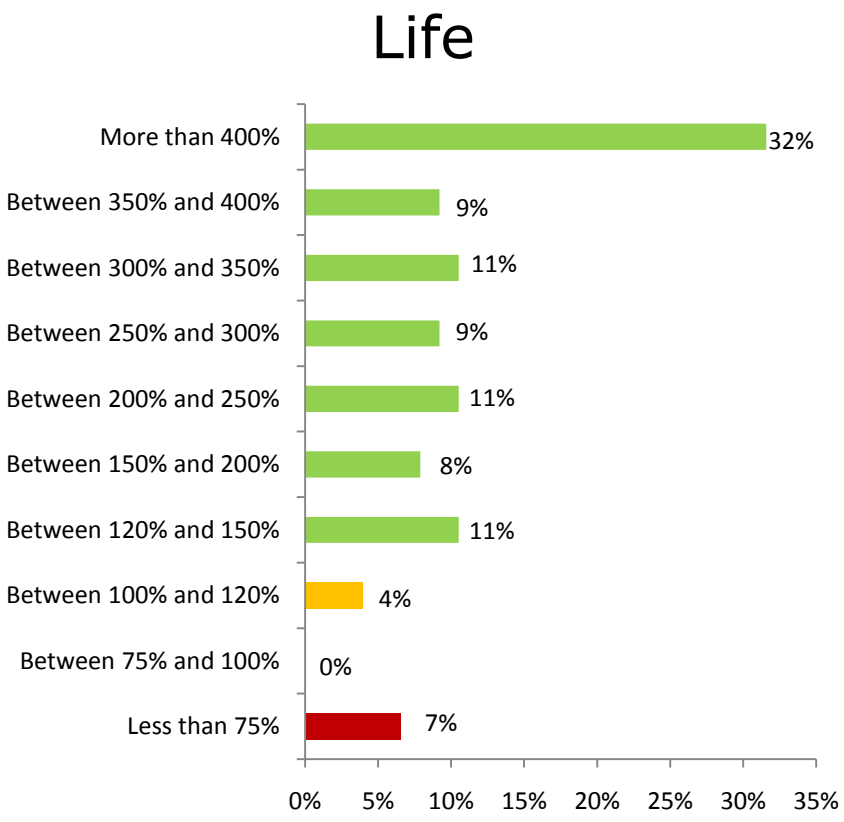
Type of company	Increase	Decrease	Total
Life	45	31	76
Non-life	32	111	143
Total	77	142	219

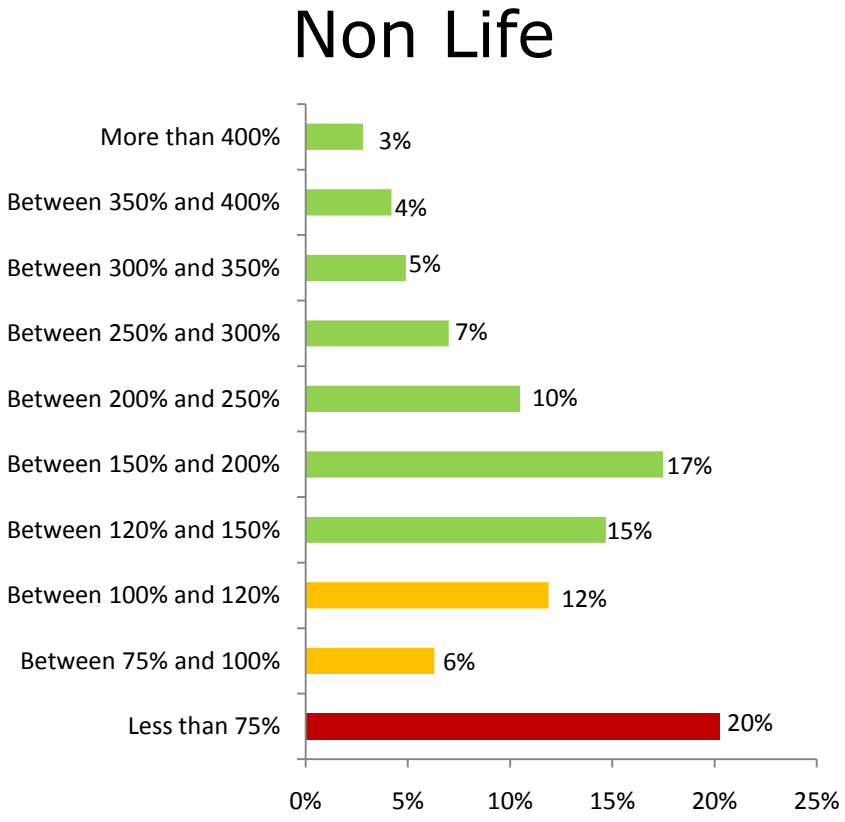
Overall Financial Impact
SCR Coverage





Overall Financial Impact
SCR Coverage





Next Steps

Next Steps
Central Bank of Ireland

- Reviewing and contributing to the further development of the Level 2 Implementing Measures, Level 3 Guidelines and standards and development of additional transitional arrangements
- Reviewing our regulatory and supervisory processes to align with evolving Solvency II standards
- Working with firms in the 'pre-application' phase of the Internal Model Approval Process
- Engaging with European counterparts for the review of European cross-border groups' internal models
- Developing the reporting templates and disclosure requirements for industry reporting to supervisors and supervisory reporting to EIOPA
- Active involvement in the assessment of the equivalence of non Solvency II supervisory regimes

Next Steps
Industry

- Solvency II conference for Industry on Thursday 12 May 2011 where we will give updates about the on-going progress of Solvency II
- Keep monitoring our website, the EIOPA website and our quarterly publication, Solvency II Matters
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Thank you