

Report

Report on the CIA ORSA Survey conducted in April 2015

**Committee on Risk Management
and Capital Requirements**

April 2016

Document 216036

Ce document est disponible en français

© 2016 Canadian Institute of Actuaries

MEMORANDUM

To: All Fellows, Affiliates, Associates, and Correspondents of the Canadian Institute of Actuaries

From: Pierre Dionne, Chair
Practice Council

Leonard Pressey, Chair
Committee on Risk Management and Capital Requirements

Date: April 13, 2016

Subject: **ORSA Survey Report**

In April 2015, the Committee on Risk Management and Capital Requirements (CRMCR) of the Canadian Institute of Actuaries (CIA) conducted a survey on Own Risk and Solvency Assessment (ORSA). The goals of the survey were to

- Inform actuaries of best practices in the industry with respect to ORSA requirements, to improve ORSA processes;
- Learn about potential areas for research and/or initiatives by the CIA and/or CRMCR with respect to ORSA; and
- Understand the current involvement of actuaries in the ORSA process, and whether it could be increased.

The preliminary results were shared with the industry at the CIA 50th Annual Meeting in June 2015, and the final aggregated results are now being made available to the public.

Key Findings

Overall, the ORSA process is fairly young and practices are evolving. While actuaries are already involved in the process, there is an opportunity for the actuarial profession to have increased involvement in ORSA through both quantitative analysis and the more qualitative aspects of ORSA, such as risk mitigation strategies, decision-making based on ORSA, communication of results, and encouraging a risk culture in the organization.

The survey indicates that over time, developing standards of practice, educational notes, and research material as well as integrating Dynamic Capital Adequacy Testing (DCAT) into ORSA, would be desirable. In the meantime, leveraging currently available

actuarial and industry materials related to ORSA and DCAT processes would help actuaries improve economic capital calculations and risk measurement. The document received approval for distribution from the Practice Council on January 26, 2016.

Next Steps

The various committees of the CIA will use the results of the survey to establish priorities for research material and additional guidance on ORSA.

Acknowledgements

The CRMCR acknowledges the assistance of the Joint Risk Management Section of the Society of Actuaries, the CIA, and the Casualty Actuarial Society with the ORSA survey and report. The following people also contributed to the development of the survey questions, analysis of results, and/or the presentation and report:

ORSA Survey Working Group:

Michelle Lindo, Chair
Leonard Pressey
Pierre Lepage
Sylvain Veilleux
Sylvain St-Georges
Jean-Guy Lapointe
Jas Bhatia
Judith Toupin
Jessi Gaulin
Pierre Bernard
David Schraub (SOA staff fellow)

CIA Head Office:

Josée Racette
Leona Campbell

Thank you to the groups that contributed to the ORSA survey.

PD, LP

Table of contents

| | | |
|------|---|----|
| 1 | Introduction | 2 |
| 1.1 | Objectives of the survey | 2 |
| 1.2 | The Survey | 3 |
| 1.3 | Report Organization | 3 |
| 2 | Survey Results | 3 |
| 2.1 | Demographics of the Respondents | 4 |
| 2.2 | Sophistication of ORSA Process | 9 |
| 2.3 | Capital Planning and Internal Targets | 11 |
| 2.4 | Risk Quantification | 13 |
| 2.5 | Metrics/Stress tests | 25 |
| 2.6 | Integration with DCAT and Stress Testing Processes | 28 |
| 2.7 | Validation and Control of Models | 31 |
| 2.8 | Issues within ORSA Process | 32 |
| 2.9 | Future Improvements | 33 |
| 2.10 | Actuarial Involvement in ORSA | 34 |
| 2.11 | Need for Standards or Educational Material | 40 |
| 3 | Conclusion | 42 |
| | Appendix A – ORSA Survey | 43 |
| | Appendix B – ORSA Presentation at the 2015 CIA Annual Meeting | 62 |

Report on the CIA ORSA Survey conducted in April 2015

1 Introduction

The Own Risk and Solvency Assessment (ORSA) is a requirement for insurers in Canada. The Office of the Superintendent of Financial Institutions (OSFI) published a draft guideline E19 on ORSA and a draft of revised Guideline A-4: *Internal Target Capital Ratio for Insurance Companies* in 2012 for federally regulated insurers, followed by the final versions in November 2013. The first ORSA report from insurers was required in 2014. Notably, OSFI does not approve the report and provides only general guidelines for the content. The first ORSA report was required to be submitted to OSFI, with subsequent reports available on request. In addition, OSFI noted the following:

“While OSFI recognizes that a number of insurers will not immediately meet all of the expectations outlined in guidelines E-19 and A-4, OSFI expects insurers will, over a period of time, put in place the processes needed to meet the expectations.”

In May 2015, the Autorité des marchés financiers (AMF) published its Capital Management Guideline which introduced specifically its expectation for insurers licensed to transact insurance business in Québec to set up an ORSA mechanism that would be the subject of an official report to the board of directors at least once a year. However, most of the elements included in an ORSA have already been expected from insurers in the AMF’s Integrated Risk Management Guideline that was first published in April 2009. For example, this guideline included expectations for insurers to establish a dynamic framework to adequately manage all of their risks based on risk appetite and risk tolerance levels, to support their framework on a solid governance structure, and to make their risk management decisions in light of their financial resources, regulatory capital requirements, and ultimately their economic capital. Along with the publication of the Capital Management Guideline, the Integrated Risk Management Guideline was reviewed and some parts of the latter were moved to the former.

In early 2015, the Canadian Institute of Actuaries (CIA), through the Committee on Risk Management and Capital Requirements (CRMCR) developed a survey for insurers to review and assess the implementation of ORSA in Canada. The preliminary results of the survey were shared at a session of the CIA Annual Meeting in June 2015. This report provides further analysis and the detailed results of the survey. The Joint Risk Management Section (Casualty Actuarial Society (CAS), the Canadian Institute of Actuaries (CIA) and the Society of Actuaries (SOA)) also assisted with the survey.

1.1 Objectives of the survey

The survey had three objectives:

- To inform actuaries of best practices in the industry with respect to ORSA requirements, to improve ORSA processes;
- To learn about potential areas for research and/or initiatives by the CIA and/or CRMCR with respect to ORSA; and

- To understand the current involvement of actuaries in the ORSA process, and whether it could be increased.

There were specific survey sections and questions designed to satisfy each of the objectives.

1.2 The Survey

The survey was developed by the CRMCR with the assistance of the Joint Risk Management Section of the SOA, CIA, the CAS, and the CIA Head Office staff.

The electronic, web-based survey was sent to all Appointed Actuaries (life and property and casualty (P&C)) on record with OSFI and AMF via e-mail. The cover letter indicated that the Appointed Actuary (AA) should fill in the survey if ORSA was his/her responsibility, otherwise, the survey should be forwarded to the relevant person in the organization to fill out. Only one response was required from each organization. In cases where a consulting actuary was engaged as the Appointed Actuary for several companies, only one response was requested for the most representative company.

While participation was voluntary, a high participation rate was achieved, primarily due to the follow-up phone calls and e-mails from the CIA Head Office. The survey was sent to 67 actuaries representing 188 insurance companies and in total, we received 46 complete and 70 incomplete responses. There were 61 responses used in the analysis.

Individual submissions were confidential and seen only by CIA Head Office staff. However, aggregated results were shared publicly via the CIA Annual Meeting held in June 2015 and this report.

The survey was available in French and English, with the format being mainly “multiple choice” or “check all that apply” answer types. Additional free-form comments were encouraged where relevant. Results are included from both complete and incomplete surveys. Completely blank or surveys with little or no responses were deleted before the analysis.

A copy of the survey is included in appendix A. Appendix B includes the presentation to the CIA annual meeting.

1.3 Report Organization

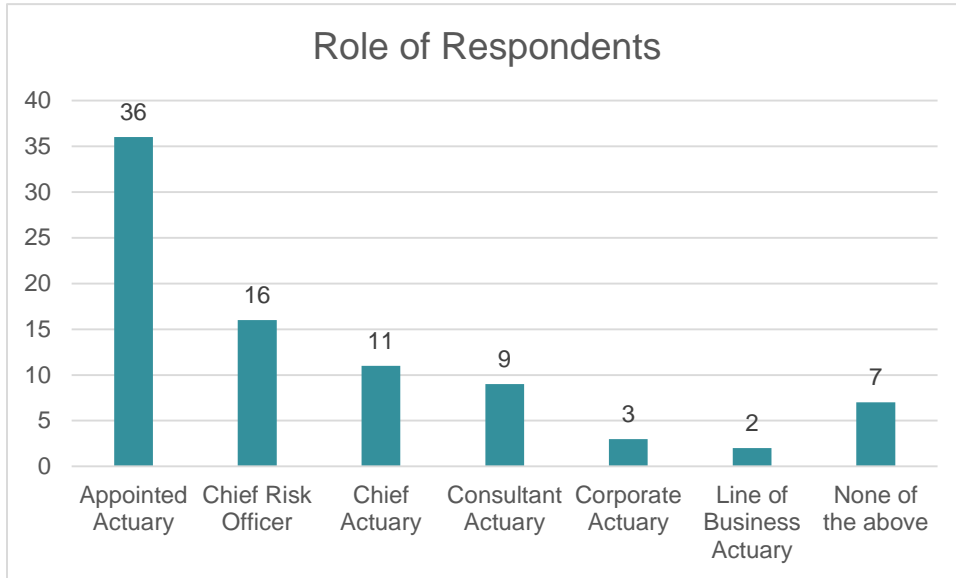
Section 2 provides the detailed results and analysis, and follows the headings of each section of the survey. Additional breakdown, for example, the data by type (life/P&C) or company size is provided where relevant. In addition, any comments from the industry (edited where necessary to preserve confidentiality) are provided in the corresponding section, only when relevant.

2 Survey Results

There were 61 responses used in the analysis. Completely blank or largely incomplete responses were deleted prior to the analysis for this report. Small differences may exist between the numbers used in the preliminary results shared at the CIA Annual Meeting and this report due to these deletions.

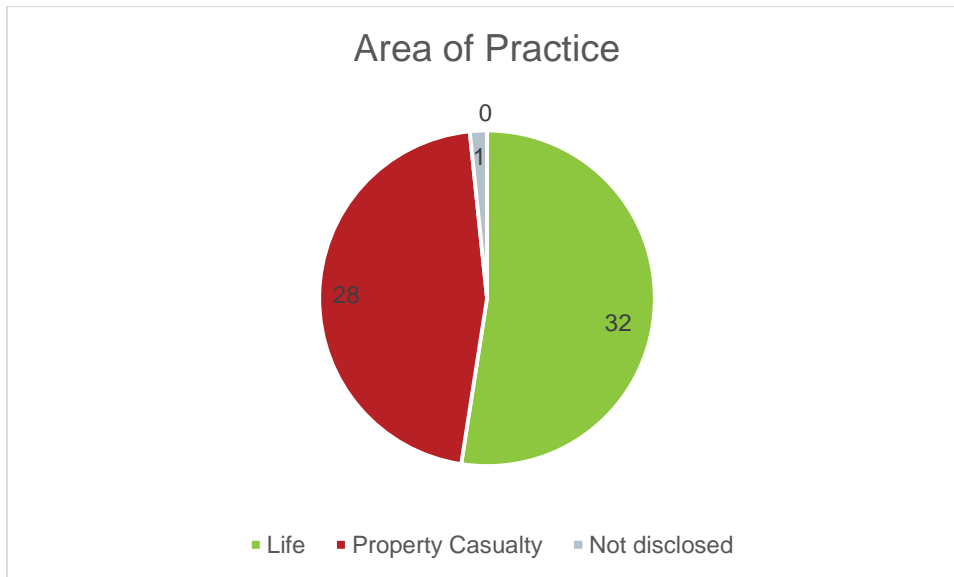
2.1 Demographics of the Respondents

Q1. Please specify your position(s). Please check all that apply.



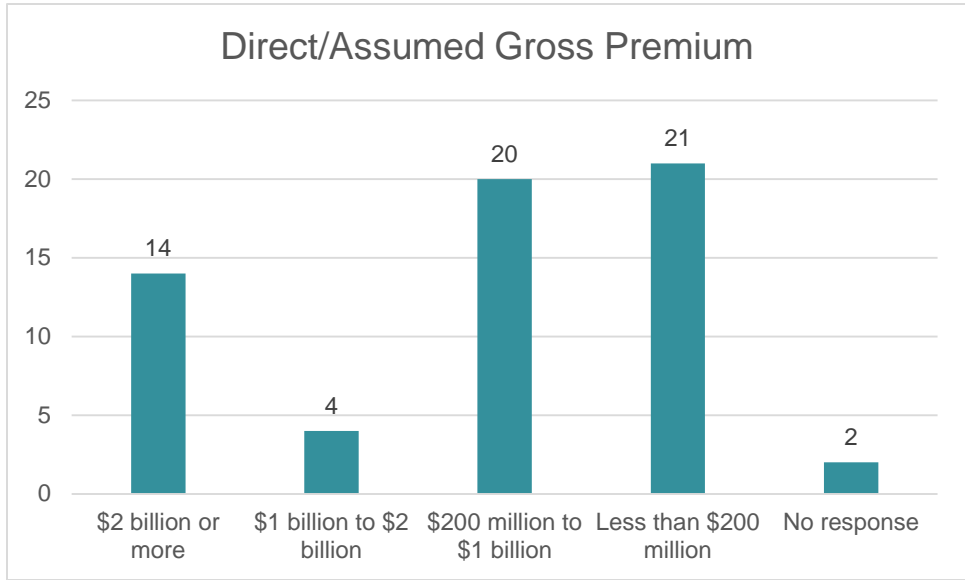
- By far the majority of responses came from Appointed Actuaries (AA), which is understandable since the survey was initially sent to them.
- The responses indicated significant overlap in roles, including AA/chief risk officer/chief actuary and AA/consultant actuary.
- “None of the above” included risk actuary, chief financial officer, corporate secretary, and other managerial roles.

Q2. What is your area of practice?



- The responses were almost evenly split between life (including accident and sickness) and P&C practice areas.
- The response to this question was taken as a proxy for entity type for the purpose of analyzing other questions covered later in the report.

Q3. What is the size of your company based on the following measures as at year-end 2014?
 All companies: (life/A&S/PC) gross premium (direct and/or assumed)

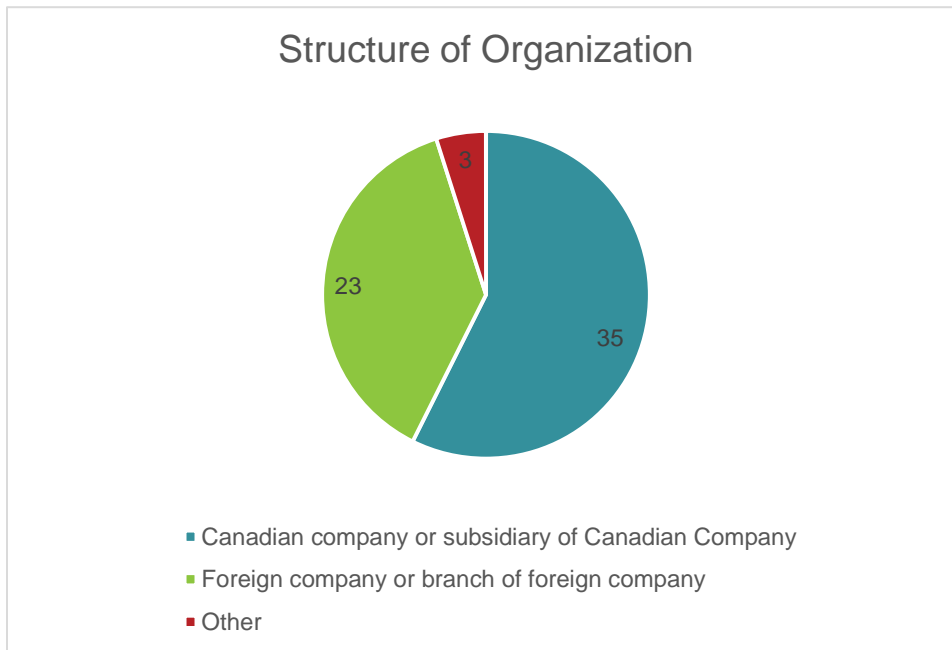


For the rest of the report, the following segregation was used to split the responses by small, medium, and large company.

| Gross Premium | Life | P&C |
|------------------------------|--------|--------|
| \$2 billion or more | large | large |
| \$1 billion to \$2 billion | medium | large |
| \$200 million to \$1 billion | medium | medium |
| Less than \$200 million | small | small |

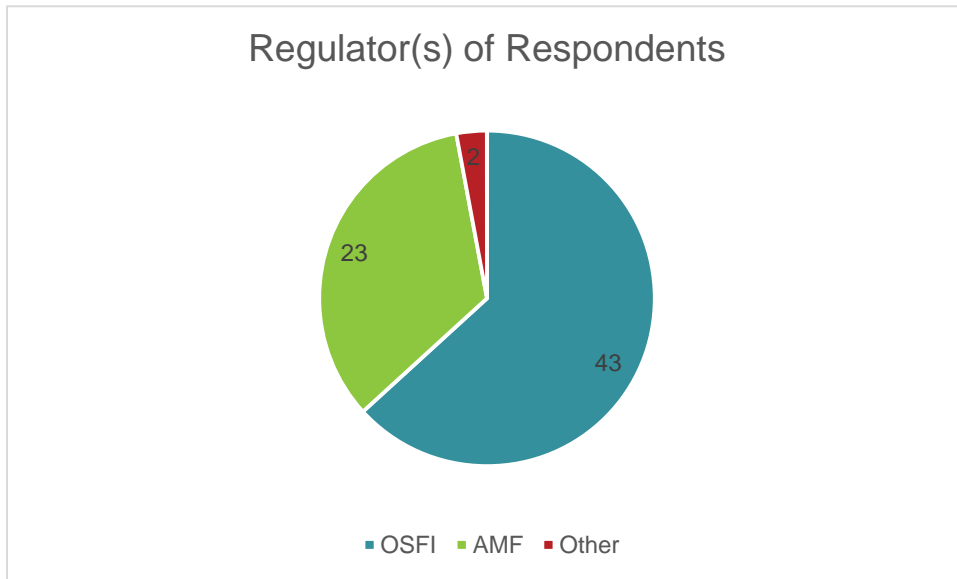
This segregation provided an appropriate grouping when taking into account other measures obtained from the survey (e.g., asset size). It also generated a fairly even split between company size: small (21), medium (23), and large (15).

Q4. What is the type of structure of your organization?



- The majority of respondents (57%) were Canadian entities.
- Others consisted of the following:
 - Single proprietor;
 - Mutual management company; and
 - Self-insurance funds (provinces of Québec and British Columbia).

Q5. By which entity is your organization in Canada regulated? (Please check all that apply.)

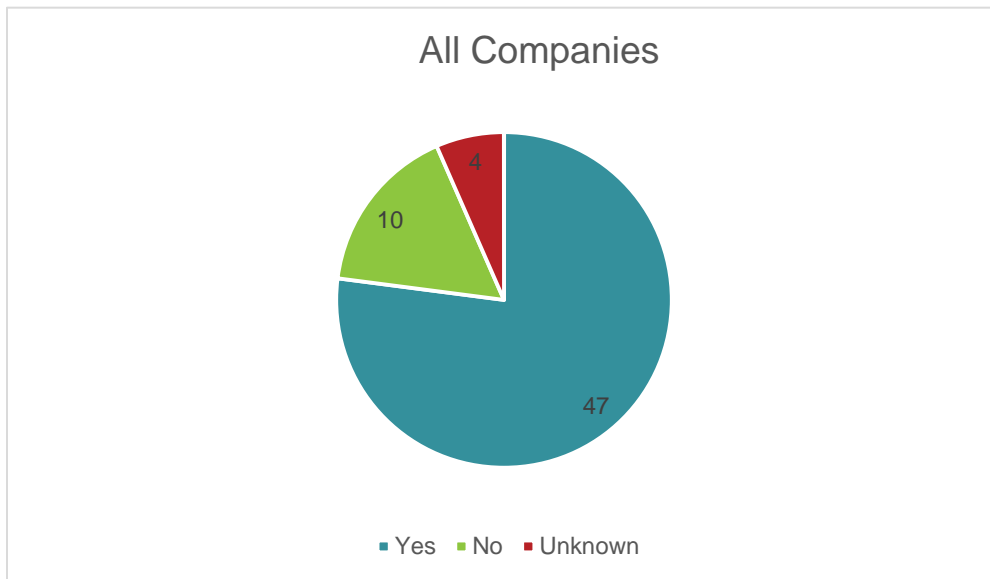


Most respondents were regulated by OSFI.

- Nine respondents were regulated by more than one regulator.

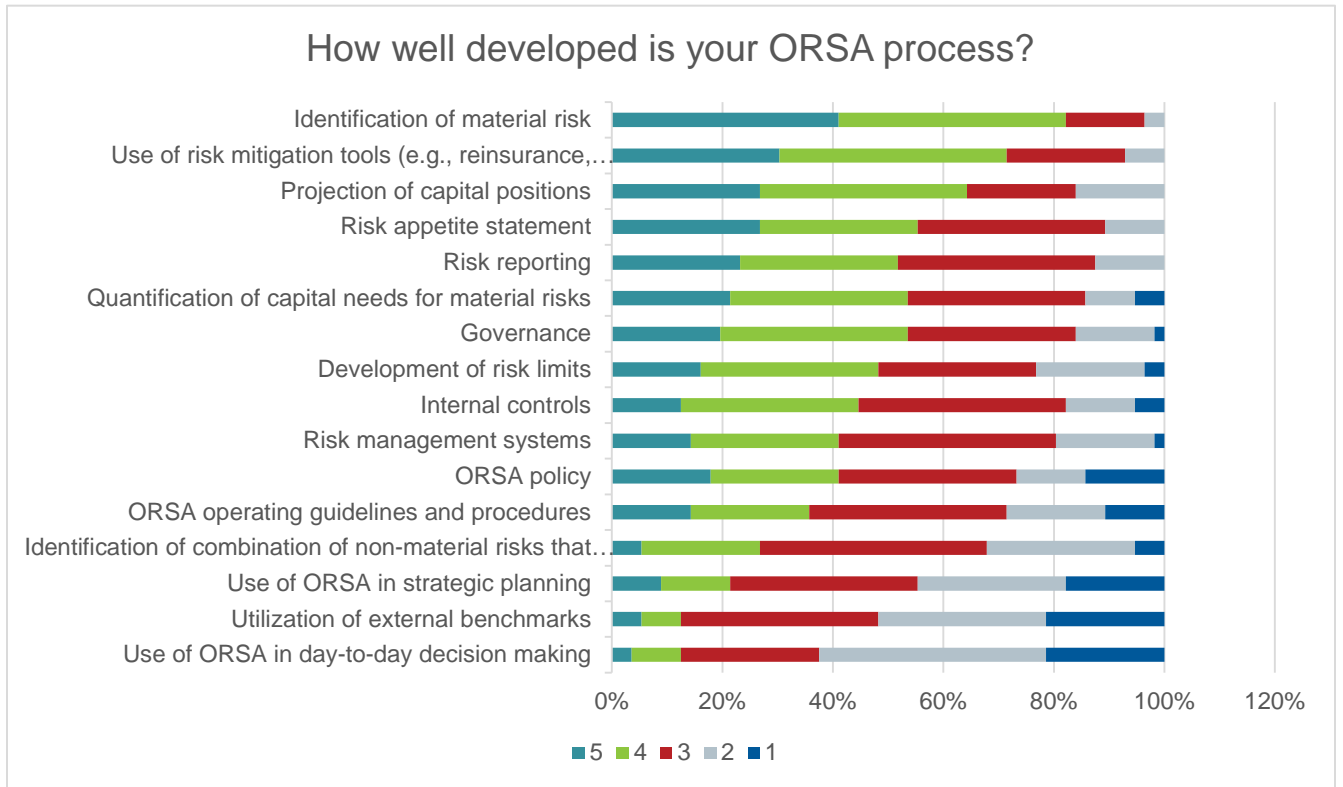
2.2 Sophistication of ORSA Process

Q6. Has your company started the ORSA process?



- At the time of the survey, 77% of respondents had started the ORSA process.
- The “No” responses were all companies regulated by the AMF. Note that the AMF did not require an ORSA report as at year-end 2014.

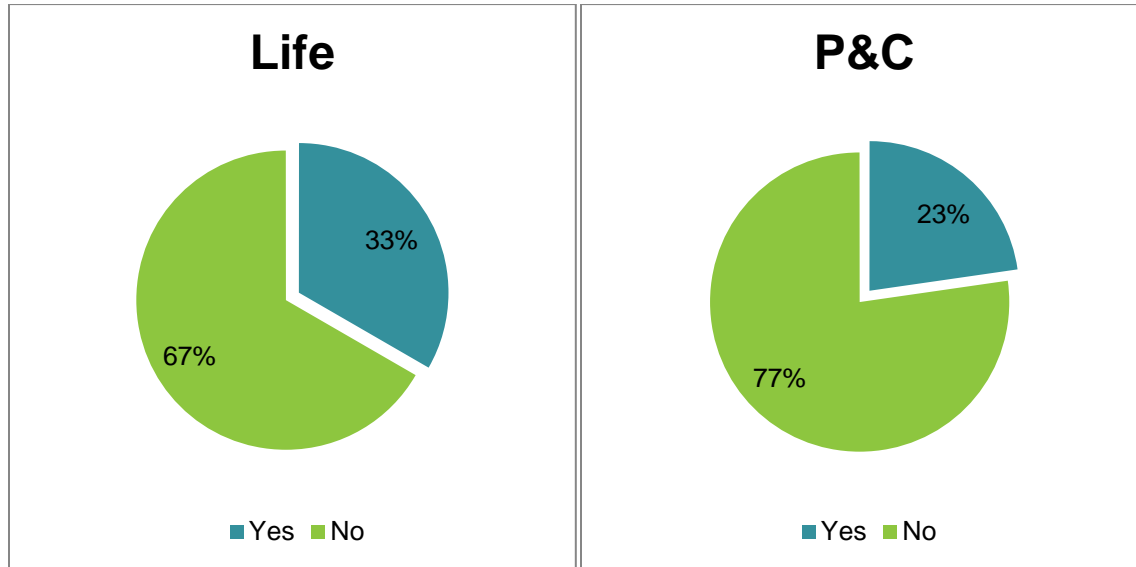
Q7. On a scale of 1 to 5, how well-developed is your ORSA process (1=not developed, 5=well developed)?



- Most insurers were comfortable with identification of material risks, use of risk mitigation tools, and projection of capital positions.
- At the other end of the spectrum, insurers felt that using ORSA in strategic planning and day-to-day decision-making could be developed further, as well as the utilization of external benchmarks.

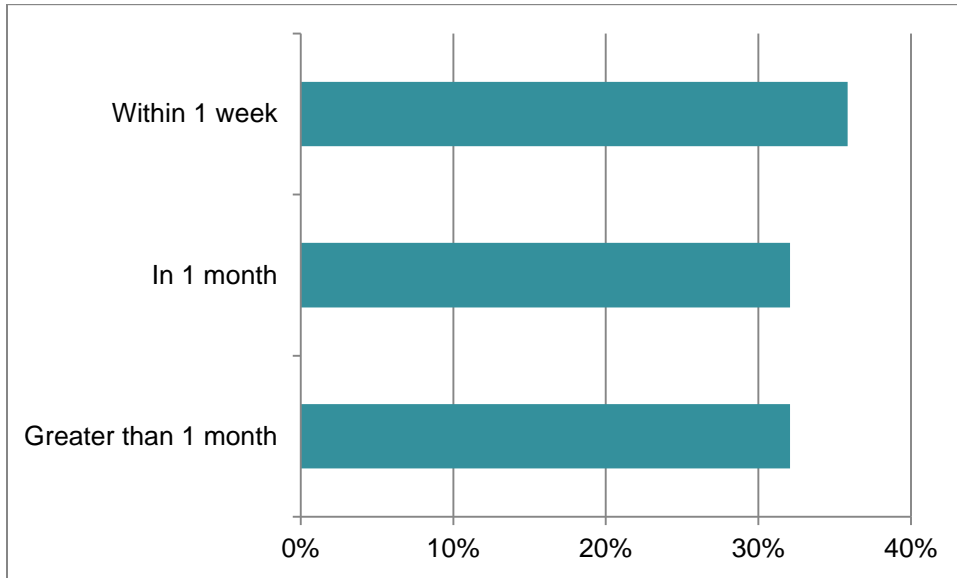
2.3 Capital Planning and Internal Targets

Q8. Has ORSA changed your organization's approach to setting internal targets?



- Generally, ORSA has not changed the approach to setting internal targets, with fewer than 33% indicating a change in their approach.
 - The impact has been larger for life insurers than for P&C insurers.
 - The impact has been larger for large life insurers (44%) and lower for medium P&C insurers (10%).
- The changes were along these lines:
 - More use of internal capital modeling (less stress testing, regulatory capital);
 - More comprehensive assessment (e.g. risks, function units involved); and
 - Better governance (e.g. more formal, better documentation).

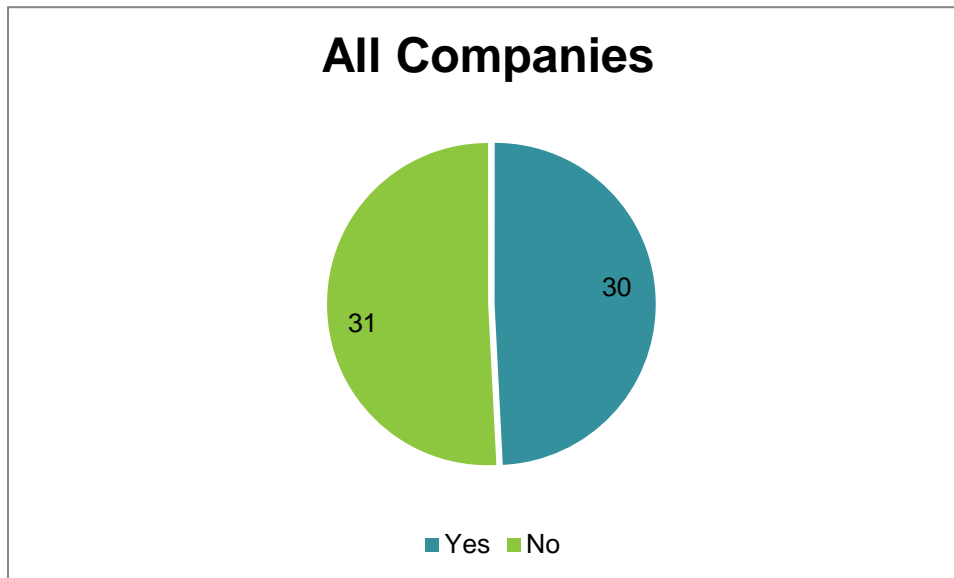
Q9. How quickly can your company quantify your ORSA capital if an unforeseen event materially affects your risk profile?



- In general, the respondents are equally divided among the three proposed time periods.
- However, a significant percentage of large P&C insurers can quantify their ORSA capital within one week (67%), compared to only 22% of large life insurers (44% of the large life insurers need up to one month).
- In contrast, 50% of the small life insurers can do it within one week; while only 17% of the small P&C insurers can do it within one week.

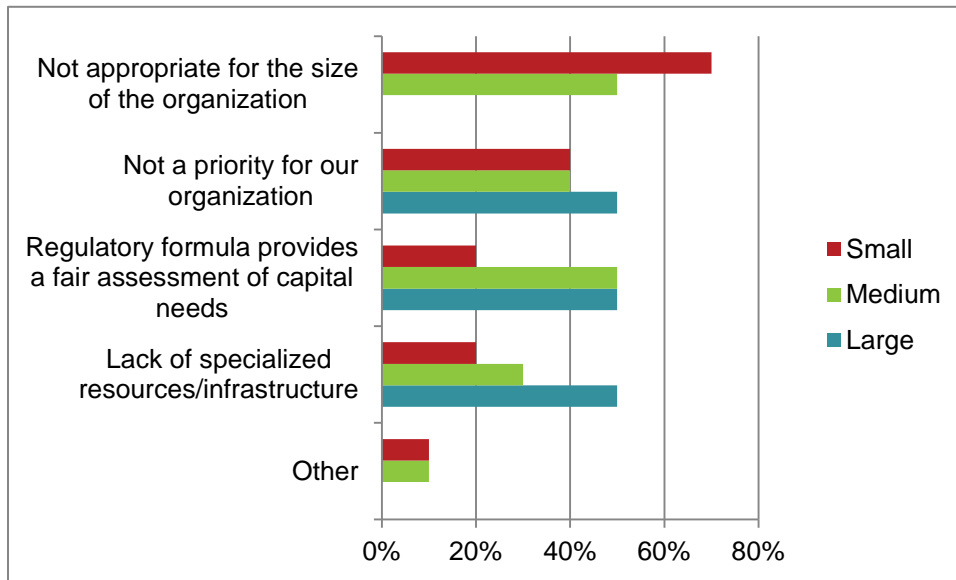
2.4 Risk Quantification

Q10. Does your organization calculate economic capital?



- About half of all companies (49%) calculate economic capital.
- 73% of large companies calculate economic capital.
- 41% of small or medium companies calculate economic capital.
- A greater percentage of P&C companies (57%) than life companies (44%) calculate economic capital.
- 65% of companies regulated by OSFI calculate economic capital.
- Out of 15 companies regulated by the AMF and not by OSFI, only one company calculates economic capital.

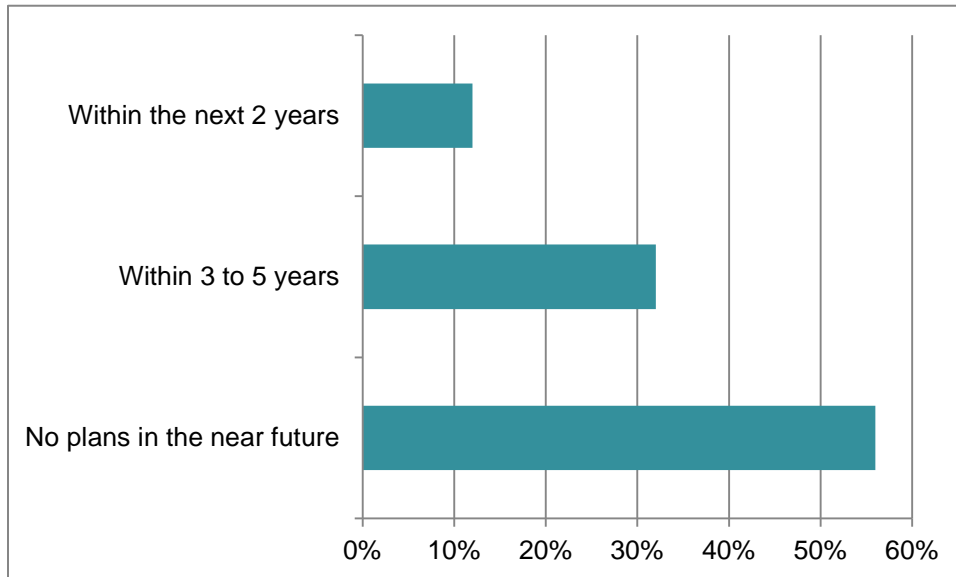
Q11. If your organization does not calculate economic capital, please provide reason(s).
(Check all that apply.)



The most selected reason was that economic capital is not appropriate for the size of the organization. (Selected by 48% of all companies, 0% of large companies, 50% of medium companies, and 70% of small companies.)

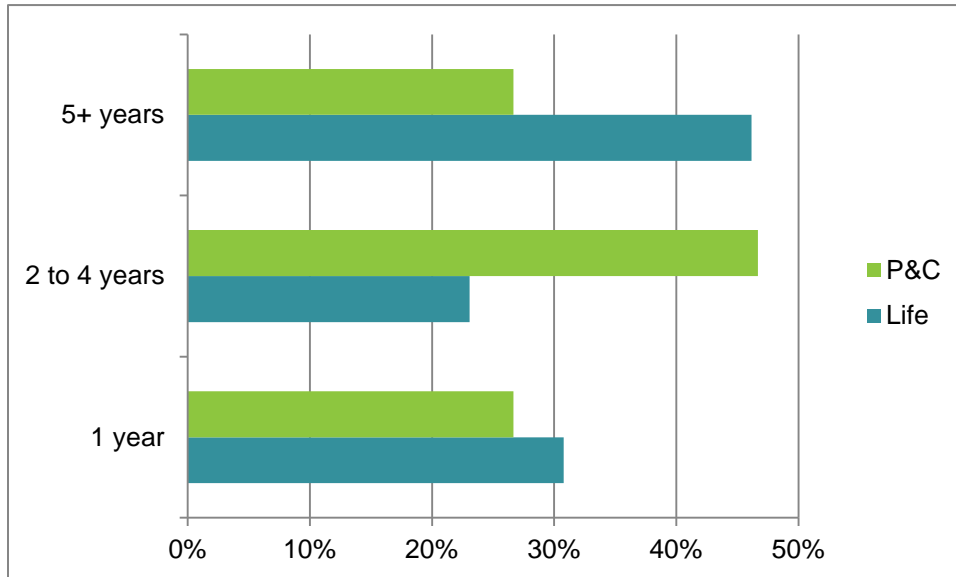
- 50% of large and medium companies that do not calculate economic capital think the regulatory formula provides a fair assessment of capital needs.
- No significant differences between life and P&C responses.

Q12. When does your organization plan to calculate economic capital?



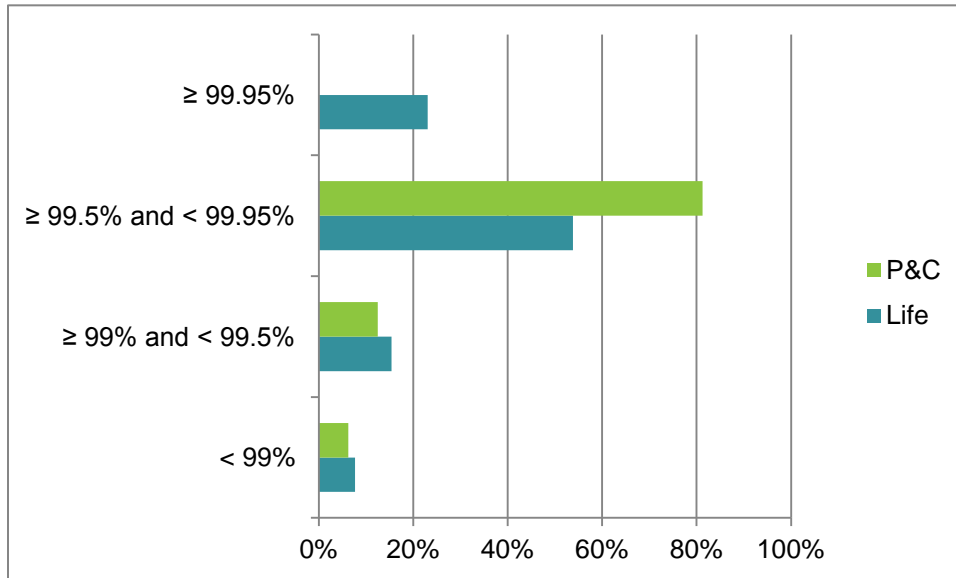
- All large companies plan to calculate economic capital within three to five years
- 70% of medium and small companies have no plans to calculate economic capital in the near future.

Q13. For how long has your organization been calculating economic capital?



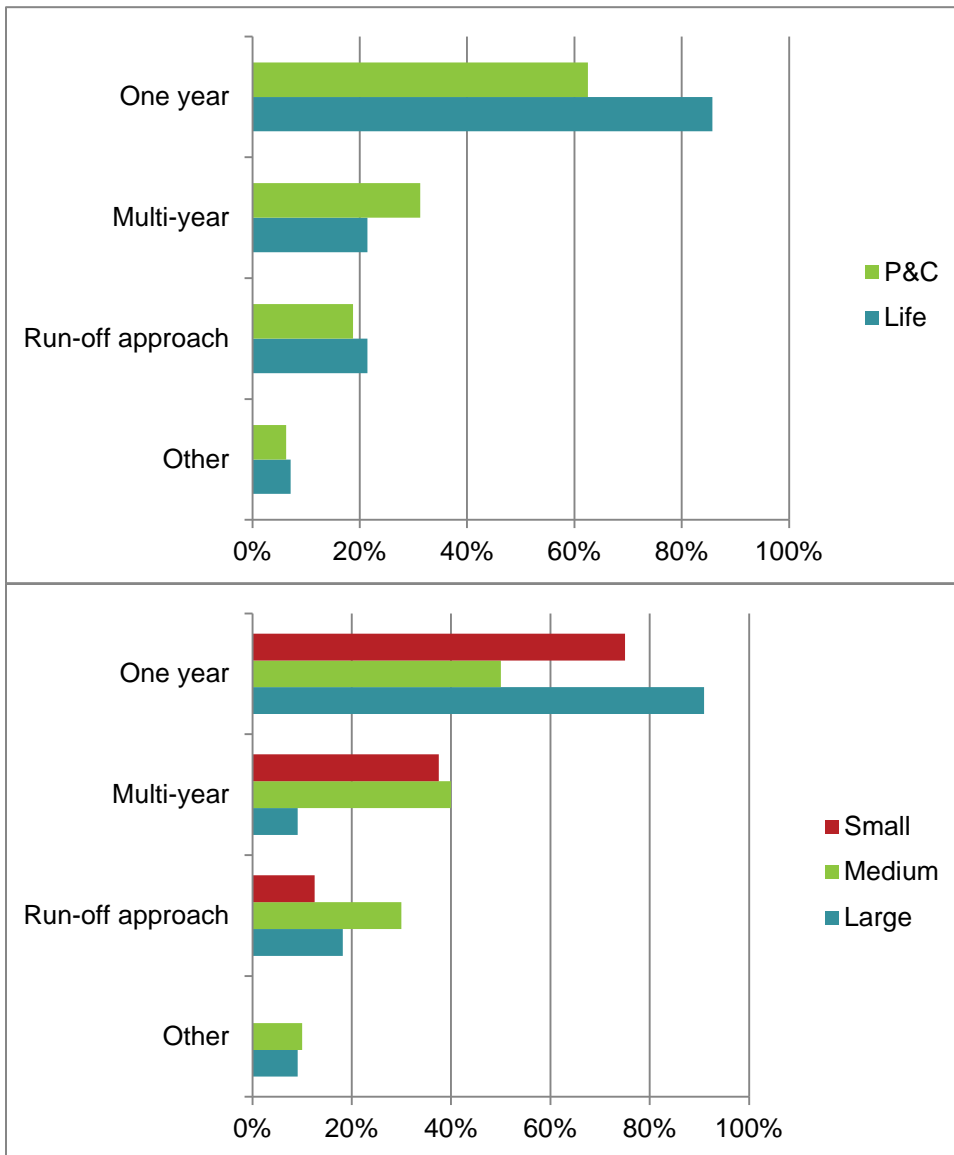
- A greater proportion of large companies have been calculating economic capital for more than four years.
- No companies headquartered in Canada have been calculating economic capital for more than four years.

Q14. At what confidence level is economic capital calculated (i.e., Value at Risk (VaR) equivalent)? [VaR(99.6%)~CTE(99%)]?



- Three (23%) life companies calculate their economic capital at a confidence level superior to 99.95%.
- No P&C companies calculate their economic capital at a confidence level superior to 99.95%.
- About two-thirds of companies calculate economic capital at a confidence level between 99.5% and 99.95%.

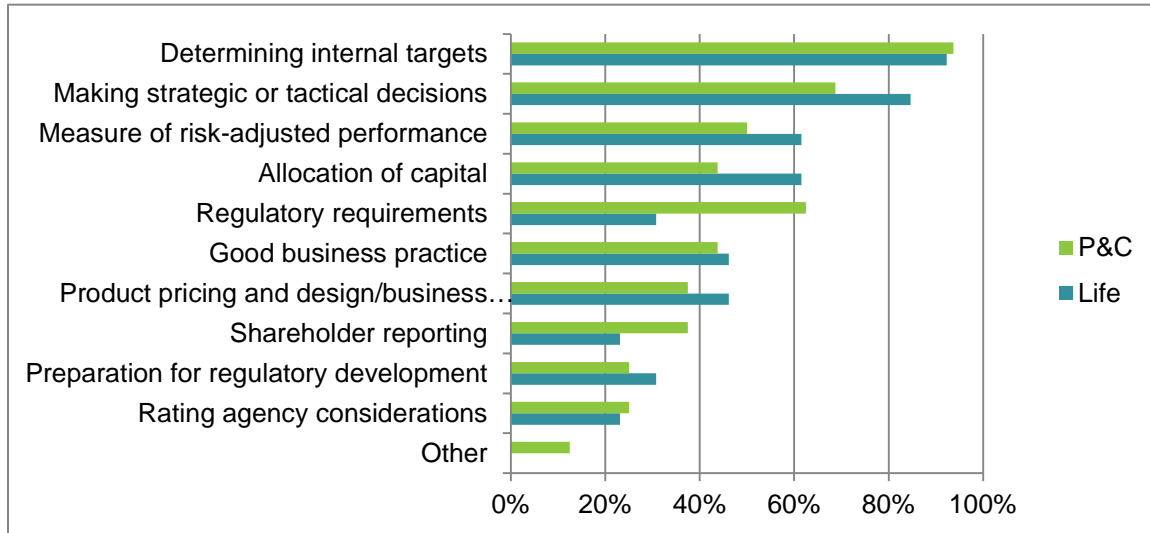
Q15. What time horizon is/are considered in calculating economic capital? (Check all that apply.)



- One year is the most used time horizon when calculating economic capital, 73% of all companies are considering it.
- One-year time horizon is considered by the vast majority of large companies (91%).
- Only five companies out of 30 are considering more than one time horizon.
- A greater proportion of life insurers (86%) than P&C insurers (63%) are considering the one-year time horizon.

Q16. What are your top five principal drivers for calculating economic capital with “driver 1” being the most relevant?

The following chart shows the proportion that each driver was chosen as one of the five principal drivers.

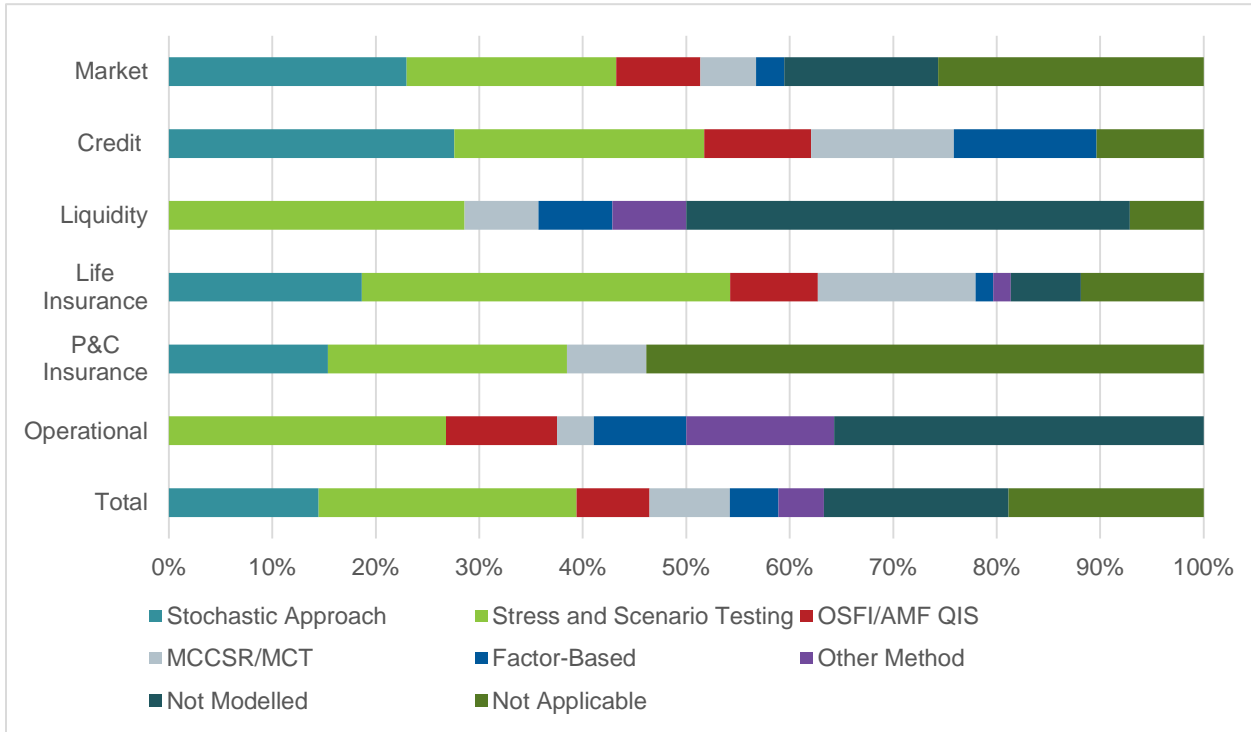


- “Determining internal targets” is the driver chosen the most often in the five principal drivers for both P&C and life insurers.
- “Making strategic or tactical decisions” is the second most popular choice in the five principal drivers for both P&C and life companies. However, we observe a higher percentage for life companies.
- “Regulatory requirements” is the third most popular choice for P&C companies while it comes in seventh place for life companies.
- For life companies, the following drivers were chosen the most often as the principal driver:
 - Determining internal targets (38%);
 - Making strategic or tactical decisions (15%);
 - Good business practice (15%); and
 - Regulatory requirements (15%).
- For P&C companies, the following drivers were chosen the most often as the principal driver:
 - Regulatory requirements (38%);
 - Measure of risk-adjusted performance (25%);

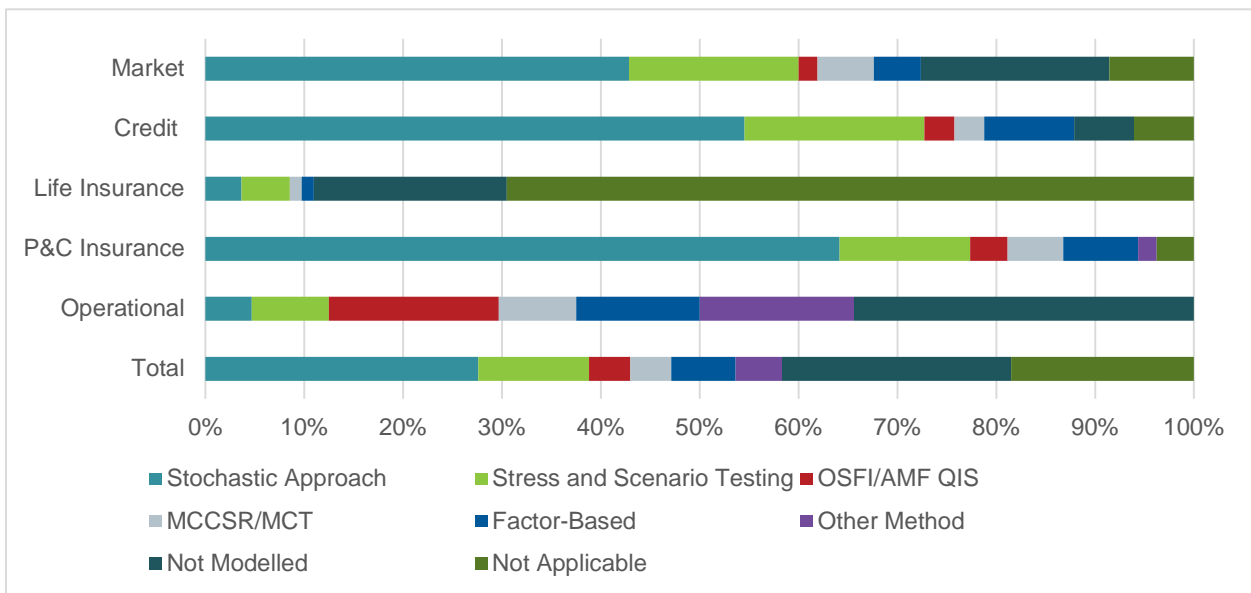
- Determining internal targets (19%); and
 - Making strategic or tactical decisions (13%).
- Out of the eight companies that chose “Regulatory requirements” as their primary driver, six are branches of a foreign company.

Q17. What modelling approach and measure are used to assess economic capital for each of the following risks?

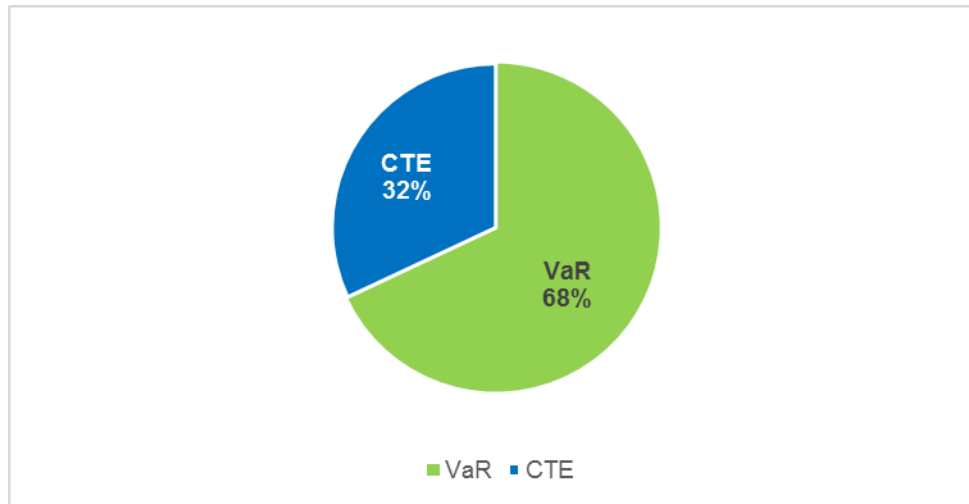
Life Insurers



P&C Insurers



Total Company – Metrics for Stochastic Approach



- In general, insurers model economic capital using stochastic approaches.
- P&C insurers model more of their risks using stochastic approaches than life insurers do.
- For both P&C and life insurers, VaR is more used than conditional tail expectation (CTE) as a stochastic metric.
- Life insurers rely more on stress testing
- The following risks are modelled stochastically:
 - Interest rate (market) for both life and P&C insurers.
 - Inflation (market) – a proportion of insurers do not model the risk, the latter coming from life insurers.
 - Credit spread (market) – is mostly allocated between stochastic and not modelled, the latter coming from mostly P&C insurers.
 - Credit (credit) is modelled using stochastic for both life and P&C insurers.
 - Equity (market) – is mostly allocated between stochastic and not applicable, the latter coming from mostly life insurers.
 - Counterparty (credit) – is mainly modeled using stress testing for life insurers and stochastic for P&C insurers.
 - Reserving, underwriting and catastrophe (P&C insurance) are mostly stochastic by P&C insurers.
- The following risks are modelled using stress tests:
 - Mortality, lapse and morbidity (life insurance) – are mostly stress test except longevity which is mostly not applicable.

- The following risks are mostly not modelled or not applicable:
 - Property/real estate (market) – is mostly not applicable.
 - Exchange rate (market) – is mostly not modelled.
 - Liquidity – is mainly not modeled but some life insurers use stress testing.
 - Expense – is mostly not modelled by both life and P&C insurers.
 - Emerging risk is not modelled by both life and P&C insurers.
 - Cyber, internal fraud, reputational, other (operational) are mostly not modelled by both life and P&C insurers. However, life insurers stress test more operation risks than P&C insurers.
 - Concentration and business are mostly not modelled by both life and P&C insurers.

Q18. If you consider diversification credit in your economic capital calculation, please briefly describe the methodology used and the risk(s) affected.

Summary of Responses

Within risk diversification and between risk diversification matrix for risks and geographies.

The methodology is copula-based for diversification between risk categories.

Based on stochastic simulation using copulas and causality

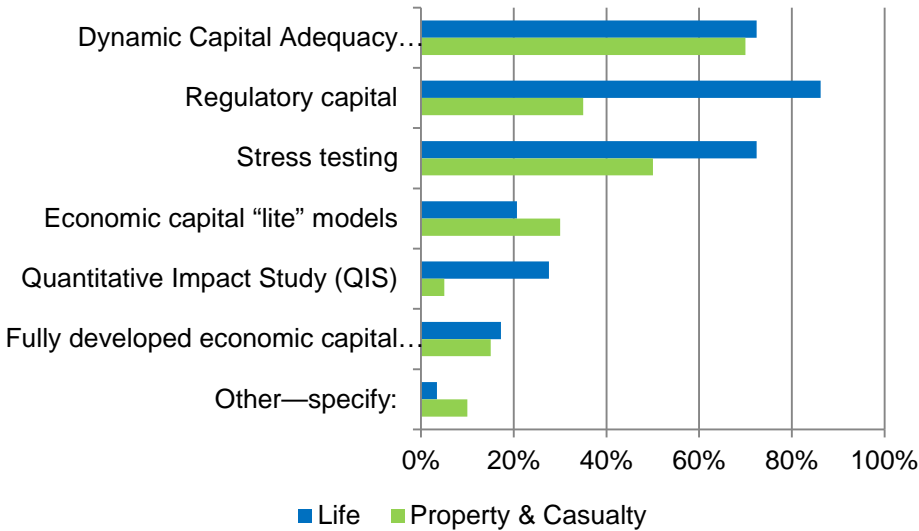
OSFI approach used in the quantitative impact study (QIS).

Standards risk-based capital formula (Solvency II, minimum capital test (MCT) and judgment.

- Limited number of answers making it difficult to draw conclusions by type and size.
- In general, we see that regulatory and internal correlation matrices are the most common. Structural dependency and copula are also used.

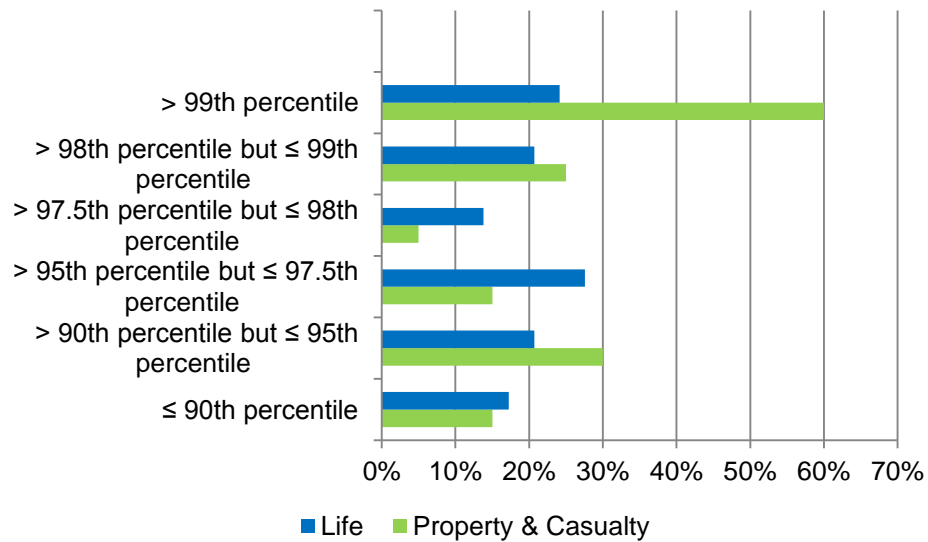
2.5 Metrics/Stress tests

Q19. What is your primary source for setting your internal target capital? (Check all that apply)



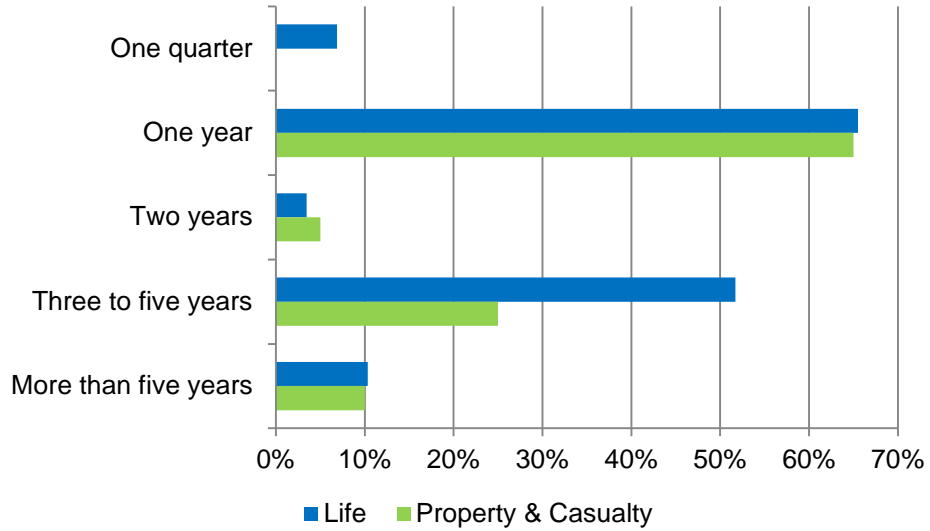
- Other responses received refer to Delphi survey and rating agency requirement.
- Strong concentration in dynamic capital adequacy testing (DCAT), regulatory capital, and stress testing.
- Life insurers are using more regulatory capital, stress testing, and QIS than P&C insurers.
- Similar results by size but more economic capital "lite" models coming mainly from small-size P&C insurers.

Q20. What level(s) of severity is/are considered in the range or series of adverse scenarios used in establishing a buffer above your internal targets? (Check all that apply.)



- Some of the insurers look at more than one percentile. In general, the larger the size of the insurer, the greater number of percentiles the company looks at.
- P&C is looking at more percentiles than are life insurers.
- Higher proportion of insurers look at above 99th percentile, especially P&C insurers.
- Higher proportion of life insurers focus their attentions between the 95th percentile and 97.5th percentile.

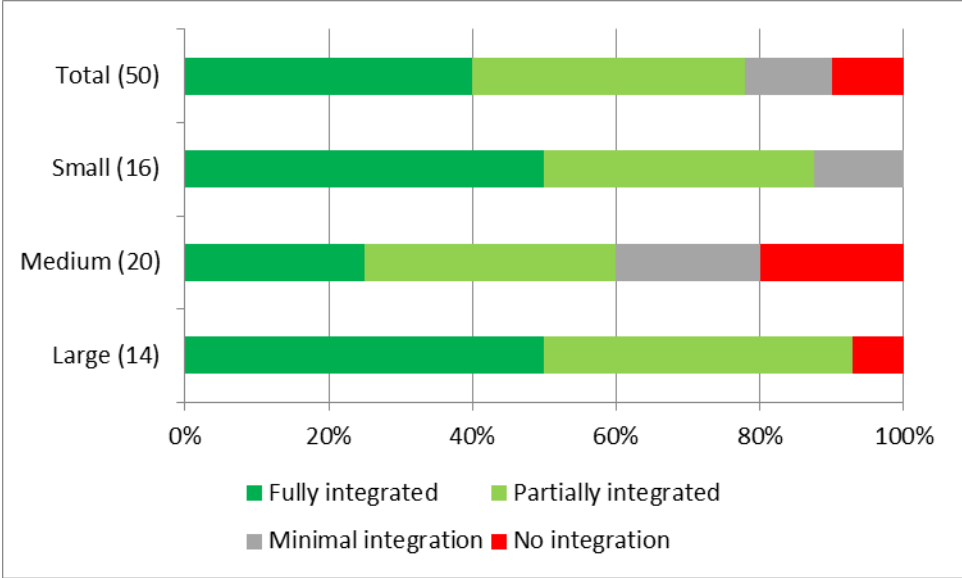
Q21. What time horizon(s) is/are considered in establishing your internal targets?
(Check all that apply.)



- Insurers are mainly concentrating on one year for both life and P&C insurers.
- Three to five years is also looked at but mainly by life insurers.

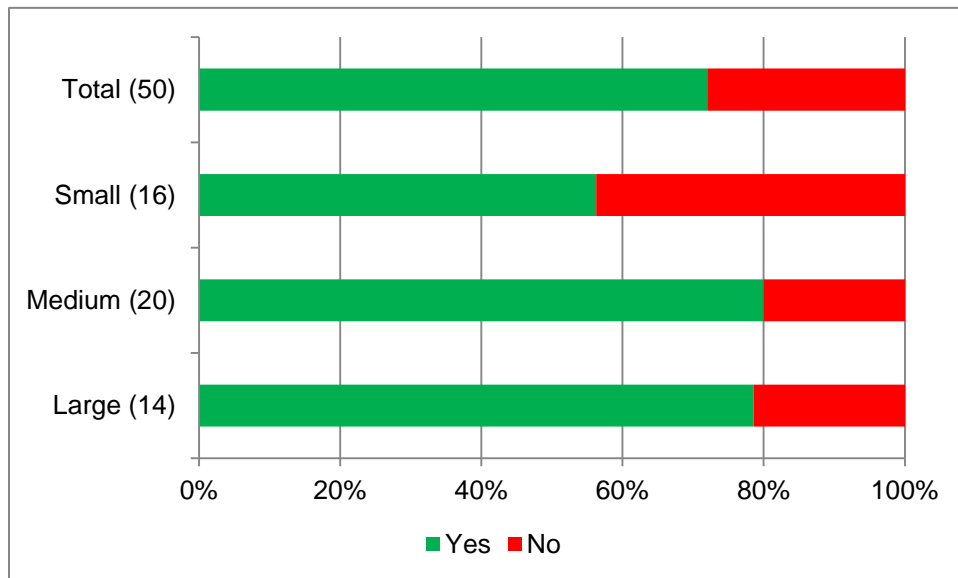
2.6 Integration with DCAT and Stress Testing Processes

Q22. How integrated is DCAT within ORSA?



- Overall, about 40% companies have fully integrated DCAT with ORSA. However, medium-size life companies are not as far along with integrating DCAT and ORSA as other sizes of companies.
- The responses are consistent for both life and P&C insurers.

Q23. Should DCAT be incorporated into the ORSA and not be a separate requirement?

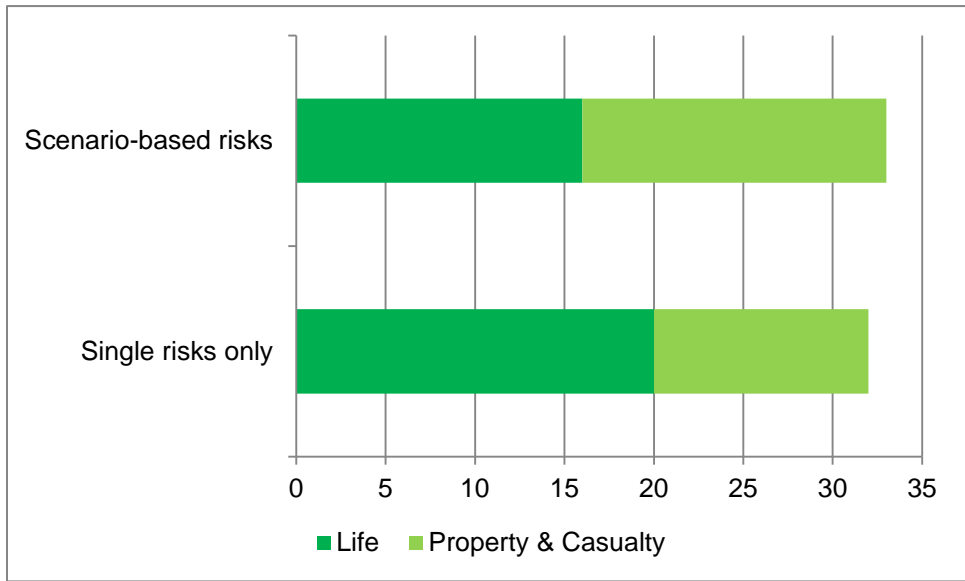
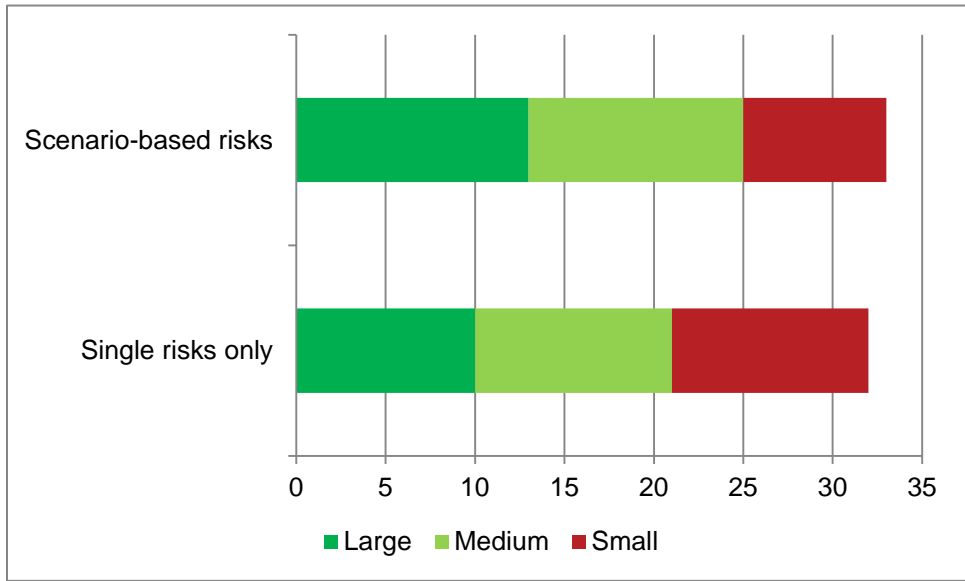


The responses are consistent for both life and P&C insurers, with about 70% of respondents supporting incorporating DCAT into ORSA. However, smaller insurers that use external consultants as Appointed Actuaries are less supportive of incorporating DCAT into ORSA.

Sample comments from respondents:

- We should not lose the need for the AA to opine on the financial health of the company.
- DCAT is simply a form of stress testing. . . ORSA requires various stress testing views.
- ORSA, DCAT, and stress testing may be seen as repetitive and regulatory exercises rather than helping with business decisions.
- Would allow for better coordination and integration of the various components of the stress testing program. The process would become more understandable and more efficient.
- If you abandon DCAT, then more specific actuarial guidance would be necessary for ORSA.
- Makes sense to combine ORSA and DCAT.
- Without a required actuarial opinion, the AA might be left out of the process.
- DCAT can provide standardized stress testing that can be benchmarked against peer companies.

Q24. What types of stress tests are incorporated into the ORSA?



The use of scenario-based risk and single risk for scenarios was balanced for different sizes of companies as well as life and P&C insurers.

2.7 Validation and Control of Models

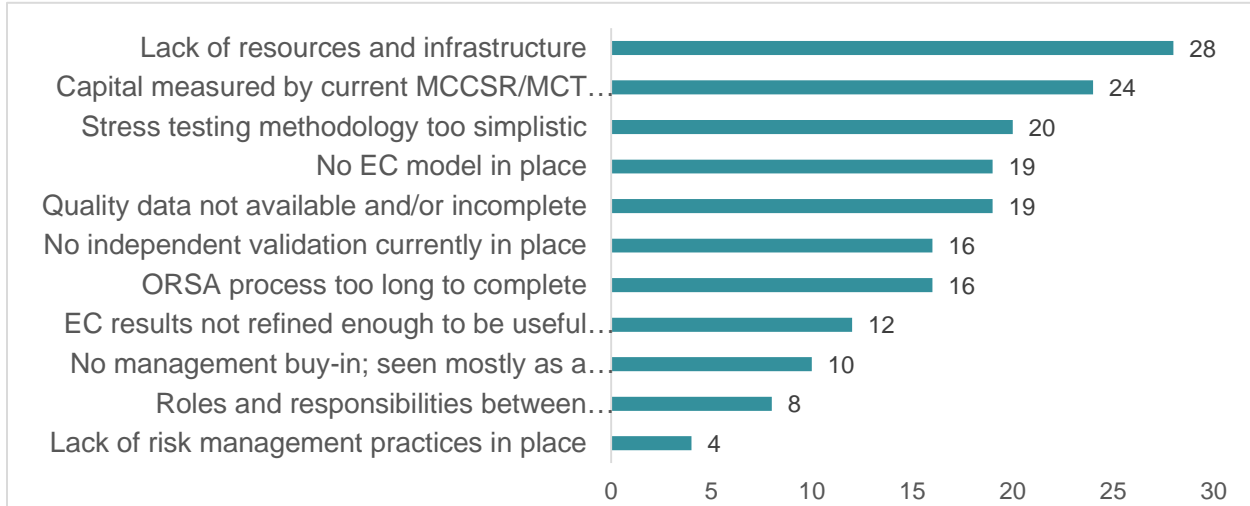
Q25. What model governance is currently in place?



- Companies have set in place governance for intended purpose, documentation, and review and challenge processes. Governance for approval authorities, change management, and audit controls is not as far along.
- There is a wider range of governance practices for independent model validation between different sizes of companies and life and P&C insurers.

2.8 Issues within ORSA Process

Q26. What are the practical issues encountered in your ORSA process?



- The most significant practical issue faced by companies was a lack of resources and infrastructure.
- There is also a significant concern about the methods (i.e., measurement by current minimum continuing capital and surplus requirements (MCCR)/MCT, stress testing methodology is too simplistic or no economic capital (EC) model in place) and the lack of data available to quantify capital requirements.
- The responses were consistent between life and P&C insurers and by size of company.
- For large companies, the length of time to complete the ORSA process is a more important issue than for small companies.
- For actuaries, the lack of economic capital models was more important than for non-actuaries.

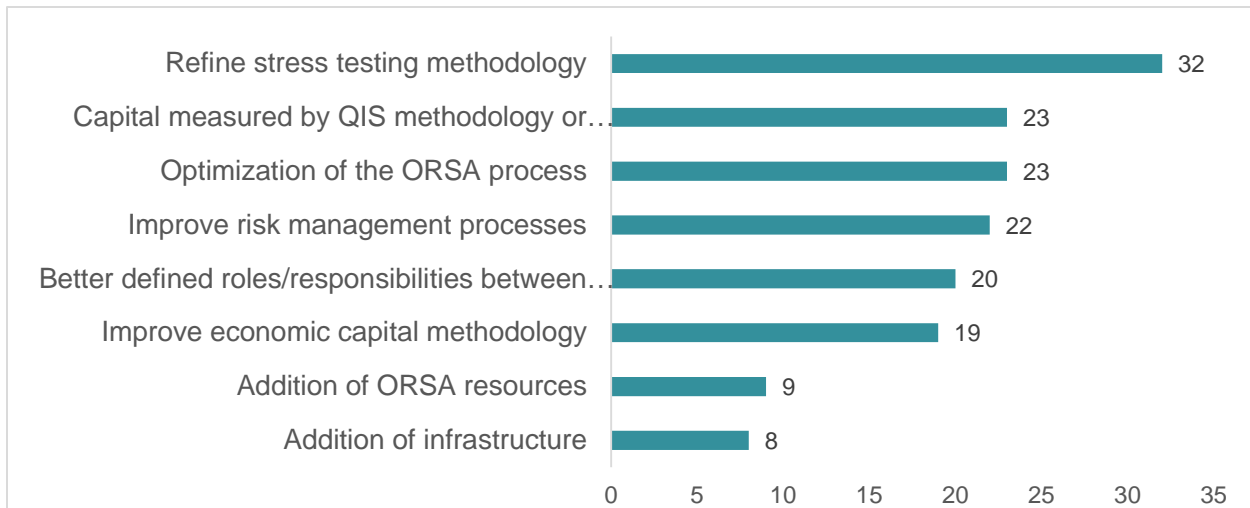
Sample comments from respondents:

- It would be helpful to management and the board if we reduce down to just ORSA and not a separate DCAT and stress testing.
- Managing the process for subsidiary companies – approach to report development, level of detail to provide, reconciling timing of board and committee meetings of the various entities with the availability of ORSA deliverables.
- Subjectivity in determining significant assumptions.
- Increasingly, the internal target is viewed as a minimum, which for many companies would not be a figure that would be used in the management of the organization.

This leads to an undue focus on confirming a number that isn't used by management. The idea of a "normal operating level of capital" is brought forth in the ORSA guideline, but without enough emphasis given to its importance or relevance. To condense this point, it would be "Too much focus on the wrong key metric".

2.9 Future Improvements

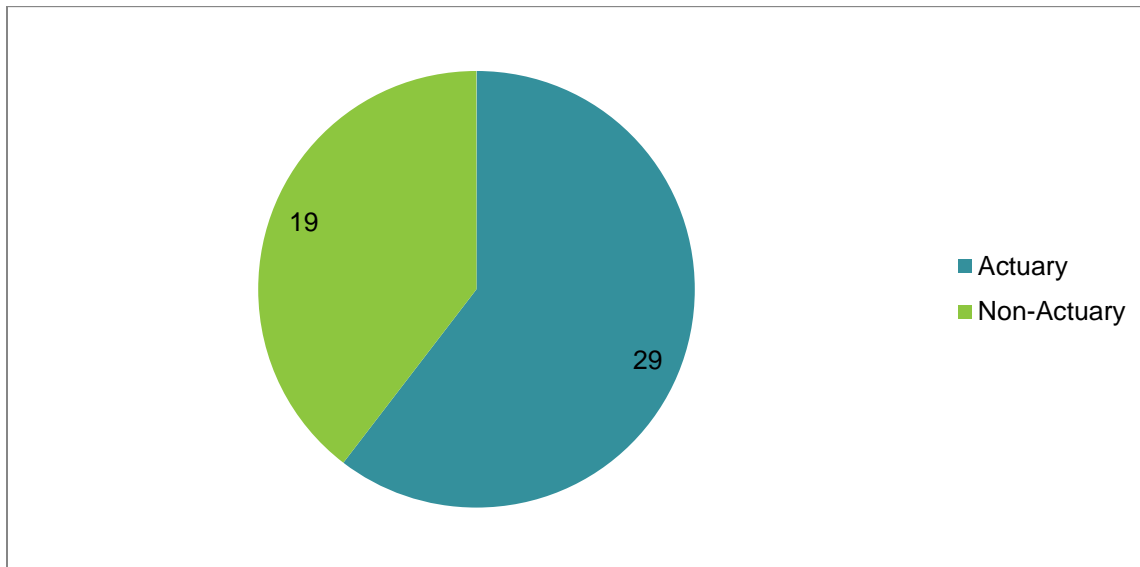
Q27. Which improvements do you plan in the next few years?



- Over the next two years, the most important improvement is to refine the stress testing methodology, which is closely related to the capital measurement methodology, and improving economic capital methodology. In the long-term, optimization of the ORSA process is a high priority for all companies.
- Although Q26 identified a lack of resources and infrastructure was the most significant practical issue faced by companies, the addition of ORSA resources appears to be a lower priority for most companies.
- Sample comments were related to fully incorporate ORSA into decision-making and planning, using ORSA to influence decision-making and the alignment of the risk management processes with strategic planning.

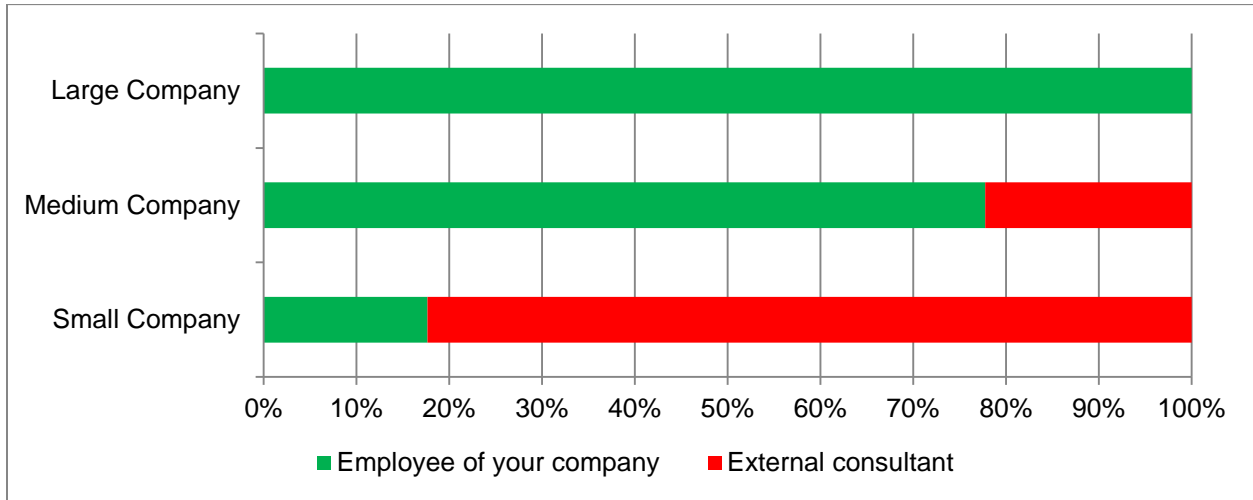
2.10 Actuarial Involvement in ORSA

Q28. Who holds the chief risk officer role (or if not filled, a similar responsibility) in your organization?



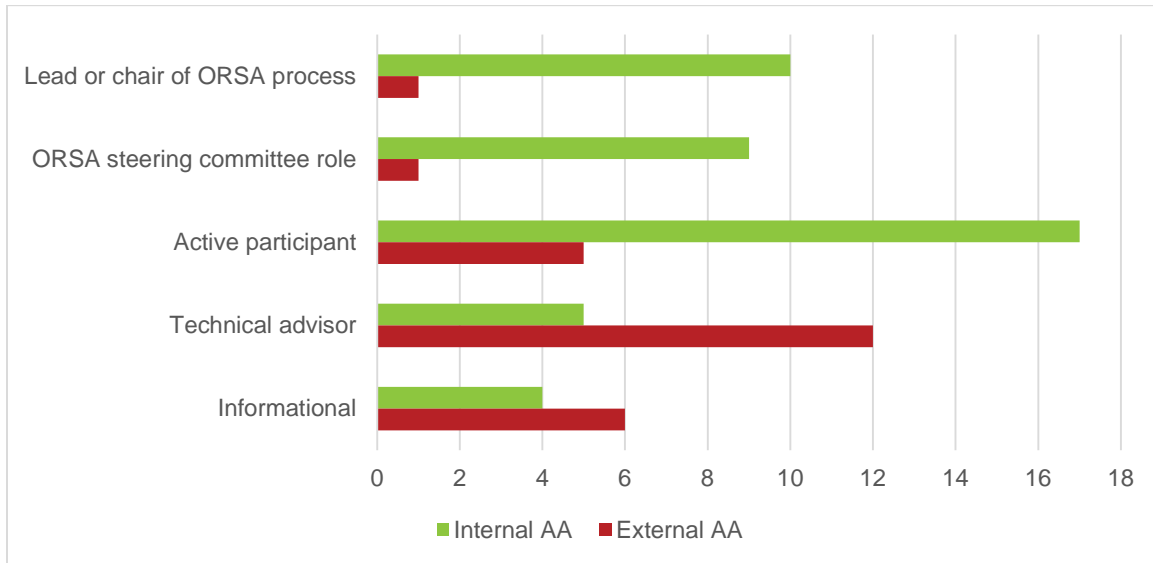
- A great proportion of CROs in insurance companies are actuaries; this includes actuaries who are also the Appointed Actuary (three) and chief actuaries (five).
- Non-actuary CROs are mostly accountants or come from the head office (which could include some who are actuaries).

Q29. Is the Appointed Actuary an employee of your company or an external consultant?



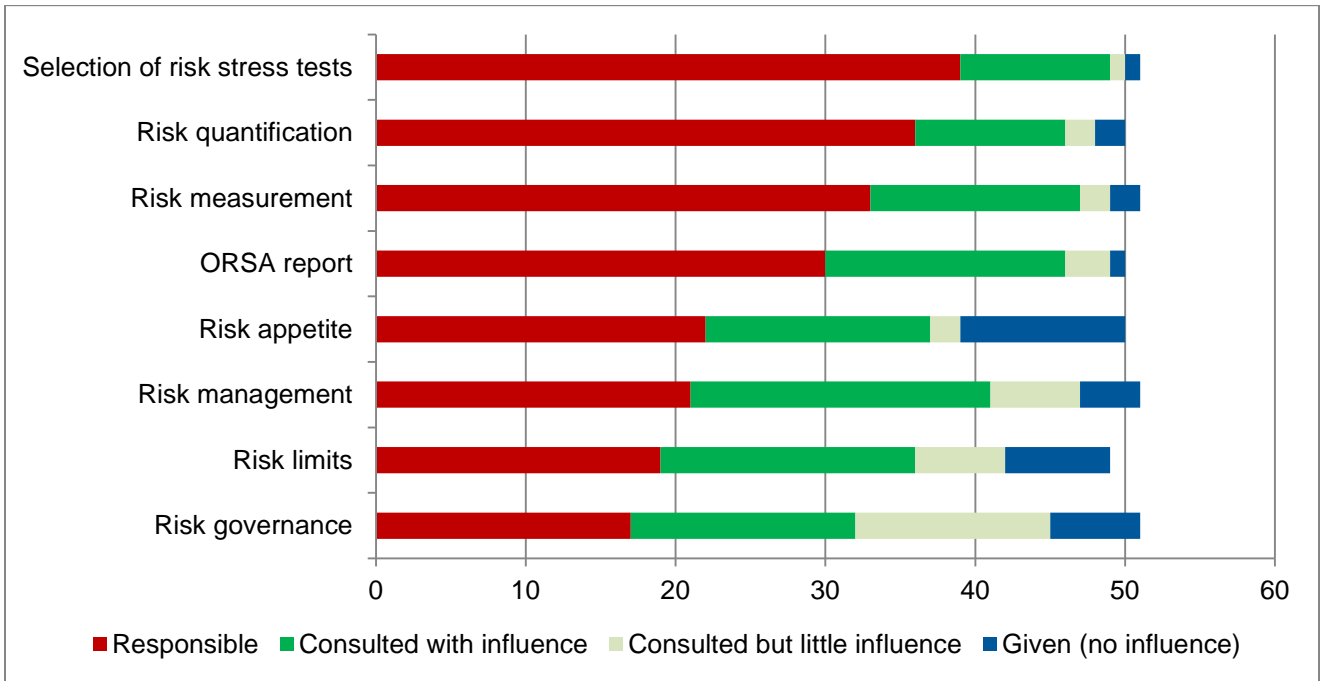
- For most large and medium insurers, the Appointed Actuary is an employee of the company.
- Conversely, for small companies, the role of the Appointed Actuary is mostly assumed by an external actuary.

Q30. What is the role of the Appointed Actuary in the ORSA process? (Please check all that apply.)



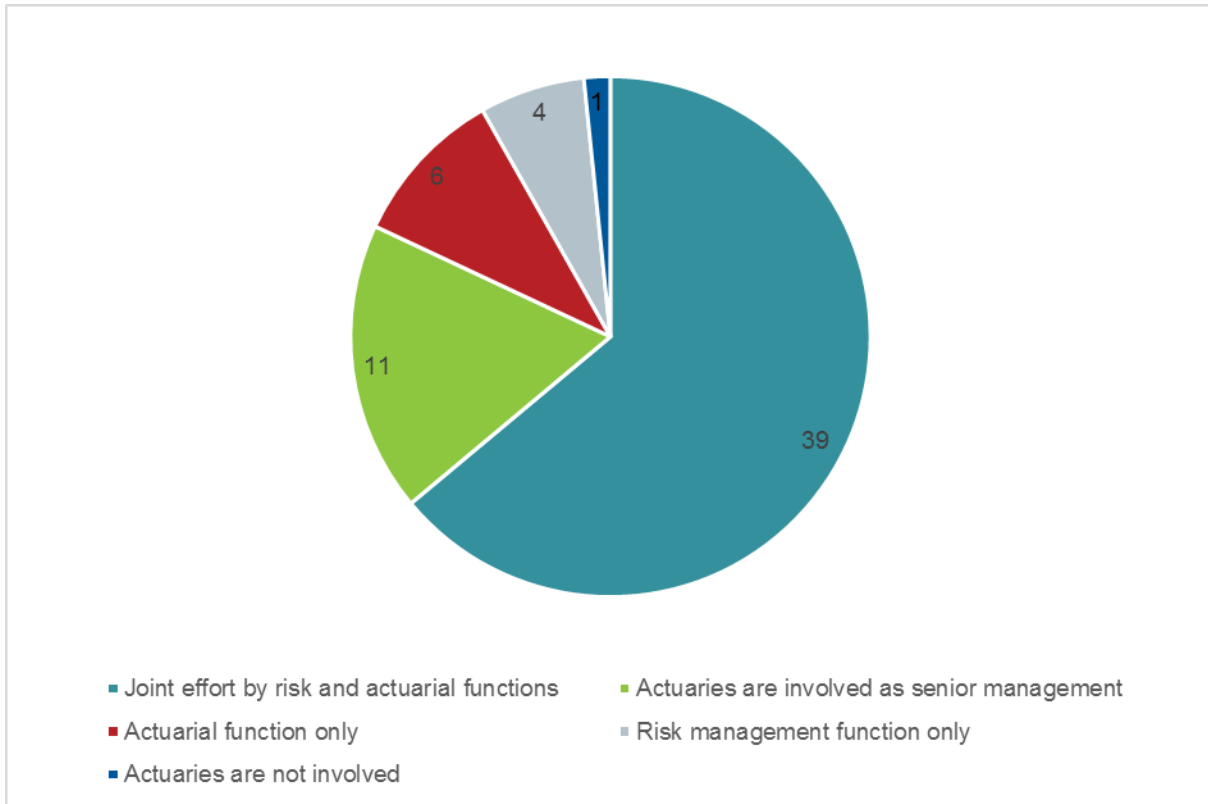
- Internal Appointed Actuaries play an important role in the ORSA process: leading role, part of the steering committee, or an active participant.
- For companies with external actuaries, actuaries tend to be less involved; when involved, it tends to be in the role of a technical advisor or on an informational basis. This may be due to the fact that the ORSA itself is less sophisticated and does not have much need for quantitative information.

Q31. What was the level of involvement of actuaries in the following items? Select the closest answer for the determination or identification of each of the following items.



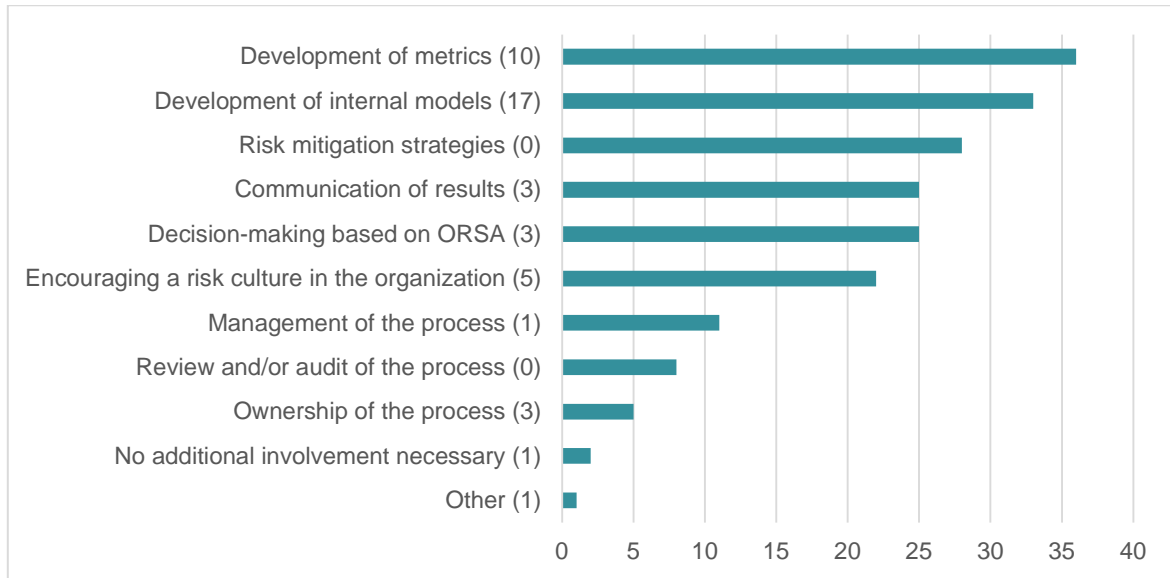
- Most actuaries have a lot of influence on the quantitative aspects of ORSA: selection of risk stress tests, risk quantification, and risk measurement.
- In the ORSA process, actuaries tend to have less influence on the risk governance.

Q32. How would you characterize the level of involvement of actuaries in developing the ORSA/ERM framework within your company? (Please check all that apply.)



- In most cases, the ORSA is a collaborative effort of many functions including the actuarial function.

Q33. How can actuaries contribute more to the ORSA process and enterprise risk management (ERM) framework? Please rank the top five, with “1” being the most important.



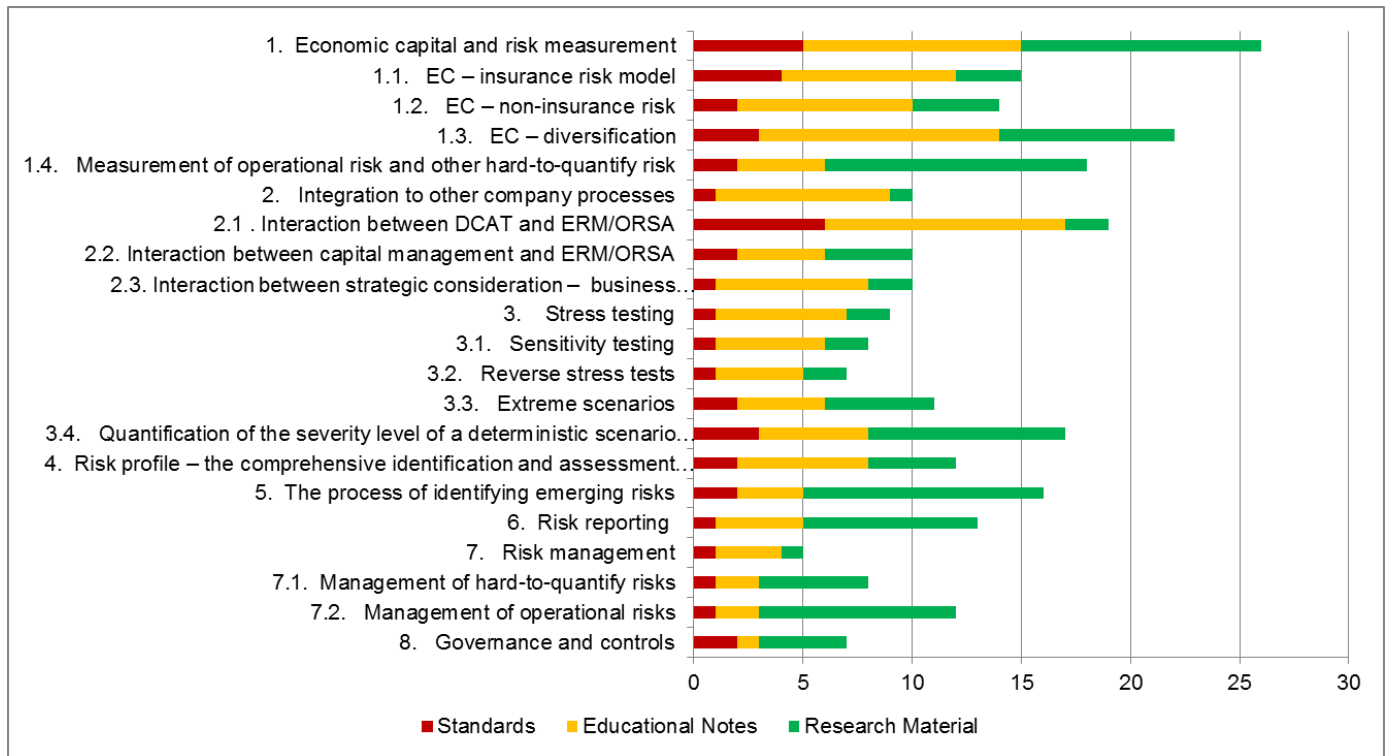
(in brackets – number who ranked first)

- The majority of respondents feel that actuaries could contribute more in the development of internal models and in the development of metrics in the ORSA process, as well as in risk mitigation strategies and decision-making based on ORSA.
- A large portion of the respondents also see actuaries contributing more in non-quantitative areas of the ORSA process such as risk mitigation strategies, decision-making based on ORSA, communication of ORSA results, and encouraging a risk culture in the organization.

2.11 Need for Standards or Educational Material

Q34. In which areas must the CIA develop research and/or educational material?

(Please rank the top five issues or subjects, with “1” being the most important. Please add more detail in the additional comments.)



- In general, the survey seems to indicate that there is a need for further educational and/or research material from the CIA. Respondents indicate a lower preference for developing additional or new standards of practice.
- The areas where the respondents indicate a need to develop standards of practice and/or educational notes are as follows:
 - The primary area is the interaction between DCAT and ERM/ORSA. For DCAT, the CIA currently has guidelines in the form of standards of practice and educational notes, including a standard expression of opinion. In addition to the fact that they are both addressing similar concepts, there are many interactions between the DCAT report and the ORSA process.
 - A high number of respondents indicated economic capital and risk measurement as a higher priority.

- The areas where respondents believe the CIA should develop further educational notes or research material related to ORSA are as follows:
 - Economic capital modelling, in particular insurance risk models and risk diversification (discussed above);
 - Interaction between DCAT and ERM/ORSA (discussed above);
 - Measurement of operational risk and other hard-to-quantify risks – in particular, it may be beneficial to favour more consistency of adverse scenarios developed by Appointed Actuaries;
 - Quantification of the severity level of a deterministic scenario over a time horizon; and
 - Process of identifying emerging risk.
- In written comments, a few respondents indicated that the international community has already developed a lot of useful material (in particular, financial risk models and stress scenarios) and believe that it would not be effective for the CIA to start developing its own educational material.

3 Conclusion

Overall, the ORSA process is fairly young and practices are evolving. There is an opportunity for the actuarial profession to have increased involvement in ORSA. The survey indicates that over time, developing standards of practice, educational notes, and research material as well as integrating DCAT into ORSA would be desirable. In the meantime, leveraging currently available actuarial and industry materials related to the ORSA and DCAT processes would help actuaries improve economic capital calculations and risk measurement.

The main findings from the survey can be summarized by objective as follows:

Objective #1: To inform actuaries of best practices in the industry with respect to ORSA requirements, to improve ORSA processes.

The survey respondents indicate that there are a range of approaches used by life and P&C insurers, and the approaches vary by size of company. Respondents indicate that over 70% of large companies calculate economic capital (Q10). The responses show that capital levels are generally calculated at a confidence level of 99.5% or higher (Q14). Many companies are using stochastic modelling approaches for market risk (interest rates, credit, credit spreads and equities) and insurance risks.

P&C companies are more likely to model their insurance specific risks than life insurers (Q17).

There are still many challenges ahead with many companies indicating that they plan to refine or improve stress testing and capital measurement methodologies (Q27) and many medium and small insurers indicating that economic capital calculations are not appropriate for the size of the company (Q11).

Objective #2: To understand the current involvement of actuaries in the ORSA process, and whether it could be increased.

Overall, actuaries are very involved in the ORSA process (Q28, Q30, Q31, and Q32). A great proportion of CROs in insurance companies are actuaries, which included Appointed Actuaries and chief actuaries. In most companies, actuaries appear to have a lot of influence on the quantitative aspects of ORSA, i.e., selection of risk stress tests, risk quantification, and risk measurement. Actuaries have less influence on risk management, risk limits, and risk governance.

With respect to whether the role of the actuary could be increased, most respondents indicated that the actuary could contribute more to the process through the development of metrics and internal models (Q33). There is also scope for actuaries to be more involved in the more qualitative aspects of ORSA, such as risk mitigation strategies, decision-making based on ORSA, communication of results, and encouraging a risk culture in the organization.

It was evident that Appointed Actuaries who are external or consultant actuaries tend to be less involved in the ORSA process (Q30). It is important to consider the role of the external Appointed Actuaries in exploring avenues on how best to support or to build guidance for actuaries regarding ORSA.

Objective #3: To learn about potential areas for research and/or initiatives by the CIA and/or CRMCR with respect to ORSA.

A majority of respondents (70%) believe that DCAT and ORSA processes should be integrated (Q23). The development of updates to the standards of practice and educational notes was identified as a high priority by many respondents (Q34).

The majority of respondents feel that actuaries could contribute more towards the development of metrics and internal capital models (Q33). Refining stress testing (for which actuaries are heavily involved) is the highest ranked in terms of planned improvement in the next two years (Q27). There is also a significant concern about the methods currently being used (i.e., measurement by current MCCR/MCT, stress testing methodology are too simplistic) and there is a lack of data available to quantify capital requirements (Q26). There is also a strong need for educational notes and research materials on the related issues of economic capital and risk measurement (Q34).

Most respondents were comfortable with identification of material risks, use of risk mitigation tools, and projection of capital positions. At the other end of the spectrum, respondents felt that using ORSA in strategic planning and day-to-day decision-making could be developed further, as well as the utilization of external benchmarks (Q7). The CIA could consider educational activities (e.g., at AA seminars or CIA meetings) on the subject of use of ORSA in strategic planning and day-to-day business decision-making to accelerate development and sharing of leading practices.

Own Risk and Solvency Assessment (ORSA) Survey by CIA Committee on Risk Management and Capital Requirements (CRMCR)

Company Name:

The company name will only be seen by CIA Head Office Staff, and will be kept confidential. The compilation process ensures that published results do not reveal individual company information. Please do not indicate your name or company affiliation in any of the comments in the survey below.

Demographic Questions

Please specify your position(s) . Please check all that apply.

- Appointed Actuary
- Chief actuary
- Chief risk officer
- Corporate actuary
- Line of business actuary
- Consultant actuary
- None of the above—specify: _____

What is your area of practice?

- Life
- Property & Casualty
- Other—specify: _____

What is the size of your company based on the following measures as at year-end 2014?All companies: (life/A&S/PC) gross premium (direct and/or assumed)

- \$2 billion or more
- \$1 billion to \$2 billion
- \$200 million to \$1 billion
- Less than \$200 million

Life/A&S insurers only: balance sheet assets

- \$100 billion or more
- \$10 billion to \$100 billion
- \$1 billion to \$10 billion
- \$100 million to \$1 billion
- Less than \$100 million

Life/A&S insurers only if applicable: segregated fund assets

- \$50 billion or more
- \$10 billion to \$50 billion
- \$1 billion to \$10 billion
- \$100 million to \$1 billion
- Less than \$100 million

Please provide a breakdown of your business by % of gross premium as at year-end 2014. Please enter the percentage as a number, e.g. 82, not .82 or 82%. Also, the sum of all boxes should be equal to 100.

| | Direct | Assumed |
|-----------------------------------|----------------------|----------------------|
| Individual life and/or A&S | <input type="text"/> | <input type="text"/> |
| Group life and/or A&S | <input type="text"/> | <input type="text"/> |
| Annuity (individual and/or group) | <input type="text"/> | <input type="text"/> |
| Segregated fund deposits | <input type="text"/> | <input type="text"/> |
| Personal automobile and property | <input type="text"/> | <input type="text"/> |
| Commercial insurance | <input type="text"/> | <input type="text"/> |
| Mortgage insurance | <input type="text"/> | <input type="text"/> |
| Other | <input type="text"/> | <input type="text"/> |

If you chose Other, please specify:

What is the type of structure of your organization?

- Stock company headquartered in Canada with subsidiaries
- Stock company headquartered in Canada with no subsidiary
- Mutual or fraternal company headquartered in Canada
- Branch of a foreign company
- Subsidiary of a Canadian company
- Canadian subsidiary of a foreign company
- Foreign subsidiary of a Canadian company
- Other—specify: _____

By which entity is your organization in Canada regulated?(Please check all that apply)

- AMF
- OSFI
- Provincial regulator—specify: _____
- Other(s)—specify: _____

Best Practice Questions

Sophistication of ORSA Process

Has your company started the Own Risk and Solvency Assessment (ORSA) process?

- Yes
- No

If you answered No above, please respond to questions below based on your current and planned changes to your capital and risk management processes.

On a scale of 1 to 5, how well-developed is your ORSA process (1=not developed, 5=well developed)?

| | 1 | 2 | 3 | 4 | 5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Governance | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Risk appetite statement | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Development of risk limits | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Risk management systems | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Identification of material risk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Identification of combination of non-material risks that when combined are material | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Use of risk mitigation tools (e.g., reinsurance, securitization, hedging) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Risk reporting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ORSA policy | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ORSA operating guidelines and procedures | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Quantification of capital needs for material risks | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Projection of capital positions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Utilization of external benchmarks | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Use of ORSA in strategic planning | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Use of ORSA in day-to-day decision making | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Internal controls | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Capital Planning and Internal Targets

Has ORSA changed your organization's approach to setting internal targets?

Yes

No

If yes, please elaborate.

How quickly can your company quantify your ORSA capital if an unforeseen event materially affects your risk profile?

- Within 1 week
- In 1 month
- Greater than 1 month

Risk Quantification

Does your organization calculate economic capital?

- Yes
- No

If No, please provide reason(s). (Check all that apply)

- Regulatory formula provides a fair assessment of capital needs
- Not appropriate for the size of the organization
- Lack of specialized resources/infrastructure
- Not a priority for our organization
- Other—specify: _____

When does your organization plan to calculate economic capital?

- Within the next 2 years
- Within 3 to 5 years
- No plans in the near future

For how long has your organization been calculating economic capital?

- 1 year
- 2 to 4 years
- 5+ years

At what confidence level is economic capital calculated (i.e., VaR equivalent)?

[Note: VaR(99.6%)~CTE(99%)]

- < 99%
- ≥ 99% and < 99.5%
- ≥ 99.5% and < 99.95%
- ≥ 99.95%

What time horizon(s) is/are considered in calculating economic capital? (Check all that apply)

- One year
- Multi-year
- Run-off approach
- Other – specify: _____

What are your top five principal drivers for calculating economic capital with “Driver 1” being the most relevant?

| | Driver 1 | Driver 2 | Driver 3 | Driver 4 | Driver 5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Allocation of capital | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Measure of risk-adjusted performance | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Making strategic or tactical decisions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Product pricing and design/business mix | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Good business practice | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Determining internal targets | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Regulatory requirements | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Rating agency considerations | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Preparation for regulatory development | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Shareholder reporting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If you chose Other, please specify:

Emerging risks

Insurance-P/C reserving

Insurance-P/C underwriting

Insurance-P/C catastrophe

Operational-Cyber

Operational-Internal Fraud

Operational-Reputational

Operational-Other

Concentration-Concentration

Business-Business

If "Other method" selected above – specify:

If you consider diversification credit in your economic capital calculation, please briefly describe the methodology used and the risk(s) affected.

Metrics/Stress tests

What is your primary source for setting your internal target capital?(Check all that apply)

- Regulatory capital
- Dynamic Capital Adequacy Testing (DCAT)
- Stress testing
- Quantitative Impact Study (QIS)
- Economic capital “lite” models
- Fully developed economic capital models
- Other—specify: _____

What level(s) of severity is/are considered in the range or series of adverse scenarios used in establishing a buffer above your internal targets?(Check all that apply)

- ≤ 90th percentile
- > 90th percentile but ≤ 95th percentile
- > 95th percentile but ≤ 97.5th percentile
- > 97.5th percentile but ≤ 98th percentile
- > 98th percentile but ≤ 99th percentile
- > 99th percentile

What time horizon(s) is/are considered in establishing your internal targets?(Check all that apply)

- One quarter
- One year
- Two years
- Three to five years
- More than five years

Integration with DCAT and Stress Testing Processes

How integrated is DCAT within the ORSA?

- Fully integrated: consistent scenario development, natural progression of adverse scenarios
- Partially integrated: similar scenarios, many common elements
- Minimal integration: generally different scenarios
- No integration

Do you think the DCAT should be incorporated into the ORSA and no longer be a separate requirement?

- Yes
- No

Please provide additional commentary.

What types of stress tests are incorporated into the ORSA?(Check all that apply)

| | Stress tests | Reverse stress tests |
|-------------------------------------|-----------------------|-----------------------|
| All risks (single risks) | <input type="radio"/> | <input type="radio"/> |
| Material single risks only | <input type="radio"/> | <input type="radio"/> |
| Multiple risks (not scenario based) | <input type="radio"/> | <input type="radio"/> |
| Scenario-based risks | <input type="radio"/> | <input type="radio"/> |

Validation and Control of Models

What model governance is currently in place?(Check all that apply)

- Clearly defined intended purpose of model
- Approval authorities well defined
- Development plans
- Review and challenge process
- Independent model validation
- Model fully documented
- Change management
- Audit of controls

Issues within ORSA Process

What are the top five practical issues encountered in your ORSA process with “Issue 1” indicating the most problematic issue?

| | Issue 1 | Issue 2 | Issue 3 | Issue 4 | Issue 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Capital measured by current MCCR/MCT only. QIS methodology not implemented | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Stress testing methodology too simplistic | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Quality data not available and/or incomplete | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| No EC model in place | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| EC results not refined enough to be useful for ORSA | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lack of resources and infrastructure | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ORSA process too long to complete | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Roles and responsibilities between functions not well defined | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lack of risk management practices in place | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| No management buy-in; seen mostly as a regulatory exercise | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| No independent validation currently in place | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If you choose Other as a practical issue, please specify.

Future Improvements

Which improvements do you plan in the next few years?(Check all that apply)

| | Within 1 year | 1 to 2 years | 3 to 5 years |
|--|-----------------------|-----------------------|-----------------------|
| Capital measured by QIS methodology or new MCT methodology (for P&C companies) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Improve economic capital methodology | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Refine stress testing methodology | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Addition of ORSA resources | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Addition of infrastructure | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Improve risk management processes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Optimization of the ORSA process | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Better defined roles/responsibilities between functions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If you choose Other, please specify.

Actuarial Involvement in ORSA

Who holds the chief risk officer role (or if not filled, a similar responsibility) in your organization?

- Appointed Actuary
- Chief actuary
- Actuary other than the Appointed Actuary or chief actuary
- Non-actuary (e.g., economist, PhD, accountant)—please specify: _____

Is the Appointed Actuary an employee of your company or an external consultant?

- Employee of your company
- External

How can actuaries contribute more to the ORSA process and ERM framework? Please rank the top 5, with "1" being the most important.

| | 1 | 2 | 3 | 4 | 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Development of metrics | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Development of internal models | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Risk mitigation strategies | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication of results | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Encouraging a risk culture in the organization | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Management of the process | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Review and/or audit of the process | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Decision-making based on ORSA | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ownership of the process | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| No additional involvement necessary | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If you choose Other as one of the top 5, please specify.

Need for Standards or Educational Material

In which areas must the CIA develop research and/or educational material? Please rank the top 5 issues or subjects, with "1" being the most important. Please add more detail in the additional comments.

| | Develop standard of practice | Develop or update educational note | Develop research paper or provide access to additional research (e.g., links on website) |
|---|------------------------------|------------------------------------|--|
| 1. Economic capital (EC) and risk measurement | <input type="radio"/> 1 | <input type="radio"/> 1 | <input type="radio"/> 1 |
| | <input type="radio"/> 2 | <input type="radio"/> 2 | <input type="radio"/> 2 |
| | <input type="radio"/> 3 | <input type="radio"/> 3 | <input type="radio"/> 3 |
| | <input type="radio"/> 4 | <input type="radio"/> 4 | <input type="radio"/> 4 |
| | <input type="radio"/> 5 | <input type="radio"/> 5 | <input type="radio"/> 5 |

1.1. EC – insurance risk model

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

1.2. EC – non-insurance risk (market risk, counterparty, etc.). Please use written comment to specify which non-insurance risk to be addressed

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

1.3. EC – diversification

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

1.4. Measurement of operational risk and other hard-to-quantify risk

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

2. Integration to other company processes

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

2.1 Interaction between DCAT and ERM/ORSA

- 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

- 2.2 Interaction between capital management and ERM/ORSA
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 2.3 Interaction between strategic consideration – business planning process and ERM/ORSA
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 3. Stress testing
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 3.1 Sensitivity testing
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 3.2 Reverse stress tests
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 3.3 Extreme scenarios
 - 1 1 1
 - 2 2 2
 - 3 3 3
 - 4 4 4
 - 5 5 5

- 3.4 Quantification of the severity level of a deterministic scenario over a time horizon (VaR and CTE) 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5
4. Risk profile – the comprehensive identification and assessment of risk 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5
5. The process of identifying emerging risks 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5
6. Risk reporting (e.g., dashboard, granularity, internal action level) 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5
7. Risk management 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5
- 7.1 Management of hard-to-quantify risks 1 1 1
 2 2 2
 3 3 3
 4 4 4
 5 5 5

- 7.2 Management of operational risks 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5
- 8. Governance and controls 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5
- 9. Other 1 1 1
- 2 2 2
- 3 3 3
- 4 4 4
- 5 5 5

Additional comments

ORSA Evolution - Panel Discussion

Moderator: Paul Downes, *partner, Deloitte*

Speakers: Brandon Blant, *vice-president, risk management, Intact*

Michelle Lindo, *chair, ORSA survey working group of the CIA CRMCR*

Kerry Reinke, *vice-president, enterprise risk management, Manulife*

2015 ORSA Survey

Conducted by: CIA Committee of Risk Management and Capital Requirements

Contents

- ▶ Objectives of the survey
- ▶ Demographics of respondents
- ▶ Current practices
 - ▶ Sophistication of the ORSA process
 - ▶ Internal targets
 - ▶ Integration with DCAT and stress testing
 - ▶ Risk quantification
 - ▶ Implementation challenges
- ▶ Actuarial involvement in ORSA
- ▶ Feedback on future research needed
- ▶ Next Steps
- ▶ Questions/Comments

Objectives of the survey

- ▶ To inform actuaries of best practices in the industry with respect to ORSA requirements, such that actuaries may take this information and improve the ORSA process for next time
- ▶ To learn whether there are any potential areas for future research and/or initiatives by the CIA and/or CRMCR Committee with respect to ORSA
- ▶ To understand the current involvement of actuaries in the ORSA process, and whether this involvement could be increased.

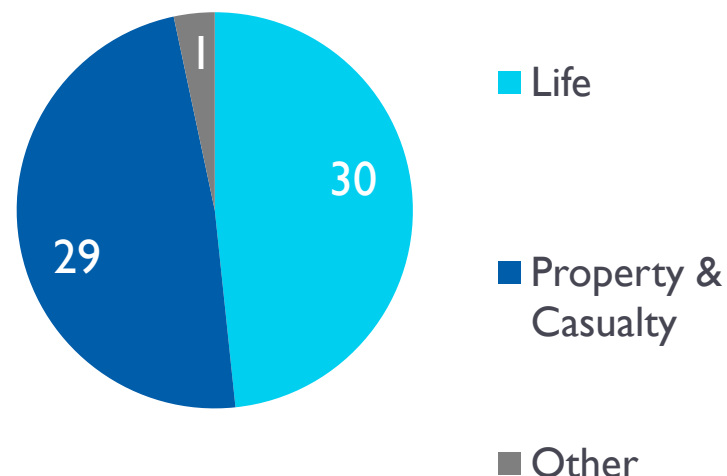
Respondents to the survey

- ▶ 60 responses in total

| Role | Number of Respondents |
|--------------------|-----------------------|
| Appointed Actuary | 37 |
| Chief Actuary | 12 |
| Chief Risk Officer | 15 |
| Consulting Actuary | 8 |
| Other | 12 |

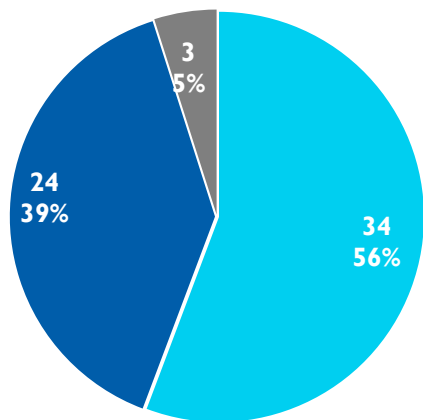
- ▶ Overlap in roles
- ▶ Other roles included (sample):
 - ▶ Chief Financial Officer
 - ▶ Corporate/Line of business actuary
 - ▶ Corporate Secretary
 - ▶ Vice President, Enterprise Risk Management

Area of Practice



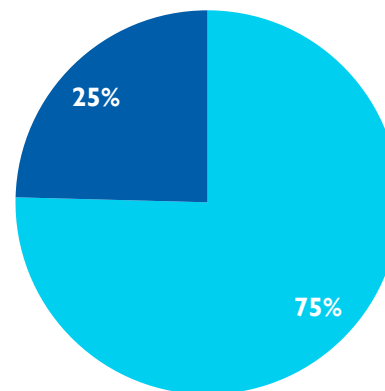
Entities responding

Structure of the organization



- Canadian Co. or Subsidiary of Canadian Co.
- Branch or Subsidiary of a Foreign Co.
- Other

Direct/Assumed Split of Gross Premium



- Direct
- Assumed

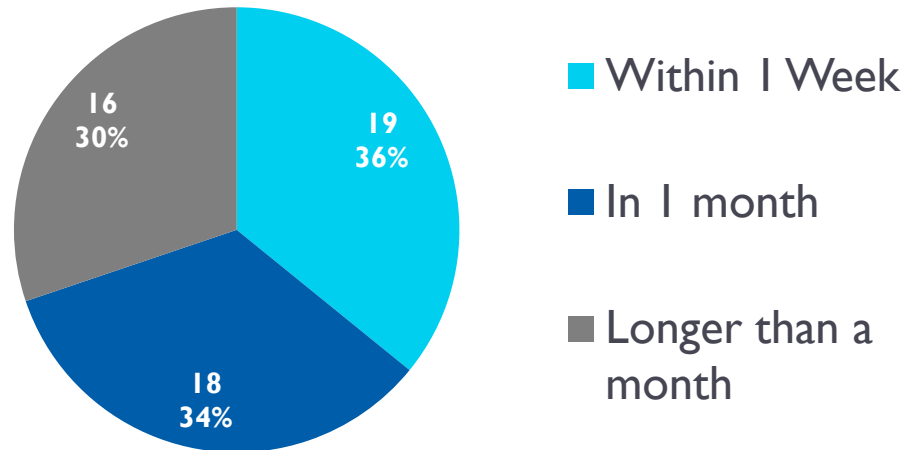
Sophistication of the ORSA process

How well developed are each of the following components of your ORSA process?

| Not Developed | Mixed | Well developed |
|--|---|---|
| <ul style="list-style-type: none">• Utilization of external benchmarks• Use of ORSA in day-to-day decision making | <ul style="list-style-type: none">• Development of risk limits• Risk management systems• Identification of combination of non-material risks that when combined are material• ORSA policy• ORSA operating guidelines and procedures• Use of ORSA in strategic planning• Internal controls | <ul style="list-style-type: none">• Governance• Risk appetite statement• Identification of material risk• Use of risk mitigation tools• Risk reporting• Quantification of capital needs for material risks• Projection of capital positions |

Sophistication of the ORSA process

How quickly can your company quantify your ORSA capital if an unforeseen event materially affects your risk profile?



Setting Internal Targets

Has ORSA changed your approach to setting internal targets?

Yes: 28%

No: 72%

If “Yes”, please elaborate (sample of responses):

- ORSA now the primary mechanism for setting internal targets
- Based on the results of the economic capital model, with adjustments as appropriate
- Process is now more inclusive, involving risk management, actuarial, finance, senior management and the board
- More formal and transparent approach
- More documentation

Integration with DCAT and Stress Testing

How integrated is DCAT within the ORSA?

Full integration: 42%

Partial integration: 38%

Minimal or no integration: 20%

Should DCAT be incorporated into the ORSA & no longer be a separate requirement?

Yes: 74%

No: 26%

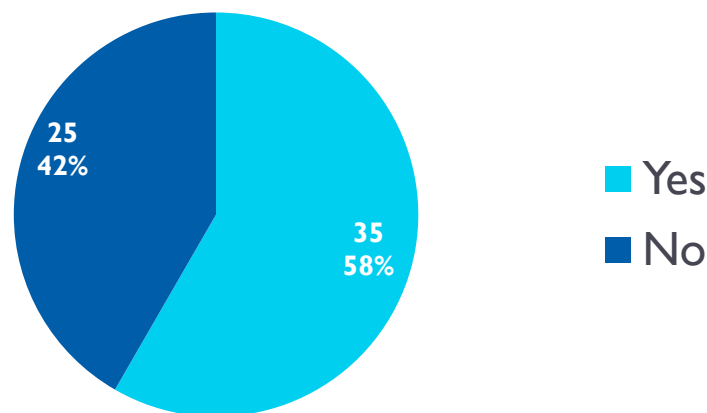
Integration with DCAT and Stress Testing

Sample comments:

- Would allow for better coordination and integration of the various components of the stress testing program. The process would become more understandable and more efficient.
- Consider the Board's view towards doing: ORSA, DCAT and Stress Testing. These are 3 separate reports and may be seen as repetitive and regulatory exercises rather than helping with business decisions.
- It makes sense to take advantage of the stress testing infrastructure created for DCAT when conducting the ORSA. At the same time, we should not lose the need for the Appointed Actuary to opine on the financial health of the company.
- DCAT has a slightly different focus and useful for many reasons. If you abandon DCAT, more specific guidance would be necessary for ORSA.

Risk Quantification

Does your company calculate economic capital?



Top 3 Reasons for “No”:

- Not appropriate for size of the organization
 - Not a priority for our organization
 - Regulatory formula provides a fair assessment of capital needs
- However 10 companies plan to calculate economic capital within the next 5 years

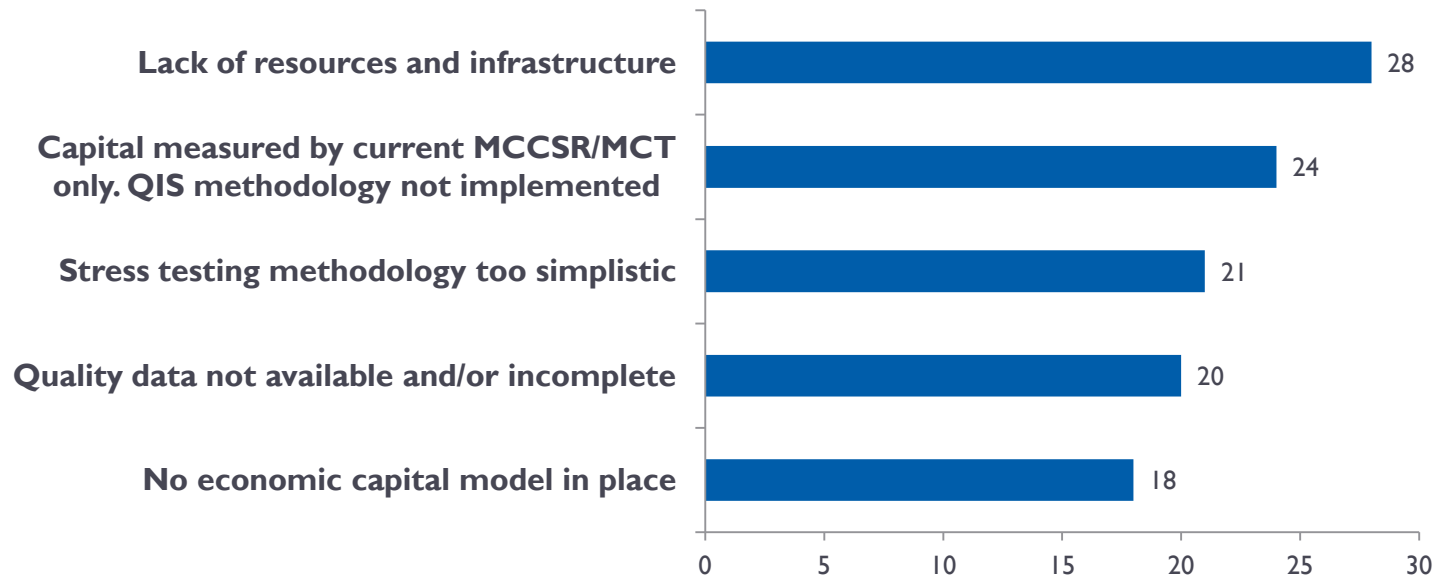
Risk Quantification

What are the principal drivers for calculating economic capital?



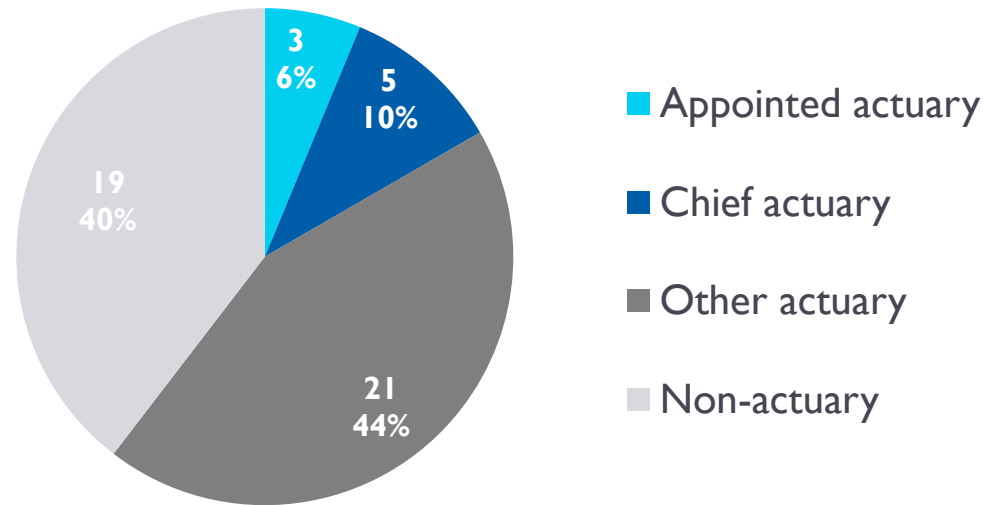
Implementation Challenges

What are the top five practical issues encountered in your ORSA process?



Actuarial Involvement

Who holds the CRO role in your organization?

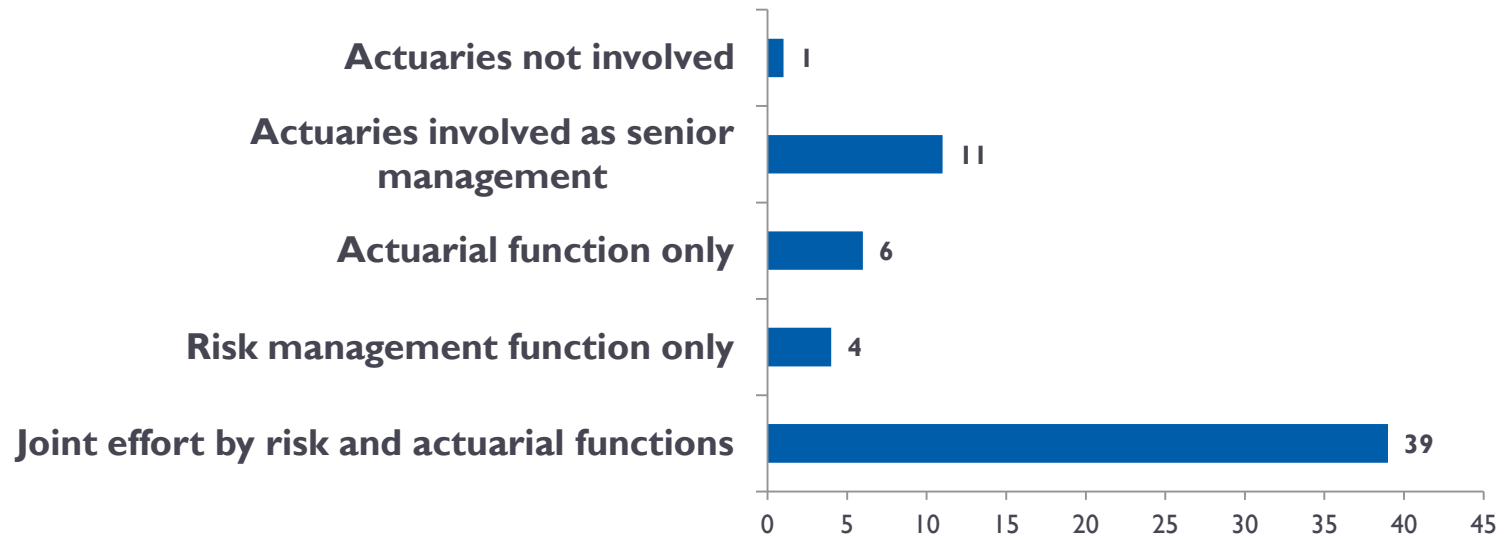


Non-actuary (samples):

- Accountant
- President
- PhD
- CRO role is at the head office only

Actuarial Involvement

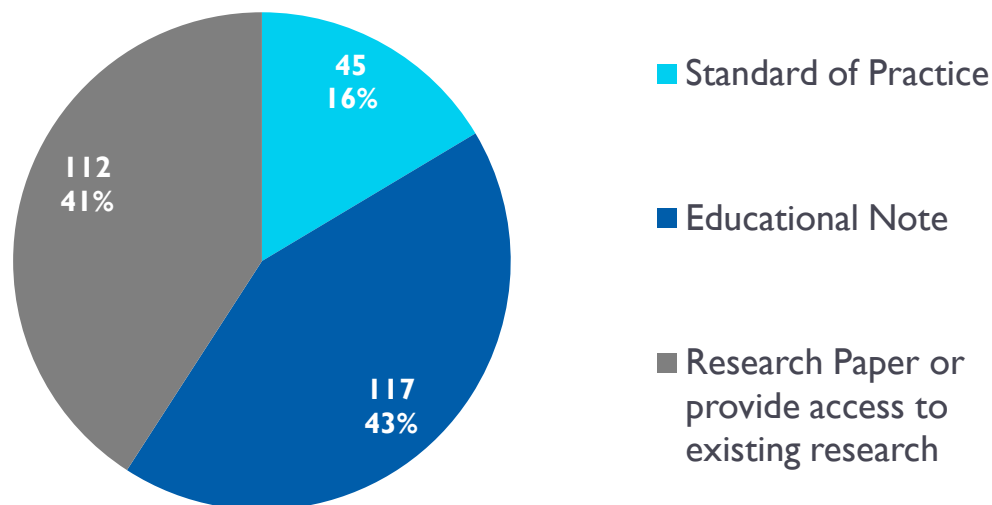
Level of involvement of actuaries in developing the ORSA/ERM framework?



- Actuaries are heavily involved in the process

Future Research and Guidance

What type of guidance should the CIA provide on ORSA/ERM/Economic Capital?



- There is a general preference for less prescriptive guidance

Future Research and Guidance

Which topics would you be interested in research or guidance from the CIA?



Next steps

- Complete review and analysis of the data received from the survey
- Write report on the survey and make public before the end of 2015
- Decision on future standards or educational material

Questions or Comments?