



The Actuarial Profession

making financial sense of the future

Good, Better, Best Practice:

A look at how actuaries are meeting today's challenges with respect to ICA, EV and Regulatory Reporting

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e-Survey:

Background

Background

- Information on assumptions and results are readily available in public. But there is comparatively little information available on the actuarial methodologies used.
- Earlier this year KPMG carried out a series of three e-surveys to benchmark common industry practices used in ICA, EV and FSA regulatory reporting calculations.
- The survey was addressed to all 70 life offices with an internal actuarial function.
- The responses we received have been wide-ranging, significant and representative of the UK market. Total responses for each part of the survey were:

▪ ICA:	27
▪ EV:	20
▪ Regulatory reporting:	28

List of participants

Abbey National

ALICO (UK Branch)

Aviva

BUPA Health Assurance

Clerical Medical Investment Group

Chesnara

Engage Mutual Assurance

Equitable Life Assurance Society

Friends Provident

GE Pensions

GenRe Life-Health UK

Hannover Life Re (UK)

HSBC Life

Irish Life & Permanent

Legal & General Assurance Society

Marks & Spencer Life Assurance

MGM Assurance

Nationwide Life

Prudential

Reliance Mutual Insurance Society

Resolution

Revios

RGA UK

Royal Liver Assurance

Royal London Mutual Insurance Society

Scottish Friendly Assurance Society

Scottish Legal Life

Scottish Widows

St. James's Place

Standard Life

Swiss Re Life and Health UK

Threadneedle

The Co-operative Insurance Society

Unum

Wesleyan Assurance Society

Windsor Life Assurance Company

Winterthur

XL Re

A note on the interpretation of results

- Best practice is a term used to describe an ideal way in which things could be done so that they comply with the relevant legislation, regulations, standards, guidance and principles of corporate governance. Rather than use the word “best” we would say that the report reflects the current state of market practice.
- The information contained in this report is of a general nature and it is not intended to address the circumstances of any particular individual or entity. Although we have tried to provide timely and accurate information we cannot guarantee that this information was accurate at the date it was received or that it will continue to be accurate in the future. No one should act on any information contained in this report without appropriate professional advice and a thorough examination of their particular situation.



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ICA practices

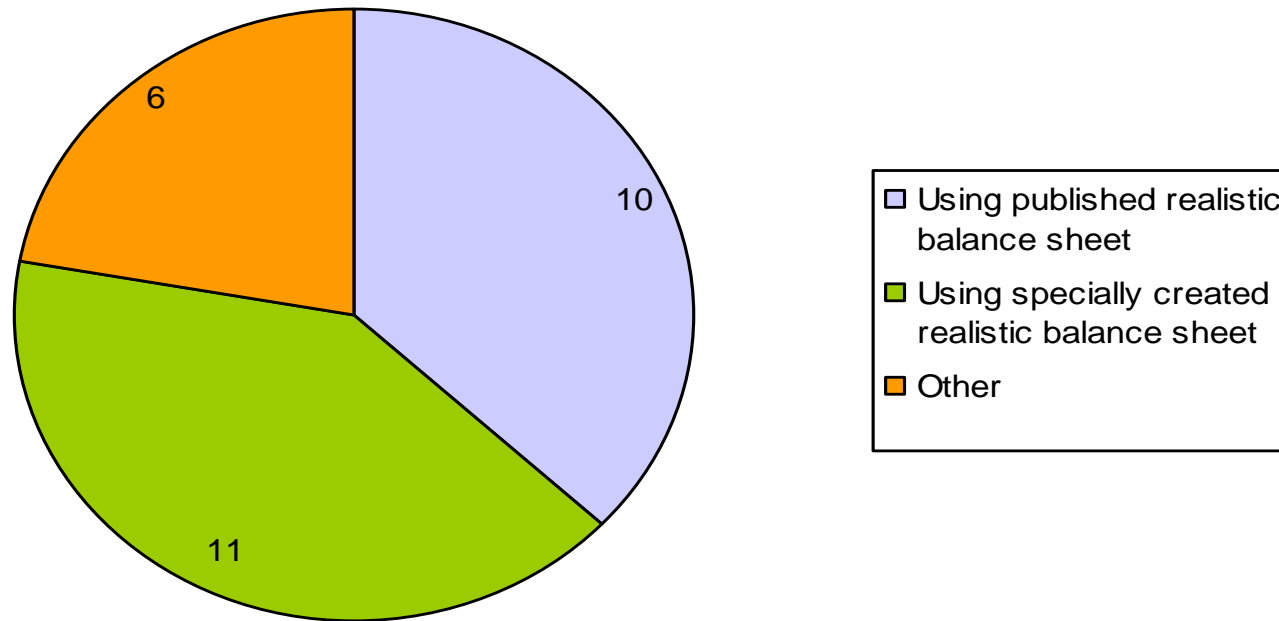
ICA highlights

- Fundamental approach
- Market risk
- Insurance risk
- Operational risk
- Aggregation of risk
- Some other interesting bits

Fundamental approach

- Basis of calculation

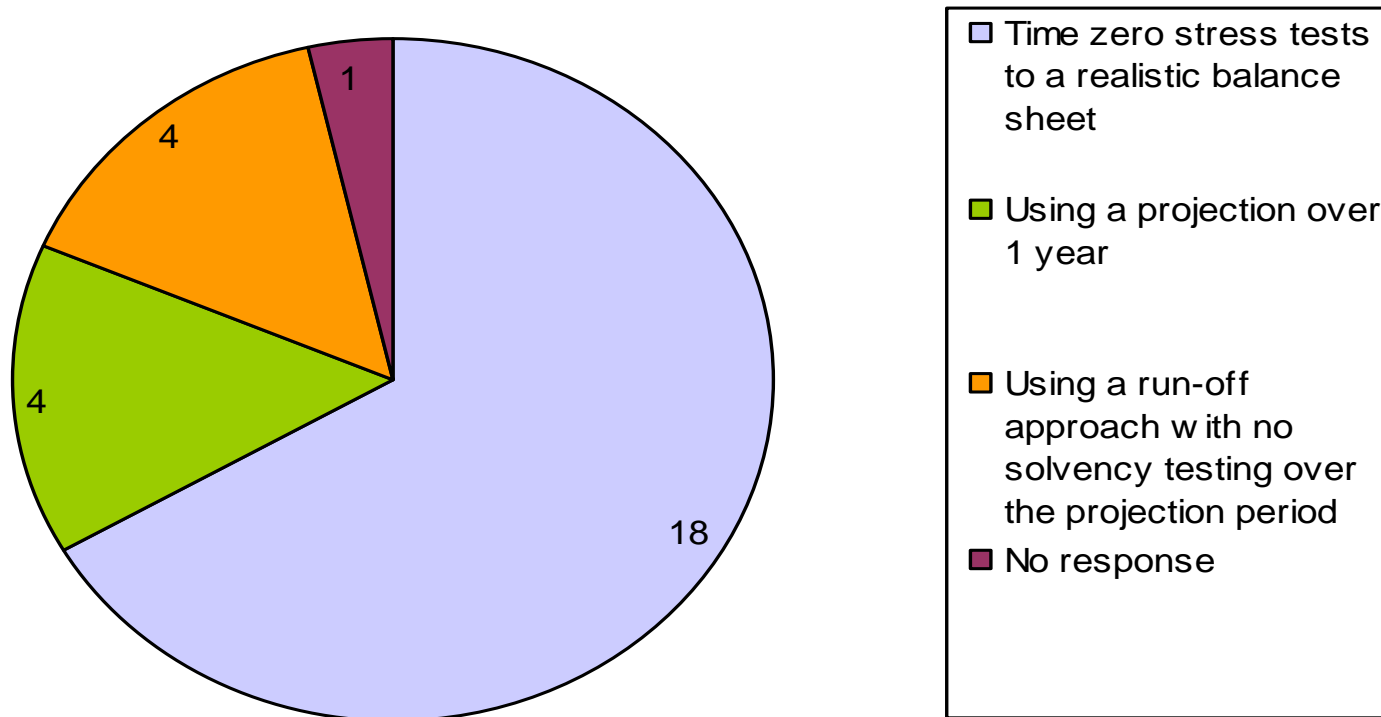
Approach to calculating best estimate liabilities



Fundamental approach

- Stress testing

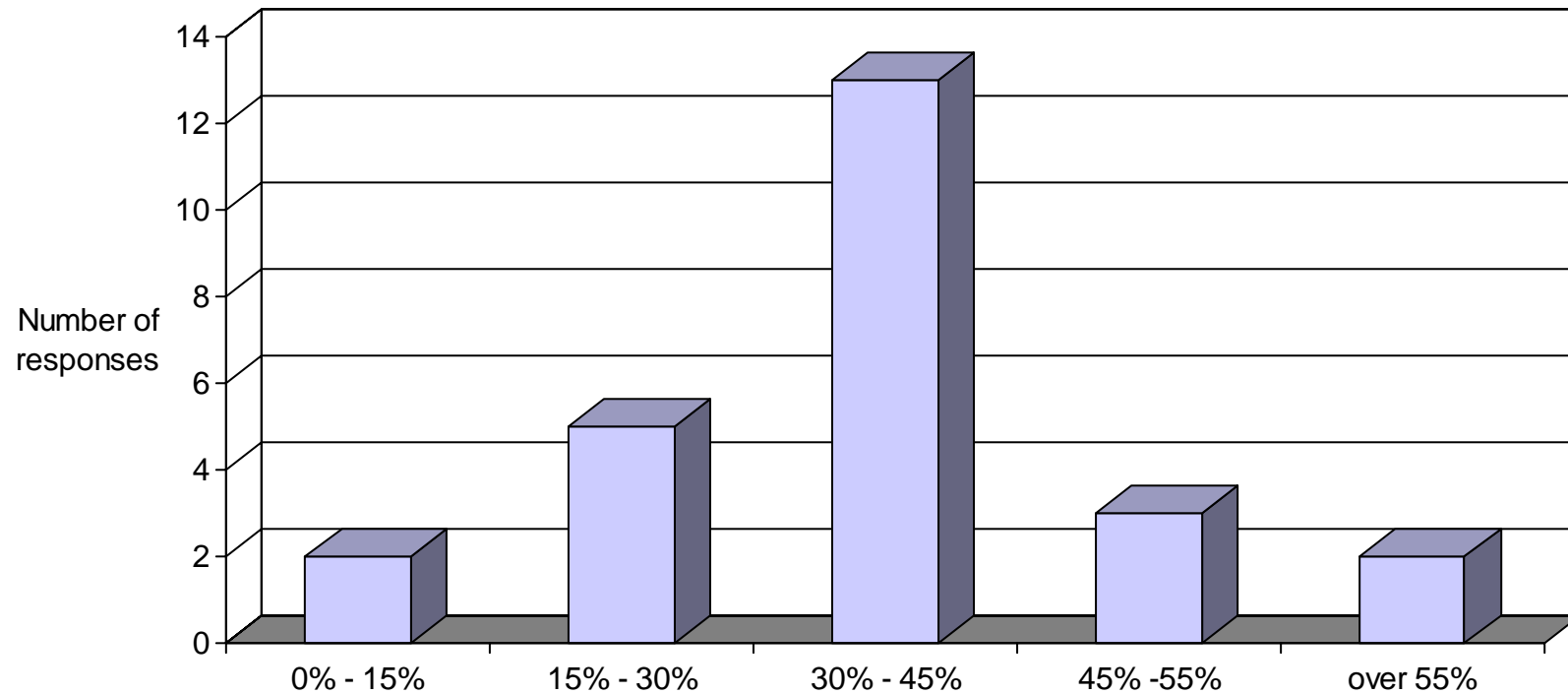
Application of ICA stress tests



Market risk

- Equity stresses

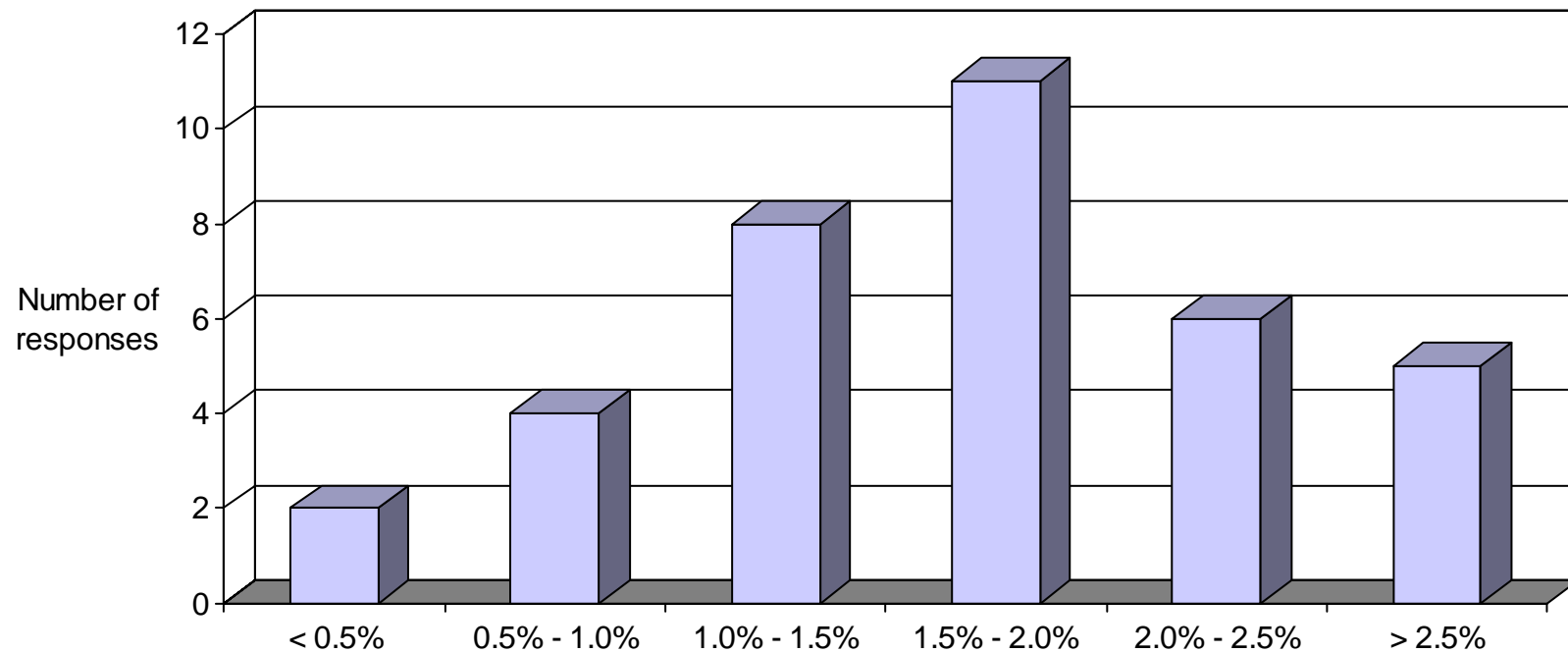
Rise or fall in equity market values considered



Market risk

- Interest rate shifts

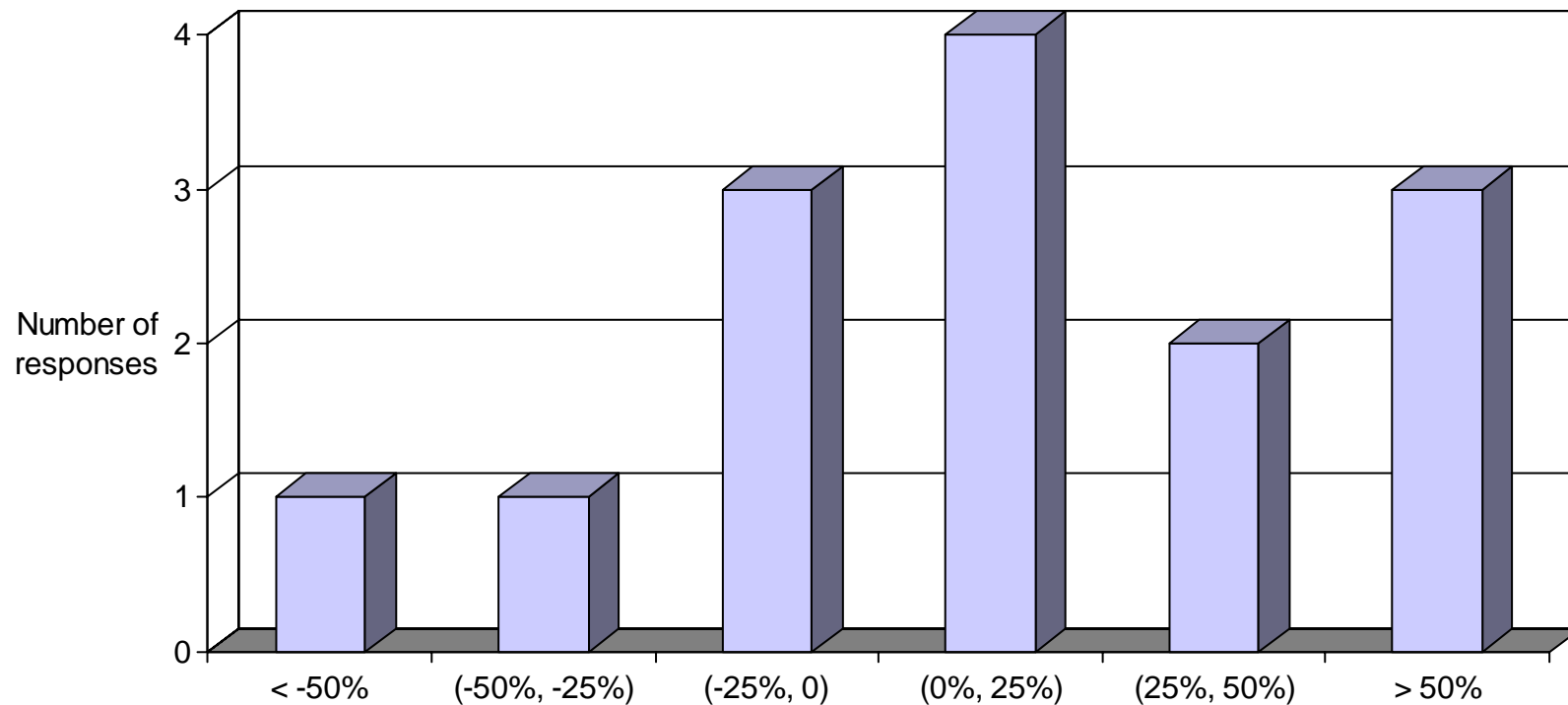
Up and down shift applied to yield curve



Market risk

- Correlations

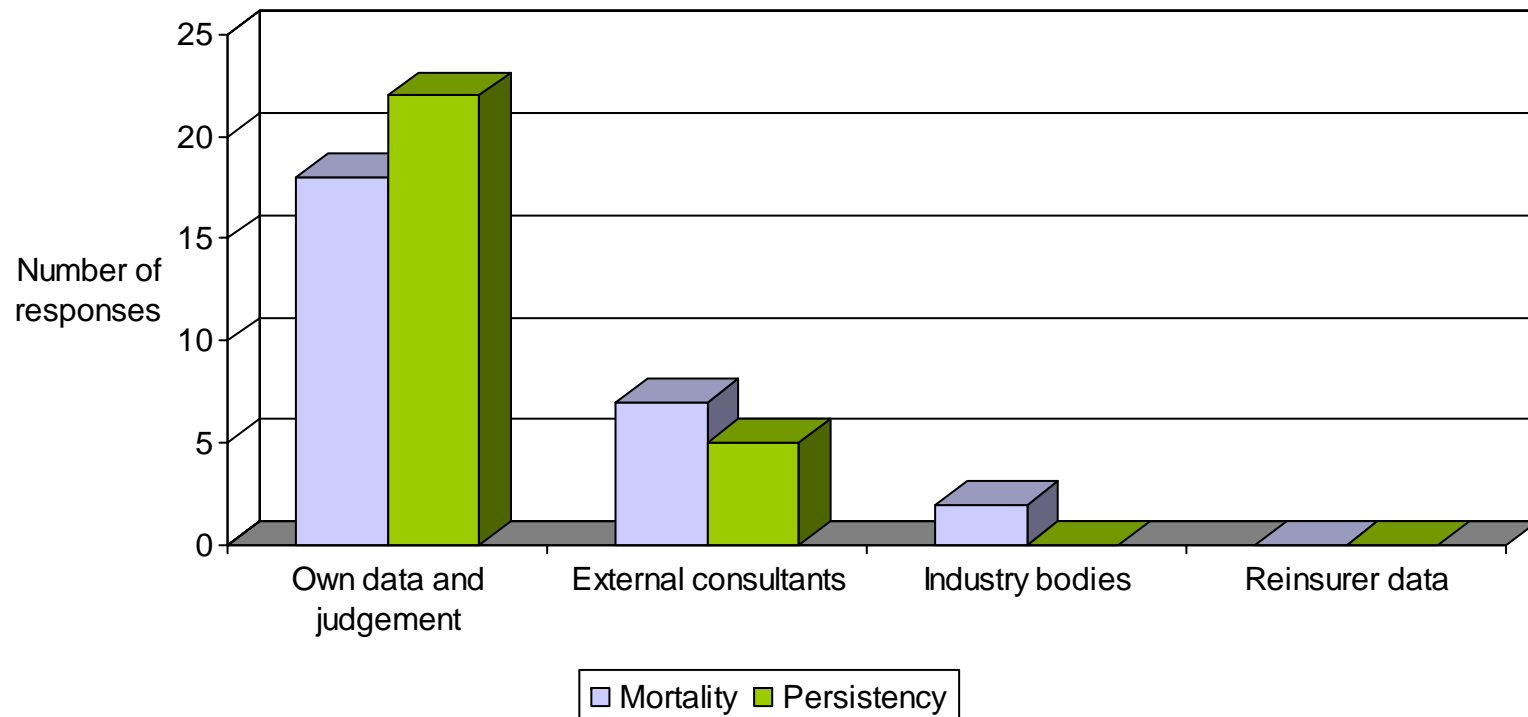
Correlation between equity values and fixed interest yields



Insurance risk

- Basis for stress tests

Source of mortality and persistency stress test data

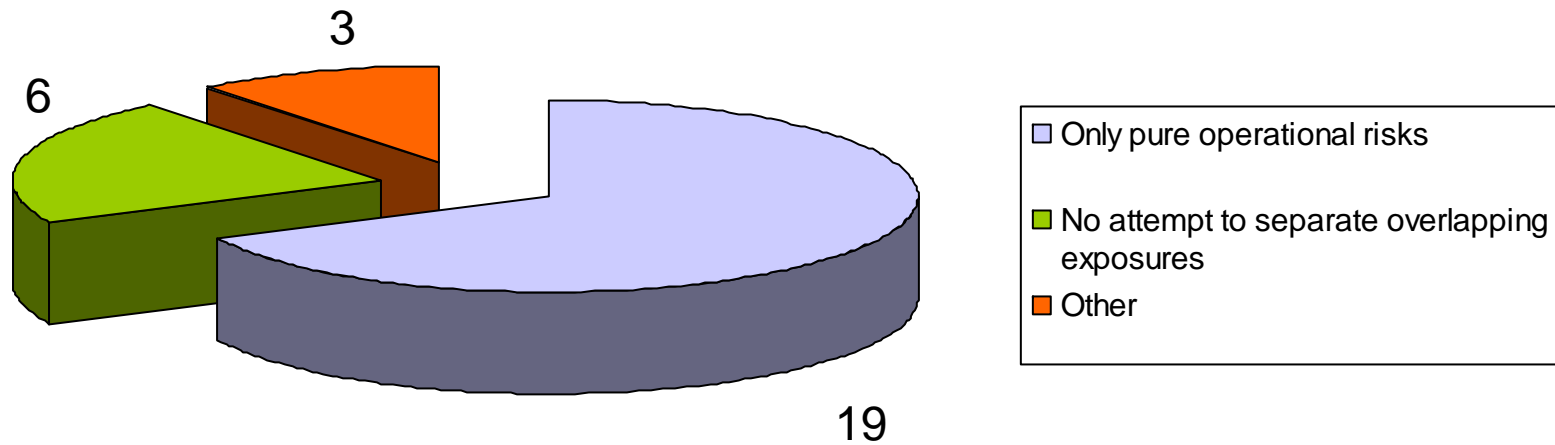


Operational risk

- New challenge for actuaries and life offices
- 63% of companies feel that their OR models are less developed than their overall ICA
- Typical approach is to use a 3-stage process:
 - Define operational risk
 - Identify operational risk exposures
 - Quantify operational risk capital

Operational risk

- Definition of operational risk



Operational risk

- Most common operational risk events modelled

Operational risk type	Main class of business written by insurer					
	Protection	Reinsurance	Unit-linked	With-profit	Other	All
Systems and technology risks	3	6	3	13	2	27
Management of employees	3	5	2	13	2	25
Business continuity	3	5	3	12	2	25
Legal risks	3	6	2	11	1	23
Breach of underwriting guidelines	3	6	1	6	1	17
Reputational risk	1	4	2	8	1	16
Difficulty in recruiting qualified staff	3	3	1	7	2	16
Marketing and distribution risks	0	3	1	10	1	15
Pensions scheme deficits	1	0	2	4	1	8

Aggregation of risk

- 48% of respondents use the root sum of squares method to aggregate capital across risk exposures
- Evidence of a two-tier approach to applying correlations and determining the reported diversification benefit

Some other interesting bits

- **Other liabilities in the ICA**
 - 70% pension scheme
 - 25% service company costs
 - 19% bond repayments
 - 11% dividend payments
- **Use of ICA in new business pricing**
 - 74% of respondents do not use their ICA in profit testing
- **Publication of ICA / ICG**
 - 100% had not published their ICA
 - 52% not prepared to publish ICA / ICG



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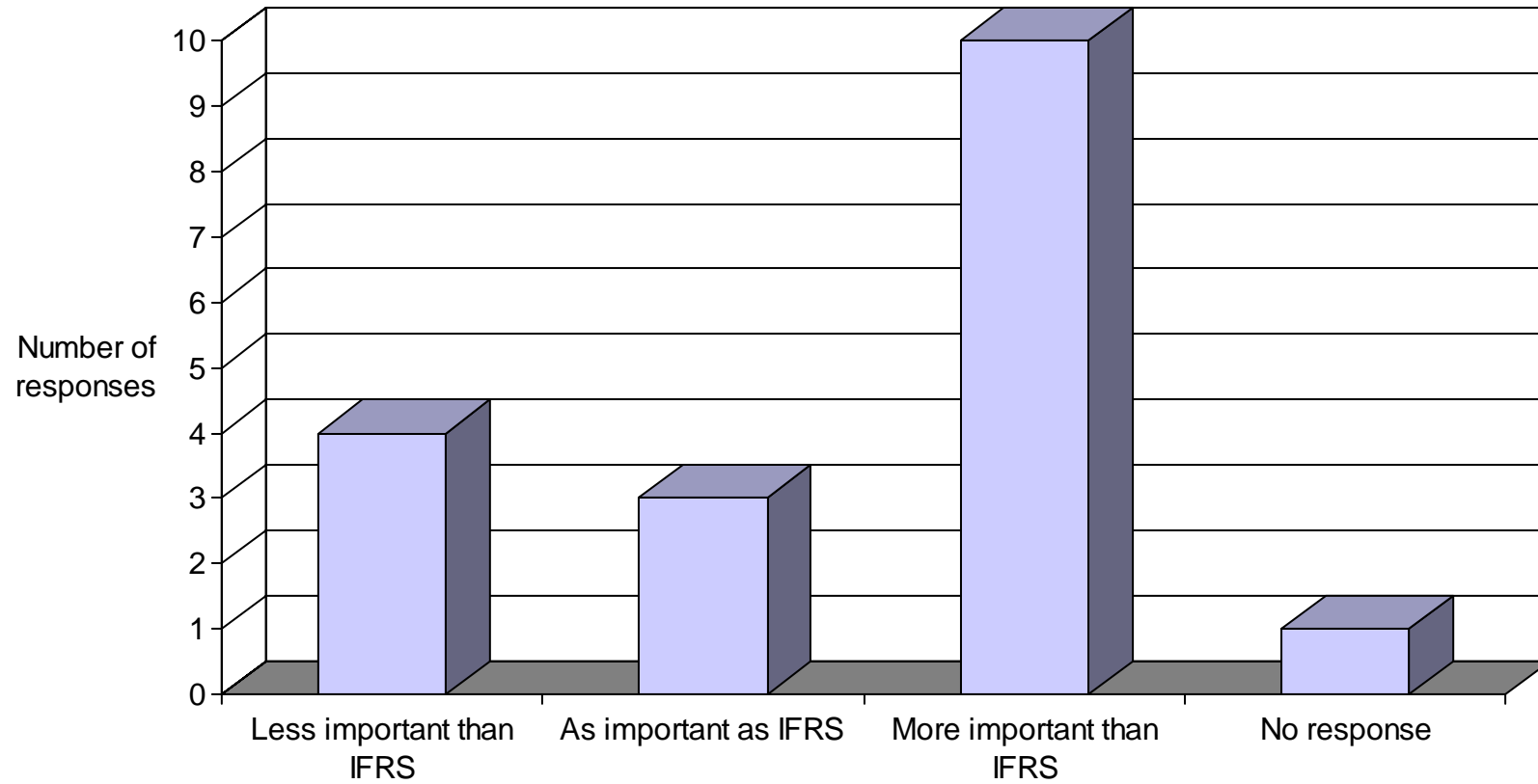
EV practices

As not all participants responded to every section all percentages included in the following slides are based on those that responded to the applicable section

EV highlights

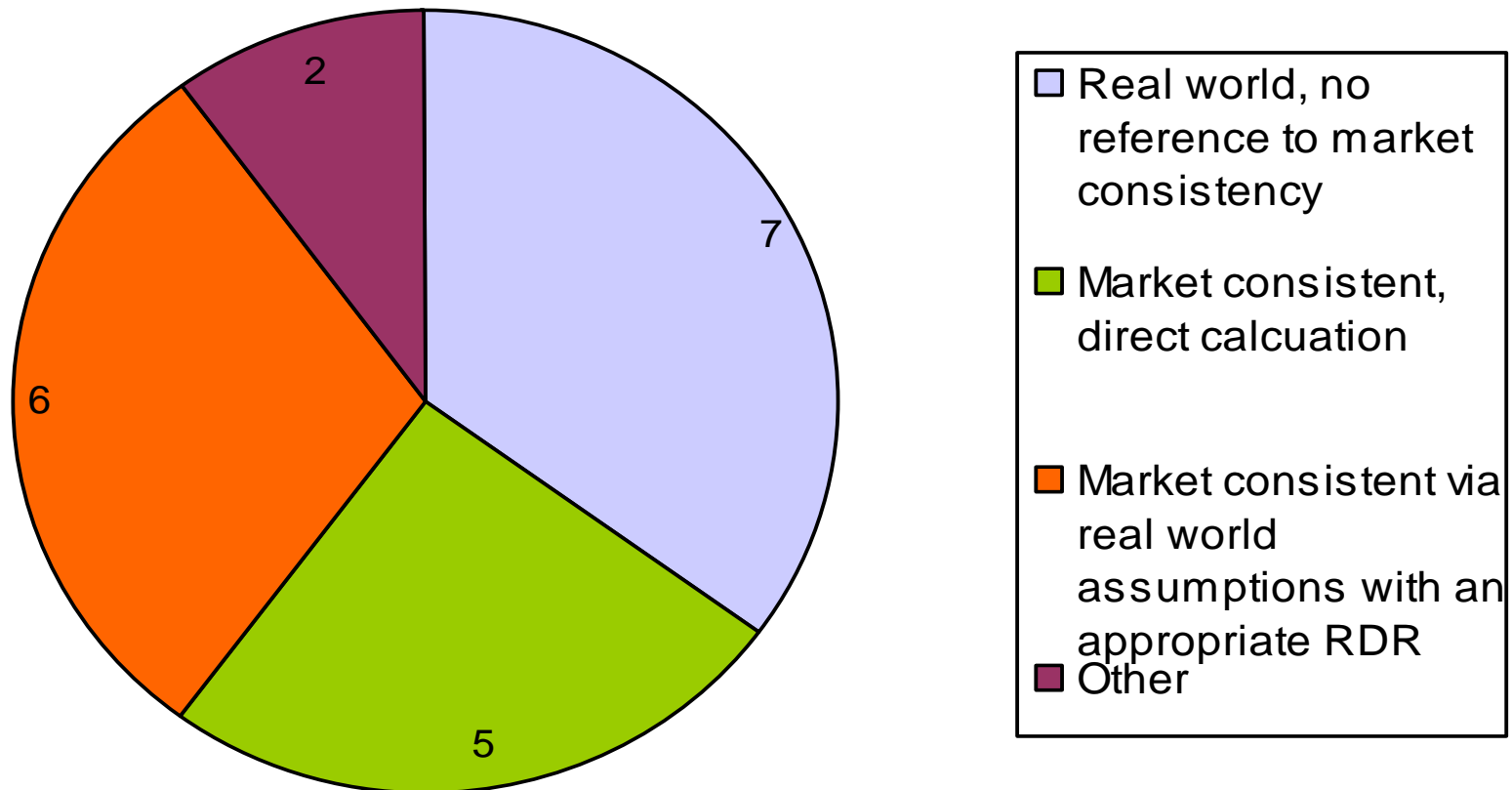
- Importance
- Basis of calculations
- Required capital
- Discount rates
- Options and guarantees
- Some other interesting bits

Importance of EV results



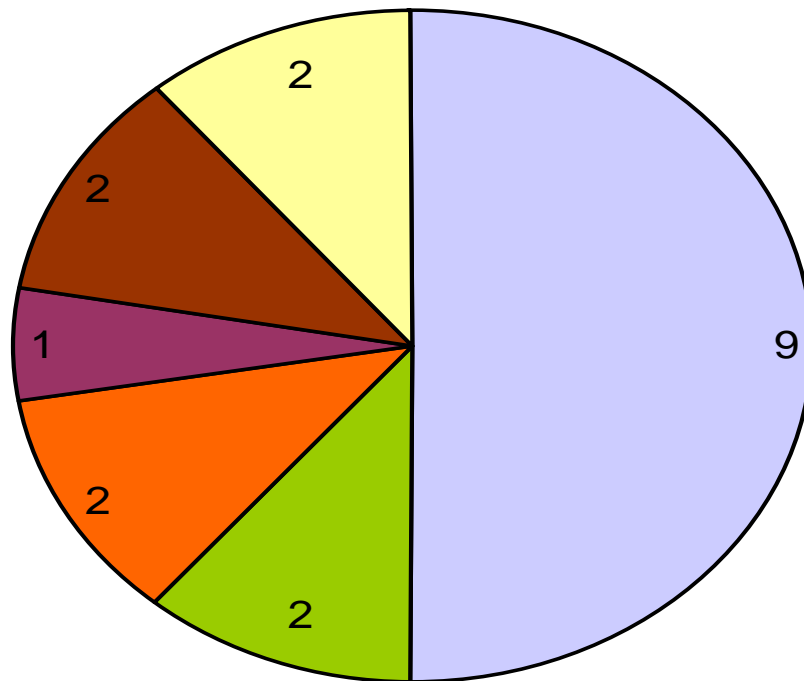
Basis of calculation

Overall EV methodology



Required capital

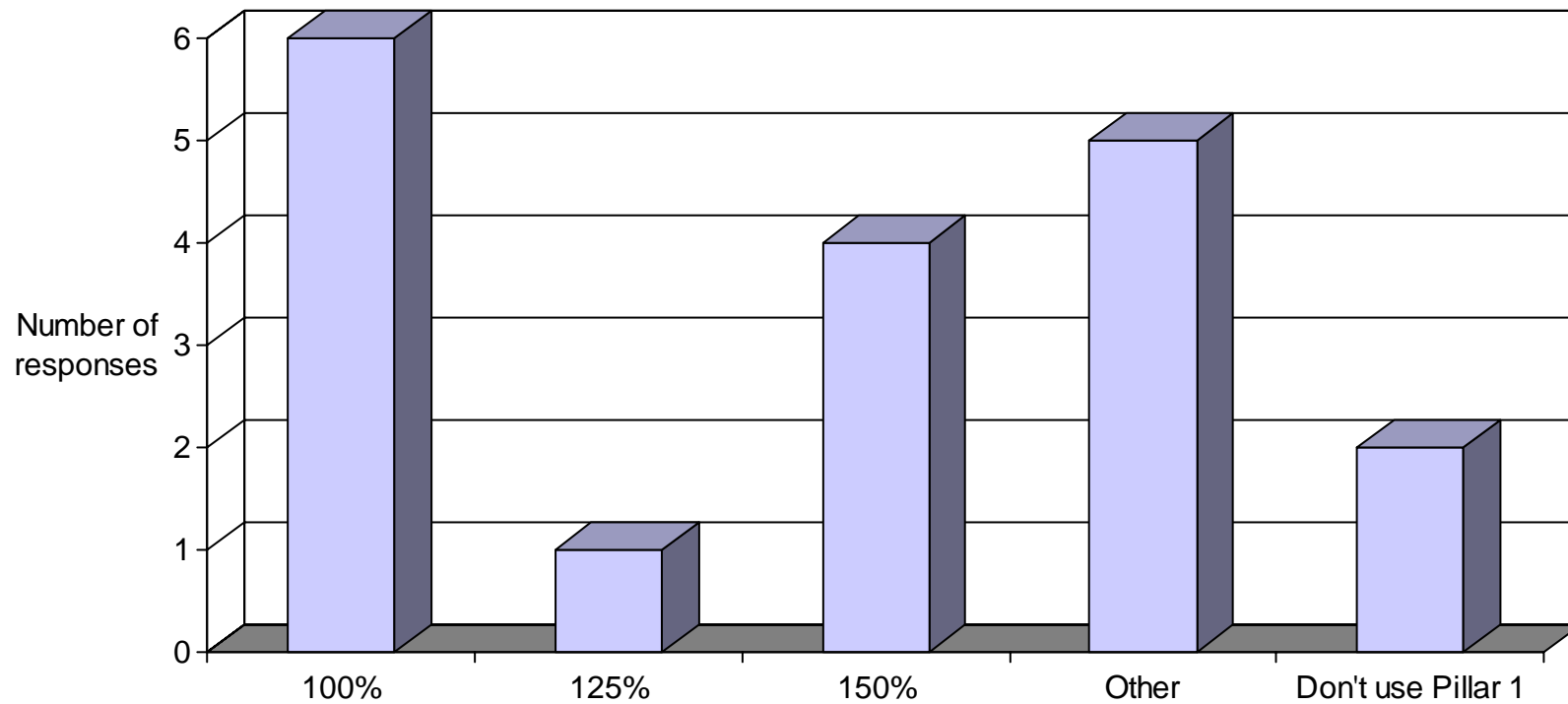
Basis for EV required capital



- Based on FSA capital requirements
- Based on Group targets
- Based on internal targets
- Based on rating agency requirements
- Some combination of the above
- Other

Required capital

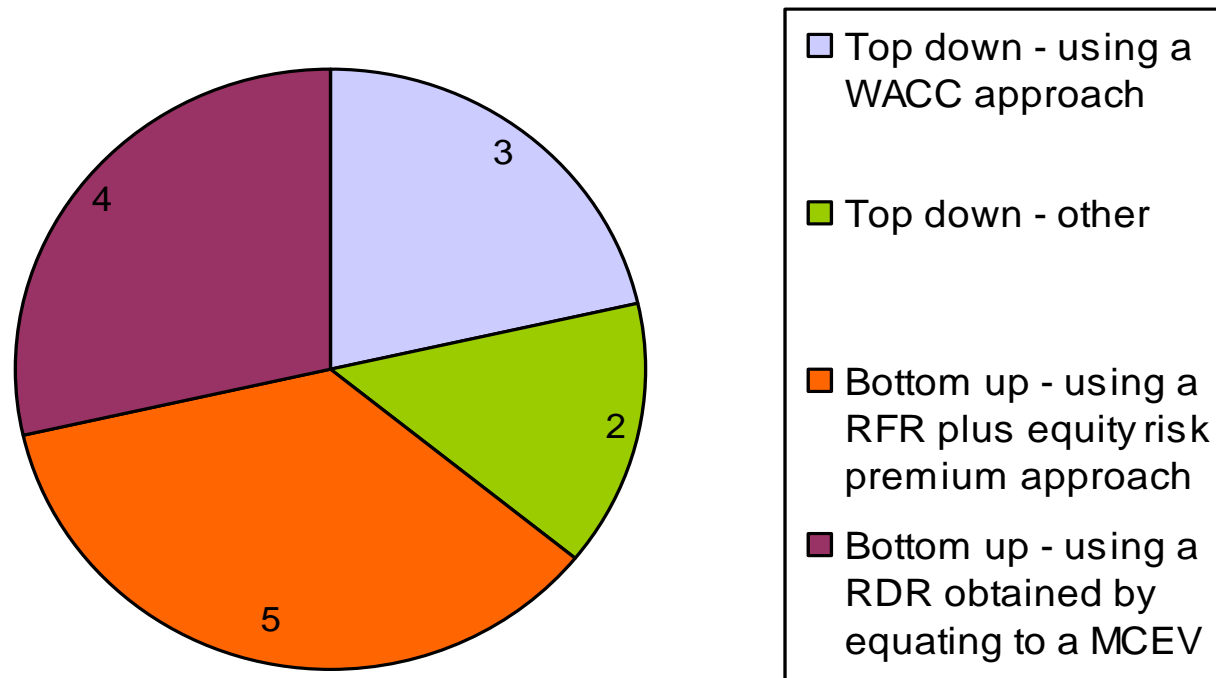
Level of required capital (as a proportion of pillar 1)



Discount rates

- Real world

Method used to set real world RDR

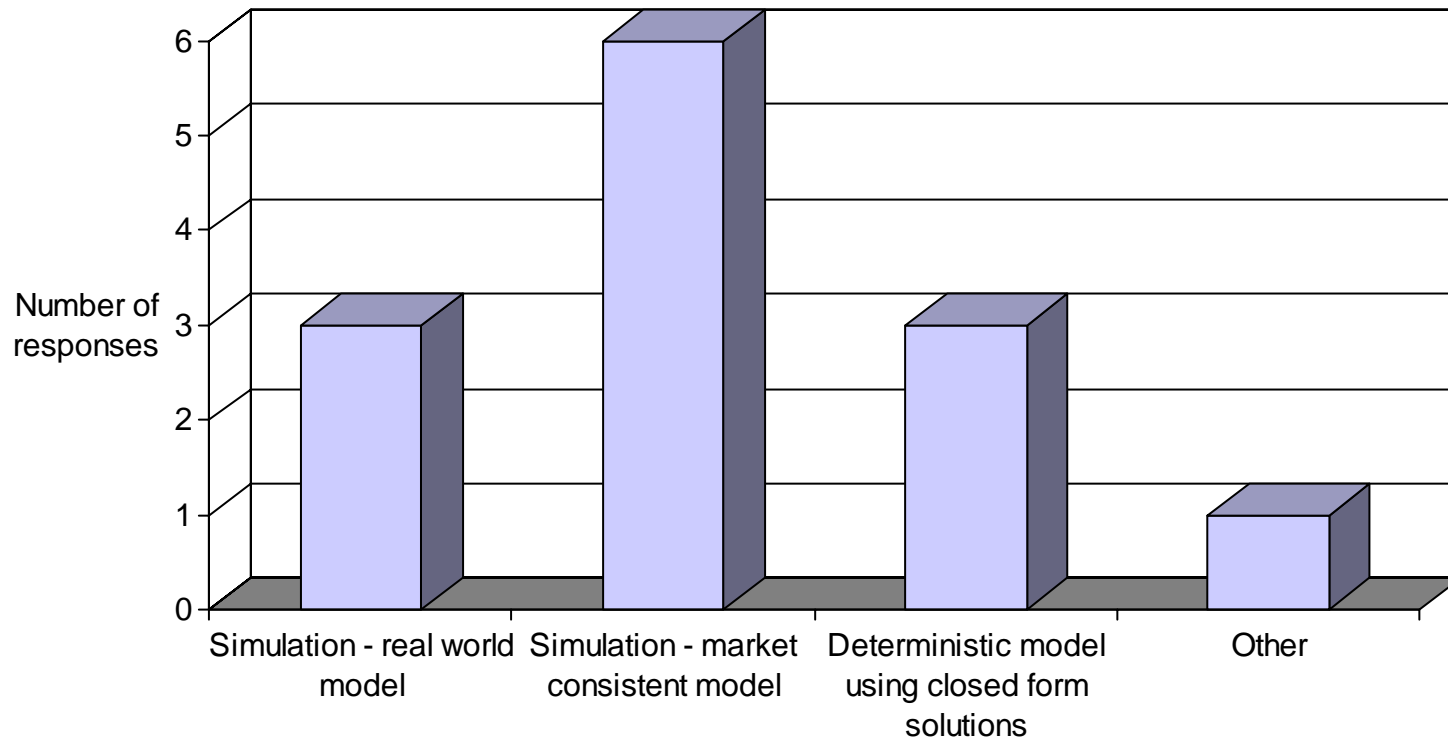


Discount rates

- Market consistent
 - 77% calibrate to gilt yield curve
 - Only 15% calibrate to the swap curve
 - 75% of these companies make an adjustment for non-market risk

Options and guarantees

- Valuation method



Some other interesting bits

- **New business**

- Historically this has been considered an area where practice varies widely
- We found that:
 - 71% of companies value new business at the year end rather than the point of sale
 - 63% of companies use their closing EV basis
 - 94% of companies use average cost expenses

- **Analysis of EV profit**

- We found that:
 - 55% do a fairly detailed analysis using a series of valuation runs
 - 25 % do a fairly detailed analysis but rely on some approximations
 - 15% do a high level analysis only
 - 5% do no analysis at all



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Regulatory reporting practices

Regulatory reporting highlights

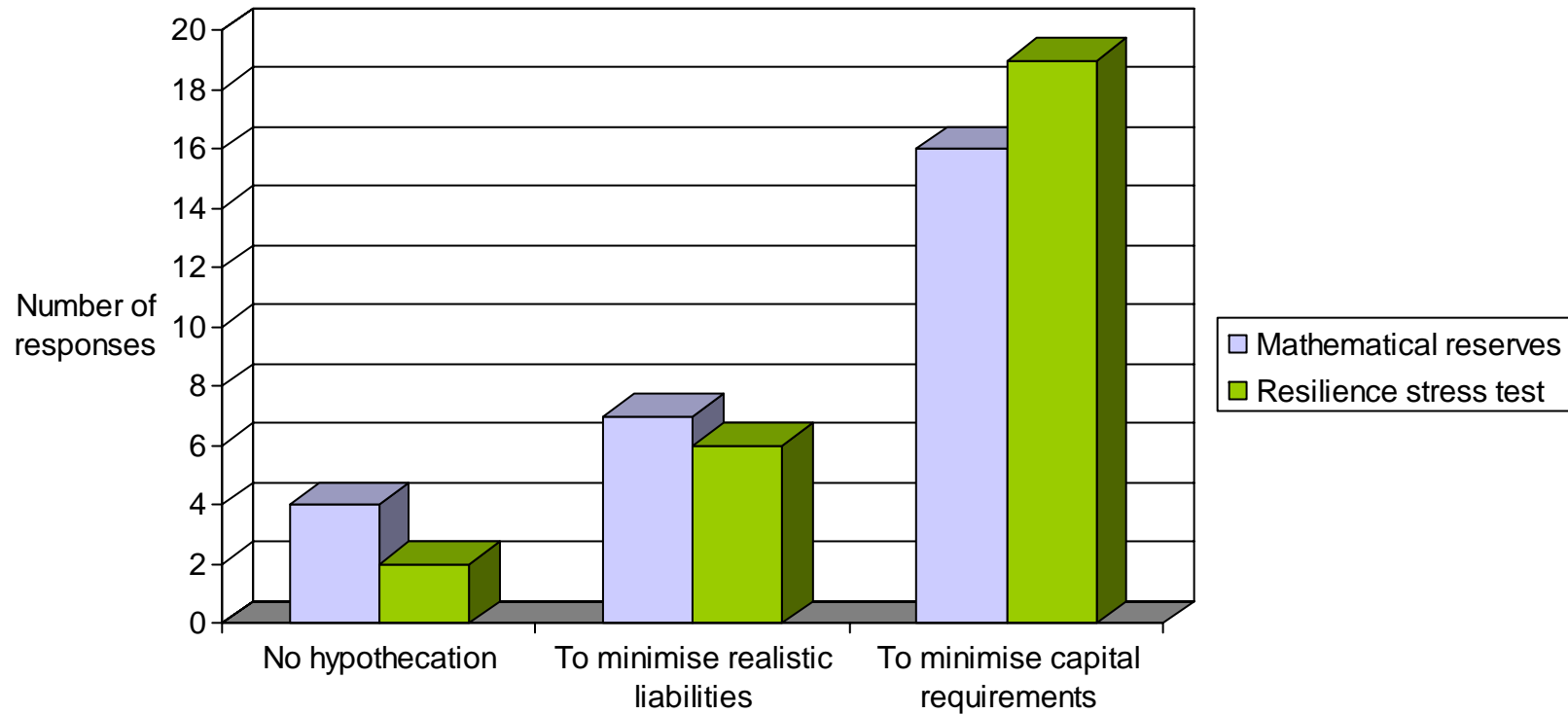
- Realistic reserving for non-profit business
- Hypothecation of assets
- Deductions from asset shares
- Checks on ESG calibrations
- Analysis of surplus

Realistic reserving for non-profit business

- 65% of respondents are planning to adopt a realistic reserving approach in time for the year end
- The chief deterrents are:
 - Clarity over proposals
 - Short timescales
 - Tax implications

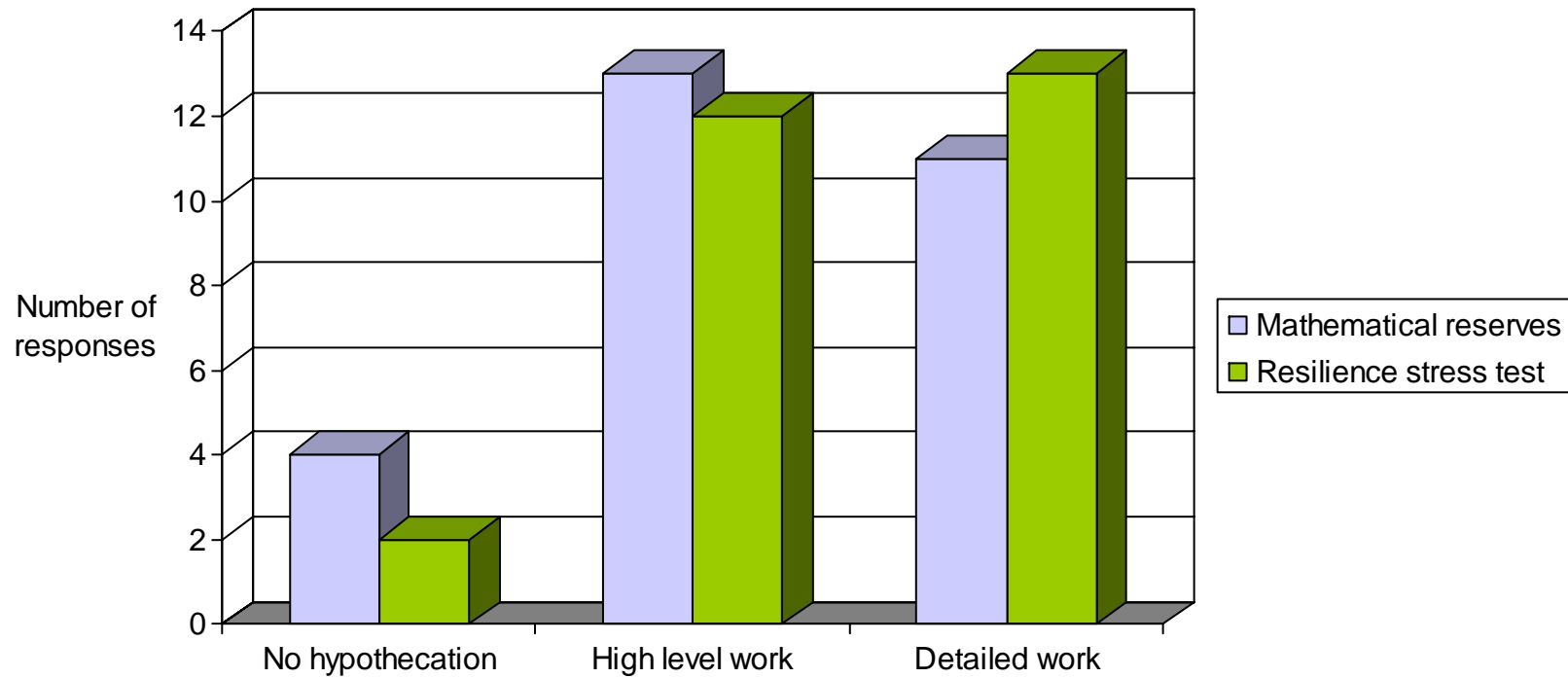
Hypothecation of assets

Objective of asset hypothecation



Hypothecation of assets

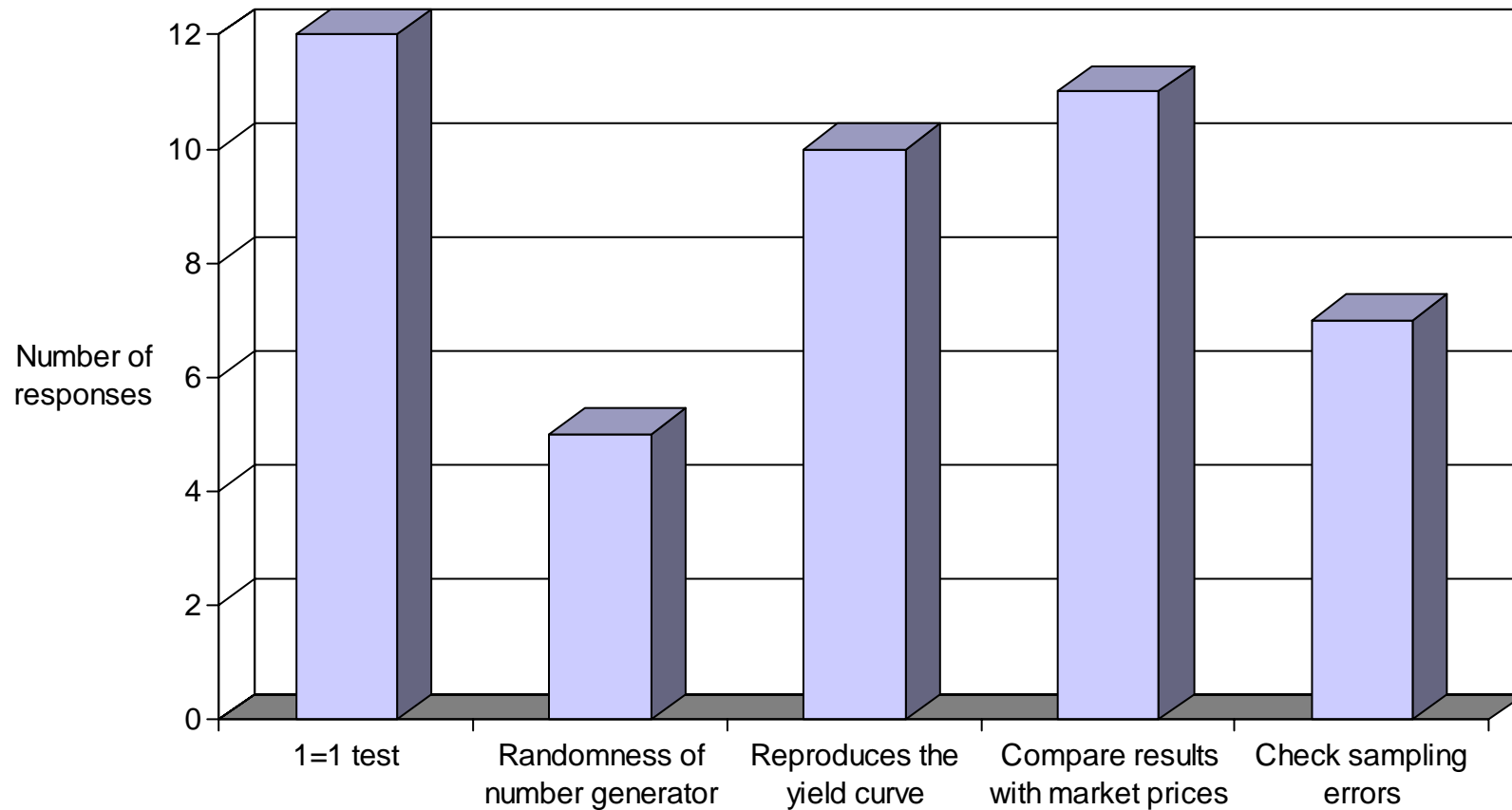
Detail used in asset hypothecation



Deductions from asset shares

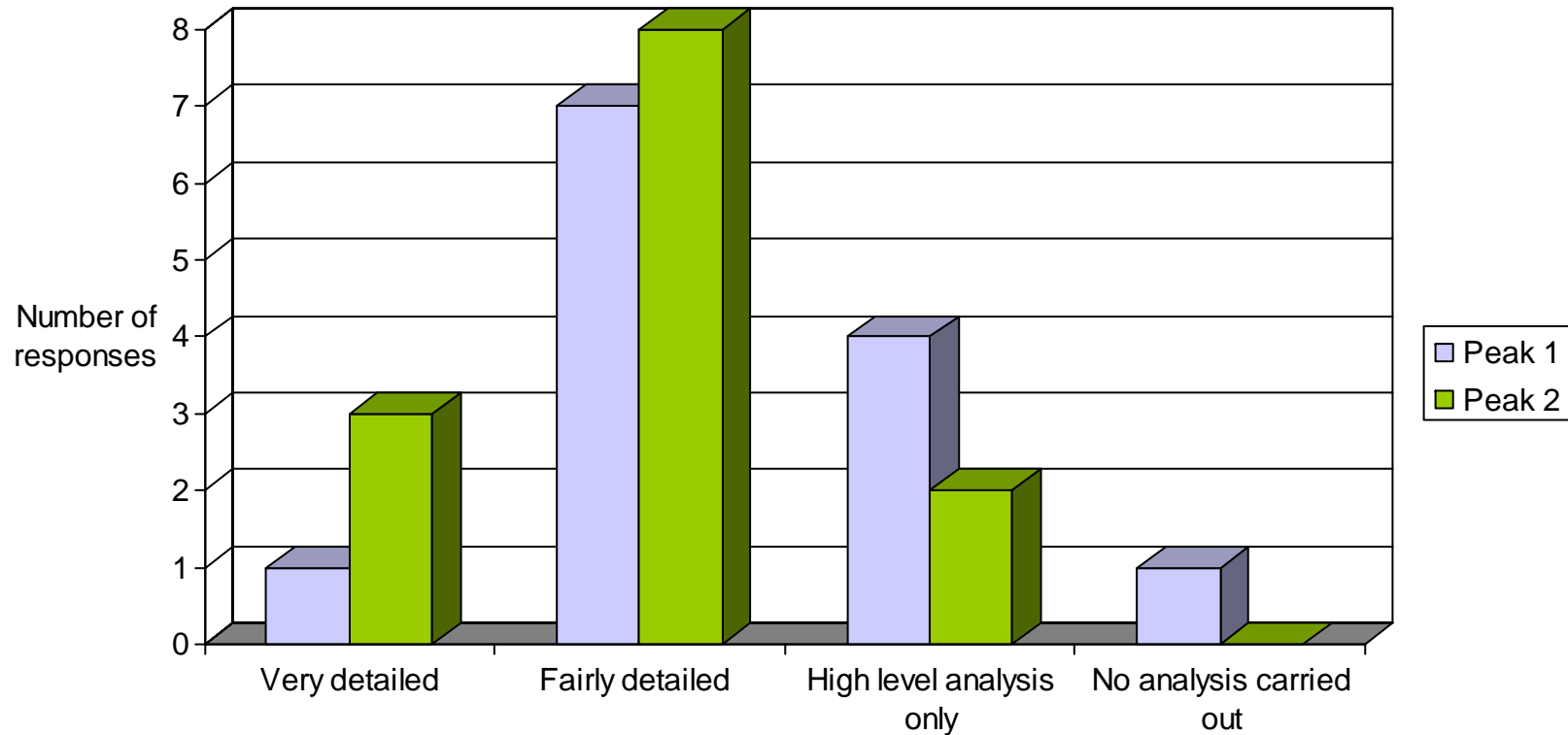
Deductions	Company												Count
	A	B	C	D	E	F	G	H	I	J	K	L	
Claims	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	11 of 12
Commission		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11 of 12
Expenses		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11 of 12
Guarantee charges			✓	✓		✓	✓	✓	✓	✓	✓	✓	9 of 12
Policy charges	✓	✓	✓				✓		✓	✓	✓	✓	8 of 12
Policyholder tax	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12 of 12
Tax on shareholder transfers													0 of 12

Checks on ESG calibrations



Analysis of surplus

- Comparison of work done on Peak 1 and Peak 2





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Wrap up

Wrap up

- We hope that this has been informative
- It is intended that this will be an annual survey project to help the industry benchmark and track best practice
- If you would like a copy or have any suggestions for areas that should be included in future exercises please let us know
- We would like to thank all those that took part in our survey for their time and effort
- We look forward to working with you in the future



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If you would like further information on our Technical Practices Survey or a copy of the detailed report please contact:

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