CEIOPS

Committee of European Insurance and Occupational Pensions Supervisors

Quantitative Impact Study 4
Main Results – an EU-Perspective

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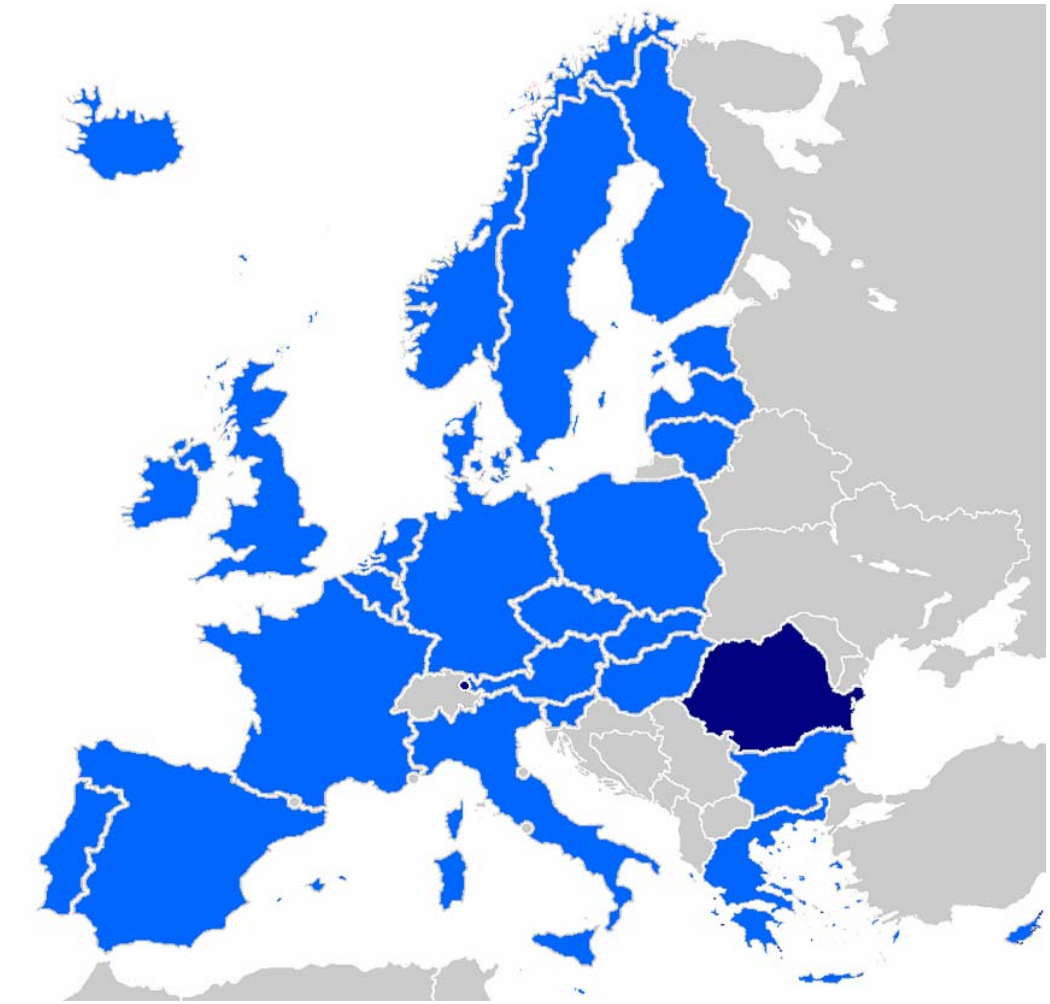
Budapest

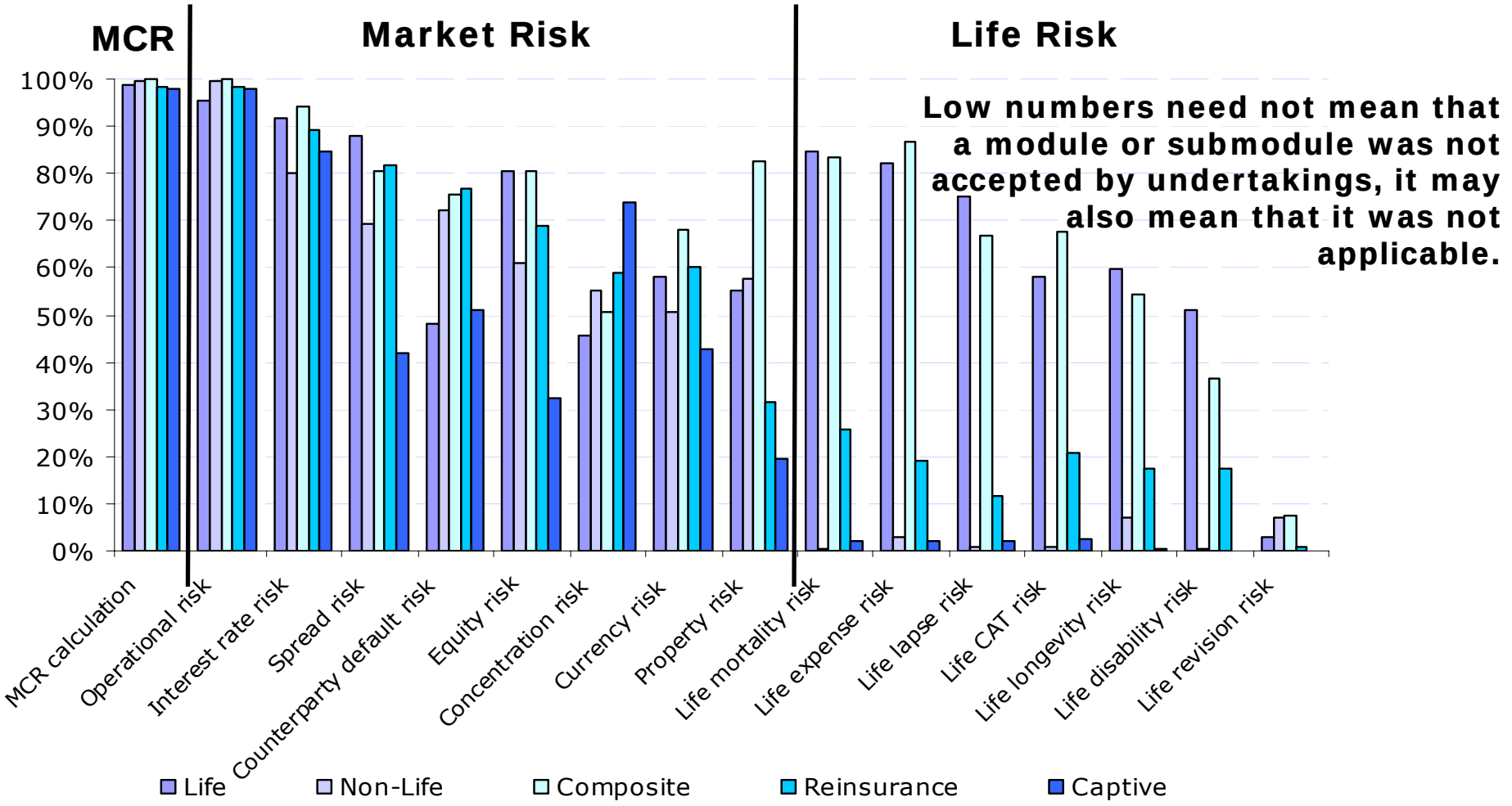
10. December 2008

Impressive participation

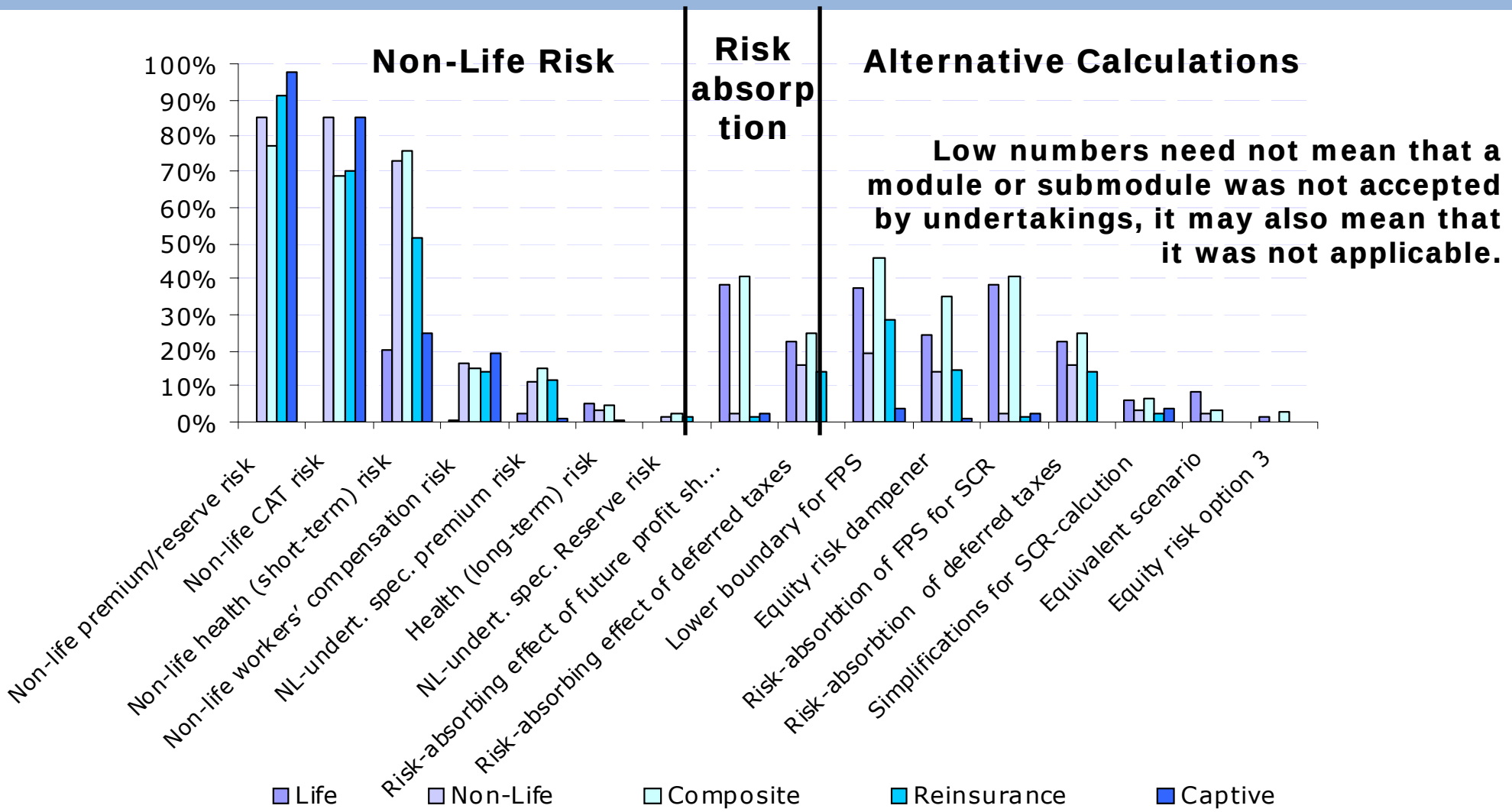


- All 30 EEA-Countries
- 1412 Solo-Undertakings
- Participation: 33.6% (+37.4%)
- 98.8% based on 2007 data

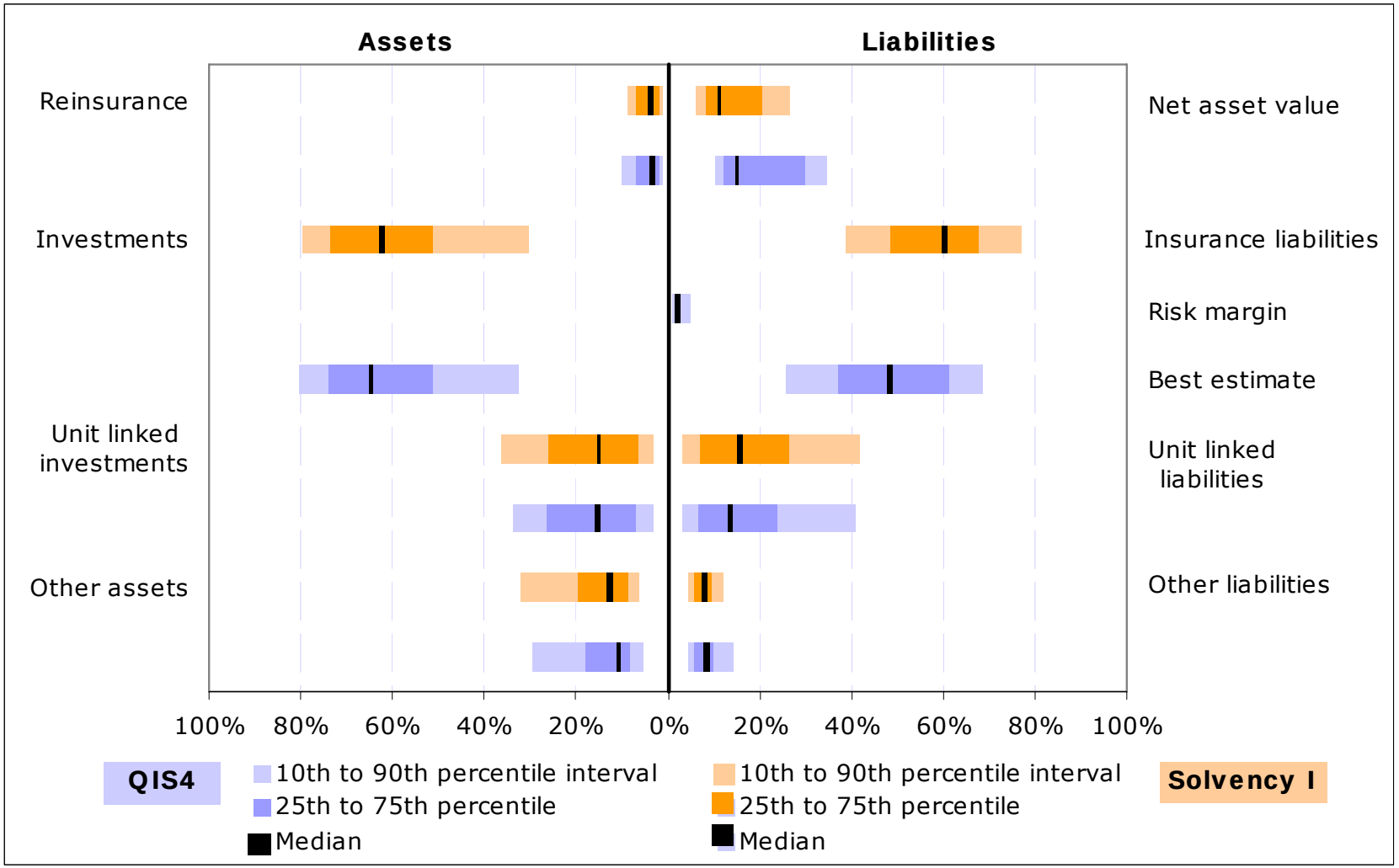
Availability of results - MCR, SCR modules



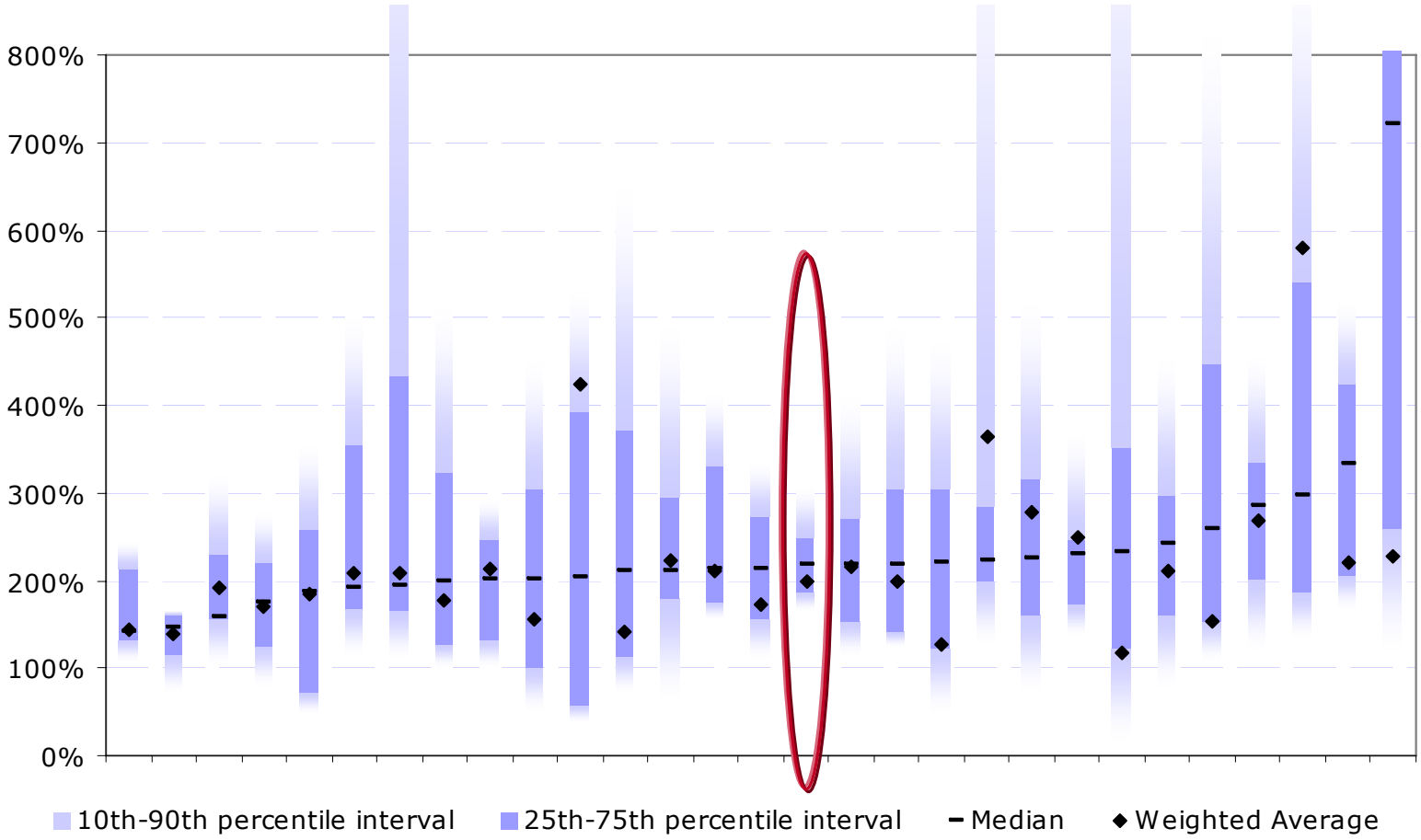
Availability of results - SCR modules



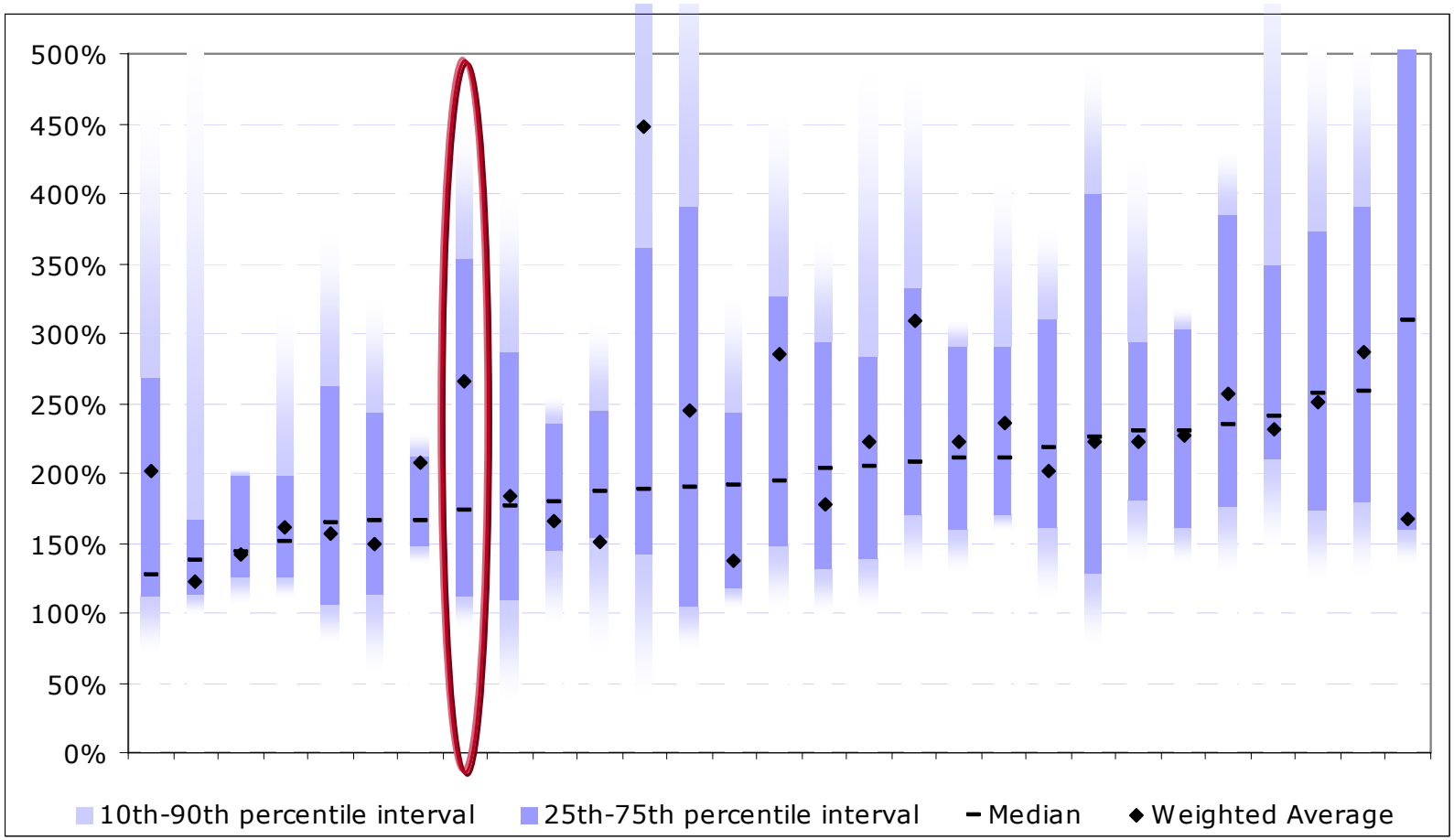
Overall financial impact: no major impact on total balance sheet composition



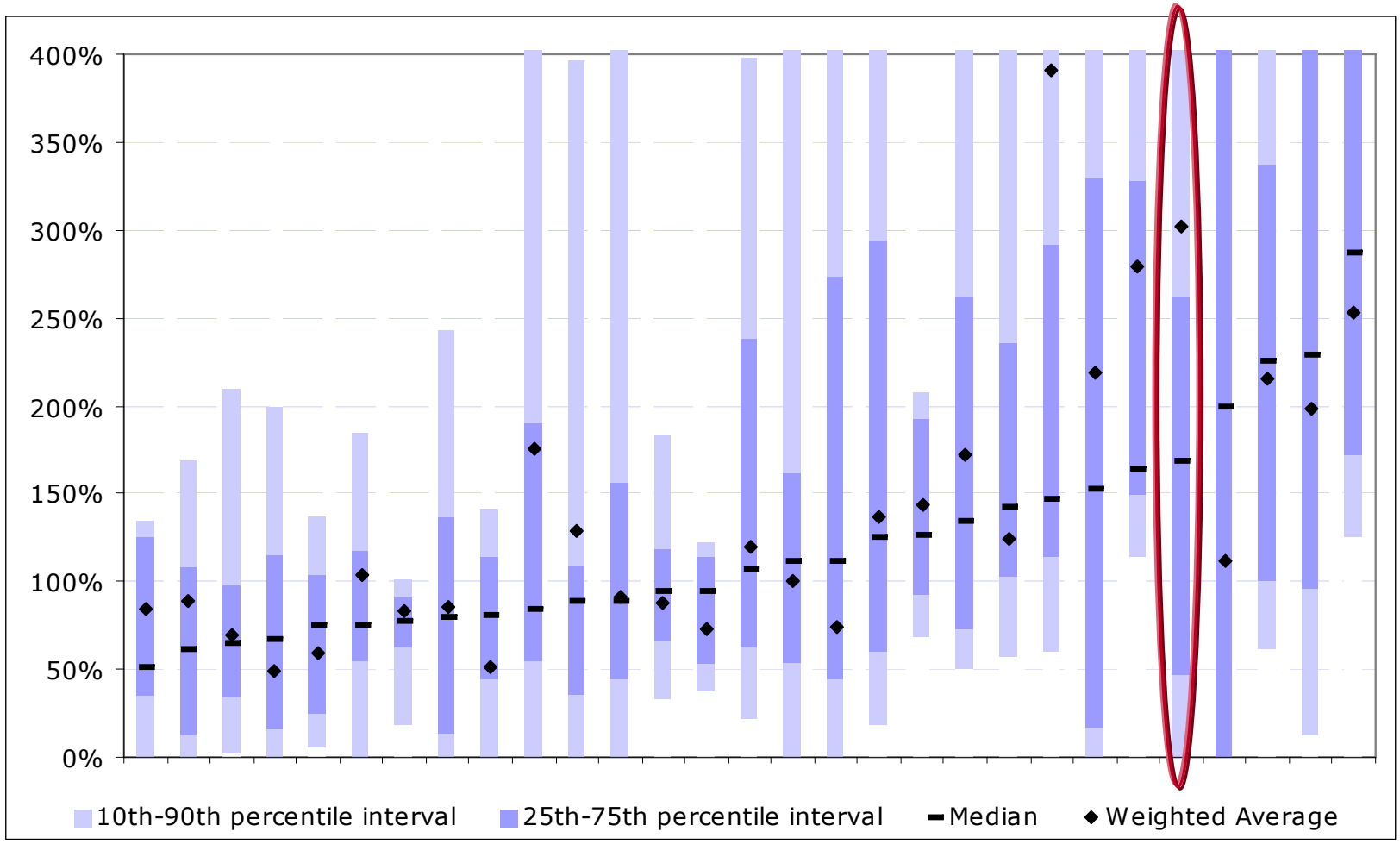
Capital requirements QIS4 increase over Solvency I …



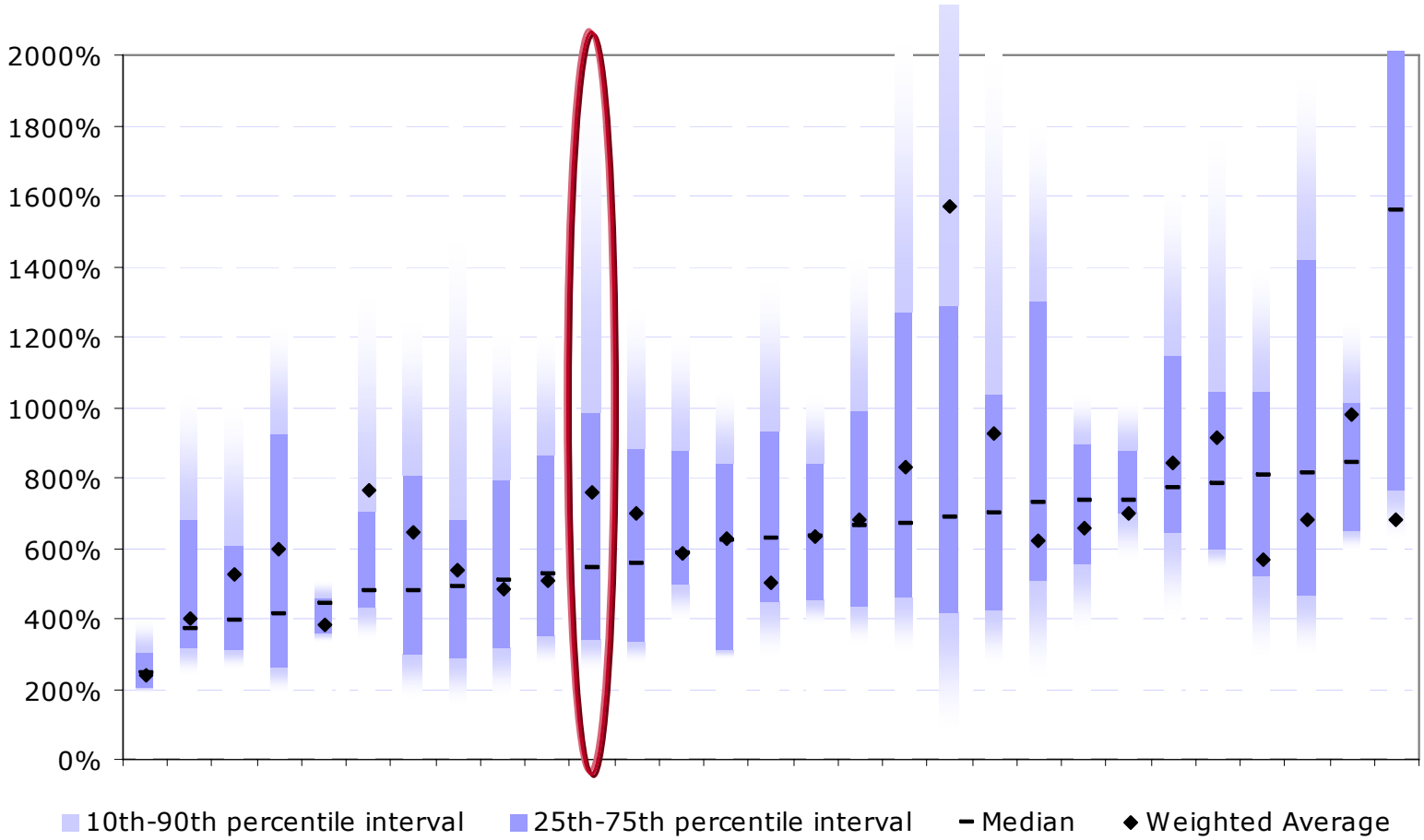
… but solvency ratios (QIS4 eligible capital / SCR) …



… may rise as well (Solvency II ratio / Solvency I ratio)



QIS4 Tier 1 and 2 Basic Own Funds largely exceed the MCR



Firms not meeting SCR or MCR in QIS4

MCR	Large	Medium	Small	Total
Life insurer	2.4%	0.0%	1.6%	1.1%
Non-Life insurer	0.0%	0.7%	1.2%	0.9%
Composite insurer	0.0%	0.0%	0.0%	0.0%
Reinsurance	0.0%	0.0%	0.0%	0.0%
Captive	n.a.	0.0%	7.1%	7.1%
Total	**0.9%**	**0.4%**	**1.9%**	**1.2%**

Not meeting the capital requirement ≠ need to raise capital

- Firms belonging to a group - change in capital allocation
- De-risking the balance sheet

SCR	Large	Medium	Small	Total
Life insurer	16.7%	7.2%	7.9%	9.7%
Non-Life insurer	14.5%	10.3%	11.2%	11.2%
Composite insurer	4.7%	6.3%	5.7%	5.7%
Reinsurance	10.0%	6.7%	0.0%	4.1%
Captive	n.a.	0.0%	28.6%	28.3%
Total	**13.2%**	**8.6%**	**12.0%**	**10.9%**

Surplus migration Solvency I → Solvency II

Decrease > 50%	Large	Medium	Small	Total
Life insurer	33.3%	18.0%	14.2%	20.2%
Non-Life insurer	31.3%	26.1%	21.5%	24.5%
Composite insurer	16.3%	10.5%	12.5%	12.3%
Reinsurance	0.0%	0.0%	12.5%	6.1%
Captive	n.a.	100.0%	30.6%	31.3%
Total	**27.7%**	**20.5%**	**19.9%**	**21.3%**

Increase > 50%	Large	Medium	Small	Total
Life insurer	32.1%	47.5%	45.7%	43.0%
Non-Life insurer	20.5%	30.1%	18.8%	23.5%
Composite insurer	51.2%	42.1%	22.7%	36.1%
Reinsurance	0.0%	33.3%	25.0%	22.4%
Captive	n.a.	0.0%	31.6%	31.3%
Total	**30.0%**	**37.0%**	**26.5%**	**30.9%**

Impact Trends

Methodological considerations on solvency ratios:

- QIS4 SCR-Quoten of two firms not 1:1 comparable
  - Free assets
  - Underlying distribution is specific to each firm
- Comparing QIS4 to Solvency I
  - Solvency I: include change in technical provisions to take into account the requirement of prudent technical provisions

[SCR+ Δ Technical Provisions SII/SI] / SI margin

Overall financial impact trends

↑ Life:

- Majority reports better solvency ratios for QIS4 compared to Solvency I. However, this is not a common fact

↓ Non-Life:

- Majority reports declining solvency ratios, with some declining capital surpluses too

? Health:

- diversity of health insurance schemes
- Considerable variation regarding SCR coverage

↓ Captives:

- Trend towards lower surplus ratios

Valuation

- **Broad support** for general design and methodologies
- economic valuation non-problematic **for IFRS users**
  - clear need for Solvency II valuation approach and IFRS phase II to develop consistently
- **Accounting balance sheet often used as proxy**
  - Appreciation of analysis required to derive an economic balance sheet
- **Some valuation difficulties (for all)**
  - deferred taxes
  - participations
  - reinsurance recoverables
  - intra-group transactions

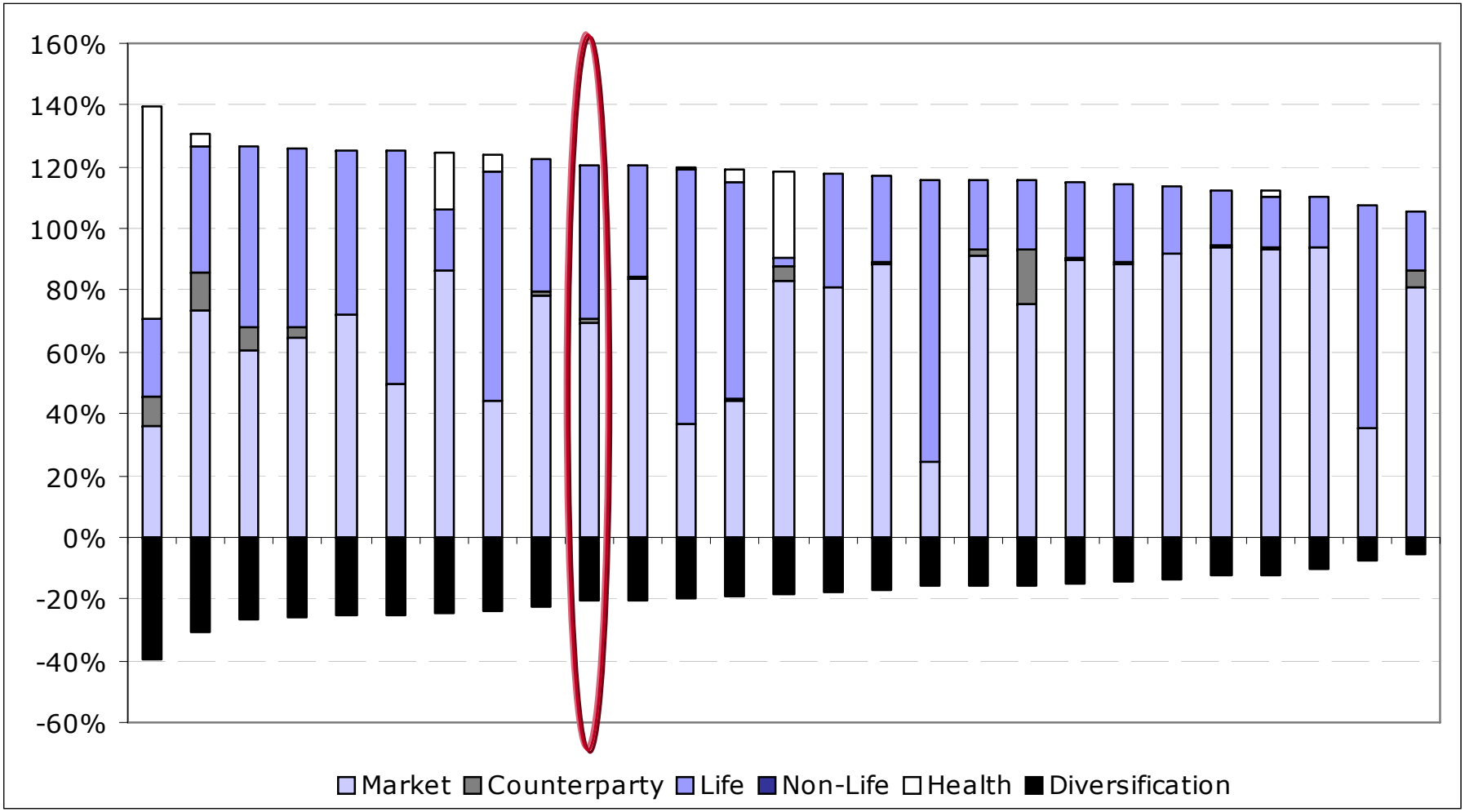
Technical Provisions

- Difficulties in valuation of liabilities
  - Data requirements, in particular SME
  - Too little guidance in QIS4 Technical Specifications
- Simplifications: well received, not commonly needed.
  - Favourites: Risk margin, interest rate risk module.
- Proxies: Useful for best estimate calculation, particularly for smaller companies.
  - Market based proxies for lack of data.

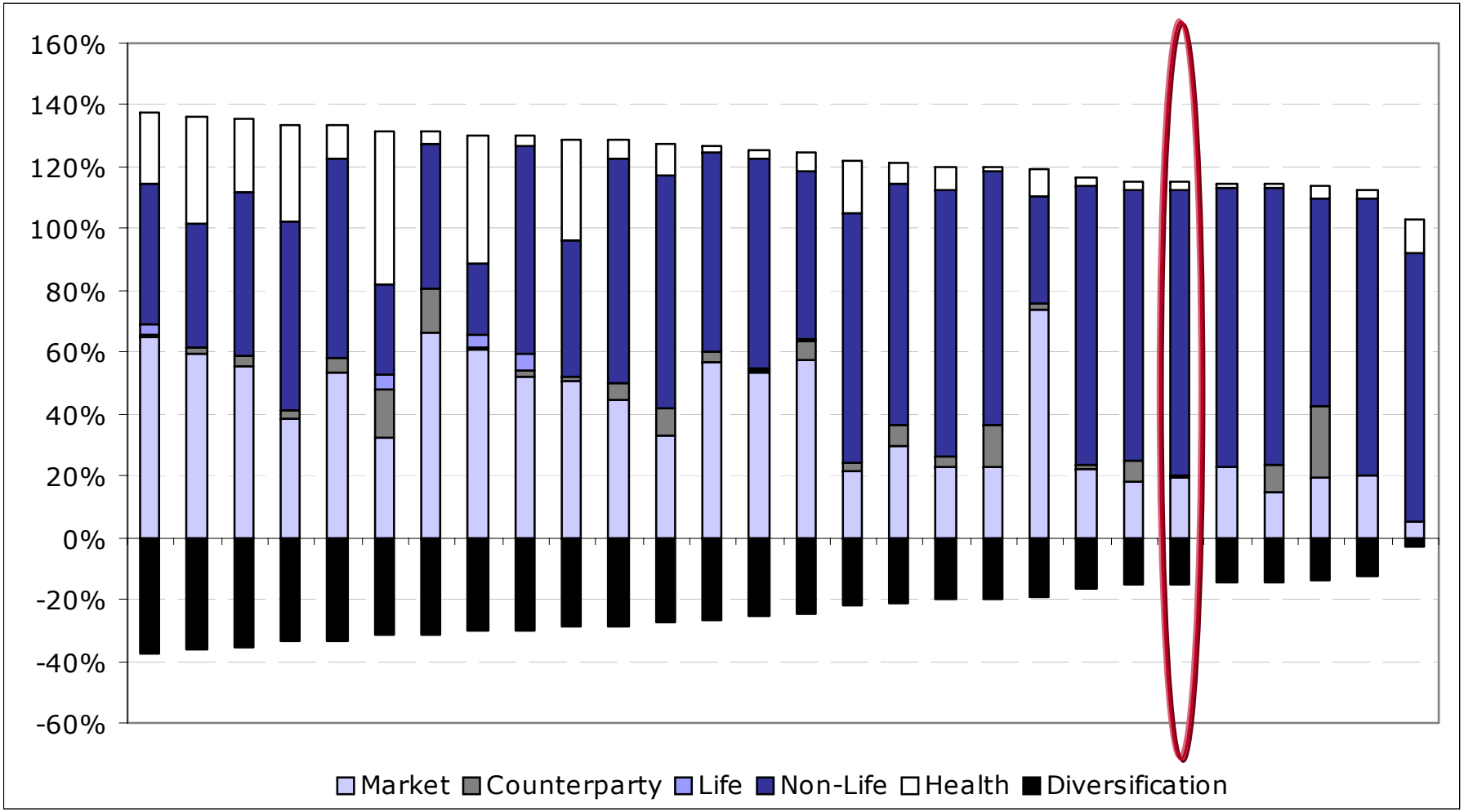
Own Funds

- Average **increase** 27%
- **Total own funds**: **95% Tier 1** / 4% Tier 2 / 1% Tier 3
- **Classification deemed suitable and practicable**
- increase of **hybrid capital in the future**
- **"Surplus funds":** significant in 4 Member States
- **Group support:** little evidence
- **Ancillary own funds:** small volume, **no useful feedback** on **valuation**
- **Supplementary mutual member calls:** separation OK

BSCR Composition (life)



BSCR composition (non-life)



Main issues SCR

- Equity Risk
- Counterparty Risk
- Deferred taxes
- Operational risk
- Correlations

SCR : Risk mitigating effect of future profit sharing and deferred taxation

= Key element in SCR calculation for life and health insurers

- Request for further and more detailed guidance on the calculation, and on impact of management actions
- Some undertakings saw the gross of profit sharing calculations as artificial;
- "Lower boundary SCR" calculated by 467 participants
- "Equivalent scenario" tested by 64 participants
- Deferred taxation – Difficulties were encountered with the interpretation of the specification, including in relation to national tax laws, more clarification and guidance needed

SCR – Equities

- Calibration
  - Equity shock adequately prudent?
- Participations
  - "Halving" of charge not transparent for some participants and some supervisors
  - Ratio SCR_{eq} differentiated approach / SCR_{eq} across the board: 90%
  - Look-through method (Option 3) more fitted to wholly owned subsidiaries for some participants and some supervisors

SCR – Equities

- Duration dampener
  - Two aspects: cyclicality + duration of liabilities
  - Tested by about 25% of participants
  - Resulted on average in a 9% reduction of equity risk capital
  - Contested by majority of undertakings and all but one supervisor:
    - Lack of theoretical and empirical justification
    - Not in line with 1 year, 99.5% Value at Risk
    - Inappropriate incentives for risk management

SCR - Counterparty default risk

- Unanimously criticised by participants and supervisors as too complex
  - Volume of data collection seen as too burdensome

  → Ad hoc proxies have been used
- Calibration for unrated intermediaries
  - Use of own experience data?
  - CEIOPS' rating?
- Artefacts due to the use of the Vasicek distribution
- Issues not addressed yet:
  - Derivatives
  - Modulated recovery rate
  - Non-rated reinsurance pools: look-through approach?
  - Policyholder's credit (risk mitigation: cancellation!)

SCR – Operational risk

- Represented between 5-10% of total SCR
- Formula simple but not risk sensitive,
- Dislike for lack of diversification with other risks
- Suggestions from participants
  - Calculate as a percentage of SCR or BSCR
  - Take account of operational risk sources and quality of risk management process and control framework
- Around 40% of undertakings capture loss events, and most of these then attempt to quantify these events

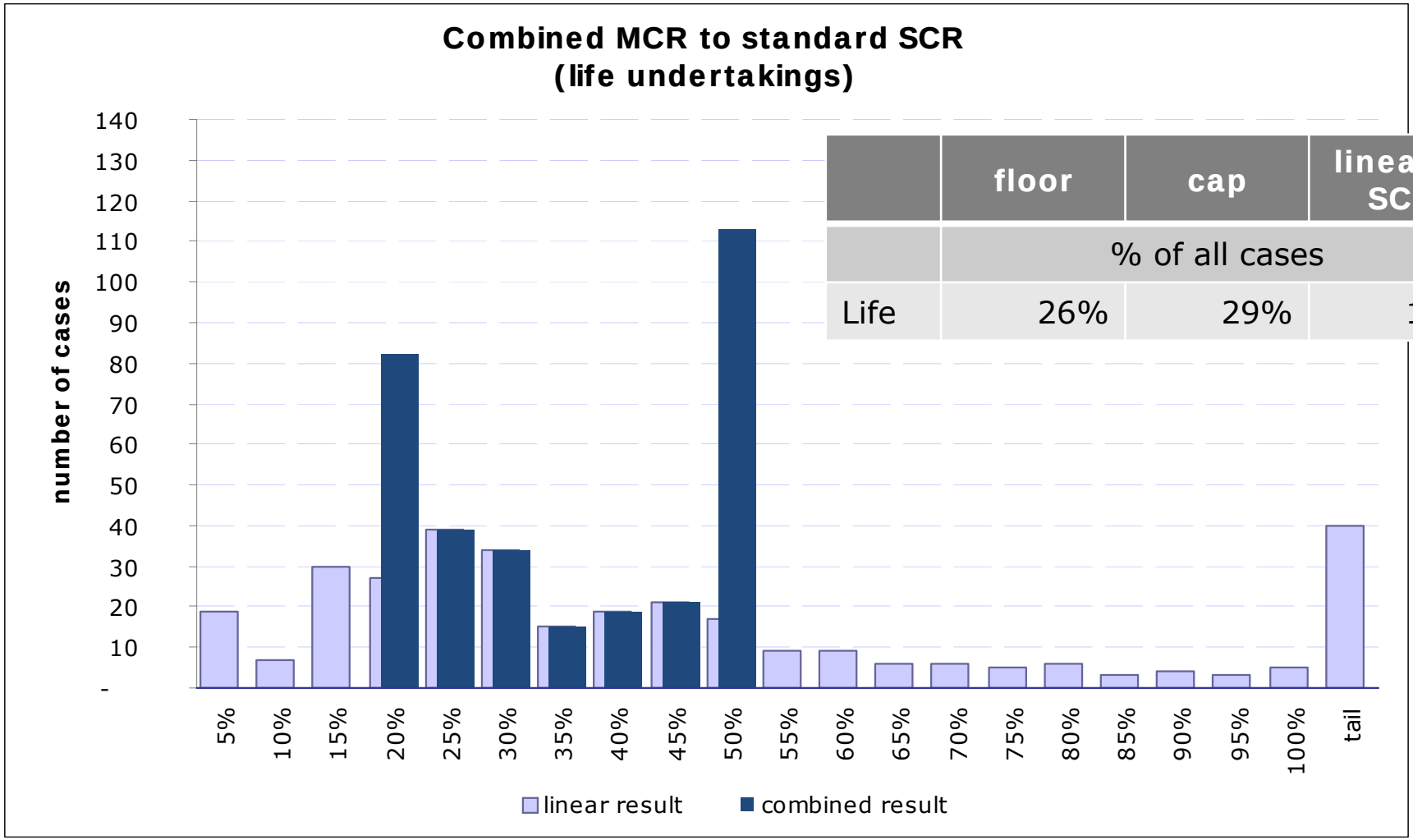
SCR – Correlations

- Critics: No objective technical basis for the present correlation matrix
- Many alternative suggestions for some specific coefficients

Reactions on MCR

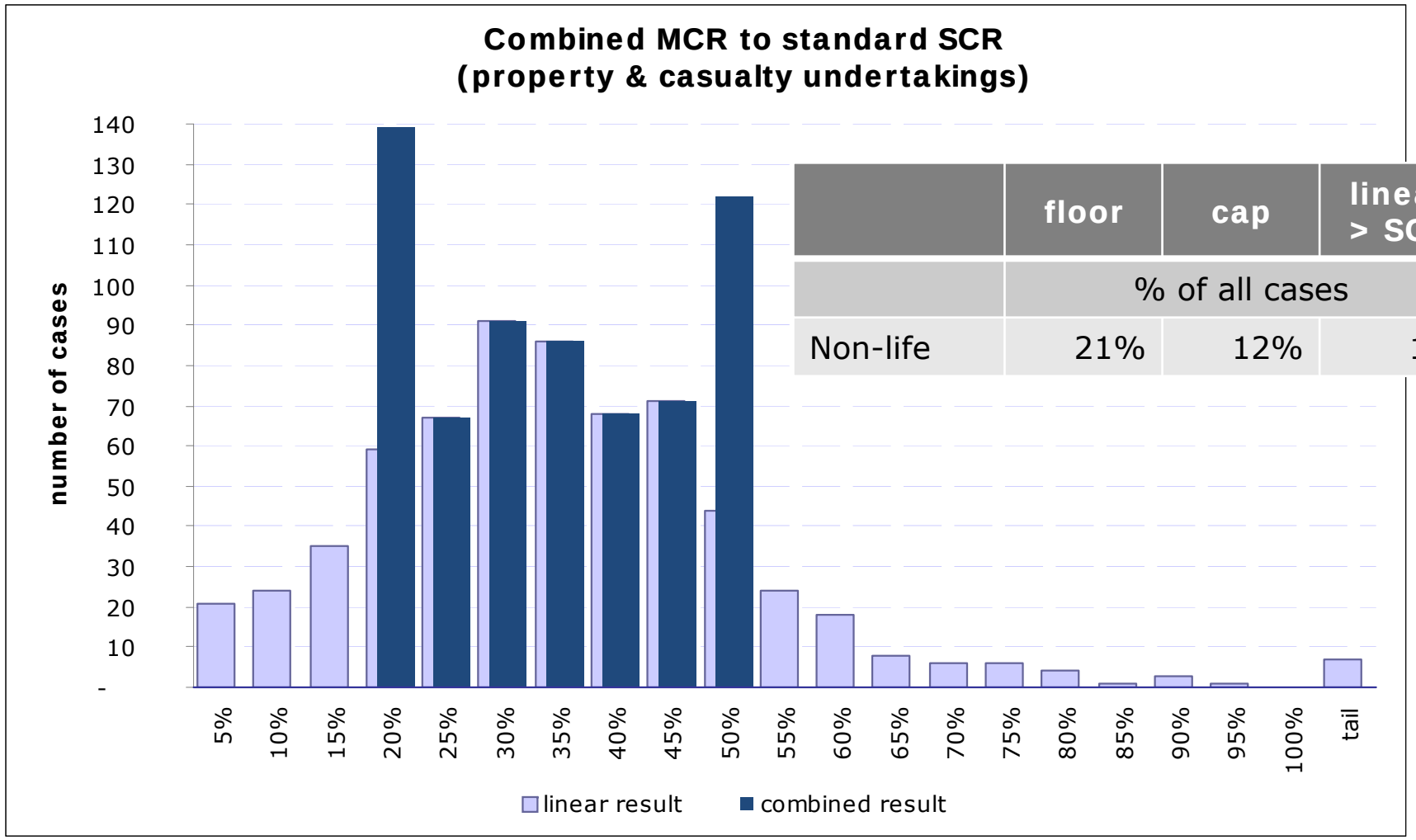
- QIS4 combined approach better received than QIS3 modular design.
- Little or no practical difficulty with MCR calculation.
- Compact Approach supported by majority of participants, majority of supervisors support Combined Approach.
- By design, the corridor kept all combined MCR to SCR ratios in the 20% to 50% range (save the absolute floor).
- Non-life business: linear approach meets target.
- Life business : linear approach needs improvement

MCR – Distribution of MCR to SCR ratios, life



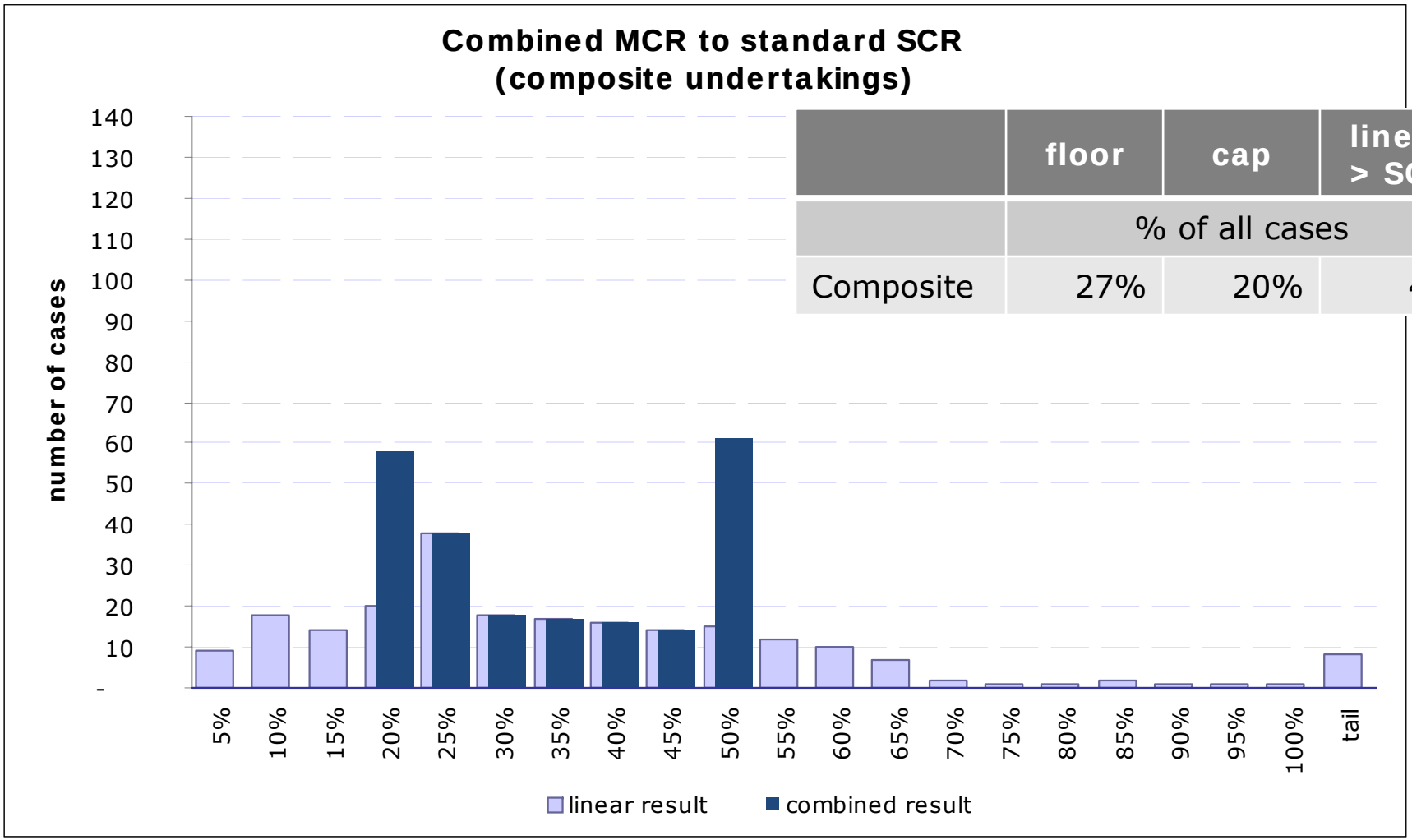
	floor	cap	linear > SCR
	% of all cases		
Life	26%	29%	12%

MCR – Distribution of MCR to SCR ratios, non-life



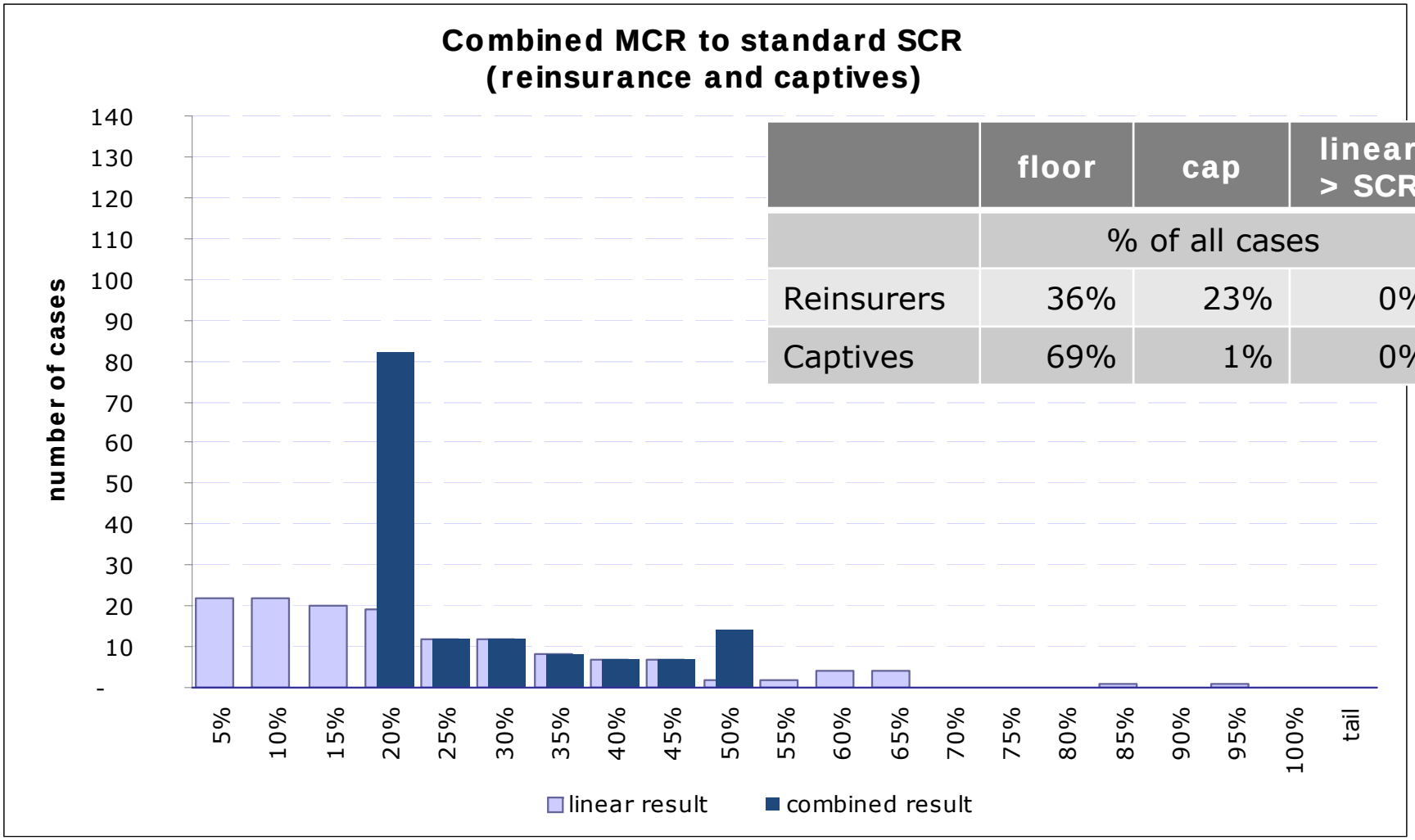
	floor	cap	linear > SCR
	% of all cases		
Non-life	21%	12%	1%

MCR – Distribution of MCR to SCR ratios, composite



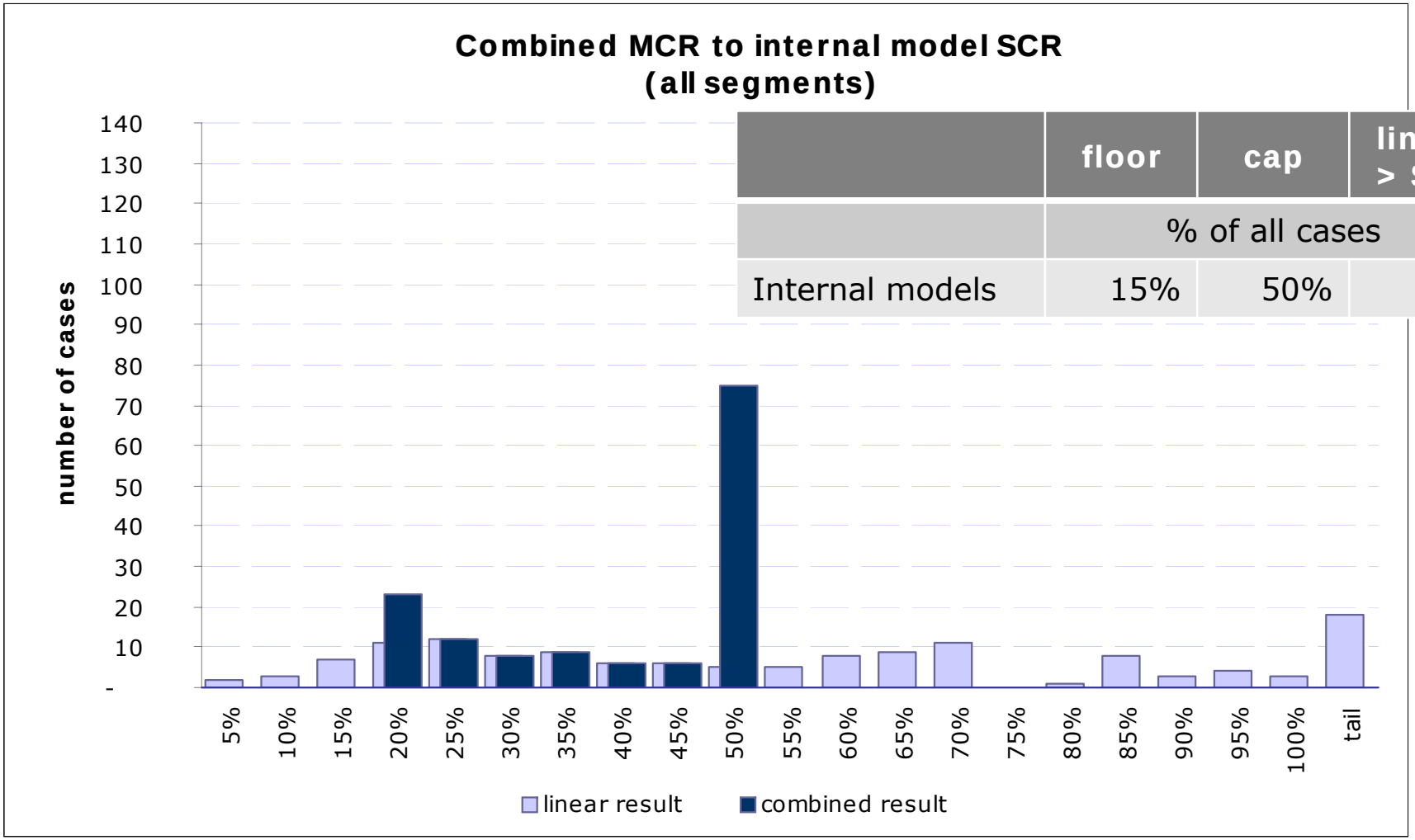
	floor	cap	linear > SCR
	% of all cases		
Composite	27%	20%	4%

MCR – Distribution of MCR to SCR ratios, reinsurance and captive



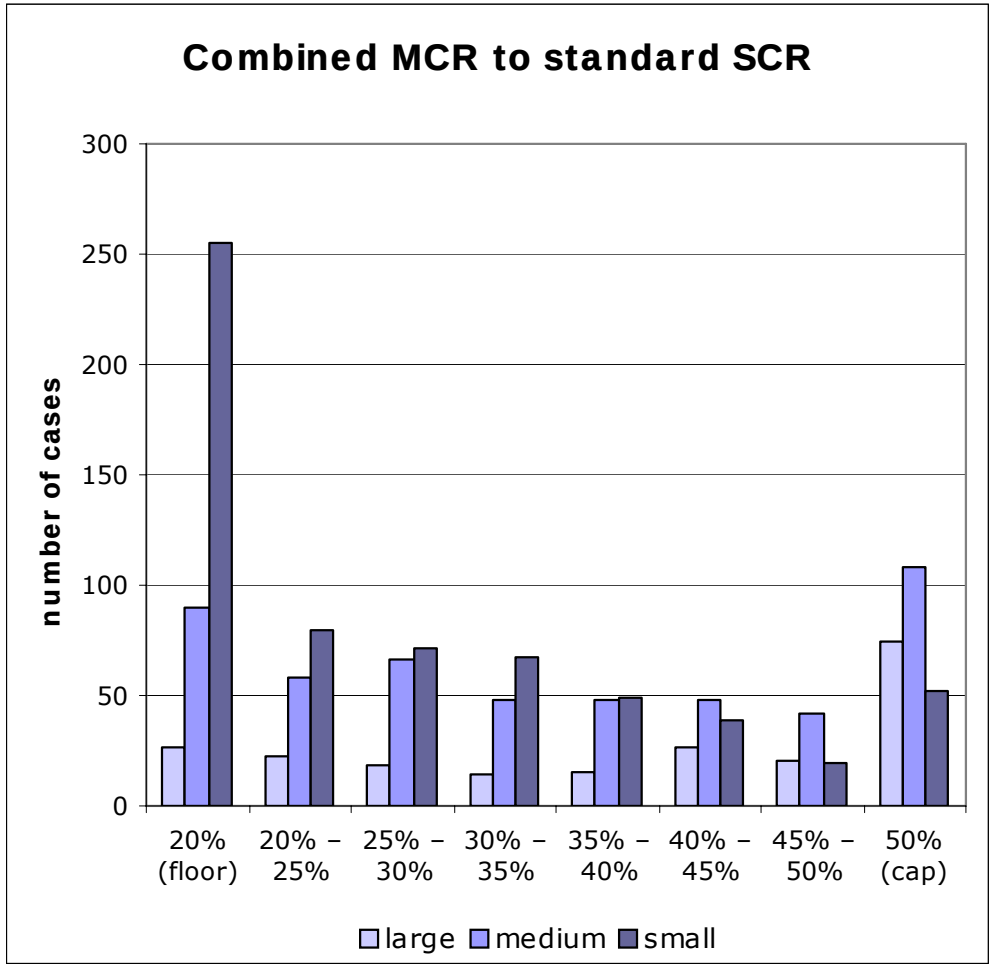
	floor	cap	linear > SCR
	% of all cases		
Reinsurers	36%	23%	0%
Captives	69%	1%	0%

MCR – Distribution of MCR to SCR ratios, internal models



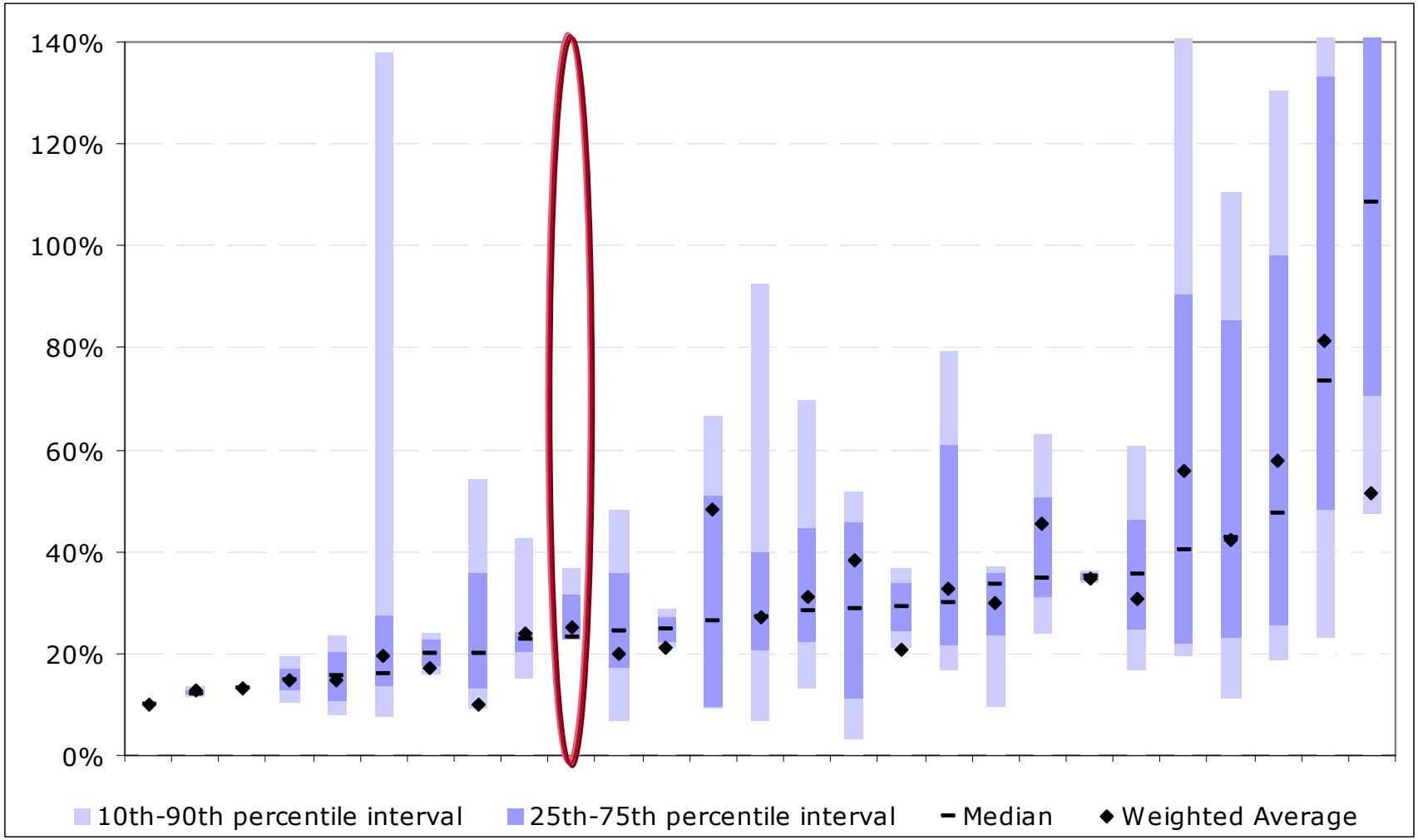
	floor	cap	linear > SCR
	% of all cases		
Internal models	15%	50%	13%

MCR – MCR to SCR ratios per size segment

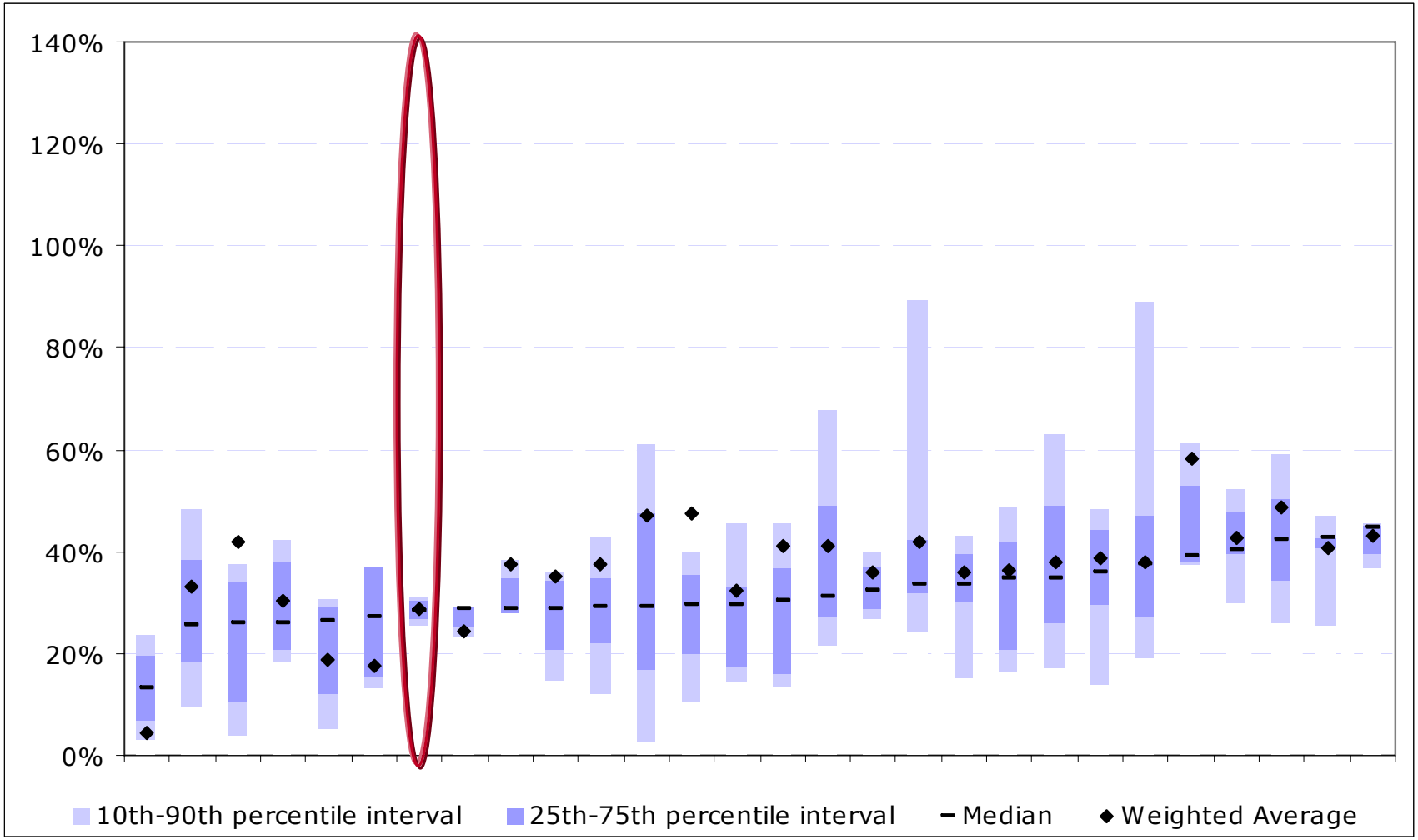


	floor	cap	linear > SCR
	% of all cases		
large undertakings	12%	34%	9%
medium undertakings	18%	21%	5%
small undertakings	40%	8%	2%

MCR – Variation by country, linear MCR to SCR, life



MCR – Variation by country, linear MCR to SCR, non-life



Internal models

- Many undertakings consider the standard formula to work reasonably well and will hence not seek internal model approval.
- Use of partial or full internal model possible route for many undertakings.
- Better risk management and governance seem to be the key drivers for seeking internal model approval.
- Wide variety of partial internal models currently in use.

Internal Models – main findings

- Majority of respondents indicated that SCR will decrease with an internal model and slightly less than half of the respondents reported a potential decrease of more than 20%.
- **Lower** internal models capital requirement than standard formula: Overall SCR, BSCR, market risk (interest rate risk) life underwriting risk (longevity risk, lapse risk), health underwriting risk (health short term underwriting risk), non-life underwriting risk and premium/reserve risk.
- **Higher** internal model capital requirement than standard formula: Operational risk, equity risk, property risk and mortality risk.

Internal Models - conclusions

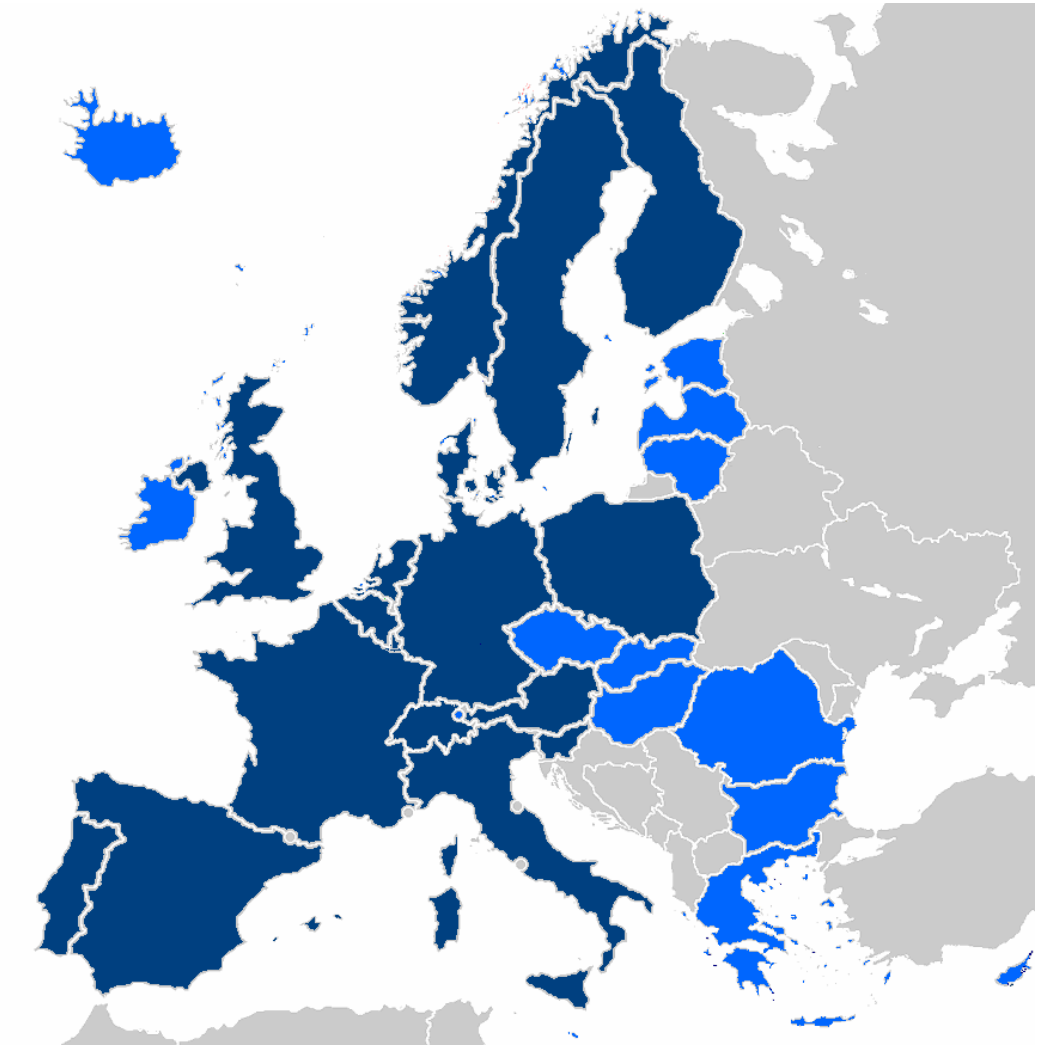
- Sophistication of internal models varies strongly.
- Very scarce sample size: no meaningful estimates can be made for the expected total EU wide costs related to the potential use of internal models in Solvency II.
- To reach a full compliance with an anticipated Solvency II framework: further work required
  - use test
  - statistical quality
  - Calibration
  - profit and loss attribution
  - validation
  - etc.

Group Solvency

- 111 Groups

  from

- 16 EEA-Member States



Comparison of methods

- Impact of IGT, “real” diversification, non-EEA entities and with profit business

Impact of	10th	25th	50th	75th	90th	Weighted average	Sample size
Global impact	60.3%	69.0%	**80.5%**	89.9%	98.1%	73.7%	*(48)*
IGT	64.4%	79.0%	**89.9%**	97.5%	100.0%	91.4%	*(54)*
Real diversification	77.2%	83.5%	**88.7%**	93.7%	96.2%	78.7%	*(24)*
EEA	64.5%	71.3%	**82.0%**	92.7%	97.1%	79.1%	*(42)*
WP	72.7%	79.4%	**86.8%**	94.2%	96.9%	84.1%	*(35)*

Evolution of surplus

Evolution of surplus	10th	25th	50th	75th	90th	Weighted average	Sample size
QIS4 surplus to Solvency I surplus	45%	76%	113%	232%	327%	109%	*(44)*

- On average, slight increase of group surpluses in QIS4 compared to the surplus in Solvency I
- Results vary largely from one group to another

Main findings

- Significant “real” worldwide diversification (21.3%)
- Significant “real” EEA diversification (20.9%)
- Relevant impact of with-profit business on the diversification effects
- Relevant impact on diversification from third countries but subsample very limited
- Slight increase of group surplus in QIS4 / Solvency I – large variation
- Higher proportion of hybris capital vis-a-vis solo-results

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