



# ORSA Process Implementation for Internal Stakeholders



September 2015

# ORSA Process Implementation for Internal Stakeholders

**SPONSOR**

CAS/CIA/SOA Joint Risk Management Section

**AUTHORS**

Ger Bradley  
Zohair Motiwalla  
Padraic O'Malley  
Eamonn Phelan

**Caveat and Disclaimer**

The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of the sponsoring organizations or their members. The sponsoring organizations make no representation or warranty to the accuracy of the information.

Copyright ©2015 All rights reserved by the Casualty Actuarial Society, Canadian Institute of Actuaries, and Society of Actuaries

## TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b>	<b>5</b>
<b>EXECUTIVE SUMMARY</b>	<b>6</b>
Introduction	6
Report structure	6
Profile of respondents	6
Milliman commentary	7
<b>INTRODUCTION</b>	<b>8</b>
Background and scope	8
Objectives	8
Survey methodology	9
<b>PROFILE OF RESPONDENTS</b>	<b>10</b>
Profile	10
<b>STRESS TEST AND SCENARIO DEVELOPMENT PROCESS</b>	<b>11</b>
Key findings	11
Derivation of stresses and scenarios	11
Role of the CRO in the development of stresses and scenarios	12
Modeling of risks	13
Number of stresses and scenarios tested	14
Timing of application of stresses	15
Management actions	16
Reverse stress testing	16
Stress and scenario testing in a group context	17
<b>INCENTIVES, GOVERNANCE, AND BEHAVIORAL ASPECTS</b>	<b>18</b>
Key findings	18
Motivation for ORSA	18
Review of process	19
Incentivization	20
Motivation	20
<b>EVALUATING THE IMPACT OF THE ORSA</b>	<b>21</b>
Key findings	21
Evaluation of impact	21
Benchmarking	23
Benefits	23
Costs	24
Changes resulting from ORSA	25
Measurement	27
<b>EVALUATING LEVEL OF BUY-IN WITHIN THE ORGANIZATION</b>	<b>29</b>
Key findings	29
Evaluating buy-in and embeddedness	29
Communication and training	32
Resources	33
Risk culture	35
<b>BOARD INVOLVEMENT</b>	<b>37</b>
Key findings	37
Level of involvement of the board	37
Ways in which the board is involved	38
Board structure and access to expertise	39
CRO's role in board meetings	41

<b>IMPLEMENTATION</b>	<b>42</b>
Key findings	42
Implementation position	42
Projection issues	45
Continuous compliance	47
<b>CHALLENGES</b>	<b>49</b>
Inputs to process	49
Methodology	49
Output process	50

## ACKNOWLEDGEMENTS

The authors would like to thank the Project Oversight Group (POG) who supported this work with their time and expense. The POG consisted of the following individuals:

Ron Harasym (Chair)  
 Steve Easson  
 Aaron Halpert  
 Dave Ingram  
 Jacky Kwan  
 Patricia Matson  
 Bill Wilkins  
 Barbara Scott, SOA Research Administrator  
 Steve Siegel, SOA Research Actuary

We also would like to thank the following Milliman professionals who assisted in the survey process and/or directly contributed to this work:

Nicola Biscaglia  
 Neil Cattle  
 Paul Correia  
 Michael Culligan  
 Aatman Dattani  
 Denis de Vries  
 Caoimhe Fahy  
 Peter Franken  
 Shamit Gupta  
 Steve Hardwick  
 Lars Hoffman  
 Cathy Hwang  
 Luca Inserra  
 Andrew Kay  
 Matthew Killough  
 Henri Laugier  
 Marcus Looft  
 Paola Luraschi  
 Casey Malone  
 Kevin Manning  
 Josephine Marks  
 Ronan Mulligan  
 Takako Nanjo  
 Derek Newton  
 Jim Stoltzfus  
 Fabrice Taillieu  
 Gary Wells  
 Thomas Wiedenmann  
 Wing Wong  
 Karthik Yadatore  
 Masaaki Yoshimura

## EXECUTIVE SUMMARY

### Introduction

The Own Risk and Solvency Assessment (ORSA) is an emerging framework that is quickly becoming a global regulatory requirement for insurance undertakings and a key element of enterprise risk management (ERM). This framework requires companies to regularly evaluate their risk profiles and to ascertain whether or not sufficient provision has been made for capital to support their strategic business plans over a multiyear period. The implementation of this framework is referred to as the ORSA process.

There is a large degree of consistency between different jurisdictions in the goals of the ORSA requirements. Almost all jurisdictions require that the ORSA process assess the insurer's overall solvency needs (in light of its risk profile), that the process include a forward-looking perspective, and that the process and results are documented and communicated to the board and to the supervisor. Although there are differences in some of the detailed requirements themselves, many of the challenges are common to all jurisdictions. This greatly enhances the ability of companies to apply similar techniques and methods across borders.

Recently, the Joint Risk Management Section of the Canadian Institute of Actuaries, Casualty Actuarial Society and Society of Actuaries issued a request for proposals that will help advance ORSA process implementation. In particular, the request was written to give researchers a broad scope within which to formulate an approach to satisfy internal stakeholder needs. The Section Research Committee also expressed a desire for responses that are appropriate to all insurance industries.

The objective of this report is to meet this need by providing benchmarking information that will help companies address the needs of internal stakeholders in cost-effectively conducting and implementing an ORSA process. In order to obtain this benchmarking information, we carried out a cross-disciplinary survey to find out what insurance companies understand and expect from an ORSA, the effort required to complete an ORSA, and the benefits from doing so. This survey was undertaken on a global basis, with participants that included life, property and casualty (P&C), often referred to as "non-life" or "general" insurers in territories such as Europe, and health insurance companies in North America (the United States and Canada), Europe, and Asia.

The survey questions focused on the following specific areas relating to the ORSA:

- Stress and scenario development processes
- Incentives, governance, and other behavioral aspects
- Evaluating the impact of the ORSA on a company's overall results
- Evaluating the level of buy-in of the ORSA within an organization
- Board involvement
- Implementation
- Challenges faced by companies in the ORSA process

This report highlights our key observations and findings from the survey results. We hope that our analysis will help companies around the world with incorporating the new regulatory ORSA requirements into their ERM frameworks and processes.

### Report structure

The body of the report is categorized into main sections that correspond to each of the specific areas outlined in the bullet point list above. At the beginning of each of these main sections there is a summary of the key findings relevant to that area, followed by a more detailed discussion of the survey results and our observations therein. Where applicable, results from the survey are presented in chart form, split across either geographical region or industry type.

### Profile of respondents

In total, 141 companies responded to the survey. This encompassed a reasonably even split across geographical region (North America, Europe, and Asia). Life companies represented 72% of respondents, while P&C companies represented 29% of respondents. The overall take rate (number of companies participating in the survey divided by the number of companies invited to participate) was approximately 28%, although this ratio varied considerably between geographical region and industry type. We note that the relatively small number of responses from health insurers (10 companies in all) limits our analysis somewhat for this sector.

As a result of the eventual geographical distribution of respondents, we grouped the United States and Canada together. Also, although our analysis of the survey results for Asian companies were split out by Japanese companies and non-Japanese companies, the results presented in this report group them together for simplicity. Where we deem necessary, however, we add specific commentary to distinguish key differences in survey results between Japanese companies and the rest of Asia.

In most jurisdictions, participating companies generally ranged on a spectrum from midsize insurance companies to large multinationals, with somewhat more of an emphasis toward the latter.

Survey responses were usually provided by the key ORSA contact at each company. In most cases, this person had a relatively senior role in the organization, responsible for enterprise risk management and/or regulatory initiatives.

### Milliman commentary

At the present time, it is clear that the ORSA is in varying stages of development across the globe. We note that there may be geographical, cultural, and/or regulatory reasons for certain differences in the application of the ORSA in different jurisdictions. For example, in Europe the preponderance of stresses on the valuation date in the ORSA is reflective of the Solvency II regulatory paradigm. Countries in Asia are most likely to follow Europe's lead, although the level of ORSA sophistication in Asia is relatively heterogeneous. We recognize that Japan in particular is more naturally grouped with Europe from a regulatory perspective and in terms of overall ORSA development. In the United States there is a cultural predilection (especially in the wake of the global financial crisis) for senior management compensation to be linked to tangible performance targets that include risk management objectives. This was evident in over half the U.S. companies surveyed. However, this contrasts very sharply with Asia, where risk management objectives are linked to performance targets in only 4% of companies surveyed.

Based on the survey results, there seem to be encouraging signs that the ORSA is already having a positive impact. For example:

- Over 80% of companies indicated that the ORSA is used (at least to some extent) in key strategic business decisions. A wide range of nonfinancial benefits was also cited, including better communication with various stakeholders, more informed strategic decision making, and improved risk culture.
- The ORSA appears to be assisting in bringing some companies up to a higher standard and creating a more level playing field from an enterprise risk management perspective, with 64% of companies indicating that it had already led to refinements to risk mitigation strategies and raising of minimum standards.
- The costs associated with the ORSA seem to be viewed by most companies (approximately 69%) as a very manageable element of their overall budgets. In addition, almost half of respondents indicated that the nonfinancial costs (such as tension arising from competing resources) were negligible.

The survey did also produce (in our opinion) some surprising observations, the most interesting of which we summarize below:

- Although almost all companies surveyed considered their ORSA implementation processes to be incomplete, a significant fraction (65%) indicated they will be fully fit-for-purpose within the next year. Somewhat counterintuitively, the U.S. and Canadian companies surveyed indicated that they consider less additional development is required, while at the same time no European company indicated that its process was fully complete, with Solvency II implementation now only months away.
- A significant portion of companies surveyed (around 30%) do not model management actions that might be pursued in adverse financial conditions when projecting future balance sheets and capital requirements. We contend, as a result, that it is less likely these companies will properly understand the extent of the impact from such conditions, because the absence of management actions will tend to lead to an overstatement of the adverse impact on the business.
- More than a third of companies surveyed did not engage in any formal review of the ORSA implementation process. In particular, European companies were least likely to have undertaken such a review, with approximately half of companies in the survey saying no independent review has been carried out. U.S. and Japanese companies appear more likely to get their ORSA processes evaluated by an external independent reviewer.
- Despite the fact that European requirements emphasize that ORSA is the responsibility of the board, there are a small percentage of cases in Europe where the board is not normally involved. In addition, awareness of the ORSA among key employees does not appear to be particularly strong, perhaps implying a disconnect between the board and management-level employees.
- The idea behind the ORSA is that it should be a (relatively) continuous process and not an annual point-in-time exercise. However, the data collected suggests that this is not how it is being viewed by a significant group of participants, regardless of both territory and industry.
- Many companies appear to use relatively simple methods to project future balance sheet and capital requirements in order to meet the prospective solvency assessment criterion under ORSA. The survey indicated only 23% of companies use proxy models (or more complex nested stochastic models) for this purpose, with the majority using factor-based or similar approaches, with projection of key risk drivers. This was particularly true of countries in Asia (excluding Japan), where deterministic projections are commonly used.

## INTRODUCTION

### Background and scope

The Own Risk and Solvency Assessment (ORSA) is quickly becoming a global regulatory requirement for insurance undertakings. It is one of the key elements of enterprise risk management (ERM), and numerous insurance regulators around the world are introducing ORSA requirements in their jurisdictions.

Many of these global developments stem from the International Association of Insurance Supervisors (IAIS), which requires an ORSA as part of Insurance Core Principle 16 (ICP 16) on ERM, which was adopted in October 2010. The inclusion of an ORSA requirement within the ICPs has resulted in an effective worldwide requirement for an ORSA, albeit one that can vary in certain respects from country to country.

In 2008, the National Association of Insurance Supervisors (NAIC) in the United States began its Solvency Modernization Initiative (SMI), placing U.S. solvency and regulatory standards in the context of international standards. The NAIC adopted an ORSA approach similar to the requirement in the ICPs as one of the main components of the SMI.

In 2012, the Office of the Superintendent of Financial Institutions (OSFI) in Canada published draft Guideline E-19, "Own Risk and Solvency Assessment," for consultation, following up with a final guideline in late 2013, with an implementation date of January 1, 2014. Many other jurisdictions are actively engaged in developing and implementing ORSA requirements, with European companies currently preparing for ORSA implementation in 2016.

There is a large degree of consistency between different jurisdictions in the goals of the ORSA requirements. In addition, while there are differences in some of the detailed requirements themselves, many of the challenges are common to all jurisdictions. This greatly enhances the ability of insurance (and reinsurance<sup>1</sup>) groups to apply similar techniques and methods across borders.

Almost all jurisdictions require that the ORSA process assess the insurer's overall solvency needs, that the process include a forward-looking assessment of solvency needs, and that the process and results are documented and communicated to the board and to the supervisor.

The Joint Risk Management Section of the Society of Actuaries (SOA), the Casualty Actuarial Society (CAS), and the Canadian Institute of Actuaries (CIA) issued a request for proposals to address ORSA process implementation for internal stakeholders. The request was written to give researchers a broad scope within which to formulate an approach to satisfy internal stakeholder needs. The Section Research Committee also expressed a desire for responses that are appropriate to all insurance industries.

Milliman was selected to perform this research and this report documents the work we have undertaken. A two-phase approach was proposed, with the first phase being a cross-discipline survey undertaken on a global basis. The second phase was the analysis and reporting of the findings from the survey results.

### Objectives

The objective of the research was to provide benchmarking information to help address the needs of internal stakeholders in the implementation of an ORSA process. Specific areas of focus included:

- Stress and scenario development processes
- Incentives, governance, and other behavioral aspects
- Evaluating the impact of the ORSA on a company's overall results
- Evaluating the level of buy-in of the ORSA within an organization
- Board involvement
- Implementation
- Challenges faced by companies in the ORSA process

---

<sup>1</sup> For the remainder of this report, reinsurance will be considered together with insurance, under the heading of insurance, unless explicitly stated otherwise.



## Survey methodology

Milliman assembled a large, international, and multidisciplinary research team spanning our life, health, and casualty practices and our offices in North America (United States and Canada), Europe, and Asia.

We formulated a survey addressing a number of topics in relation to ORSA (specifically those listed in the prior section) and sent it to companies across the globe late in the fourth quarter of 2014. The survey was sent to various types of insurance companies including life, property and casualty (P&C), often referred to as "non-life" or "general" insurers in territories such as Europe, and health. For each individual participant, one key contact was asked to coordinate the response from that company, taking input from various departments as required.

The survey contained a mixture of multiple-choice and open-ended questions.

Not all of the questions were answered by the respondents. Generally blank responses were excluded when analyzing the questions unless it was felt that the blank response was in some way worthy of comment.

Results were analyzed both by territory (Europe, Asia, and North America) and by line of business (life, P&C, and health). Some companies are active in more than one territory or line of business and, where this happened, responses were categorized by consideration of which territory or line of business was most dominant for that particular company.

Additional commentary on the results was included by line of business where experience is significantly different, taking into consideration the number of companies responding in each instance.

It should be noted that the inferences and conclusions that are outlined in this report are based on the results of the ORSA survey that we have conducted, and while we hope such commentary is helpful to the reader, we feel it is important to point out that they may not necessarily hold true generally for all companies or industries, or in all situations.

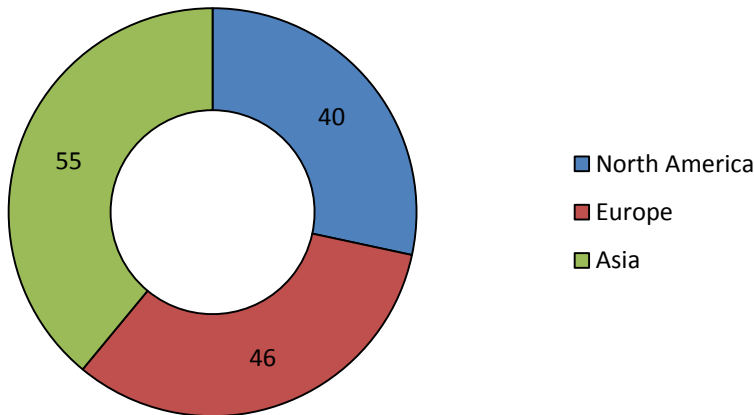
## PROFILE OF RESPONDENTS

### Profile

This section provides some analysis of the respondents to the survey in order to give some context when considering the messages emanating from the survey results.

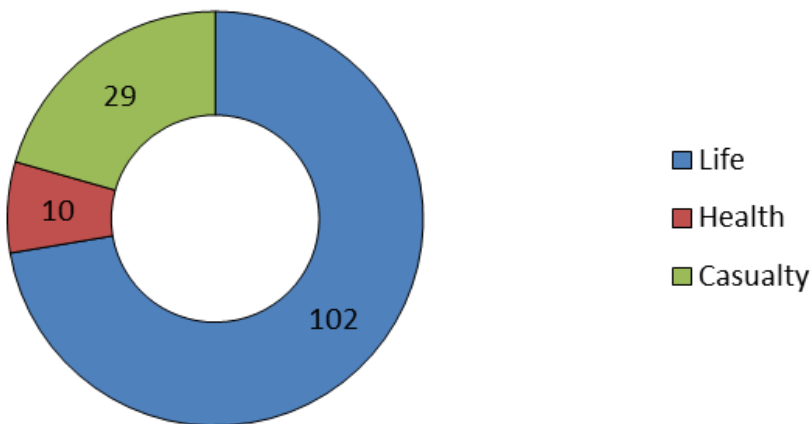
In total, 141 companies responded to the survey. The diagram in Figure 1 outlines the geographical spread of these respondents, which shows a reasonably even split across the three regions. Of the 55 companies in Asia, 25 companies are from Japan.

**Figure 1: Distribution by Geography**



The diagram in Figure 2 outlines the distribution of respondents by industry. Life companies represented 72% of respondents, while P&C companies represented 29% of responses. Given the relatively small number of responses from companies in the health sector, the ability to separately perform an analysis by industry was somewhat limited.

**Figure 2: Distribution by Industry**



## STRESS TEST AND SCENARIO DEVELOPMENT PROCESS

In the context of the ORSA process, as described in this report, a stress test represents the measurement of the sensitivity of some metric (such as economic capital, or one of its components) to variation in a key underlying assumption. A scenario, on the other hand, measures sensitivity to variation in a collection of (perhaps related) variables that have each been stressed in a consistent way.

Hence, a scenario will tend to capture diversification effects owing to the interaction between the key underlying assumptions, such that the impact of a given scenario will be less severe than that of the sum of the impacts owing to the stresses that have been applied to each individual assumption.

This section of the survey analyzed the processes used by companies to develop the stresses and scenarios contained in the ORSA, highlighting some interesting observations, as outlined in the following sections.

### Key findings

Nearly all companies (90% of those surveyed) stress market risk. Life, credit, spread, catastrophe, and liquidity risks are also very commonly stressed (as indicated by 50% to 70% of respondents, which is significant given that not all companies will be exposed to each of these risks).

Somewhat surprisingly, operational risk exposure is stressed by only 39% of companies, which indicates that there may still be some way to go in fully developing and understanding operational risk modeling techniques.

In all but 4% of companies, the chief risk officer (CRO) has some element of direct involvement in the determination of appropriate stress and scenario tests.

The survey responses demonstrated that there is a broad variety of ways in which companies derive appropriate stress and scenario tests, ranging from use of the risk appetite framework to replication of actual historical events to consultation with external experts or the regulator and other stakeholders, with no single approach universally the most popular across different territories.

There is wide variation in the number of stress tests that companies run as part of the ORSA, with fewer than five being the most common response. However, there is quite a range it seems, with a significant proportion (25%) of companies applying more than 10 stresses.

There are a number of possible approaches when it comes to the application of stresses to key variables, including the start date of the projection, applied evenly through time or at specific "pressure points," perhaps coinciding with significant events for the undertaking. The results of the survey reveal that approximately 40% of companies only apply stresses at the projection start date, with this approach more likely to be used in Europe than in other territories.

Over 70% of companies include management actions in their stress and scenario testing, or plan to do so in the future. However, this suggests that a large number of companies do not consider the management actions that would realistically be pursued should the adverse conditions they are testing actually materialize. As a result, it is less likely that they will come to properly understand the extent of the impact from such conditions, because the absence of management actions is likely, for the most part, to lead to an overstatement of the adverse impact on the business.

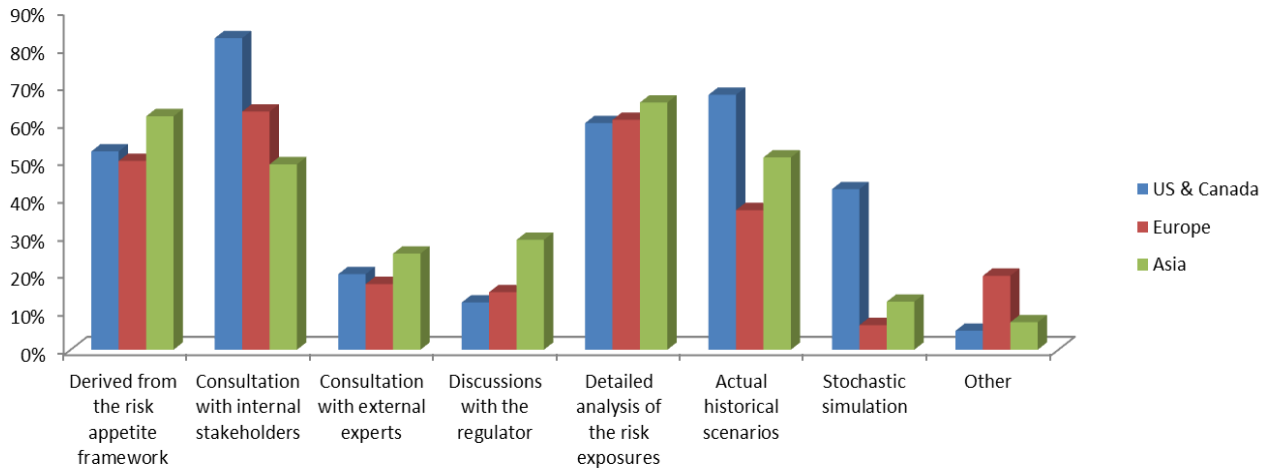
Groups tend to have a very significant influence on the ORSA process within subsidiaries, with 22% of respondents indicating that they have little or no ability to determine the most appropriate tests and 27% indicating that they have the ability to add only a limited number of customized tests. This feature was most prevalent for U.S. and Canadian companies and was less so in other territories.

### Derivation of stresses and scenarios

The derivation of a set of stress tests and scenarios that are appropriate to the nature, scale, and complexity of the business, as well as being sufficiently comprehensive to facilitate informed decision making about its strategic direction, is central to the ORSA process.

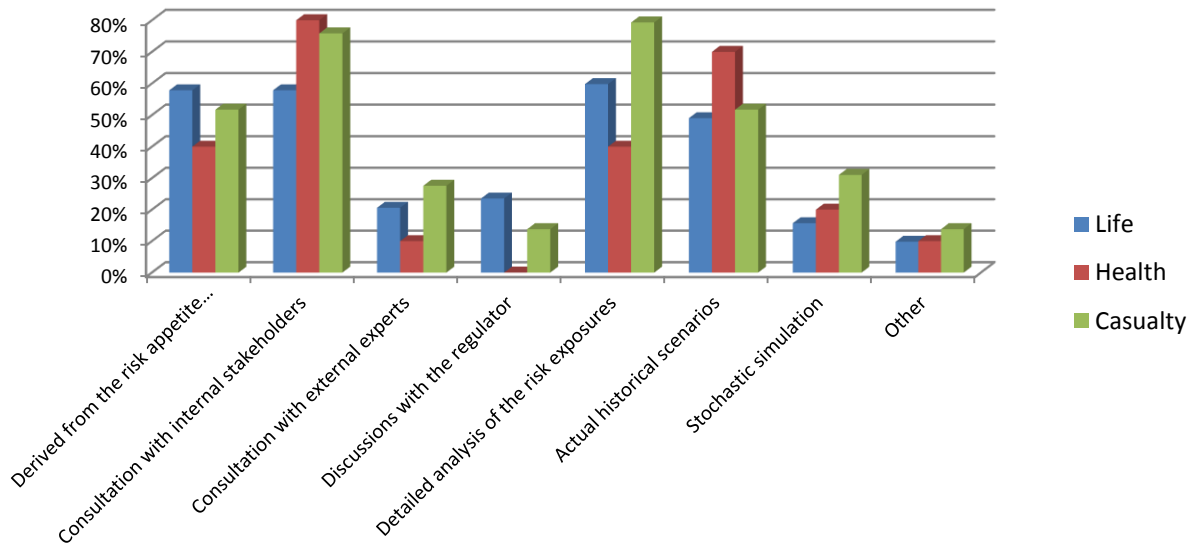
There is no right and wrong way to go about this derivation process. The graph in Figure 3 shows that the majority of companies surveyed combine a variety of approaches, with the spectrum of different approaches itself being quite broad. Discussions with regulators appear to play a greater role in Asia than in other territories. Companies in the United States and Canada are much more likely to derive stresses and scenarios from stochastic simulation than is the case in other territories, though for these same companies consultation with internal stakeholders is actually the most popular option.

**Figure 3: Derivation of Stresses and Scenarios**



It is interesting to note that the use of actual historical scenarios is among the more popular methods used in order to arrive at suitable stress and scenario tests. While there is no evidence that companies are using this approach in isolation, it is important that historical experience not be the main driver of assessments of the future, as this can lead to a distraction from understanding the true risk exposures of the business. The chart in Figure 4 illustrates that the practice of considering historical experience is more prevalent among health insurers, which is further underlined by the observation that the practice of using a detailed analysis of risk exposures appears to be less common among the health insurers relative to their life and P&C counterparts.

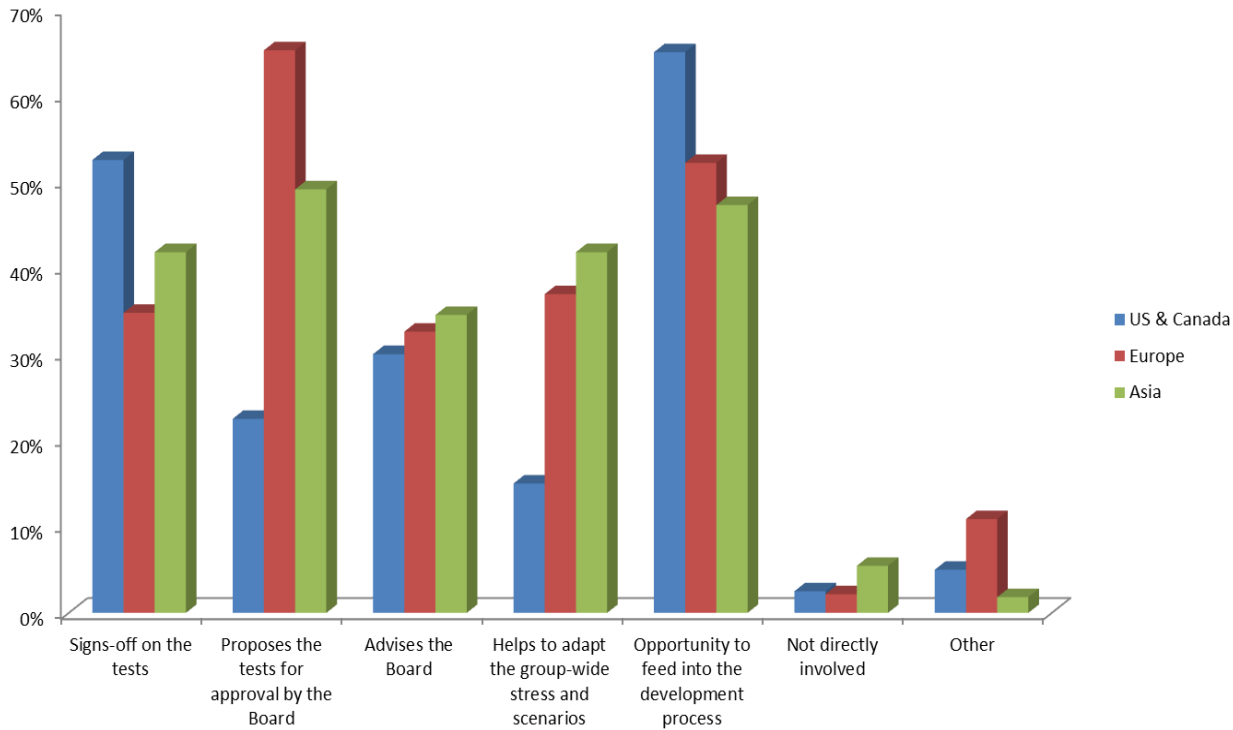
**Figure 4: Sources of Focus for Stress and Scenario Tests**



**Role of the CRO in the development of stresses and scenarios**

Generating the right set of stress and scenario tests to apply needs to be a collaborative effort among the stakeholders in the ORSA process. In the survey, participants were asked to focus on the role of the CRO in their companies and to choose (from a predefined list) the description closest to them. It is interesting to note that, in a small number of cases (4%), the CRO actually has no formal role in the stress and scenario generation process.

**Figure 5: Role of the CRO in the Development of Stresses and Scenarios**



There are a number of interesting insights to be gained from these responses, as shown in Figure 5. In Europe, for example, the board has responsibility for the selection of the stress and scenario tests to be applied, which is supported by the proportion of respondents noting the role of the CRO in proposing the tests for approval by the board. However, European participants also felt, in 35% of cases, that the CRO is actually providing the sign-off. It is unclear as to whether the cause of this is some form of delegated responsibility from the board, perhaps a joint sign-off from the board and the CRO, or a general lack of clarity on roles and responsibilities.

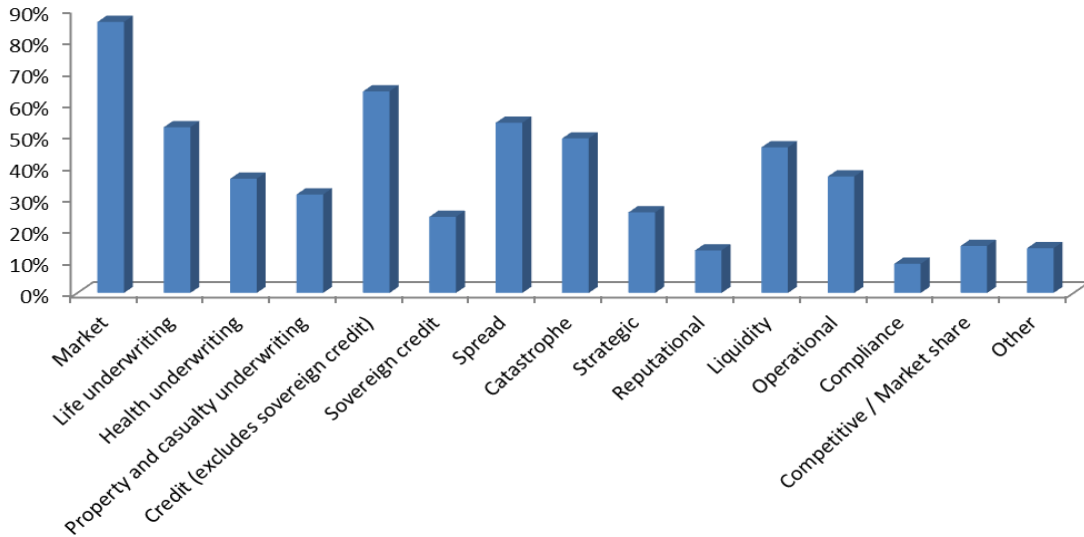
In Asia (excluding Japan), only half of CROs appear to have the opportunity to feed into the stress and scenario development process, based on the results of the survey, with only a slightly higher proportion applying in Europe and Japan. The proportion is much higher in the United States and Canada, indicating a much more hands-on role. On the whole, though, it is perhaps surprising that CROs have not managed to exert a greater influence in this key area of the ORSA process, where a deep understanding of the risk exposures of the undertaking is so important.

However, it is clear from these findings that the CRO has, in almost all cases, some direct involvement in the determination of appropriate stress and scenarios tests.

**Modeling of risks**

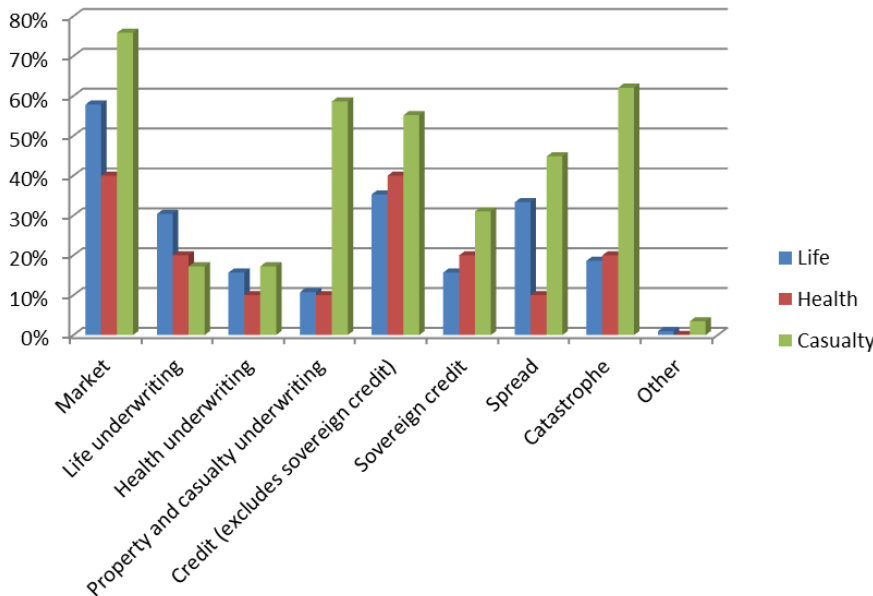
The survey results in Figure 6 show the risks that are subjected to specific deterministic stresses (or form part of adverse scenarios) as part of the ORSA process. Market, underwriting, and credit risks appear among the most commonly examined risks (noting that spread risk is considered separately from credit risk). Sovereign credit risk was most likely to be examined in Europe and Asia (particularly Japan), though the recent European sovereign debt crisis is likely to have been a significant contributing factor here. It appears that spread risk is more likely to be examined by life companies, which makes sense given that their liability profiles tend to be of a longer-term nature, while catastrophe risk is more likely to be examined by P&C companies, which again is in line with what one might expect.

**Figure 6: Which Risks Are Subjected to a Deterministic Stress Scenario?**



Many of the risks that are usually assessed deterministically may, in many cases, be assessed stochastically instead, or as a complementary piece of analysis. Similar to the case with the use of deterministic stresses, market risk is the most likely risk to be assessed stochastically, as shown in Figure 7.

**Figure 7: Which Risks Are Subjected to a Stochastic Stress Scenario?**

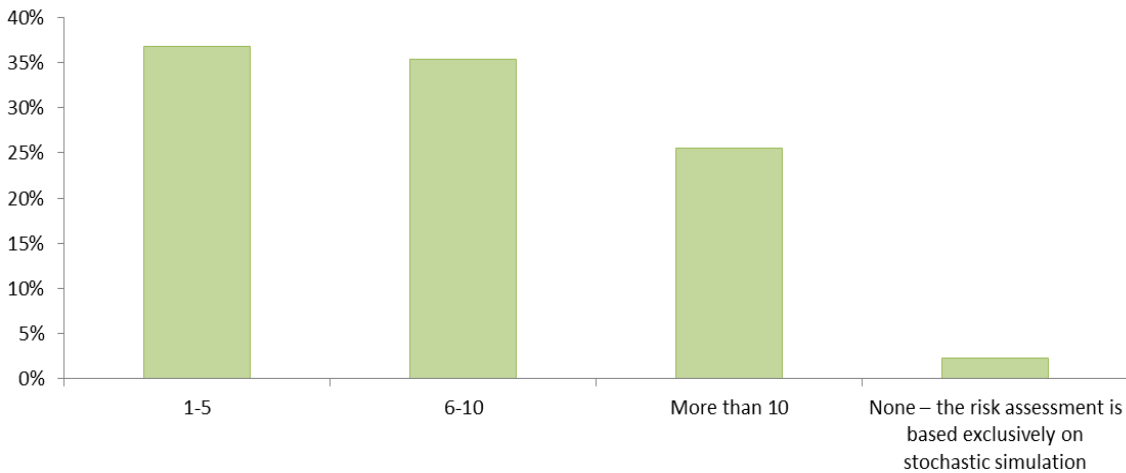


**Number of stresses and scenarios tested**

A common consideration in the ORSA process is the determination of the number of stresses that should be applied in order to adequately represent the risks underlying the business. In general, there is no specific guidance available. Instead, undertakings are encouraged to test their key risk exposures (or potential exposures, depending on their strategic plans), and it is the number of such exposures that eventually drives the overall stress and scenario count.

That being said, there is still a wide range in the number of stresses and scenarios that are actually tested. The survey revealed that in most instances, fewer than five tests were applied. However, at the other end of the scale, 25% of companies complete in excess of ten tests. The graph in Figure 8 shows the number of deterministic stresses typically applied.

**Figure 8: Number of Deterministic Stresses Applied**

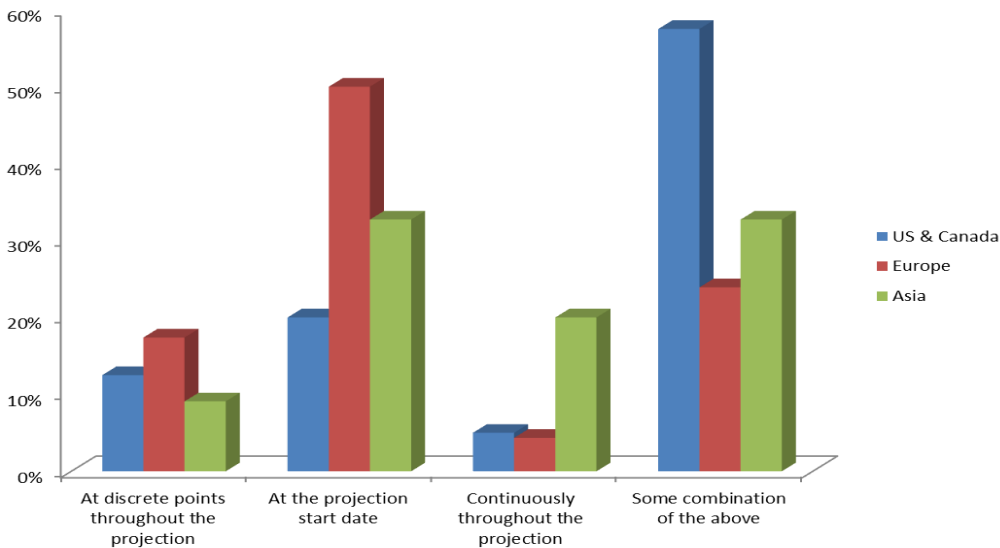


Looking into the results at a more granular level, P&C insurers were more likely to apply a larger number of stresses (more than ten) compared with the other industries studied. Similarly, U.S. and Canadian companies were more likely to use more than ten stresses than was the case with other territories, while almost 40% of both European and Asian companies choose to test fewer than five stresses or scenarios.

**Timing of application of stresses**

There are a number of possible approaches when it comes to the application of stresses to key variables. Possible choices are the start date of the projection, evenly through time, or at specific "pressure points," perhaps coinciding with significant events in the strategic business plan of the undertaking. The results of the survey reveal that approximately 40% of companies only apply stresses at the projection start date. This approach, which appears to be more likely to be used in Europe than in the other territories surveyed, simplifies some of the projection issues but does not capture evolving exposures or instances in which the risk profile of the company is changing over time (because of, for example, the evolution of the book of business).

**Figure 9: Timing of Application of Stresses**



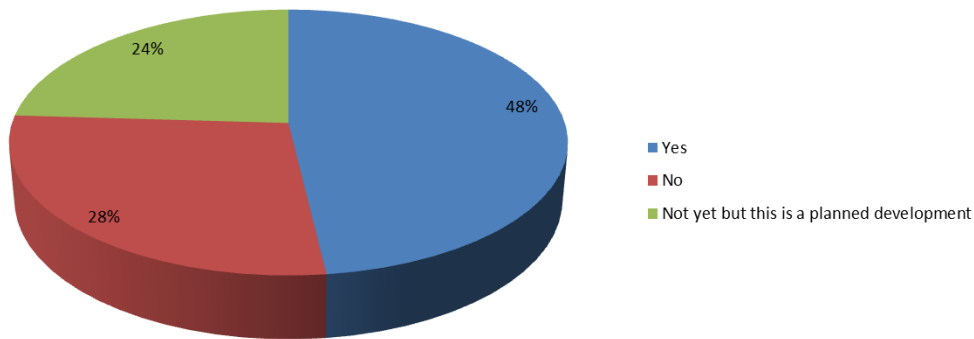
It remains to be seen if the ongoing implementation of Solvency II in Europe will push companies toward broadening their consideration of the appropriate times at which to apply stresses. In the United States, 60% of companies used some combination of approaches, as opposed to rigidly sticking with a single approach across all stresses.

**Management actions**

The inclusion of some element of management action, in response to the development of an adverse situation for the undertaking, is a sensible and informative way in which to complete ORSA projections. The diagram in Figure 10 shows that over 70% of companies include management actions in their stress and scenario testing (SST) or plan to do so in the future. This picture is reasonably consistent across both territory and industry.

Turning this around, though, does suggest that a significant proportion of companies do not seek to consider the management actions that would realistically be pursued if the adverse conditions they seek to test actually materialized. As a result, it is less likely that they will come to properly understand the extent of the impact from such conditions, because the absence of management actions is likely, for the most part, to lead to an overstatement of the adverse impact on the business. As ORSA becomes a more widely used and trusted management tool, it is likely that the proportion of companies reflecting management actions in their projections will continue to increase.

**Figure 10: Are Management Actions Included in SST?**



**Reverse stress testing**

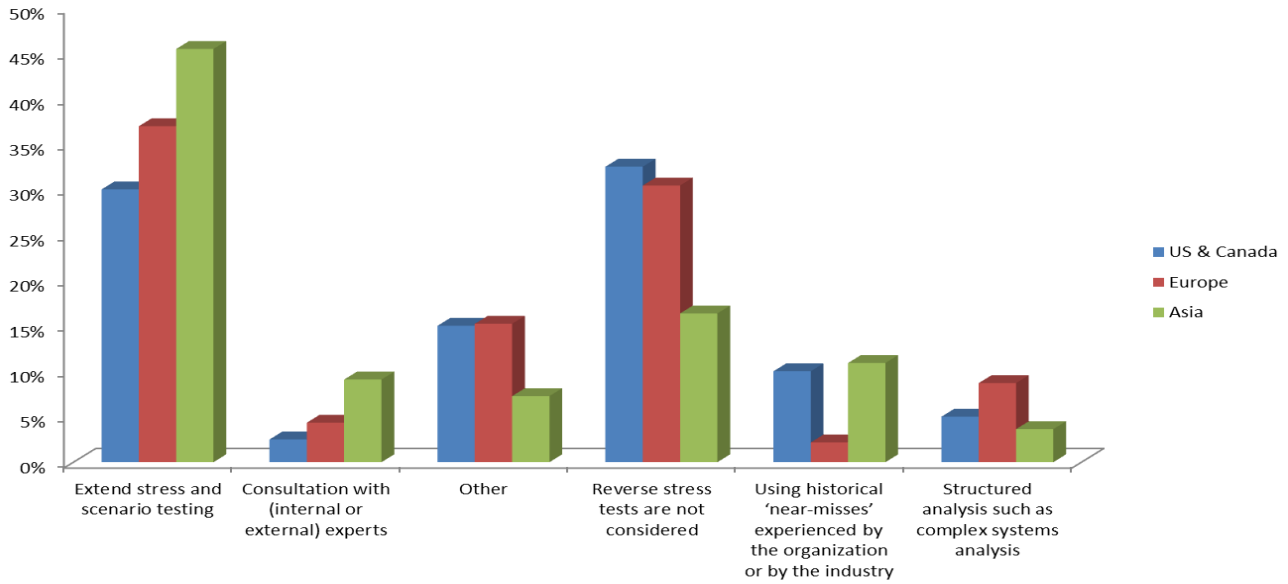
Reverse stress testing involves the identification of adverse stresses (or scenarios) that will lead to insolvency. The real value in such testing is to encourage management to "think the unthinkable" and come up with some event or combination of events—however unlikely they consider it to be—that would lead to ruin. However, in order to be of genuine value, the event also has to have some element of realism to it. Clearly, applying some impossible level of stress to a given variable just to produce an insolvency event, and in doing so tick a box from a compliance perspective, is of very limited or no value.

According to the survey, 27% of participants did not include reverse stress tests in the ORSA at all, and 40% adopted only a relatively simple approach for the construction of the test by simply extending existing stress and scenario testing. This indicates that reverse stress testing has yet to be fully recognized as a valuable source of insight into the business and the environment in which it operates.

It is also of interest that in some cases, such as in Europe—where reverse stress testing is explicitly required—it is still relatively common not to consider it at all. It is to be expected that the picture will change significantly in the near future, though, as regulators familiarize themselves more closely with the outcomes of the ORSA process.



**Figure 11: Construction of Reverse Stress Tests**

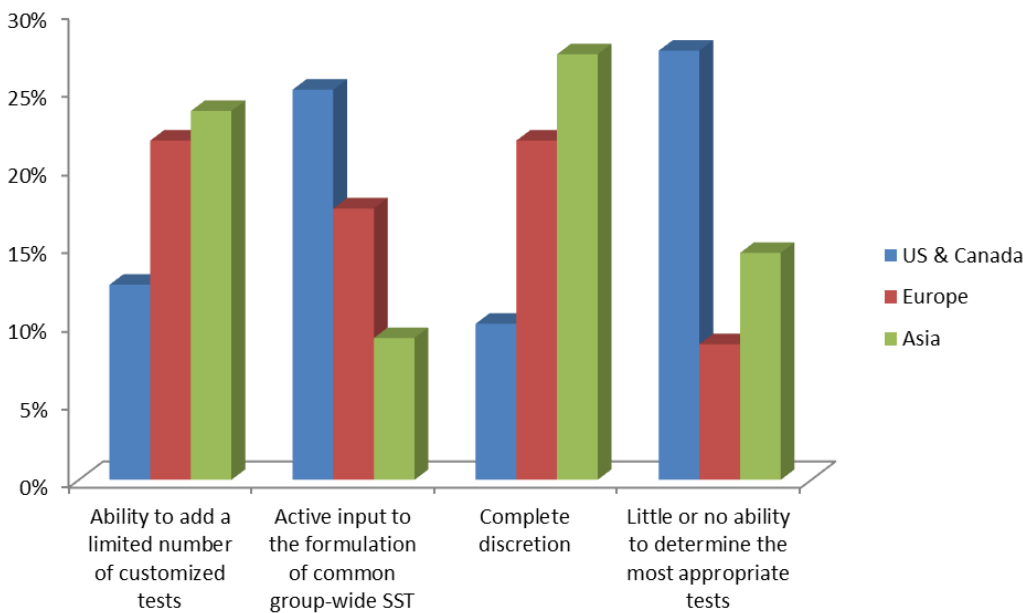


**Stress and scenario testing in a group context**

A key consideration for subsidiaries of large groups is the extent to which they have freedom to develop stress and scenario tests that are of particular relevance to the local undertaking. All too often, the stresses and scenarios most applicable for the group might not be the most relevant for the local entity, with the result that running them locally can ultimately lead to very little return for the resources used to complete the analysis. The diagram in Figure 12 shows that, perhaps unsurprisingly, groups tend to have a very significant influence on the ORSA process within subsidiaries, with 22% responding that they have little or no ability to determine the most appropriate tests and 27% indicating that they have the ability to add only a limited number of customized tests. This feature was most prevalent for U.S. and Canadian companies and was less so in other territories, which may be expected, given the greater group focus of the ORSA in the United States and Canada.

While it is, of course, important from the perspective of the group to have some element of standardization across various subsidiaries, it is equally important—from the perspective of those subsidiaries—that they have the freedom to produce an analysis that is genuinely useful to management in running the business and is consistent with the business plan.

**Figure 12: Degree of Freedom Regarding SST**



## INCENTIVES, GOVERNANCE, AND BEHAVIORAL ASPECTS

In this section the prime motivators for producing an ORSA are examined. We also consider how staff is incentivized to take part in the ORSA, with a focus on the type of review performed.

### Key findings

The primary motivation for undertaking an ORSA process is to improve risk management and regulatory compliance. Survey respondents from Europe cited regulatory compliance at 50%, but good risk management at 26%, whereas Asia has good risk management at 44%, but regulatory compliance at 28%.

When it comes to review of the ORSA process, 37% of respondents did not undertake any review, 36% had an internal review by an independent unit, and the remaining 27% had an external review, either by group or an outside consultant. However, European companies were least likely to have undertaken any review, with 51% citing no independent review of the ORSA process.

Training and education are very widely used to incentivize staff to participate in ERM. In the U.S., compensation is linked to performance targets that include risk management objectives in over half of companies surveyed. This contrasts very sharply with Asia, where risk management objectives are linked to performance targets in only 4% of companies.

Direction from the board or heads of departments is the most significant motivator for staff to participate in ERM, with this factor being strongest in Asia.

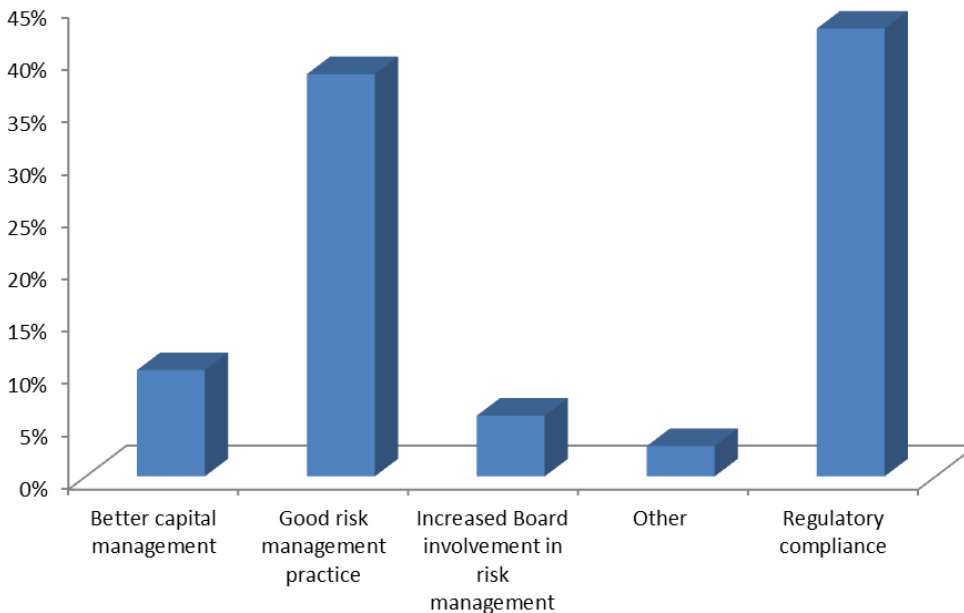
P&C companies find it hardest to motivate staff to participate, with 46% of P&C companies indicating that the best motivator was either constant reminders or board/department direction.

### Motivation for ORSA

Participants were asked what the primary motivation for undertaking an ORSA process was. The diagram in Figure 13 summarizes the results. It clearly shows that there are two distinct groups, the first whose primary motivation is to improve risk management and the second whose primary motivation is regulatory compliance.

However, these results did vary noticeably in some territories. For the United States and Asia, the results are very close for both of these groups. Europe, on the other hand, cited regulatory compliance at 50%, but good risk management at 26%, whereas companies in Asia cited good risk management at 44%, but regulatory compliance at 28%.

**Figure 13: Motivation for ORSA**



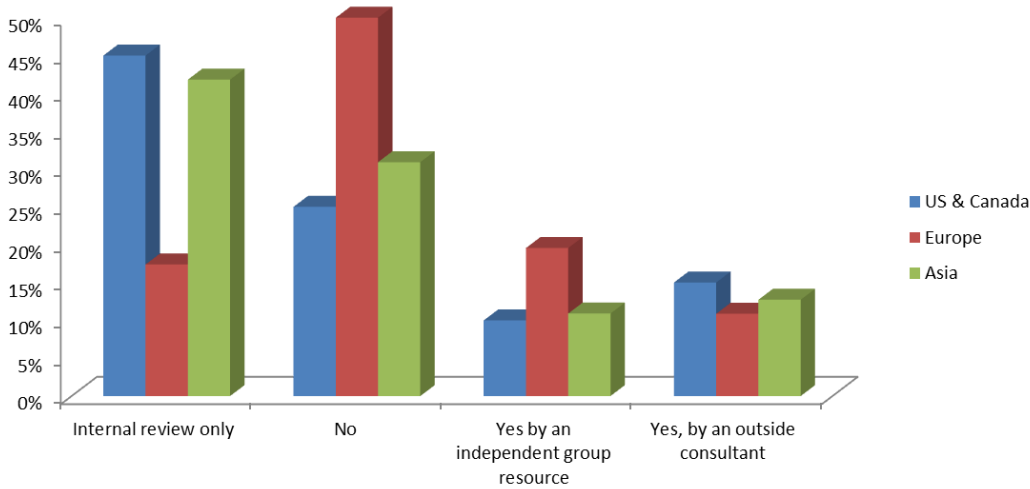
**Review of process**

Figures 14 and 15 summarize the extent of review of the ORSA process that is generally undertaken. In 37% of cases, respondents did not undertake any review, 36% had an internal review by an independent unit, and the remaining 27% had an external review, either by group or an outside consultant.

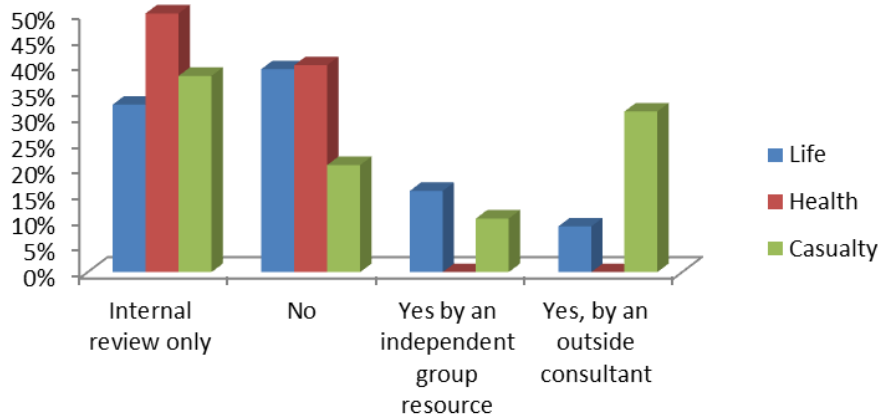
However, there was significant geographical and business sector variation in the answers provided. The European companies were least likely to have undertaken any review, with 51% citing no independent review of the ORSA process, relative to 24% for the United States. Also, Japanese companies appeared to be more likely to have independent external review of their ORSA processes than other countries in Asia.

P&C companies were more likely than the other sectors to have undertaken some form of review, with 31% of those companies commissioning a review by an external consultant, compared with 9% in life and none at all in health.

**Figure 14: Review of Process by Territory**



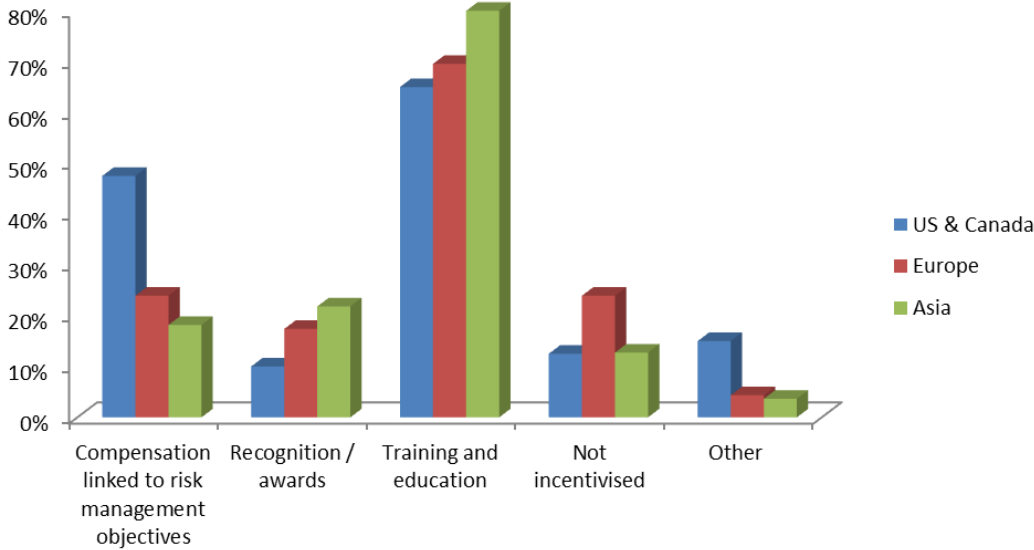
**Figure 15: Review of Process by Business Line**



**Incentivization**

Training and education are very widely used to incentivize staff to participate in ERM. Outside of training and education, the other levers are not widely employed, with one notable exception. This is in the United States, where compensation is linked to performance targets that include risk management objectives in over half (52%) of companies surveyed. This contrasts very sharply with Asia, where risk management objectives are linked to performance targets in only 4% of companies.

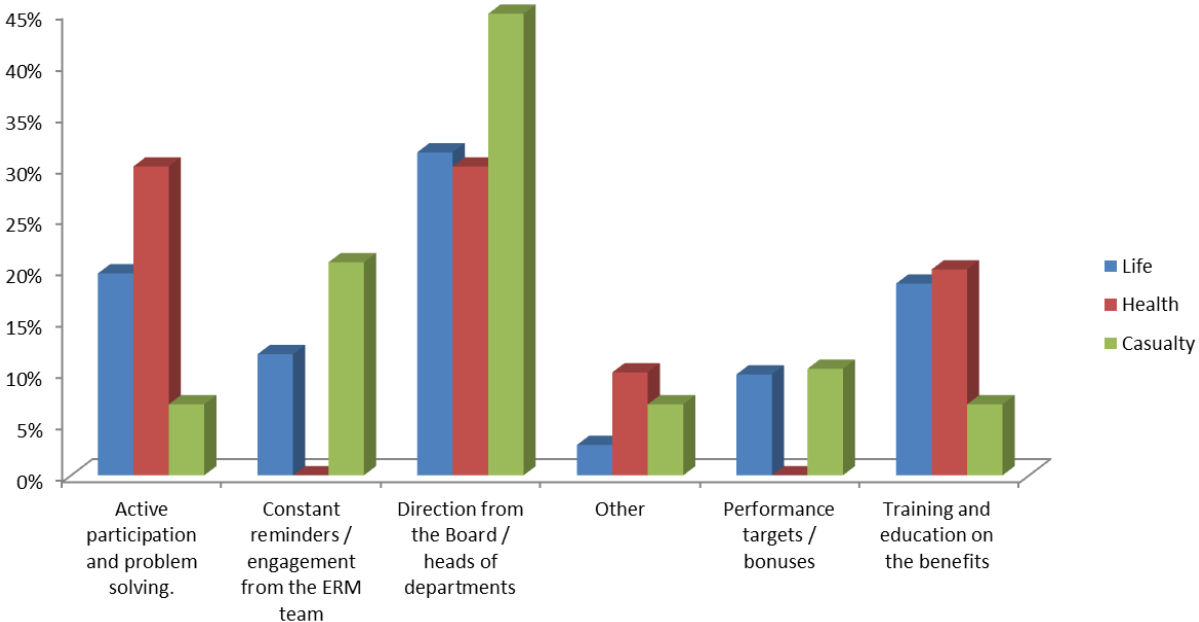
**Figure 16: Incentivization of Staff**



**Motivation**

Survey participants indicated that direction from the board or heads of departments is the most significant motivator for staff to participate in ERM, with this factor being strongest in Asia (52%), versus a 36% average. It appears that P&C companies find it harder to motivate staff to participate, with 46% of P&C companies indicating that the best motivator was either constant reminders or board/department direction.

**Figure 17: Best Motivation for Risk Management**



## EVALUATING THE IMPACT OF THE ORSA

The objective of this section of the survey was to evaluate the impact of the ORSA on companies: to understand where the ORSA had caused changes (if any), what the benefits of the ORSA are, what the costs are, and also whether companies are attempting to evaluate the impact themselves and if so how they are looking to do so.

### Key findings

The ORSA is at an early stage of development (particularly in the United States) and so it is accordingly difficult to form a view as to the impact it will have on companies. In responding to the survey, 78% of companies indicated that it was too early to say whether the ORSA was going to deliver the expected benefits. However, of those companies that had formed a view, the majority indicated that it had delivered the expected benefits and a wide range of nonfinancial benefits were cited. Therefore, the early signs are encouraging.

It appears that the ORSA is resulting in refinements to risk mitigation strategies, with 64% of companies indicating that it had already led to refinements or that changes were in progress. It also seems that the ORSA is leading to some raising of minimum standards, with 13% of companies not having previously had a formal process for assessing the adequacy of their capital to support their risks, and 23% of companies documenting their assessments of risk and capital for the first time as a result of the ORSA. Therefore, the ORSA appears to be assisting in bringing some companies up to a higher standard.

It also seems that the costs of the ORSA are manageable, with 69% of companies describing the costs as a “very manageable” element of their budgets and almost half of respondents indicating that the nonfinancial costs were negligible.

Approximately 20% of companies indicated that the ORSA resulted in significant changes to their processes for the assessment of capital adequacy, resulting in material changes to their assessments of the appropriate amounts of risk capital, with 67% of companies indicating that the ORSA resulted in minor or no changes. Similarly, 16% of companies indicated that the ORSA has led to significant changes in the internal allocation of capital, with a material impact on business strategy.

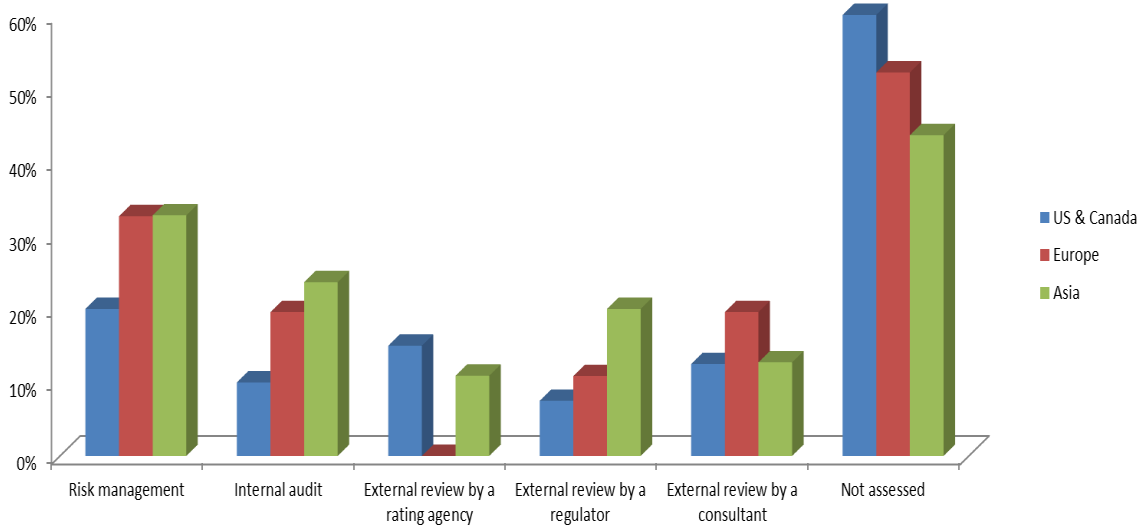
It appears that the ORSA has had less impact on views of capital in the United States and Canada. Only 3% of U.S. and Canadian companies indicated that it had led to significant changes in their processes for assessing capital adequacy, resulting in material changes to their assessments of the appropriate amount of risk capital, compared with 32% in Europe and 33% in Asia. Similarly, 66% of U.S. and Canadian companies indicated that the ORSA had led to no change to the way in which the company allocates capital internally, compared with 18% in Europe and 33% in Asia. It is difficult to know whether this relative lack of impact on capital in the United States and Canada is indicative of a higher standard prior to the introduction of ORSA requirements or of a certain mind-set regarding the process.

U.S. and Canadian companies were also more likely to indicate that less future development was required before the ORSA would be fully fit-for-purpose: 65% of U.S. and Canadian companies indicated that only minor changes or no changes were required in order to achieve this level, compared with only 40% of Asian companies and 51% of European companies.

### Evaluation of impact

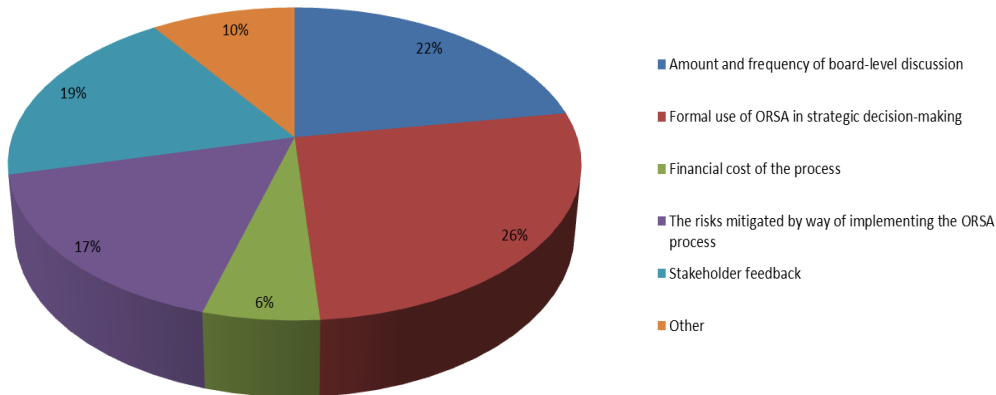
According to the survey, 51% of respondents have not evaluated the impact of the ORSA on the organization. Of those that have, there is a reasonable split between using risk management, internal audit, or external review by regulators, rating agencies, and consultants. Asian companies are more likely to have had the impact evaluated by regulators, U.S. and Canadian companies are more likely to have been evaluated by rating agencies, and European companies are more likely to have used an external consultant to evaluate the impact.

**Figure 18: Impact of ORSA Evaluated?**



For those companies where the impact of the ORSA has been evaluated, the metrics most commonly used are quite varied, as shown in the diagram in Figure 19. The results are reasonably consistent across both territory and industry.

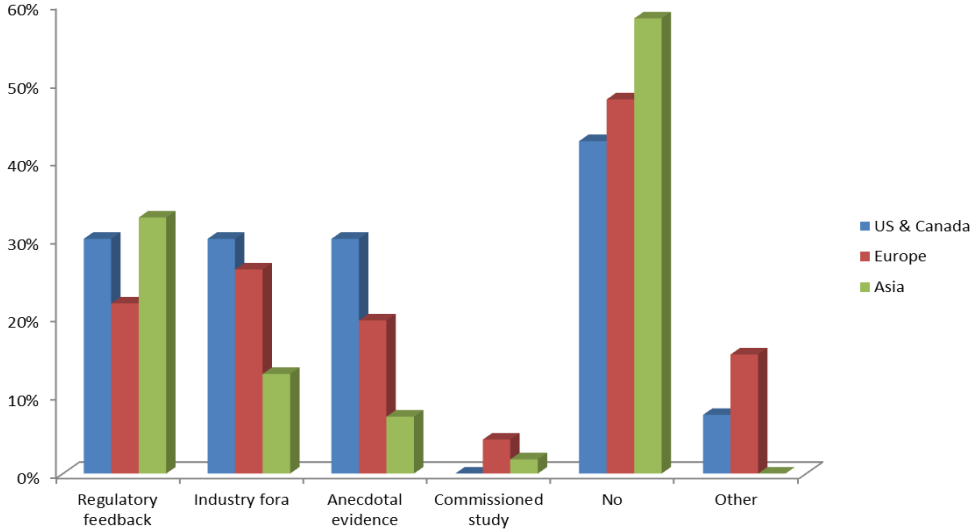
**Figure 19: Metrics Used in Evaluation**



### Benchmarking

Companies were asked whether they had benchmarked their processes against their peers, and if so, to outline how this was done. Just over 50% of companies had not benchmarked their processes. For those that had, a mixture of regulatory feedback, anecdotal evidence, and industry forums were the main methods used. Other than Japan, companies in Asia appear least likely to have benchmarked their processes, with only 42% having done so.

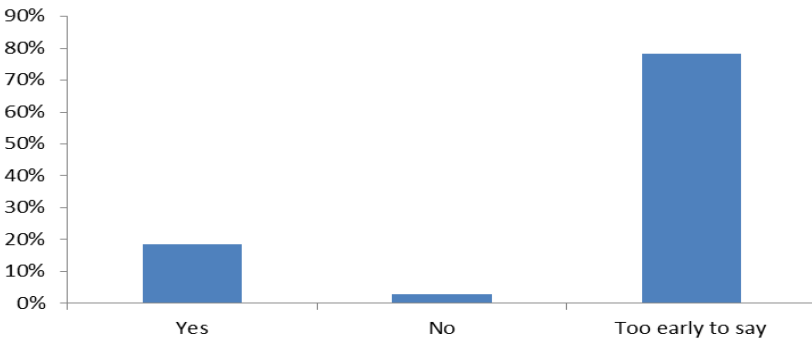
**Figure 20: Benchmarking Methods**



### Benefits

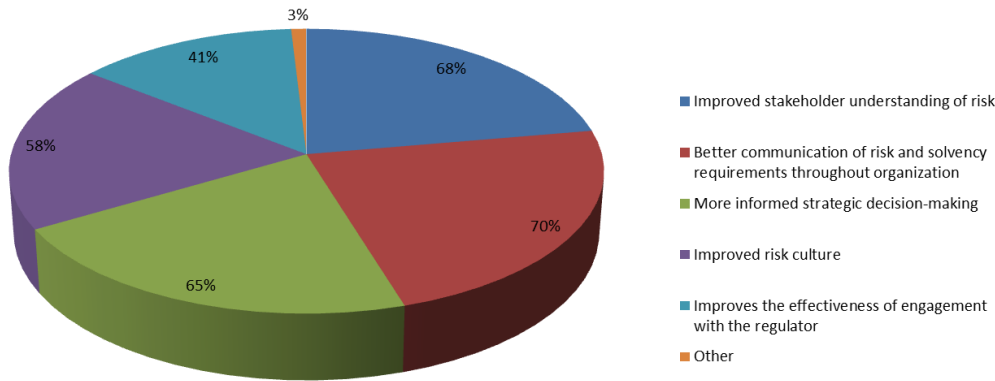
The survey queried whether the ORSA has delivered the benefits that stakeholders expected. The vast majority (78%) think it is too early to say, but the responses are mostly positive for those that have formed a view. Again, the results were reasonably consistent across both territory and industry.

**Figure 21: Expected Benefits Delivered**



The most frequently cited nonfinancial benefits of the ORSA relate to communication with various stakeholders, but also more informed strategic decision making and improved risk culture. Similar results were seen across industry and territory.

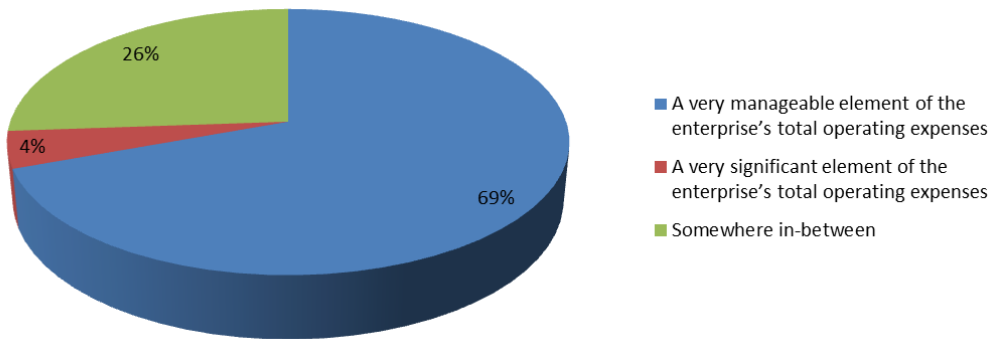
**Figure 22: Main Nonfinancial Benefits**



**Costs**

Most companies indicated that the cost of the ORSA was very manageable. Overall, 69% stated that it was “very manageable” and only 4% stated that it represented a very significant element of the company’s total operating expenses. Asian insurers were in the majority when indicating that the costs were significant, with only 60% indicating that it was very manageable. No P&C or health insurers thought that it represented a very significant element of total operating expenses.

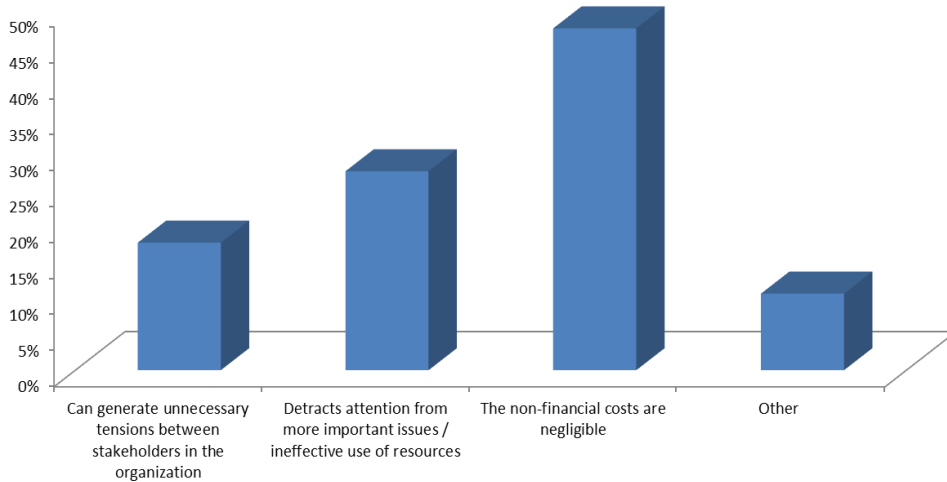
**Figure 23: Budget for ORSA**



The diagram in Figure 24 summarizes the main nonfinancial costs of the ORSA. Almost 50% of respondents indicated that the nonfinancial costs were negligible, but the other 50% indicated that there were nonfinancial costs, including generation of unnecessary tensions and detracting attention from more important issues. Ineffective use of resources was also mentioned in a significant number of cases. Life companies were most often the ones to state that the nonfinancial costs were negligible.



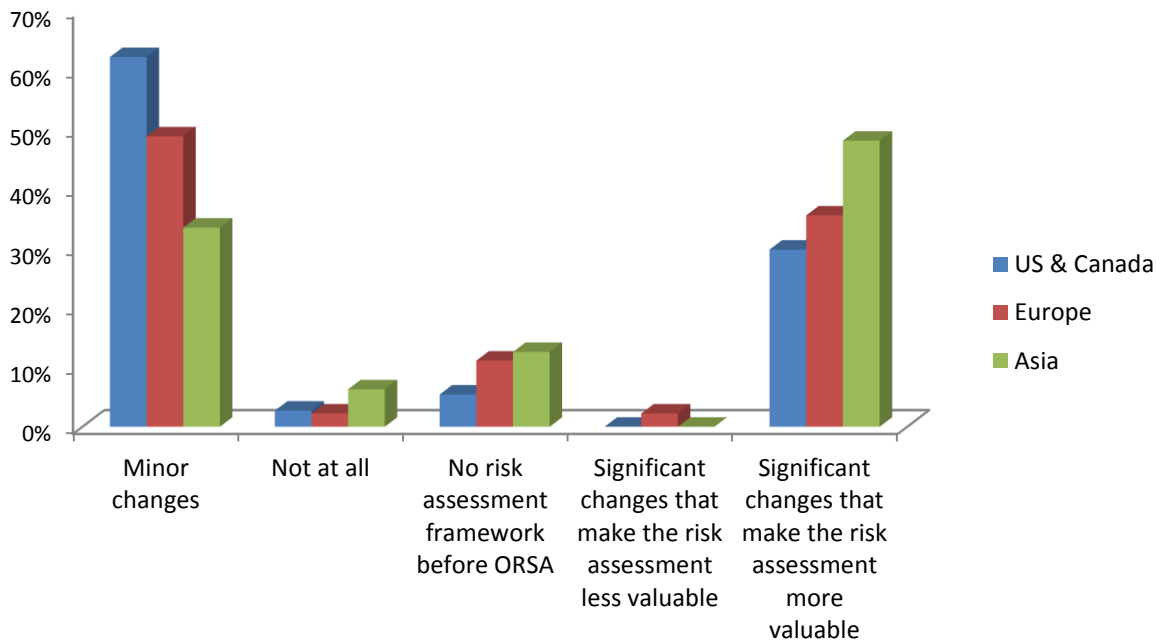
**Figure 24: Main Nonfinancial Costs**



**Changes resulting from ORSA**

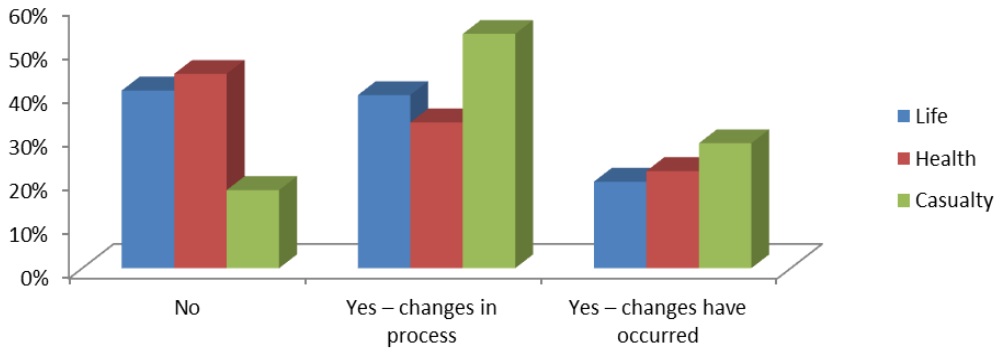
Companies generally indicated that either only minor changes were required to the process before it would be fully fit-for-purpose (46% of respondents) or that significant changes were needed, which would make the risk assessment more valuable (38% of respondents). Asia was the main territory where it was felt that there is a need for significant changes (48% of Asian respondents, with this being especially the case for Japanese insurers, where 62% felt that significant changes were required). The U.S. and Canadian companies were most likely to indicate that only minor changes were needed, with 62% of U.S. and Canadian respondents in this category.

**Figure 25: Changes Needed Before Fit-for-Purpose**



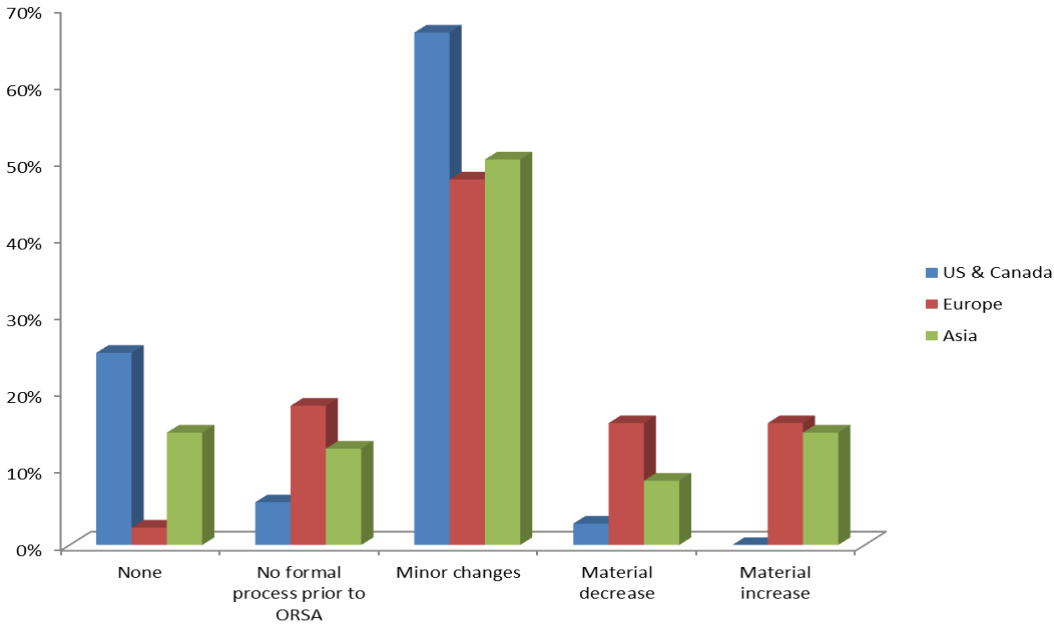
The survey also indicates that the ORSA has led to refinement of risk mitigation strategies for the majority of companies, with 64% of companies indicating that changes were either in process or had already occurred. Such refinement seemed to be particularly the case in countries in Asia outside of Japan, perhaps because Japan already had sophisticated strategies in place. P&C companies seem to have benefited most, with only 18% stating that the ORSA has not led to refinements.

**Figure 26: Has the ORSA Led to Refinements of Risk Mitigation Strategies?**



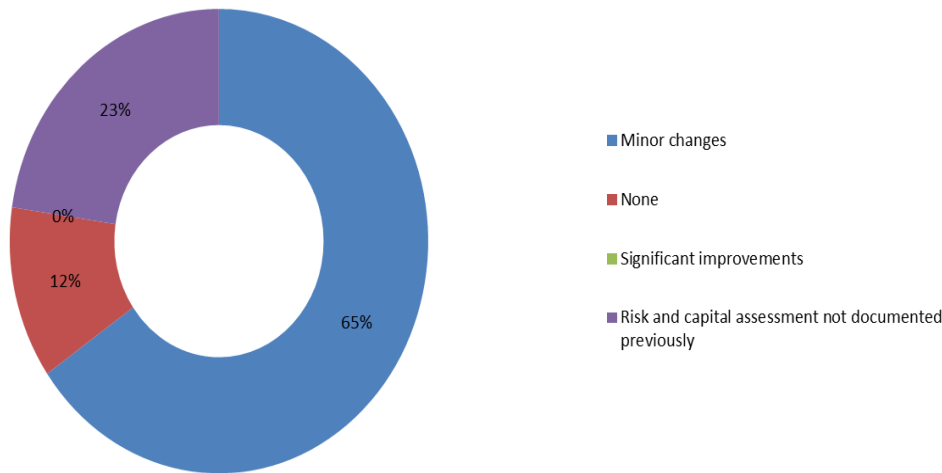
Most companies indicated that the ORSA has not led to changes in their processes for the assessments of capital adequacy, with 67% indicating no change or only minor changes. Only 11% of companies indicated that it led to a significant changes to the processes resulting in a material increase in their assessments of capital required. A similar figure of 9% indicated that it led to significant changes, resulting in material decreases. Companies in the United States appear more likely to have experienced no material impact, with only 3% indicating a significant change, compared with 32% in Europe and 33% in Asia.

**Figure 27: Changes to Assessment of Capital Adequacy**



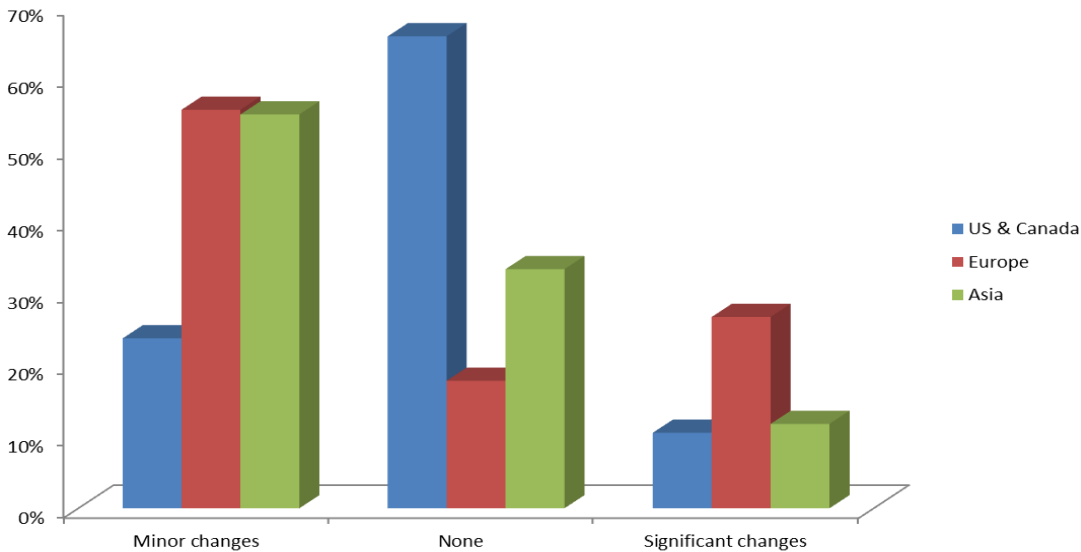
Similarly, most companies (77%) indicated minor or no changes to the documentation of their risk and capital assessments arising out of the ORSA. A significant proportion of companies had not previously documented this assessment, with 23% of companies doing so for the first time as part of the ORSA. Interestingly, no company thought that the process resulted in significant changes that made the documentation more valuable for management. These results were reasonably consistent across territory and industry.

**Figure 28: Changes to Documentation of Risk and Capital Assessment**



The majority of companies (84%) indicated that the ORSA had little or no impact on the internal allocations of capital, but 16% of companies indicated that it had a significant impact that had a material effect on business strategy. The companies that indicated a significant impact were most often European insurers, with 26% of those companies falling into this category, compared with approximately 10% in the United States and Canada and in Asia. European companies were also least likely to indicate no impact, with only 18% falling into this category compared with 66% of U.S. and Canadian companies.

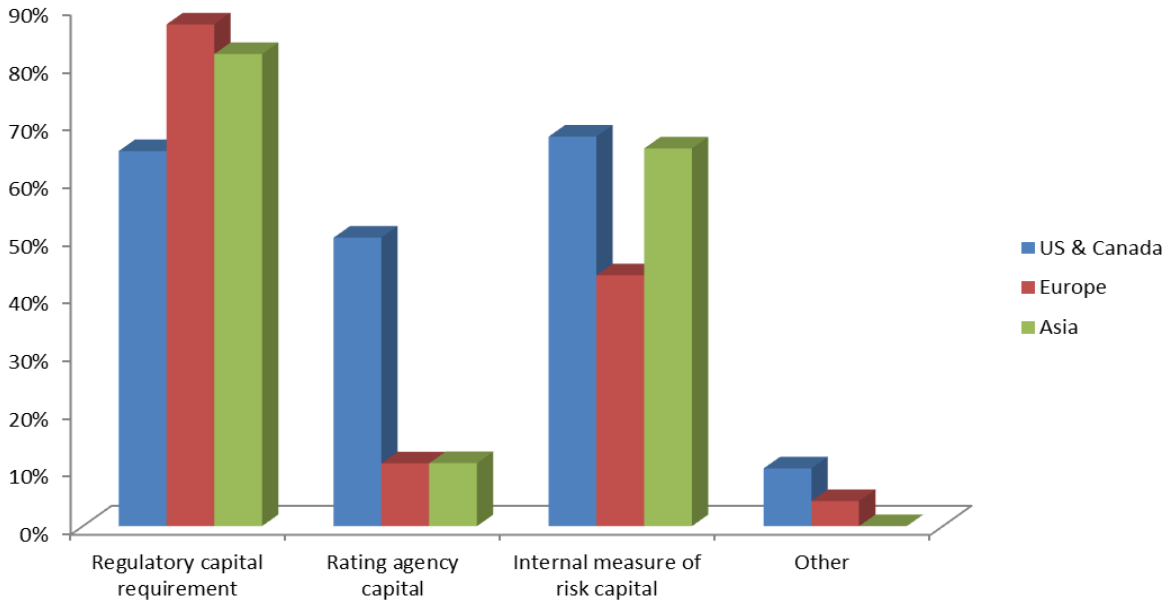
**Figure 29: Impact of ORSA on Internal Capital Allocation**



**Measurement**

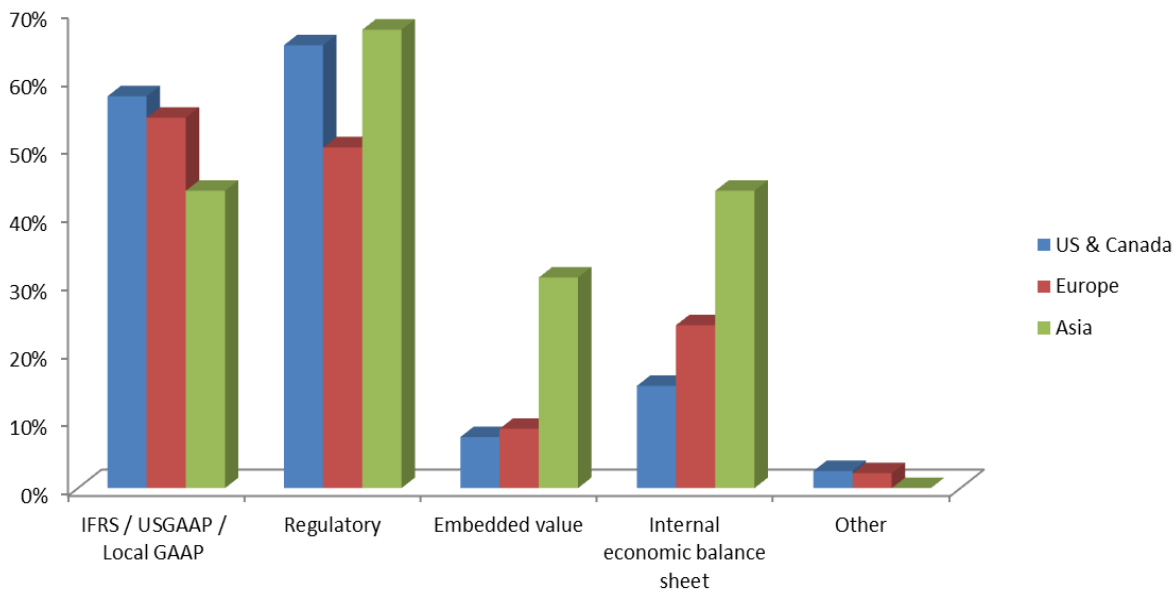
The survey asked what capital measure or measures were used in the ORSA process. The majority of companies examine both regulatory capital and an internal or rating agency view of capital, with 79% of respondents using regulatory capital and 81% using either rating agency capital or an internal measure of risk capital. Regulatory capital was more dominant in Europe and Asia, whereas the United States and Canada were more evenly spread between regulatory, rating agency, and internal measures and, in particular, were most likely to use rating agency capital.

**Figure 30: Capital Measure Used in ORSA**



The survey also asked what balance sheet was used in the ORSA. The regulatory balance sheet is the most commonly used, with financial reporting being second most common and internal economic balance sheet only used for 29% of companies. Asian companies appear to be more likely to use multiple measures, including the embedded value balance sheet or internal economic balance sheet, whereas U.S. and Canadian companies are least likely to use these additional measures.

**Figure 31: Balance Sheet Used**



## EVALUATING LEVEL OF BUY-IN WITHIN THE ORGANIZATION

With the appropriate level of buy-in at each level within the organization, the effectiveness of the ORSA process can be greatly enhanced. In the absence of adequate buy-in, though, the process can be reduced to being little more than a compliance exercise. Therefore, evaluating the overall level of buy-in is critical.

### Key findings

There appears to be a significant level of buy-in when it comes to the ORSA, with a combined 85% of the undertakings surveyed indicating that senior management and the board have a positive attitude toward it.

However, the survey also found that awareness of the ORSA among key employees is not particularly strong. In fact, 36% of companies characterized it as “poor” or “relatively poor,” with only 4% of companies characterizing it as “excellent.”

Over 80% of companies indicated that the ORSA is used to some extent in key strategic decisions, though the level of use does appear to vary quite a lot.

There is a wide variation in the amount of effort required to complete the ORSA, with the survey revealing that, on the one hand, 26% of companies require more than one person-year for the risk function to complete the process, while, on the other hand, 23% of companies indicated it requires less than three person-months.

The scale of resources devoted from outside the risk function is typically not that significant, with 72% of companies devoting less than six person-months.

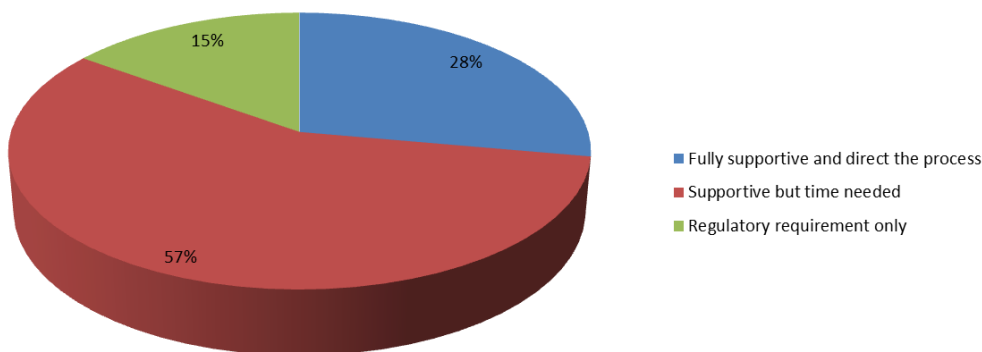
Having the right risk culture in the organization is key to embedding the ORSA process. However, the assessment of risk culture is not universal, with companies appearing to be quite evenly split between those that actively measure it and those not actively measuring it.

### Evaluating buy-in and embeddedness

The survey revealed that, in the majority of companies (57%), the board and senior management are supportive of the ORSA, but that it will take some time to embed the process and fully achieve the objective of the ORSA. It is, perhaps, somewhat surprising that this proportion is not a bit higher, given the potential usefulness of the ORSA. A significant proportion (28%) indicated that the ORSA is already achieving its goals in the organization, being fully supported by the board. However, the remainder (15%) indicated that ORSA is considered to be no more than a regulatory requirement with no significant impact on the company’s business. These results are consistent across industry and territory.

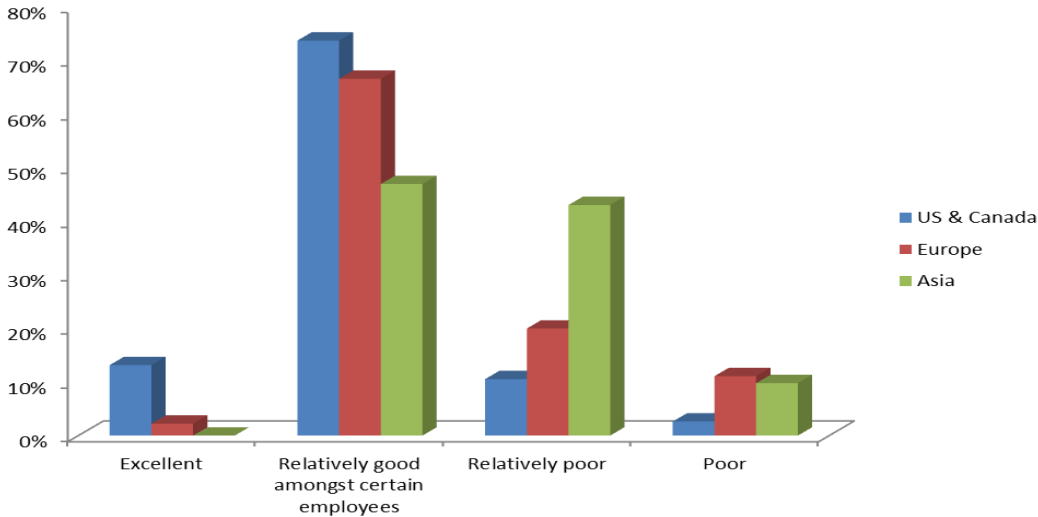
At an overall level, this is a very positive message, with a combined 85% of responses indicating that senior management and the board have a positive attitude toward the ORSA, which is a message that is echoed later on the use of ORSA in strategic decision making.

**Figure 32: Attitude of Board and Senior Management**



Somewhat surprisingly, though, awareness of the ORSA among key employees is not particularly strong. In fact, 36% of companies characterized it as “poor” or “relatively poor,” with only 4% of companies characterizing it as “excellent.” However, these figures vary considerably by territory (as seen in the chart in Figure 33), with 53% of Asian companies characterizing awareness as “poor” or “relatively poor,” compared with only 14% of U.S. and Canadian companies. P&C companies were more likely to characterize awareness as “relatively good” or “excellent,” with 79% of companies falling into these categories. It is possible that this might be more of a testament to the lack of awareness of the ORSA at different levels of the organization rather than at senior levels, where the presumption is that key individuals have been (and continue to be) exposed to the ORSA process and framework.

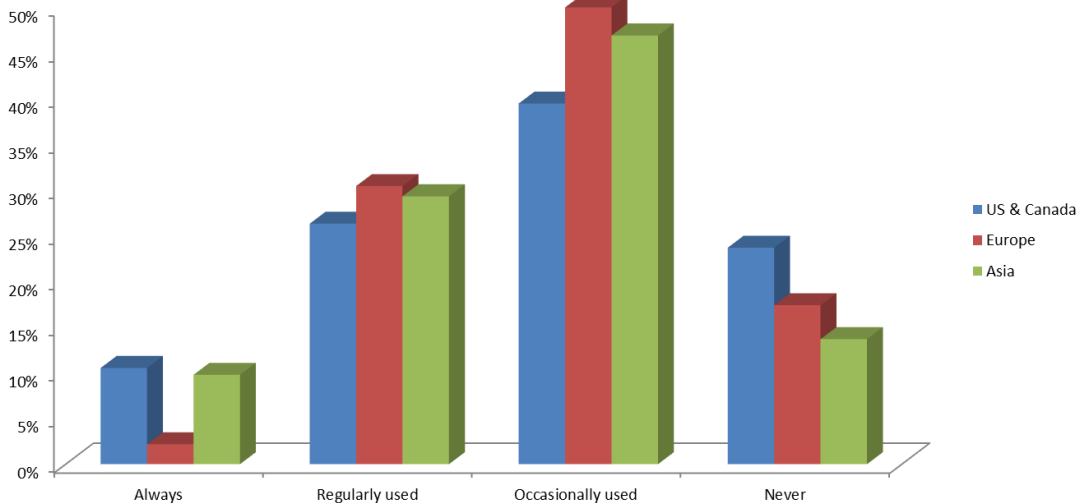
**Figure 33: Awareness of ORSA Across Key Employees**



Somewhat in contrast to this finding, the survey indicates a relatively wide range of use of the ORSA for key strategic decisions. In 34% of companies it is either always or at least regularly used. In 47% of cases it is used occasionally, while the remainder never use it. European companies are less likely to always use it, as the formal requirements associated with use of the ORSA have not yet fully come into force, but U.S. and Canadian companies are more likely to never use it at all (although we might expect that over the next few years the United States and Canada will continue to follow the example set by Europe). The results are reasonably consistent across the industries that were surveyed.

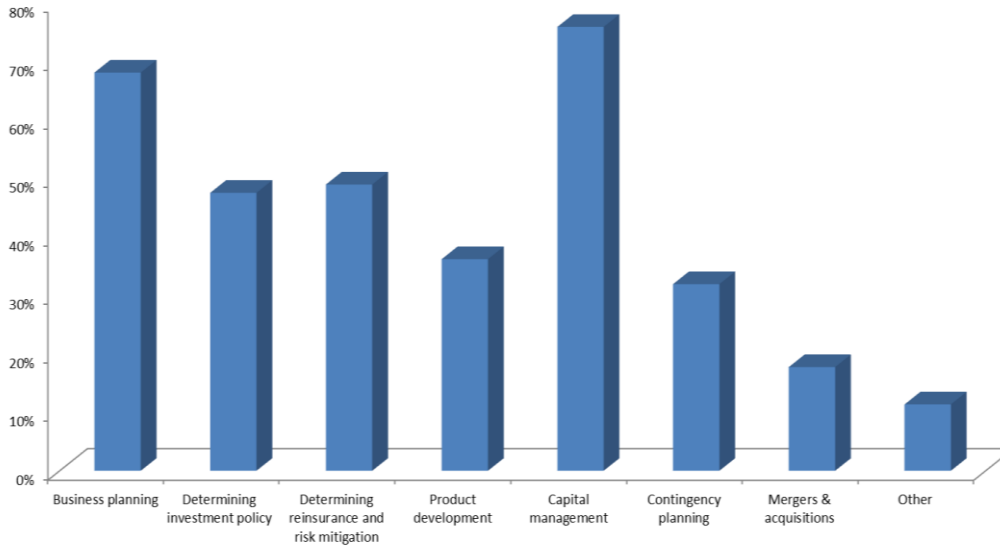
Overall, this represents over 80% of instances in which the ORSA feeds into strategic decision making, even if a number of key employees are unaware that this is the case. This may point toward a communication issue, or some disconnect between board and management levels in the organizations when it comes to ORSA, which may in turn limit the effectiveness of the ORSA process.

**Figure 34: How Often Is ORSA Used for Key Strategic Decisions?**



The ORSA is typically used in a number of different processes, with capital management and business planning being the most common. The results are reasonably consistent across industry and territory. The low percentage using it for mergers and acquisitions (M&A) is perhaps surprising, but may simply be indicative of a lack of M&A activity among the respondents to the survey rather than a lack of use of ORSA in this regard, per se.

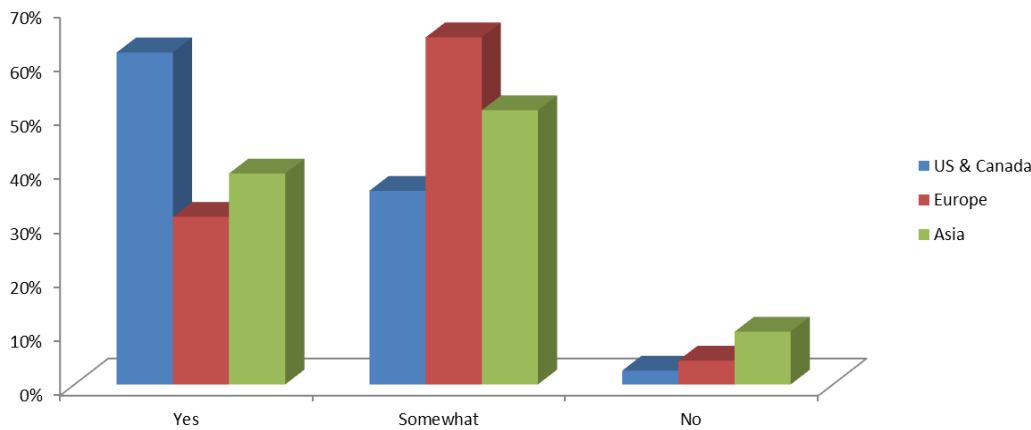
**Figure 35: Processes in Which the ORSA Is Used**



The spread of uses is an encouraging sign, indicating that the ORSA is becoming ever more embedded into the running of the business.

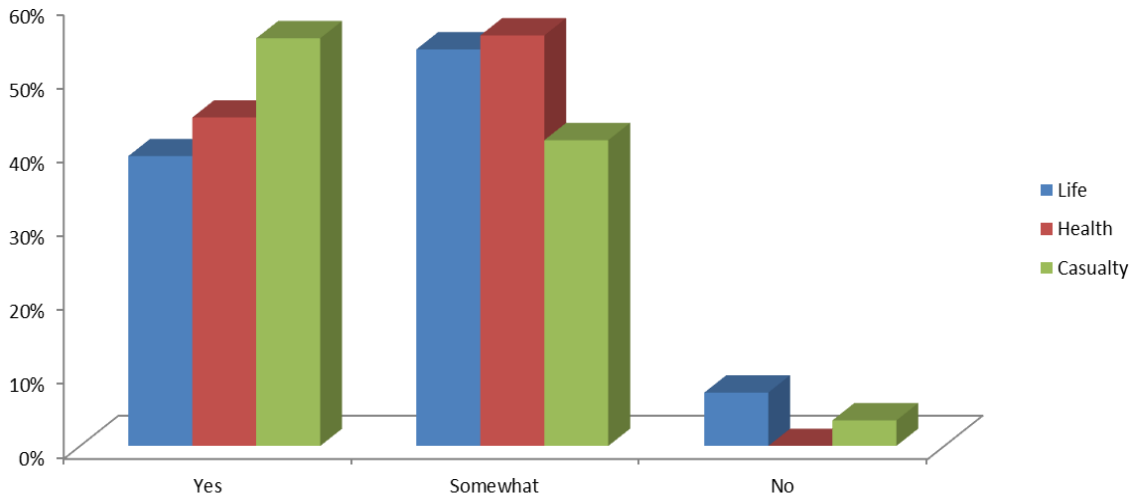
Participants were asked whether or not risk management analysis is sufficiently up-to-date to allow decision making to benefit from the risk management perspective offered by the ORSA. Companies in the United States and Canada were slightly more definitive than the rest on this one, with 62% responding positively without qualification, compared with 39% in Asia and 31% in Europe.

**Figure 36: Does Risk Management Analysis Provide Sufficiently Up-to-Date Information to Allow Decision Making to Benefit?**



Similarly, P&C insurers were more likely to respond positively without qualification than was the case with life or health insurers. It is a little surprising, though, that, across both territory and industry, there is a very significant group of market participants that consider the risk management information provided by the ORSA to not be sufficiently up-to-date. Perhaps this indicates that these undertakings are dealing with a very fast-moving, dynamic risk environment, and that anything other than daily or weekly analyses are insufficient. However, it may also indicate that an annual cycle of the ORSA is just too long a time horizon, such that things have moved on too far before the next analysis is completed for the ORSA to continue to be useful throughout the whole year. The idea behind the ORSA in all territories is that it should be a (relatively) continuous process and not an annual point-in-time exercise. However, the data collected suggests that this is not how it is being viewed by a significant group of participants, regardless of both territory and industry.

**Figure 37: Does Risk Management Analysis Provide Sufficiently Up-to-Date Information to Allow Decision Making to Benefit?**



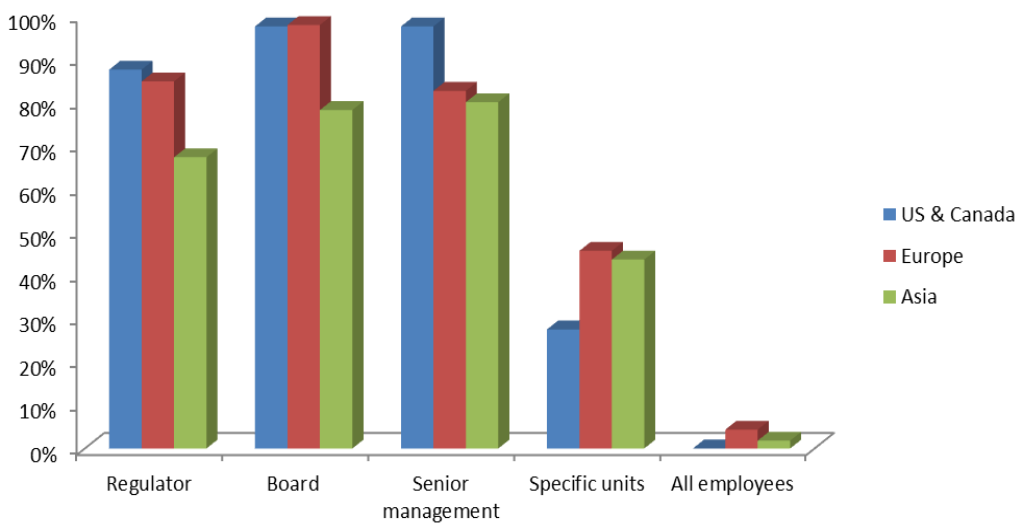
**Communication and training**

The vast majority of companies communicate the results of the ORSA to the board, senior management, and the regulator. Only 40% of companies report the results to other specific units, which perhaps indicates the degree to which the process is embedded in the company.

When compared with the outcome to the earlier question concerning the awareness of the ORSA among key employees, there is a slight inconsistency here. While it is apparent that results are being communicated by those with responsibility for performing the ORSA process, the outcome of the survey suggests that certain key employees may not be fully receiving or understanding the key messages such that they feel that they are fully aware of the process.

Companies in Asia were less likely to communicate the results to the regulator, the board, or senior management. Conversely companies in the United States and Canada were less likely to communicate the results to other specific units. Life companies were much more likely to communicate results to specific units, with 48% of life companies doing so compared with only 10% of health companies and 21% of P&C companies.

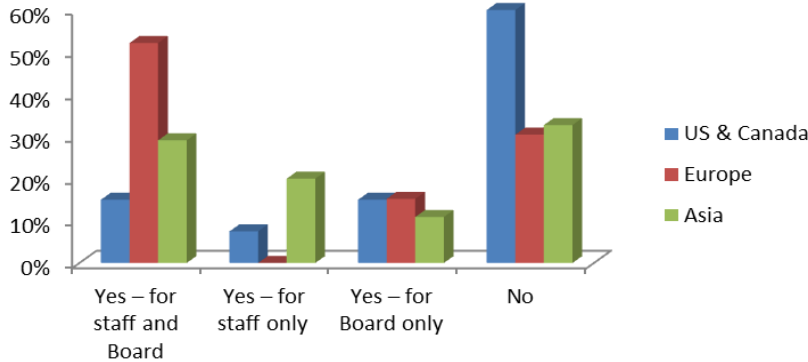
**Figure 38: Communication of Results**





A useful aid when it comes to the communication of the outcome of the ORSA is to have a suitable training program in place, in order to provide appropriate background such that the results of the process can be properly understood. In 59% of the companies surveyed, a training program was reported to be in place. Of these, in most instances this program covers both staff and board level. However, this also means that 41% of companies do not have a training program of any sort in place. This finding varies significantly by territory, though, with European companies much more likely to have a program and U.S. and Canadian companies much more likely not to have any program.

**Figure 39: Training Program**

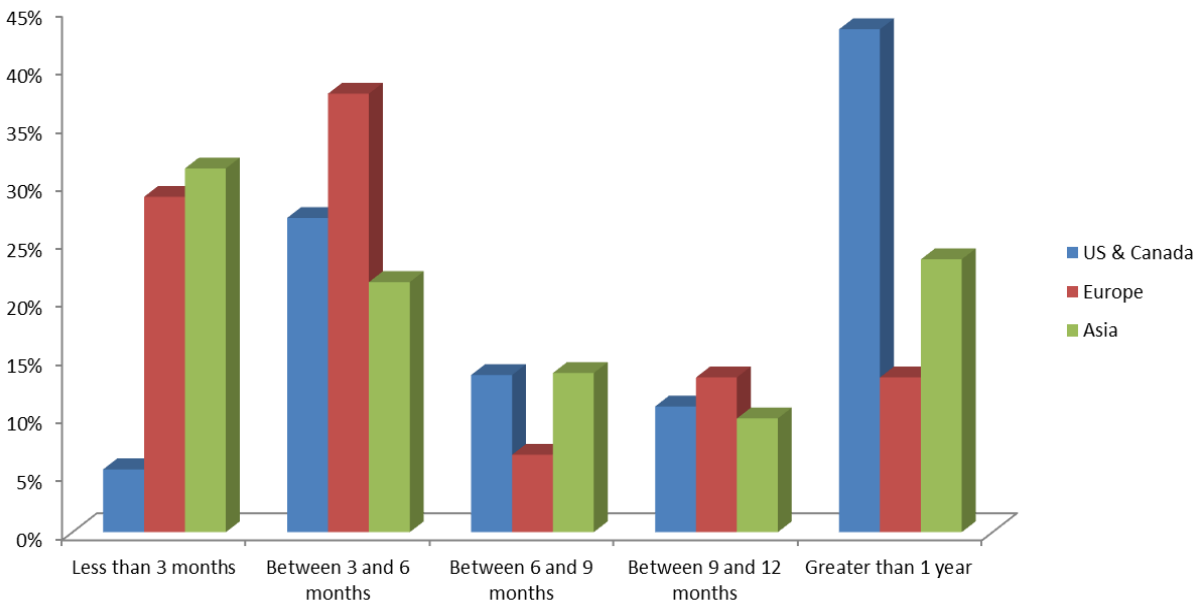


**Resources**

Depending on key factors such as the risk profile of the undertaking, its business environment, its state of development, and the level of automation of systems and processes, there can be quite a wide range in the number of person-months required for the risk function in relation to the ORSA process. Of course, it is worth noting that there can also be different interpretations as to what is included in the ORSA process.

The survey revealed that 26% of companies require more than one person-year for the risk function to complete the process. On the other hand, 23% of companies indicated it requires less than three person-months. U.S. and Canadian companies appear to devote more resources to the process, with 43% of U.S. and Canadian companies devoting more than one person-year to the process, whereas only 13% of European and 23% of Asian companies dedicate as much. The results across industry were relatively consistent. The scale of resources will vary with the scale and complexity of company and it is possible that the additional resources in the United States and Canada reflect larger or more complex companies than in the other territories.

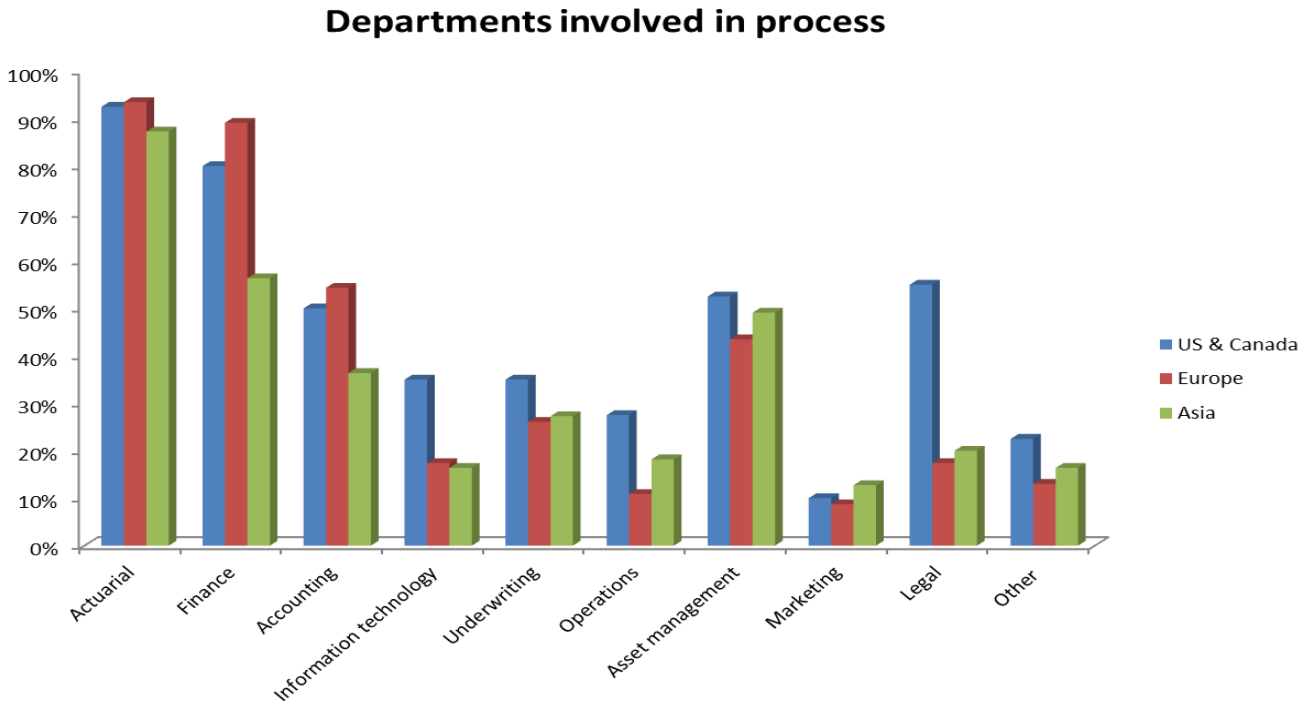
**Figure 40: Number of Person-Months Required for Risk Function**



Most companies involve a range of departments in the process, with actuarial, finance, accounting, and asset management typically involved. U.S. and Canadian companies are more likely to also involve the legal department, with 55% of those companies doing so compared with only 17% of European companies or 20% of Asian companies. The results across industry are relatively consistent.

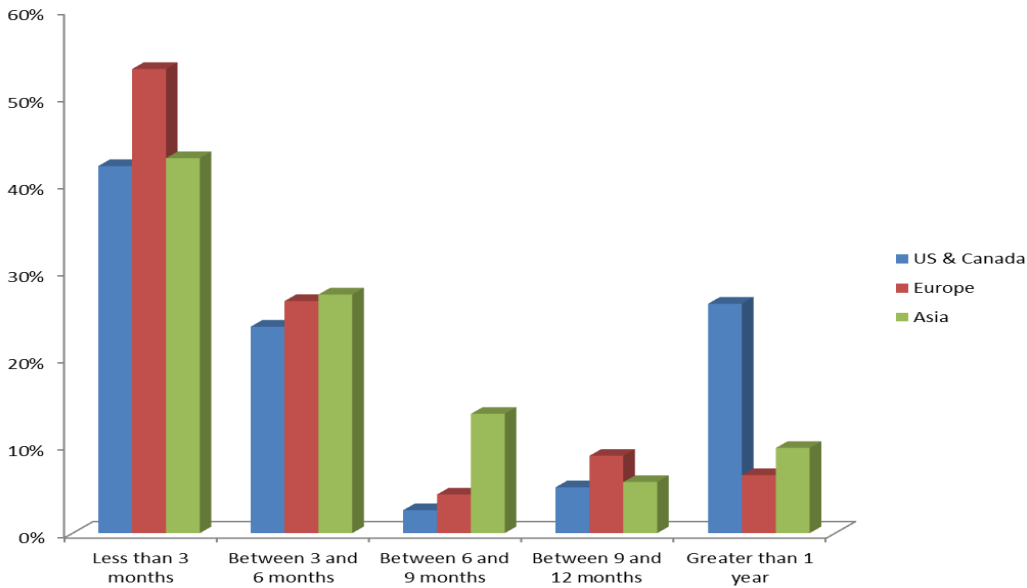
Overall, this finding indicates that the ORSA process is becoming embedded into organizations, because of the level of cross-departmental cooperation required in order to complete it, although there appears to be some way to go yet, as evidenced by the scale of involvement (in person-months) from other areas.

**Figure 41: Departments Involved in Process**



The scale of resources devoted from outside the risk function is typically not that significant, with 72% of companies devoting less than six person-months. Again, U.S. and Canadian companies are more likely to devote more resources from outside of the risk function, with 26% devoting more than one person-year from departments outside of the risk function, compared with only 7% of European companies and 10% of Asian companies.

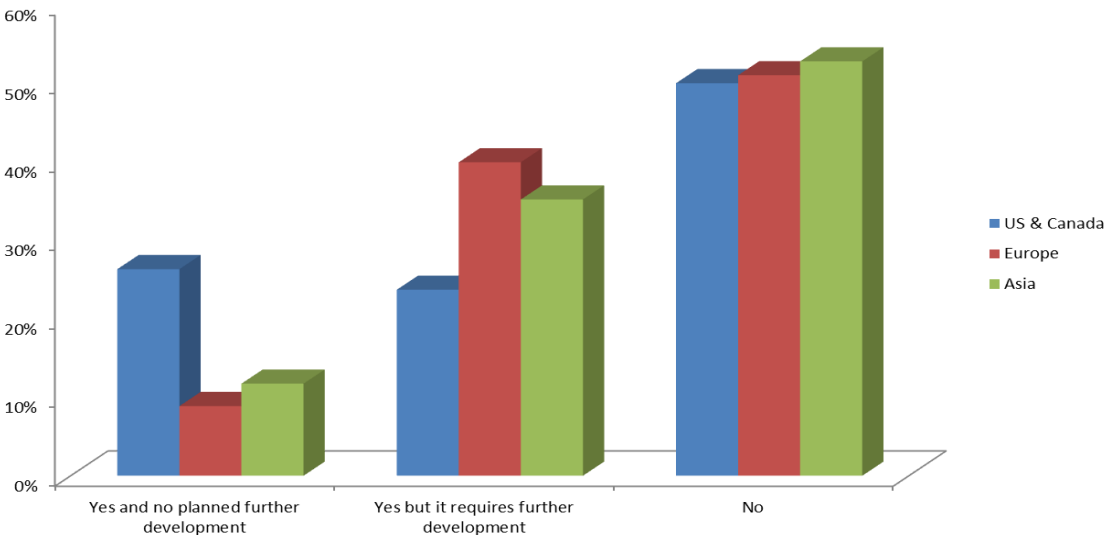
**Figure 42: Person-Months Dedicated to Process**



**Risk culture**

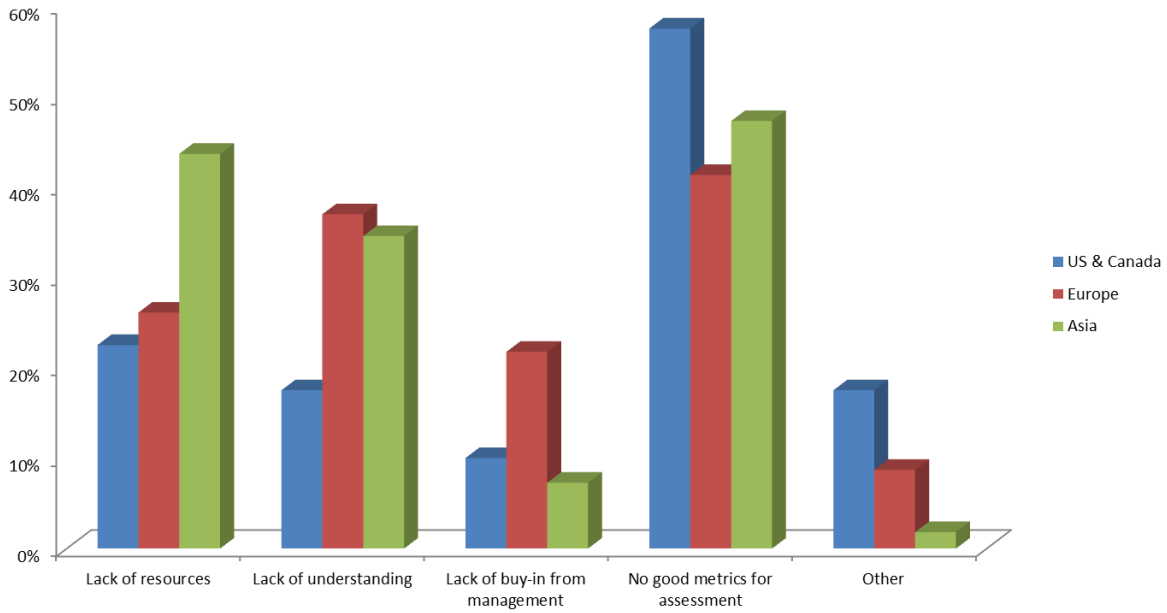
Having the right risk culture in the organization is key to embedding the ORSA process. However, the assessment of risk culture is not universal, and so it may not be possible to use risk culture as an indicator of the likely level of buy-in among key stakeholders. Companies appear to be quite evenly split when it comes to the assessment of risk culture, with approximately 50% of companies doing so and 50% not actively measuring it. This picture is relatively consistent across territory and industry, but U.S. and Canadian companies are perhaps slightly ahead in that 26% of U.S. and Canadian companies do not plan any further development, whereas only 9% of European and 12% of Asian companies fall into this category, with a correspondingly higher amount in the category that has a process already but which requires further development.

**Figure 43: Process for Assessing Risk Culture**



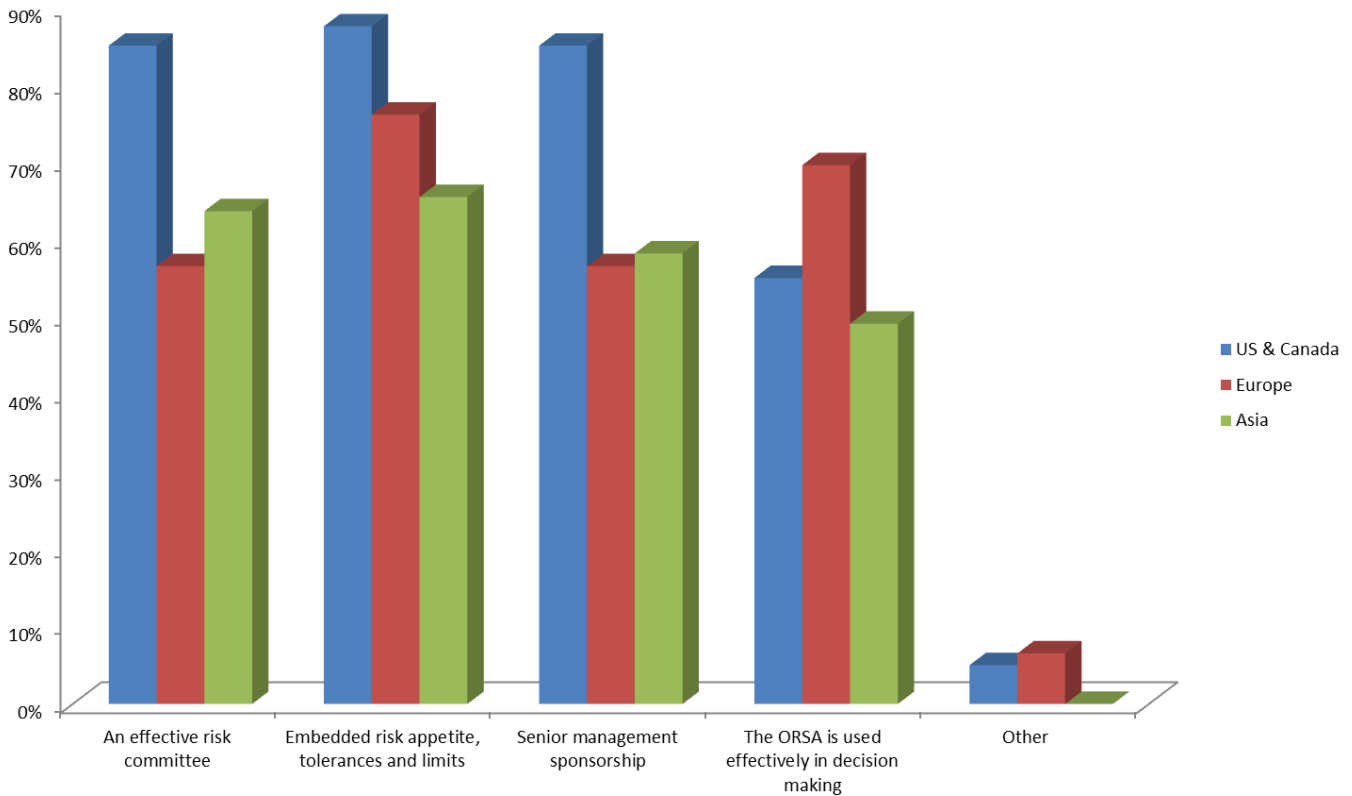
Measuring risk culture is not an easy task. Overall, the main challenge in assessing risk culture was identified as the absence of good metrics to use, with other important factors being a lack of resources and a lack of understanding. Lack of resources was seen as a more significant challenge by Asian companies, with European companies being more likely to highlight lack of management buy-in and U.S. and Canadian companies more likely to cite the absence of good metrics. The results across industry were reasonably consistent.

**Figure 44: Challenges in Assessing Risk Culture**



It is sometimes possible to find good indicators of risk culture, though, even if the undertaking cannot measure the risk culture itself, for whatever reason. There is reasonable consistency in the factors that are seen as most indicative of an effective risk culture, with an embedded risk appetite being the leading indicator (albeit closely followed by the effectiveness of the risk committee and the degree of senior management sponsorship).

**Figure 45: Main Indicators of an Effective Risk Culture**



## BOARD INVOLVEMENT

The requirements for board involvement in the ORSA vary somewhat by the territories involved in this survey. Almost all jurisdictions, however, require that the ORSA process assesses the insurer's overall solvency needs, that the process includes a forward-looking assessment of solvency needs, and that the process and results are documented and communicated to the board and the supervisor.

In Europe, Solvency II places more emphasis on the role of the board than is the case in the United States, for example. The European (and Australian) requirements emphasize that the ORSA is the responsibility of the board, and that the board must take an active role in the process. The U.S. requirements are less specific on the responsibilities of the board, but commentary in the United States frequently mentions the importance of the board as a critical driver of risk assessment and management. It is interesting to consider this different emphasis in the results of the survey below.

### Key findings

The survey clearly demonstrates that the board is involved in the ORSA process for the vast majority of companies. As expected, this involvement varies by territory, with the boards of European companies more likely to take an active role, whereas the boards of U.S. and Canadian companies are more likely not to have any involvement. What is quite surprising is that there is a small percentage of cases in Europe where the board is not normally involved. The results were reasonably consistent by sector.

In order of decreasing prevalence, the board gets involved in setting risk appetite (70%), actively monitoring and managing risk (49%), approving internal controls (46%), and ensuring the embedding of risk culture (35%).

Setting risk appetite is more prevalent in Europe than in the United States and Canada or Asia. But, strangely, Europe scores lowest on board involvement in actively monitoring and managing risk. The board is more likely to be involved in approving internal controls in Asia than is the case in the other territories.

The majority of companies (68%) have a board risk committee, peaking at 73% in Europe, with 70% in Asia and 59% in the United States and Canada.

Only 46% of boards have a technical expert who is well versed in the ORSA. The ratio is significantly lower for U.S. and Canadian companies, at only 27%, compared with 49% in Asia and 58% in Europe.

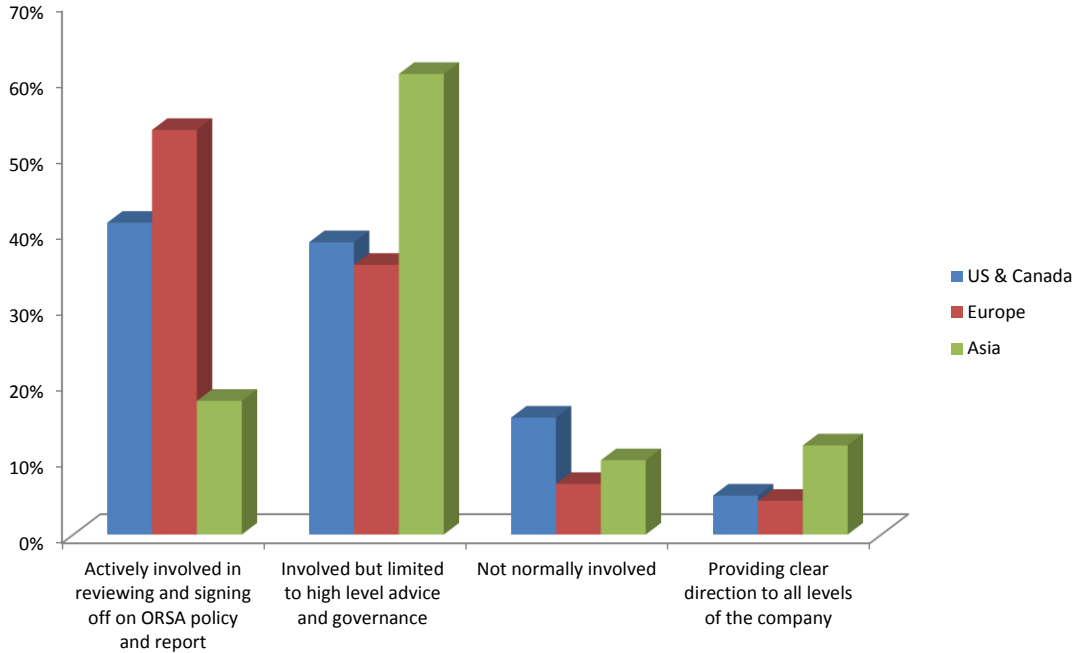
Most companies do not have an independent director who is responsible for oversight of ERM. This is reasonably consistent across territory and sector, with Europe slightly more likely to have an independent director filling such a role.

The role of the CRO in board meetings is quite consistent across sector and territory. The role that stood out related to "explaining the tough concepts in the ORSA report," which scored noticeably lower than the other roles at 43%, with Asia scoring it the lowest, at 31%.

### Level of involvement of the board

The board is involved in the process for the vast majority of companies, with only 10% indicating that it was not normally involved. This involvement varies by territory, with the boards of European companies more likely to take an active role, and the boards of U.S. and Canadian companies more likely not to have any involvement. This varying level of engagement is, as suspected, reflective of the regulatory requirements by territory. What is quite surprising is that there is a small percentage of cases in Europe where the board is not normally involved. This will have to change with the formal introduction of Solvency II on January 1, 2016. The results were reasonably consistent by sector.

**Figure 46: Level of Board Involvement in the ORSA Process?**



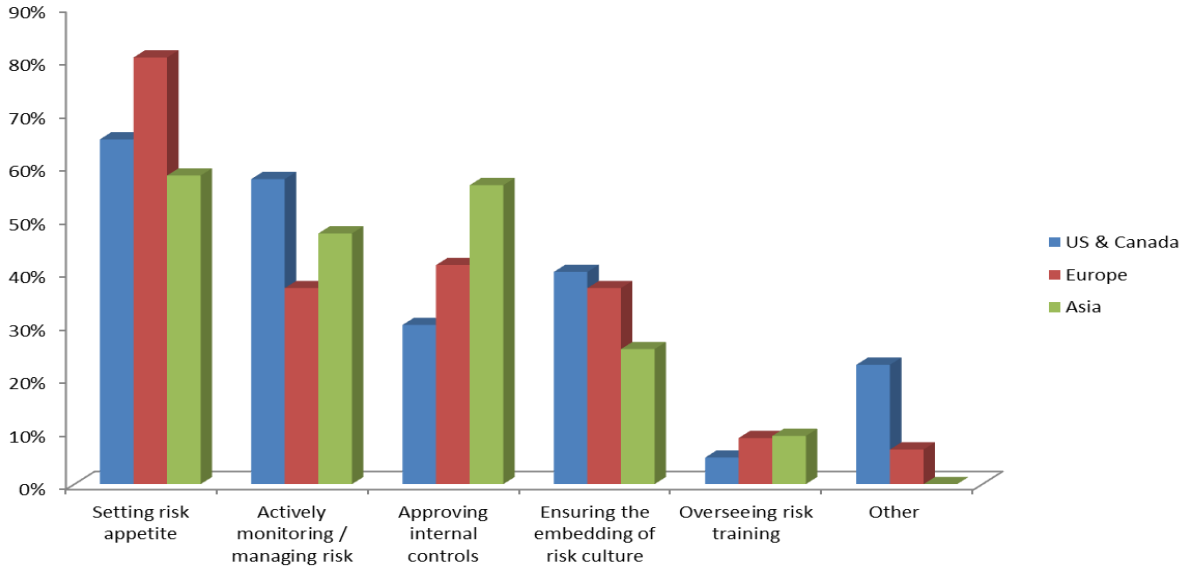
**Ways in which the board is involved**

The ways in which the board is typically involved are, in decreasing order of prevalence:

- Setting risk appetite (70%)
- Actively monitoring and managing risk (49%)
- Approving internal controls (46%)
- Ensuring the embedding of risk culture (35%)

The diagram in Figure 47 shows that setting risk appetite is more prevalent in Europe than in the United States and Canada or Asia. But, strangely, Europe scores lowest on board involvement in actively monitoring and managing risk, with less than 40% of European companies doing this at board level, compared with approximately 60% of U.S. and Canadian companies, and 50% of Asian companies. Figure 47 also shows that the board is more likely to be involved in approving internal controls in Asia than is the case in the other territories.

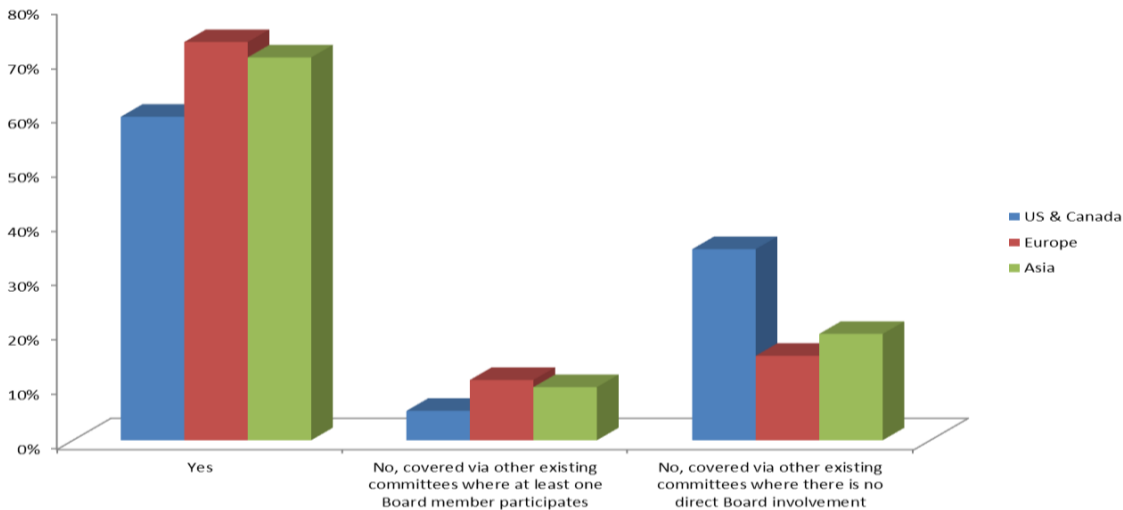
**Figure 47: Ways in Which the Board Is Involved in the ORSA Process**



**Board structure and access to expertise**

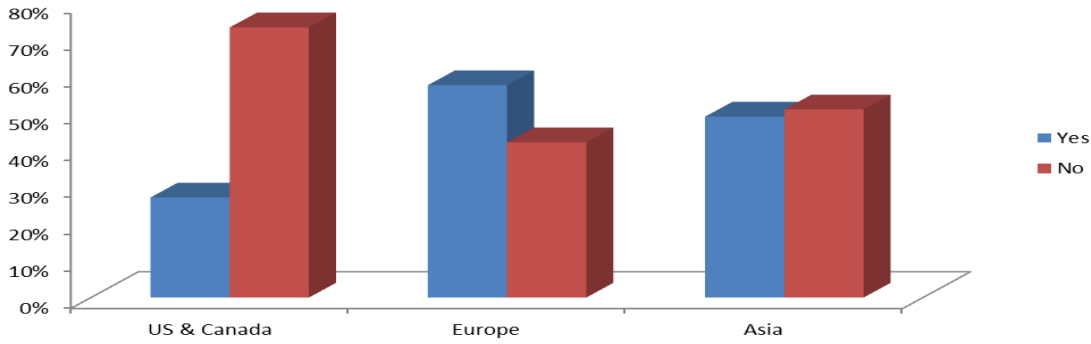
The majority of companies (68%) have a board risk committee, peaking at 73% in Europe, with 70% in Asia and 59% in the United States and Canada. The survey revealed that 35% of companies in the United States and Canada don't have a risk committee, with this function instead being covered by another committee where there is no direct board involvement. This compares with 16% of companies in this category in Europe and 20% in Asia. The results are reasonably consistent across sectors.

**Figure 48: Does Your Board Have a Risk Committee?**

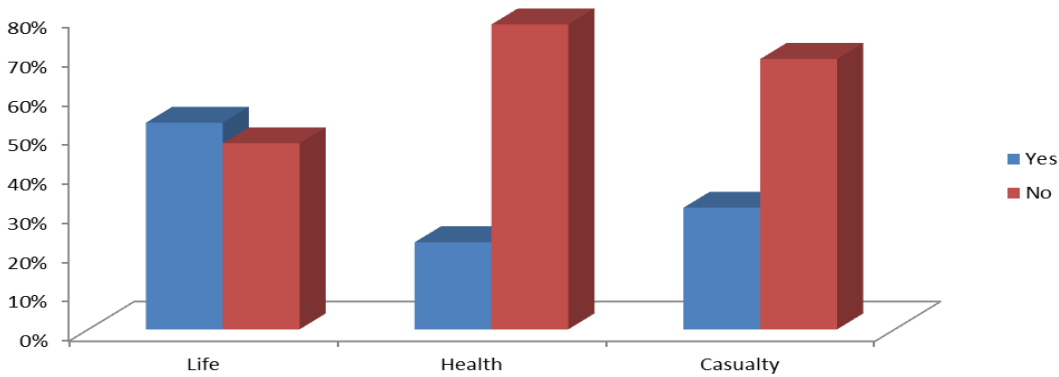


Only 46% of boards have a technical expert who is well versed in the ORSA. This technical expert was not identified in the survey, but we speculate that CROs may be filling this role. The ratio is significantly lower for U.S. and Canadian companies, at only 27%, compared with 49% in Asia and 58% in Europe. Similarly, the percentage is lower for health and P&C companies, at only 22% and 31% respectively, compared with 53% for life companies.

**Figure 49: Does Your Board Have a Technical Expert Well Versed in the ORSA? (by territory)**

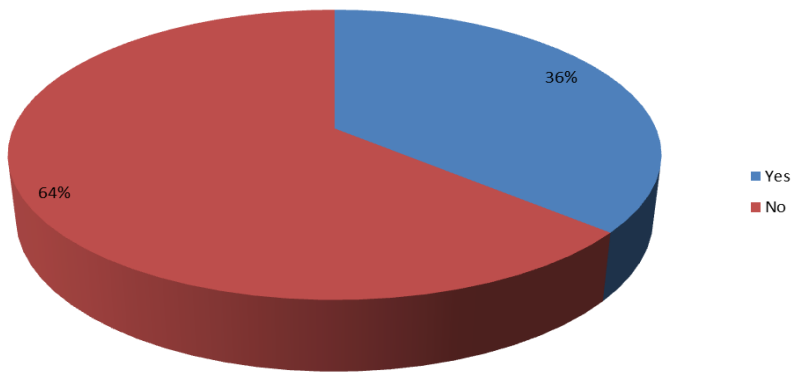


**Figure 50: Does Your Board Have a Technical Expert Well Versed in the ORSA? (by business sector)**



Most companies do not have an independent director who is responsible for oversight of ERM. The results shown in the diagram in Figure 51 are reasonably consistent across territory and sector, with Europe slightly more likely to have an independent director fulfilling such a role.

**Figure 51: Does Your Board Have an Independent Director Responsible for ERM Oversight?**

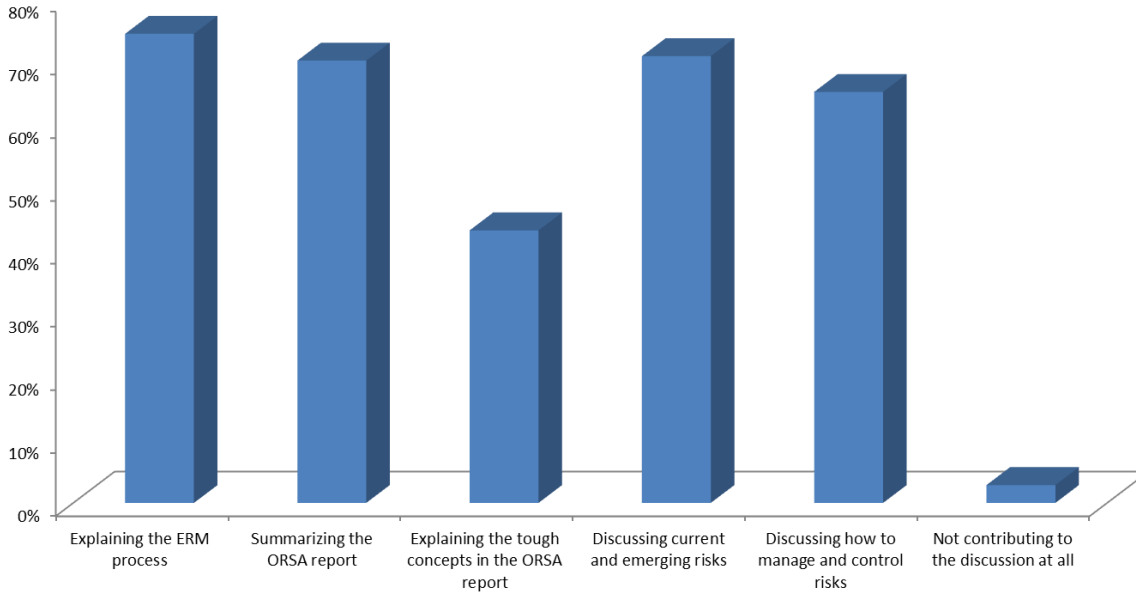




**CRO's role in board meetings**

There was a reasonable degree of consistency across sector and territory in relation to the role fulfilled by the CRO at board meetings. It is curious to see that “explaining the tough concepts in the ORSA report” scored quite low among participant responses.

**Figure 52: CRO's Role in Board Meetings**



## IMPLEMENTATION

The objective of this section of the survey was to establish the current position regarding ORSA capabilities and documentation and to determine the extent of further development that may be required.

### Key findings

The vast majority of companies consider that the ORSA process is not yet complete and integrated into the business, with only 5% of companies claiming this to be the case. That said, the majority of companies (65%) indicate that the process will be fully fit-for-purpose within the next year.

Views on preparedness vary substantially by region, with U.S. and Canadian companies indicating (somewhat surprisingly) that they consider less development to be required. Over half, 52%, of U.S. and Canadian companies indicated that the ORSA process was either nearly or fully complete and integrated, compared with 42% of European companies and only 18% of Asian companies. Interestingly, no European company indicated that its process was fully complete, with Solvency II implementation now only a short time away.

Similarly, the most frequently chosen category for U.S. and Canadian companies was that less than three person-months is required to complete the ORSA implementation process to make it fit-for-purpose, with 33% of U.S. and Canadian companies selecting this category. The most frequently chosen category for European companies was six person-months to one person-year, with 41% of European companies falling into this category. The most frequently chosen category for Asian companies was more than one person-year, with 57% of companies selecting this category.

The responses of the U.S. and Canadian companies in relation to preparedness are interesting, given that only 36% of companies in this region have filed an ORSA with the regulator, compared with 78% of European companies.

The projection horizon is generally between three and five years, with 77% of companies using a projection horizon in this range.

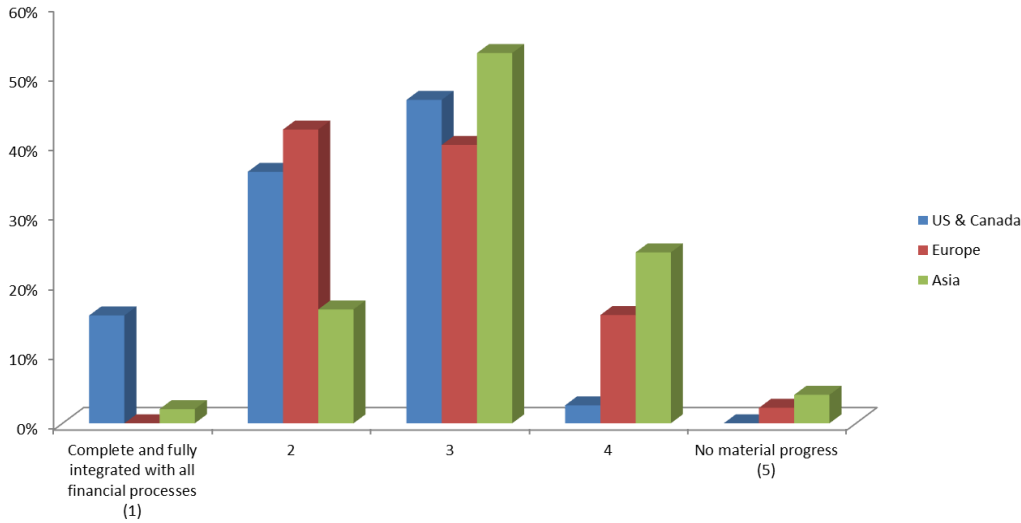
It appears that companies are using relatively simple projection methods to project future capital requirements, with the majority of companies using factor-based approaches. About two-thirds of companies, 67%, are using an approach of this nature, and only 23% of companies are using proxy models or nested stochastic calculations. The 11% of companies that selected the “Other” category in response to this question generally outlined an approach that is not very different from a factor-based approach.

Similarly, only 5% of companies claimed that their projection processes were industrialized and required no material manual intervention, and only an additional 39% claimed the process to be partly industrialized. This response would seem to suggest that companies still have a lot of work to do in order to automate the process and remove or reduce manual intervention.

### Implementation position

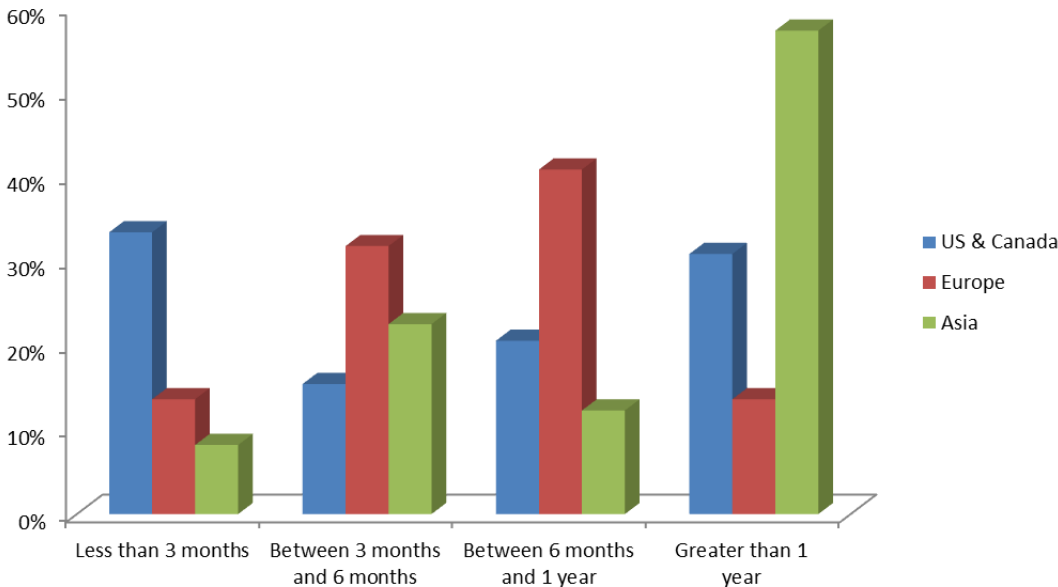
Only 5% of companies in aggregate claim that the ORSA process is complete and fully integrated. Companies were asked to rate the current state of ORSA implementation on a scale of 1 to 5, with 1 representing “Complete and fully integrated with all financial processes” and 5 representing “No material progress.” This ratio varies considerably by region, with 15% of U.S. and Canadian companies claiming to have achieved full implementation, compared with only 2% of Asian companies and no European companies (among those surveyed). A high majority of Asian companies, 82%, rated themselves 3 or less in response to this question, compared with 58% of European companies and 49% of U.S. and Canadian companies. There was reasonable consistency across industries.

**Figure 53: State of ORSA Implementation**



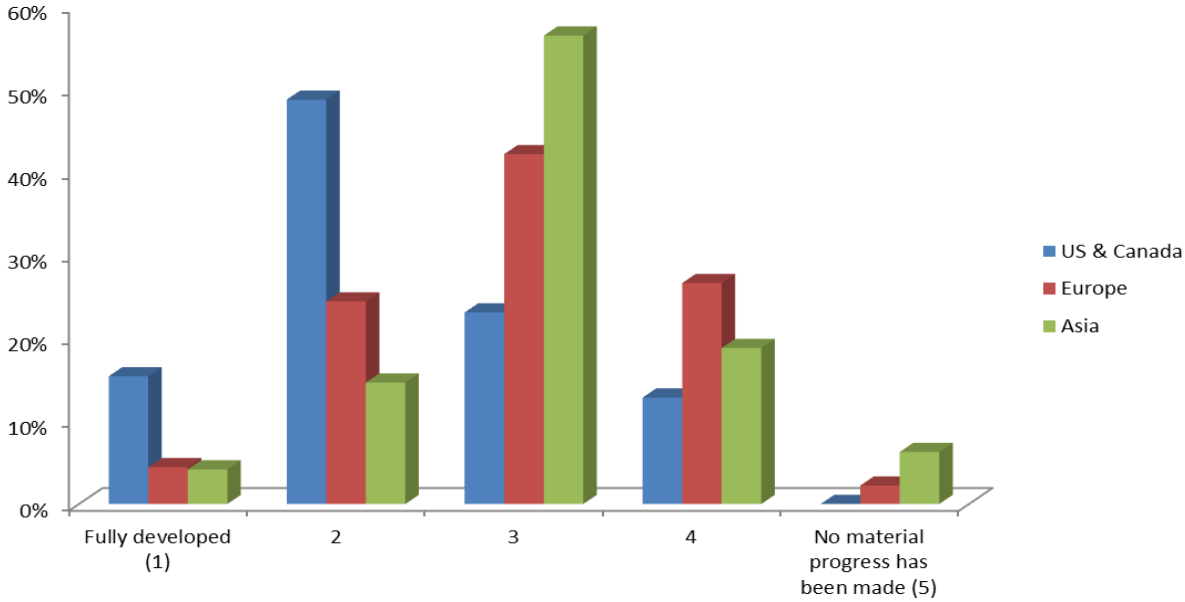
The additional development time required before the ORSA process would be fully fit-for-purpose was less than six person-months for 41% of companies, with this figure varying substantially by territory. A majority of Asian companies, 57%, indicated that more than one person-year of development time was required, compared with only 31% of European companies and 14% of U.S. and Canadian companies. The results were reasonably consistent across industries.

**Figure 54: Additional Development Time Required**



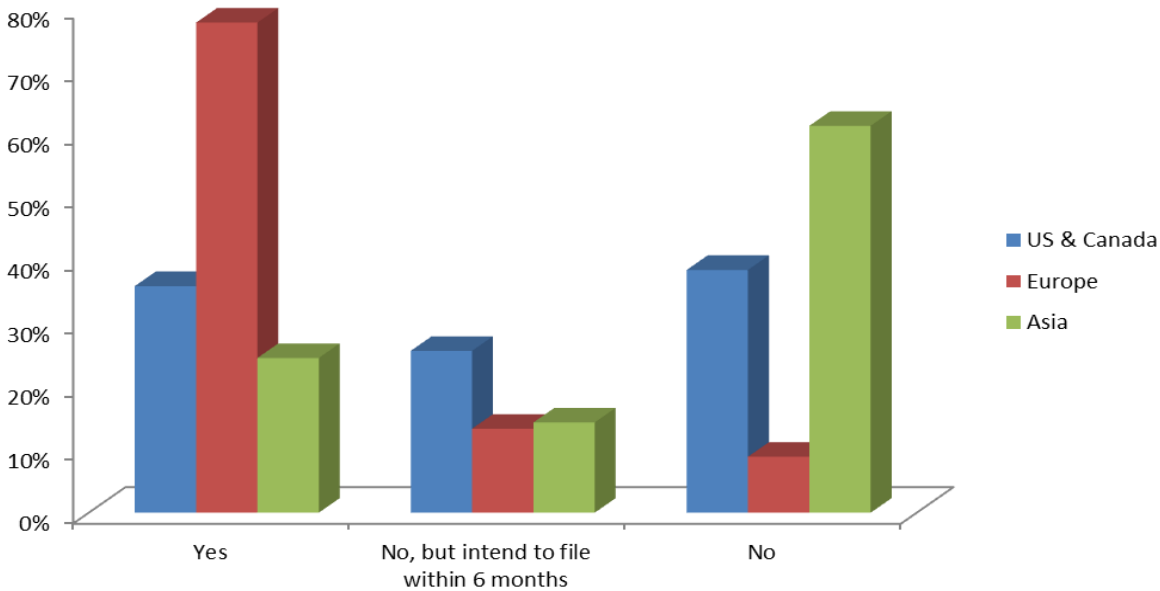
Most companies indicated that their documentation was started but not yet complete. Companies were asked to rate the current state of ORSA documentation on a scale of 1 to 5, with 1 representing “Fully developed” and 5 representing “No material progress.” Again this varied substantially by territory, with 64% of U.S. and Canadian companies indicating that their documentation was either complete or almost complete (score 1 or 2 in Figure 55), compared with 29% of European companies and only 19% of Asian companies. The results by industry were relatively consistent.

**Figure 55: State of ORSA Documentation**



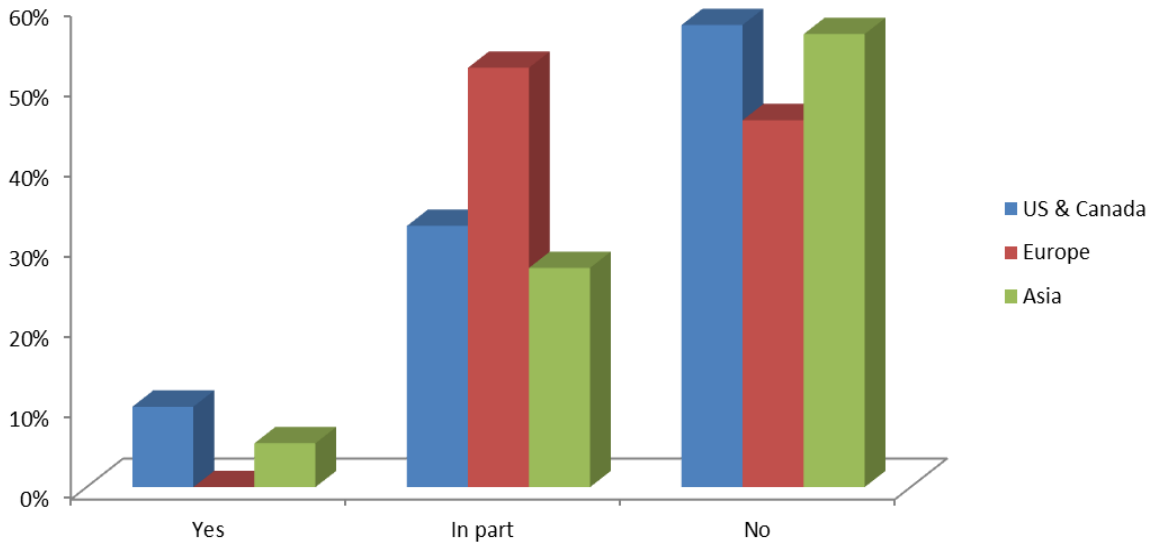
A significant proportion of companies have filed an ORSA report with the regulator, with 78% of European companies having done so, compared with 36% in the United States and Canada and 25% in Asia. The results across industry were relatively consistent. This is interesting to note considering the answers to the earlier questions in this section indicating that U.S. and Canadian companies generally felt that less development was required compared with companies in other regions.

**Figure 56: Filed an ORSA Report With the Regulator?**



Only 44% of companies claimed that the ORSA process was industrialized (either in full or in part). This ratio varied somewhat by territory, as shown in Figure 57, but was reasonably consistent by industry. "Industrialized" was defined as automation of the front-end, model calculation engine and back-end processes that are used to calculate current and future capital needs in support of the ORSA requirements.

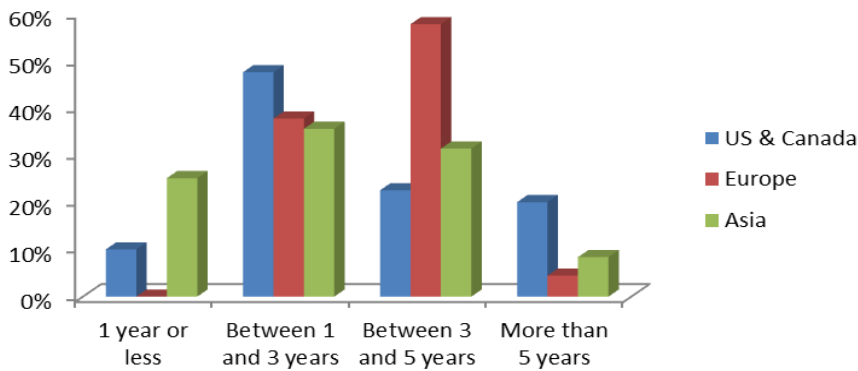
**Figure 57: ORSA Process Industrialized?**



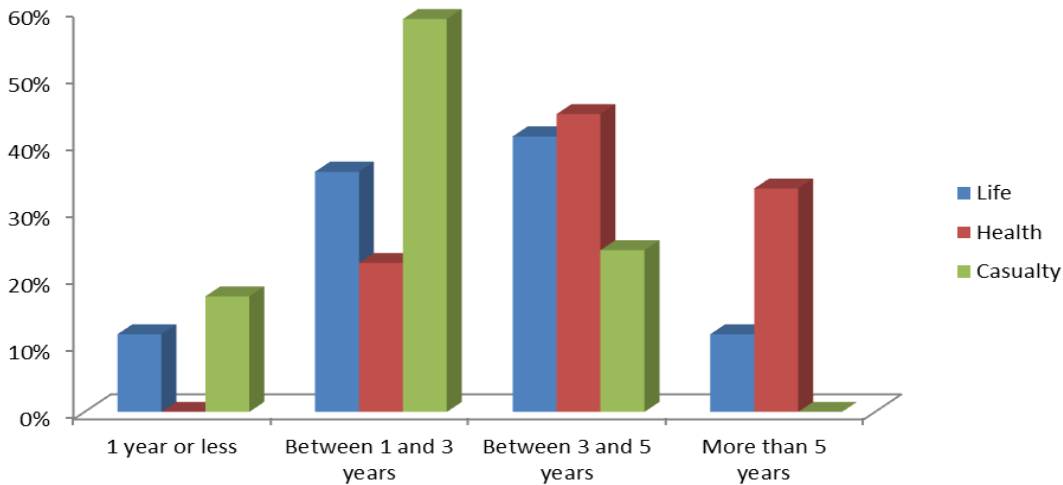
**Projection issues**

The vast majority of companies were using a projection horizon of somewhere between one and five years, with only 23% of companies using a horizon outside these limits. Perhaps unsurprisingly, P&C companies were more likely to use a shorter projection horizon than life or health companies. European companies were also more likely to use a longer projection horizon, with 62% of European companies using a horizon of more than three years, compared with 43% in the United States and Canada and 40% in Asia.

**Figure 58: Projection Horizon, by Territory**

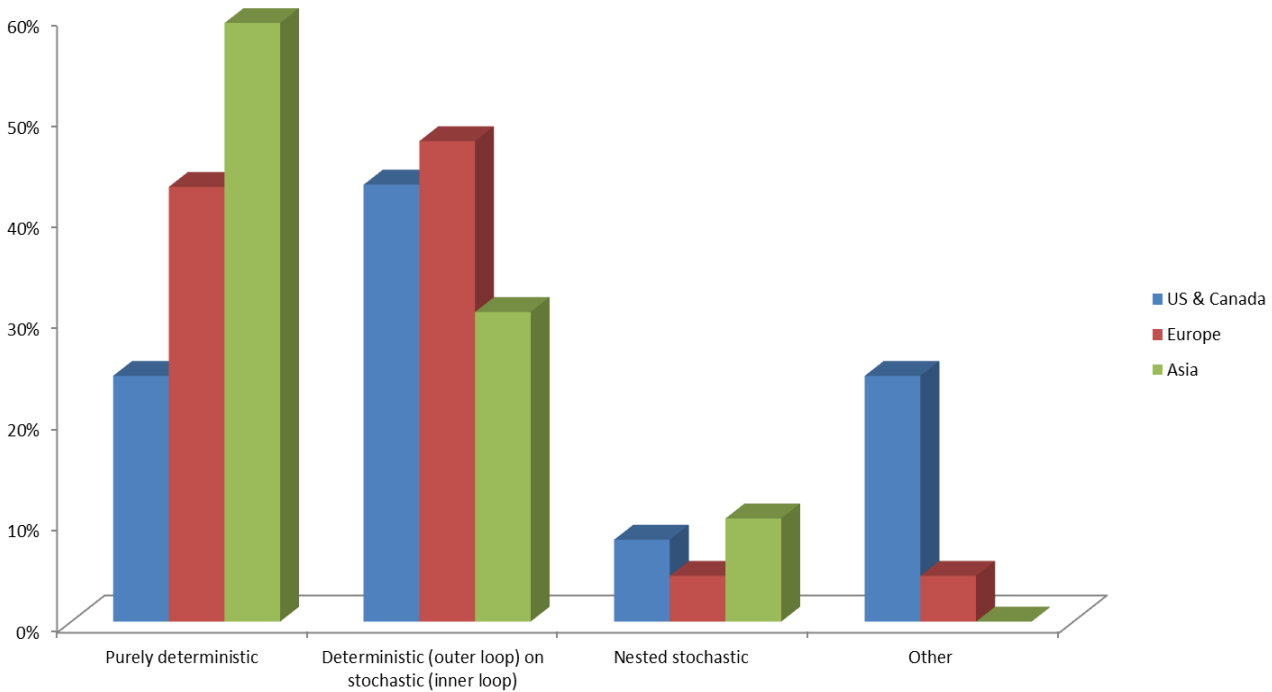


**Figure 59: Projection Horizon, by Business Sector**



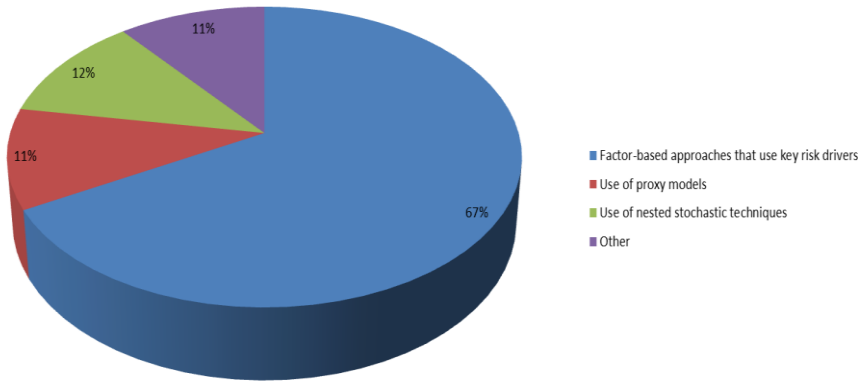
In response to the survey, 44% of companies were using purely deterministic methods to project capital requirements, with 52% of companies using at least some stochastic component. Relatively few use nested stochastic projections—only 8% of companies. The results across industries were reasonably consistent.

**Figure 60: Type of Projections Performed to Determine Capital Requirements**



The methods used to calculate future capital requirements showed a reasonable degree of consistency across territory and industry. In 67% of companies, factor-based approaches are common, with the projection of key risk drivers. Only 23% of companies indicated that they use proxy models or nested stochastic calculations. The responses to the “Other” category mostly outlined an approach that was not very different from a factor-based approach and 11% of companies selected this category. In Asia (excluding Japan), deterministic projections using factor-based approaches were commonly used.

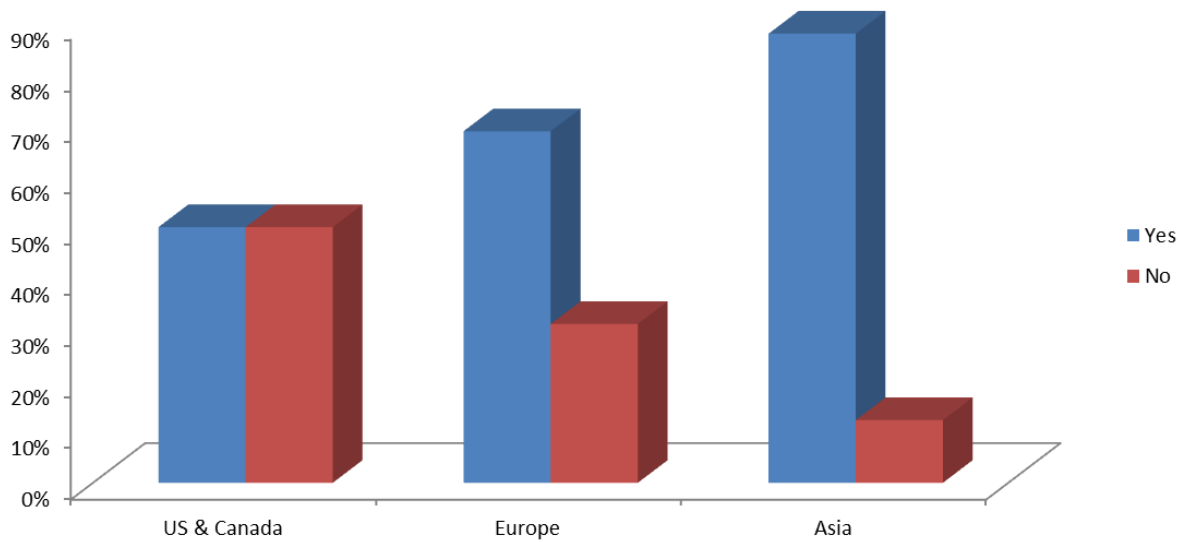
**Figure 61: Future Calculation of Capital Requirements**



**Continuous compliance**

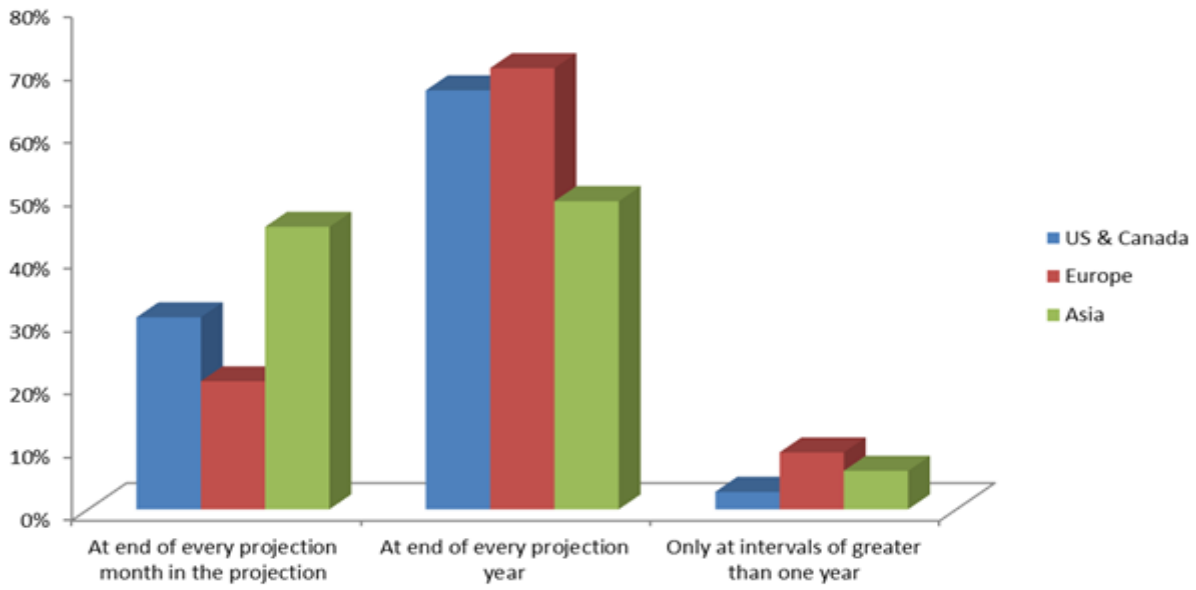
Overall, 70% of companies indicated that they had the ability to monitor compliance with solvency capital requirements on a continuous basis, though this ratio varied significantly by territory. At 50%, U.S. and Canadian companies were lowest, compared with 69% of European companies and 88% of Asian companies. This difference might well be simply due to the different ORSA regulatory requirements in different countries. Results by industry were reasonably consistent.

**Figure 62: Ability to Monitor Continuous Compliance**



A large majority of companies (94%) indicated that they were able to determine future compliance with capital requirements at the end of each future year or more frequently. The results varied somewhat by territory but were reasonably consistent across the different industry sectors.

Figure 63: Ability to Determine Future Compliance With Capital Requirements Over Projection Period





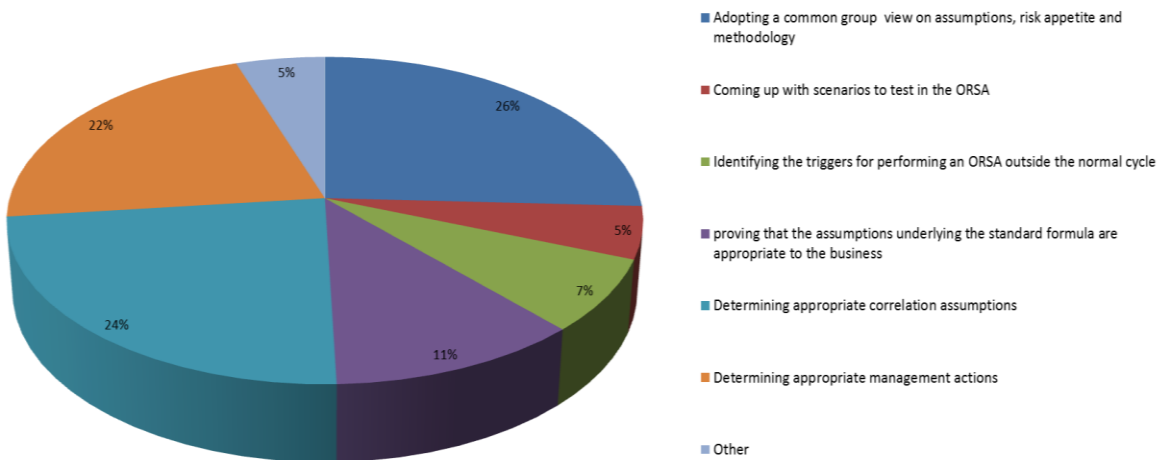
## CHALLENGES

This section of the survey gave companies the opportunity to outline the aspects that they found most challenging in relation to the inputs, the methodology, and the outputs of the ORSA process.

### Inputs to process

As might be expected, there was a good spread of areas in which companies are facing challenges when it comes to ORSA inputs. The greatest challenge faced by companies when developing the inputs for the ORSA is adopting a common group view on assumptions, risk appetite, and methodologies, with 26% of companies identifying this item. Other challenges that were commonly identified include determining appropriate correlation assumptions (24% of companies) and determining appropriate management actions (22%).

**Figure 64: Most Challenging Aspect of Inputs**

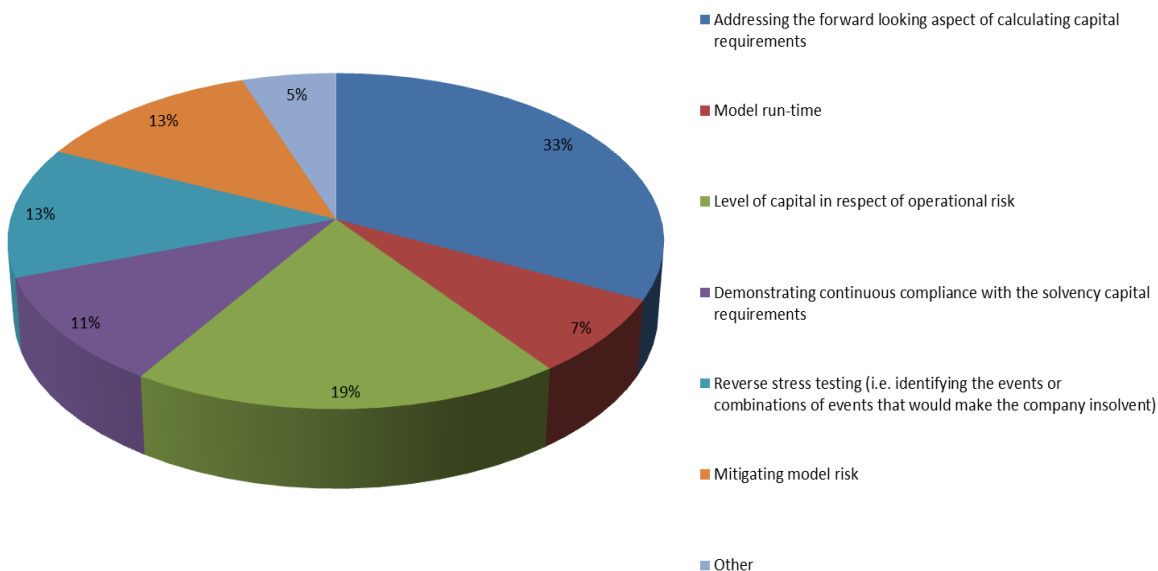


### Methodology

The most commonly identified challenge of the modeling process was addressing the forward-looking aspect of calculating capital requirements, with 33% of companies identifying this as most challenging. The level of capital to be held in respect to operational risk was the next most frequently identified, with 19% of companies citing this as most challenging.

However, there were a number of additional areas cited by survey participants as posing significant challenges, as illustrated in Figure 65.

**Figure 65: Most Challenging Aspects of Modeling**



**Output process**

The most challenging aspect of the ORSA when developing the output process appears to be the embedding of the ORSA in the risk culture, as identified by 52% of companies surveyed. Other aspects, such as documentation, consolidation, and communication with regulators were also cited, but embedding the ORSA in the risk culture was the single most frequently cited challenge in this area by a considerable distance.

**Figure 66: Most Challenging Aspect of Output Process**

