Keep Your Eye on the Prize

An ERM Update on the Global Insurance Industry

April 2013

2012 Global Insurance ERM Survey Report

TOWERS WATSON

Since our 2010 survey, Financial Crisis Puts the Spotlight on ERM, insurers have endured volatile investment markets, persistently low interest rates, and a number of major natural and man-made catastrophes. Meanwhile, insurance regulations around the world are undergoing significant change, adding to the uncertainty and in some regions drawing materially on resources, with unclear tangible benefits to the business.

As insurers set priorities for 2013 and beyond, there is a need to focus on those aspects of enterprise risk management (ERM) that will truly add value to your business, and to "Keep Your Eye on the Prize" — the theme we have chosen for our 2012 Global Insurance ERM Survey.

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Executive Summary

Our previous survey on ERM in the insurance industry, entitled Financial Crisis Puts Spotlight on ERM, took place in 2010 and found only relatively modest levels of satisfaction with ERM's business contribution during the preceding two years.

Towers Watson's latest biennial insurance ERM survey, our seventh, was held in July and August 2012, following a further two years of volatile markets and significant risk events across many different lines of business. The experience over this period is a stark reminder that insurers need to have a comprehensive understanding of risk if they are to successfully shape and execute their business strategies in challenging and unpredictable environments.

Our 2012 survey looks at how insurers are progressing with their ERM efforts, with the aim of generating value for the business. It shows that many insurers that have made advances with ERM do see their efforts rewarded with enhanced business performance. This trend is likely to continue as ERM capabilities are further enhanced, making the development of ERM a strategic imperative if firms are to thrive in an increasingly sophisticated and competitive landscape.

Our 2012 ERM survey report highlights seven key findings:

1. **Insurers see the value in ERM.** The majority of survey participants expect that ERM will enhance business performance and highlight two principal ways in which ERM should add value. First, they expect ERM to help prevent large losses that threaten the viability of the business, and second, they expect increased shareholder value through enhanced risk/return decision making.

2. **The business impact of ERM continues to grow, albeit slowly.** Participants indicated that their ERM programs brought about increased levels of change in the business — for example, in pricing and management decision making. Even so, overall levels of satisfaction with ERM performance, and its perceived contribution to the business, have risen only minimally since 2010. Further positive impact will require a step change in thinking by many to integrate ERM into key business processes such as asset strategy, reinsurance strategy and performance management.

> "These findings provide a clear picture of where the industry is and, more importantly, where it is heading."

3. **Those that stay the course reap the rewards.** The survey shows that insurers that persist and progress toward full ERM implementation are more likely to see the benefits through enhanced business performance. For example, well-advanced risk information systems contributed much more strongly to business performance than less advanced systems.

4. **Risk culture is critical to long-term ERM success.** Our survey found that 80% of insurers rate risk culture as a highly important component of their end-state vision for ERM. Respondents recognize the importance of risk culture in making ERM real, ensuring that day-to-day behavior is aligned with the business's desired approach to risk.

5. **Defining risk appetite and monitoring against it are key short-term priorities.** Many participants have prioritized work on the key areas required to make risk appetite operational in the business. Respondents recognize that for risk taking to be aligned with stakeholder expectations, it is crucial that risk limits are consistent with the business's risk appetite, and that risk taking is governed by suitable risk policies and procedures.

6. **The potential of economic capital is yet to be realized.** Many participants recognize that economic capital plays an important role in a robust ERM framework, but face challenges in introducing it as a tool to manage the business. For many participants, the robustness and efficiency of economic capital calculations is often cited as a challenge, which in turn makes it difficult to gain management buy-in for its use in the business.

7. **ORSA/ICAAP* is seen as beneficial by participants globally.** Almost all insurers that are required to complete an ORSA (Own Risk and Solvency Assessment) or ICAAP (Internal Capital Adequacy Assessment Process) believe it will be beneficial for the business, although many of the same insurers acknowledge the challenges involved in some of the technical aspects.

539 senior insurance executives from a wide range of insurers across the globe took part in the survey.

Our 2012 survey report — *Keep Your Eye on the Prize* — details findings from our web-based survey of senior risk professionals, including chief risk officers (CROs), chief financial officers (CFOs), chief actuaries and other senior executives from insurers around the world.

Survey respondents represented many of the world's largest insurers; more than half have revenues in excess of $1 billion, and approximately 14% take in over $10 billion annually. Smaller firms — those with revenues of up to $1 billion — were also well represented, comprising 48% of the respondents.

Participants covered a wide geographic spread of insurers, including companies from North America (37%), Europe (25%) and Asia Pacific (31%), with the remaining 7% coming from multiple regions.

In addition, all lines of insurance business were covered, including life insurance (41%), property & casualty (P&C) insurance (25%), reinsurance (11%) and multilines (18%). Health insurers/reinsurers and other financial groups accounted for the remaining 5% of participants.

We are grateful to the 539 senior executives from around the globe who took the time to participate in this survey and share their thoughts on these important issues.

*Referred to as "ORSA" in the rest of this document

Introduction

These are challenging times for the global insurance industry. Substantial risks continue to weigh on investment markets, requiring a detailed understanding of the underlying drivers and potential outcomes. What's more, the onset of a persistent low interest rate environment demands careful management of long-term insurance products and is putting pressure on the returns all insurers can expect to earn on their assets. Recent natural and man-made catastrophes have produced some large losses for the insurance industry. And insurance regulations around the world are undergoing significant change, adding to the uncertainty and often drawing significantly on resources — in many cases, with unclear tangible benefits to the business.

Insurers need a sound understanding of risk to ensure that business models are adapted to cope with such challenges and thereby gain competitive advantage. Those that are able to take this understanding of risk to the forefront of decision making are more likely to achieve their objectives.

This is confirmed by results of the seventh biennial Towers Watson Global Insurance ERM Survey, which reveal that ERM is strongly expected to add value and enhanced business performance is closely linked to ERM progress.

However, the development of ERM needs to be carried out with a clear vision of how it will improve business performance. In particular, our 2012 survey results illustrate that firms need to address the challenge of embedding ERM within the business. This includes building the right risk culture and ensuring that risk taking is controlled in line with risk appetite — aspects that are all too easily deferred. Quantitative support for these decisions, such as economic capital assessments, must be robust, and their link to improved performance well understood. Now, more than ever, ERM leaders need to keep their eye on the prize if they are to be successful.

Towers Watson insight on current issues

Based on discussions with clients and our consulting experience, we have identified a number of questions we think insurers should ask themselves in order to drive their ERM capabilities forward.

This is supplemented by our observations and insight on general industry activity in each area.

Observations and Insights

Key question	Towers Watson insight
Objectives and priorities Have we defined our ERM objectives and priorities in light of our strategic goals?	Those insurers that clearly define their objectives and set priorities are more successful in developing effective ERM capabilities. They are better able to balance the complexity of their systems with the need for business use.
Risk appetite and limits Are our risk appetite metrics and risk tolerances relevant to stakeholders and measurable for our business? Do our risk limits really allow for proper control of risk on a day-to-day basis consistent with risk appetite? Have we established decision processes to manage breaches of risk limits?	Many insurers are revisiting their risk appetites and limits to ensure that metrics are suitable for their businesses and stakeholders. In some cases, this means doing away with risk limits that do not meet the real needs of the business or introducing new limits to manage key risks more closely. Those insurers that have more clearly defined approaches to managing changes in risk exposures are more likely to respond appropriately.
Risk culture Have we begun to assess risk culture in a structured way that addresses both qualitative and quantitative aspects? Do we have a plan to transition our risk culture toward our target model?	Globally, insurers are in the early stages of actively shaping their risk culture. A baseline risk culture assessment is a key first step to better understanding the existing culture. In subsequent steps, risk culture can be improved through performance management, training, communication and organizational change.
Economic capital Do we have a clear view of how economic capital will be used to enhance business performance? Have we designed calculation processes to provide the information that is needed for business decisions?	It is essential to clearly establish how economic capital can be used to improve risk-adjusted returns if risk managers are to gain buy-in for the use of this metric in the business. Calculation processes can be appropriately designed for use in the business only when their purpose is clearly defined. Some insurers are employing software solutions that calculate results more efficiently and in a more controlled environment.
Risk monitoring Do our risk monitoring systems provide senior management with the ability to understand risk exposures at different levels of granularity, in a timely fashion and in relation to risk appetite?	Risk dashboards have become a more important part of ERM practice in recent years. But the need to balance demanding user requirements with complex underlying risk measurement systems can make this a challenge.

Seven Major Findings

Finding One: Insurers see the value in ERM

The survey results show that participants expect ERM to deliver real value for the business. This is in spite of some concerns that regulatory change might create a culture of compliance, to the detriment of ERM's role in identifying and supporting profitable risk-taking activities.

In *Figure 1,* insurers highlight two critical ways in which ERM is expected to add value:

- Prevention of catastrophic losses that threaten the viability of the business — cited by almost 80% of insurers
- Increased shareholder value through enhanced risk/return decision making — cited by almost three-quarters of non-mutual participants

These underscore two fundamental objectives of ERM: first, to avoid "surprises" that pose risks to the business and its franchise value, and second, to inform business decisions critical to the generation of shareholder value, such as capital allocation, risk pricing and risk transfer/retention. This is good news — survey participants believe strongly that the effort required to enhance ERM practices will lead to significant benefits for the business and is not solely aimed at risk reduction or limitation.

At the same time, ERM is expected to lead to reduced regulatory and rating agency capital requirements by improving the understanding that regulators (primarily in Europe and Asia Pacific) and rating agencies (primarily in North America) have regarding the risk profile of the business. In the short to medium term, this increased understanding might reduce discretionary aspects of regulators' or rating agencies' capital requirements. Ultimately, gaining regulator or rating agency acceptance of internal capital models aligns views on capital requirements and eliminates the prudence typically incorporated in regulatory or rating agency approaches. This demonstrates the value of the additional insight that effective ERM systems — particularly internal capital models — can offer.

Participants not only believe strongly in the long-term benefits of ERM, but also endorse the additional value to be gained from further investment in many aspects of ERM. Averaging across all the aspects of ERM, 39% of participants expect *high* added value from additional investment in ERM, and a further 47% expect *moderate* added value.

Finding Two: The business impact of ERM continues to grow, albeit slowly

The survey results indicate that the influence of ERM and the levels of satisfaction with its performance are growing, but progress since 2010 has been relatively slow, and much remains to be done.

Participants indicated that their ERM programs have led to business changes in a wide range of areas over the last two years *(Figure 2)*. Particularly notable were changes in risk strategy/appetite (50%), asset strategy (49%) and pricing (47%). What's more, the extent of these changes is greater than those seen in our 2010 survey. One key area where the influence of ERM is increasingly felt is management decision-making processes, where 44% of participants stated ERM had led to business changes, compared to 36% in our 2010 survey. In addition, 47% said that ERM had led to changes in product pricing, compared to 40% in our 2010 survey.

At the same time, satisfaction with ERM performance has increased steadily but slowly in both Europe (from 58% in 2010 to 62% in 2012) and North America (from 62% to 67%). In contrast, satisfaction has fallen since 2010 in both Asia Pacific (from 53% to 35%) and Latin America (from 67% to 33%); this is likely a reflection of the significant increase in the number of participants from those regions with less advanced ERM capabilities. Although overall satisfaction with ERM has remained broadly stable since 2010, the percentage of participants worldwide that were "very satisfied" with ERM has fallen from 14% to 5%, and this fall was seen across all regions. This may reflect the increased expectations of ERM's contribution to the business.

The survey also highlights the challenges that insurers face in using ERM to extract value for the business. As in 2010, a shortage of skilled resources remains the top-ranking challenge for ERM implementation, with this issue being most acute in North America (50%) and Asia Pacific (46%), and less so in Europe (33%). This is in line with our experience that many European insurers have taken action in recent years to strengthen their risk teams, largely as a consequence of Solvency II requirements, while other regions are only now experiencing that step-up in urgency to find the right resources.

Figure 1. How ERM is expected to enhance business performance

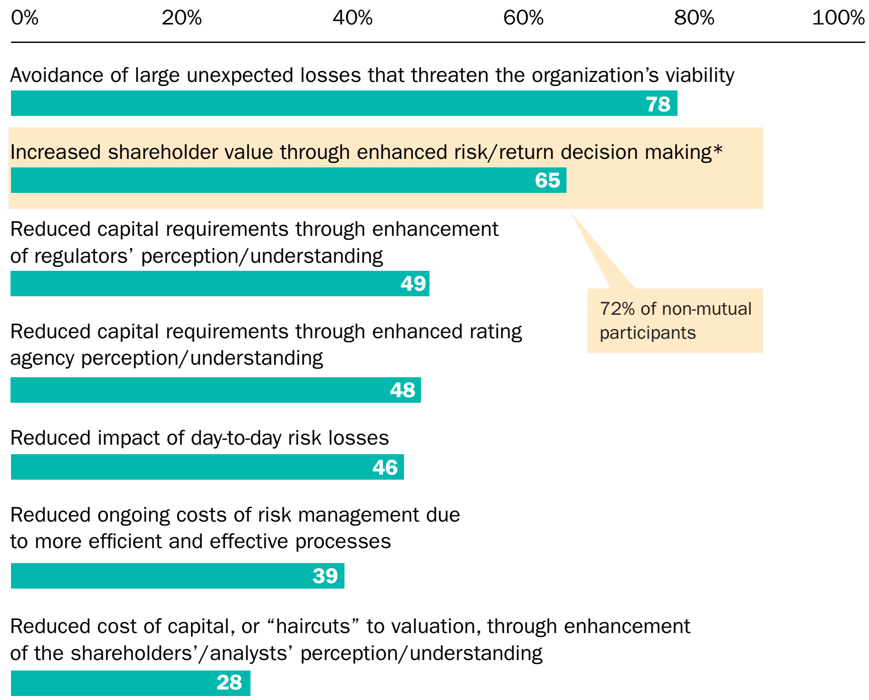
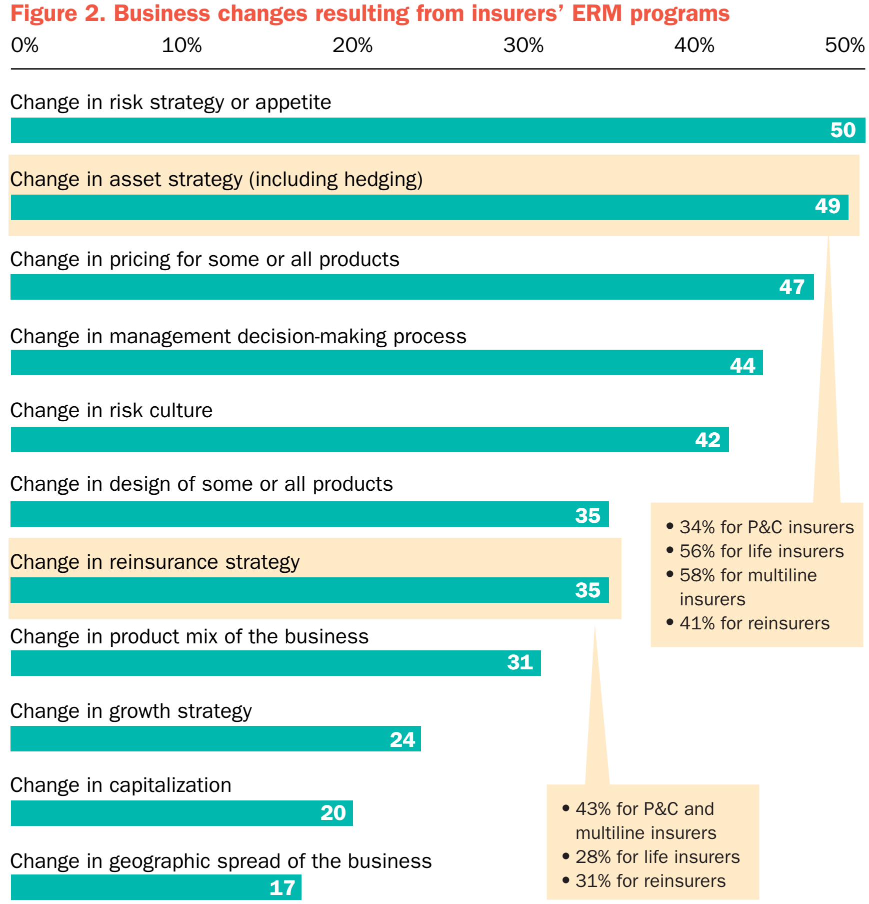


Figure 2. Business changes resulting from insurers' ERM programs

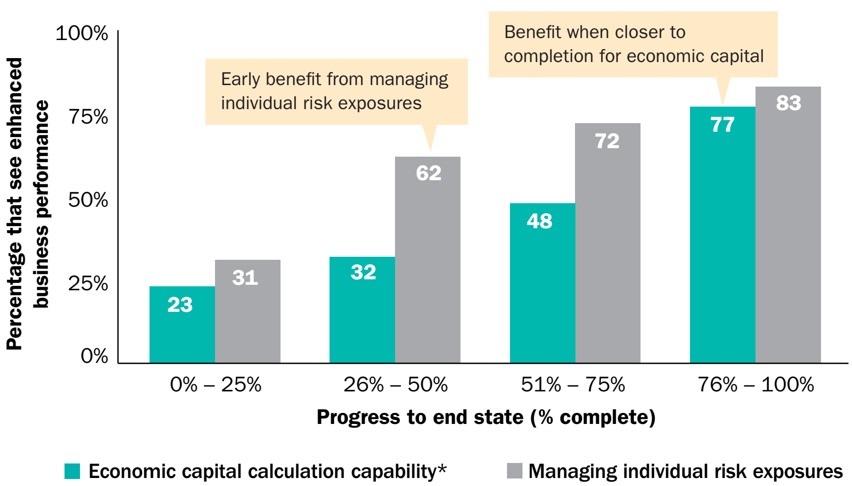


At the time of this survey's completion, regulatory challenges (e.g., uncertainty over the impact and direction of regulations) were of greatest concern in Europe (54%), although this was also cited by one in three North American and Asia Pacific insurers as a key issue. The importance of this issue for European insurers clearly reflected the high priority (at the time) of Solvency II, while most insurers in other regions have not yet faced the same level of regulatory requirements.

Another key challenge for insurers is the development of systems that provide timely information for decision making. Again, this is especially so in Europe (where 44% cite it as a challenge, compared to 30% in 2010), since in recent years insurers have focused on using results to support business decisions and to satisfy the "use test" aspects of Solvency II. The development of robust systems that provide timely and relevant risk information is crucial to enable aspects of ERM to perform their roles efficiently, and it seems that a substantial portion of insurers have recently recognized the scale of this challenge. In our experience, the development of these systems in a cost- and time-efficient manner is highly dependent on clearly defining the envisaged use of the system, maintaining focus on key features to be captured by the system and mapping out a realistic development plan.

> "One of our current priorities is achieving value for the business from the ERM capabilities we have established, in part through our Solvency II work, especially our internal model."
>
> — Julian Ross,
> CRO of Talbot Underwriting Ltd.

Figure 3. Making progress with ERM enhances business performance



*Results exclude respondents that do not calculate economic capital.

Finding Three: Those that stay the course reap the rewards

The survey results confirm the view that ERM is still largely a work in progress. Averaging across all aspects of ERM, less than 20% of participants indicated that they had completed more than three-quarters of the work needed to reach their end-state vision. In particular, there remains much work to be done regarding the development of systems that provide relevant, robust and timely information, and making allowance for risk within business processes.

Making meaningful progress in key areas can be daunting, as it requires management buy-in for real changes in the way the business is run. Even so, we observe that companies willing to take on these challenges and make progress with ERM are significantly more likely to see benefits through enhanced business performance.

Analysis of the survey data indicates that improved satisfaction with ERM performance was strongly linked with the incremental completion of aspects of companies' overall ERM vision. For example:

- Companies that have risk appetite/tolerance statements in place are almost twice as likely to be satisfied with ERM performance (60%) than those that do not (34%).
- Those that take the additional step of establishing a framework to demonstrate consistency of risk limits with risk appetite are even more likely to be satisfied with their ERM performance (70%).

Further analysis showed that well-developed ERM capabilities (more than 75% complete relative to end state) contributed much more strongly to business performance than less developed capabilities.

The contribution to enhanced business performance varies depending on the element of ERM under consideration. *Figure 3* illustrates two ends of the spectrum. It shows that quick wins have been achieved in certain areas such as managing individual risk exposures, with a large proportion of companies seeing enhanced business performance, even for those where progress in this area is far from complete.

In contrast, there are areas such as economic capital where firms need to get much closer to completion to see the business benefits. Enhanced business performance from economic capital was reported by relatively few of those with capabilities in this area that are less than 50% complete. Even for those with economic capital capabilities between 51% to 75% complete, less than half are seeing business benefits. It is only among those that are near completion that the benefits are really seen, with 77% reporting enhanced business performance. This is potentially due to the difficulty in getting economic capital models to a point where results are timely and robust, and hence capable of reliable use in business decision making.

While the full benefits of using economic capital in risk/return optimization might take time to realize, we believe there are subsidiary benefits to the calculation, which can emerge earlier in the process. In particular, it is our experience that the process of calculating economic capital provides a much deeper understanding of the risks the business is running, and this can be utilized in advance of the results being formally incorporated in business processes.

Finding Four: Risk culture is critical to long-term ERM success

Development of a strong risk culture is pivotal for ERM success and the enhancement of business performance. Eighty percent of insurers rate risk culture as a highly important aspect of their ERM end-state vision *(Figure 4),* and over 85% say that additional investment in building a good risk culture would be expected to add value to the business.

Respondents clearly recognize the importance of risk culture in making ERM real, as it aims to ensure that day-to-day behavior is aligned with the business's overall attitude to risk. This does not mean that risk owners are subject to disproportionate controls and oversight, but rather that a good risk culture should facilitate appropriate risk taking within accepted limits.

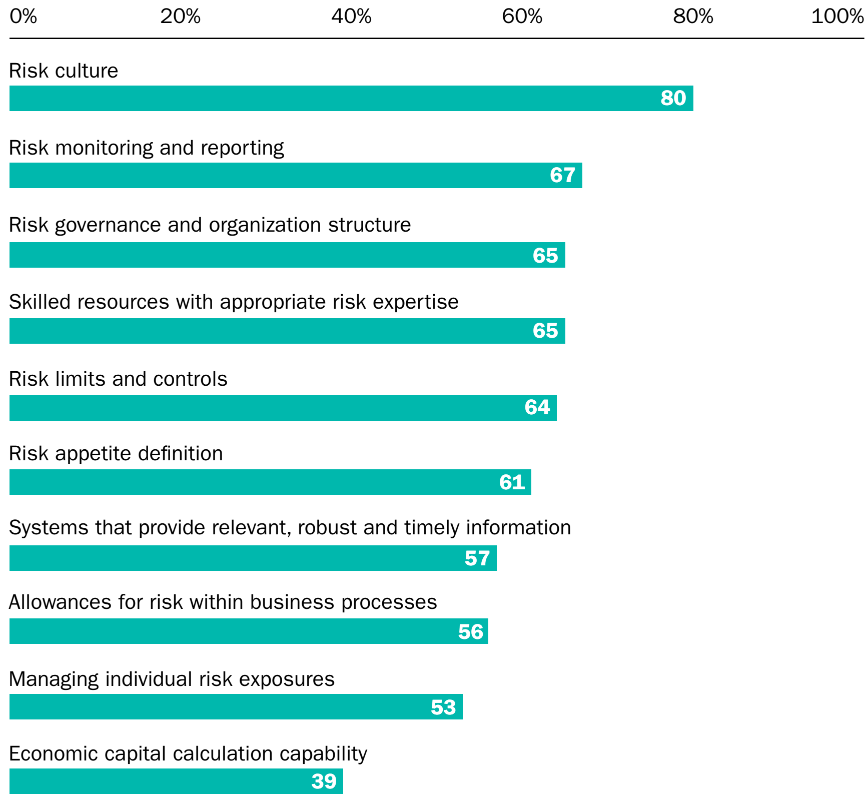
The importance of risk culture is also reflected in the proportion of participants that plan to further develop it over the next two years. Key areas for further work include establishing a common understanding of risk management throughout the organization (68%), and establishing risk and capital management as an integral part of planning and strategy (63%). Monitoring the development of risk culture throughout the organization also ranked highly (56%).

The proportion of companies making some allowance for risk within executive compensation arrangements has steadily increased from 40% in 2008, to 48% in 2010 and 58% in 2012. This allowance took many forms, including targeting returns based on risk-based capital (25% of participants) and setting capital utilization targets using a risk-based budgeting process (20%).

In spite of the acknowledged importance of risk culture and the substantial further plans in this area, only 26% of participants worldwide saw this as a key short-term priority. This may be driven by the natural tendency of some participants to focus on areas within their immediate jurisdiction.

Figure 4. Risk culture's importance in the end-state vision of ERM

% of respondents rating each aspect as highly important



In particular, despite not being fully satisfied with their current approach, around 30% of participants indicated they had no plans to make improvements to key areas related to risk culture, including:

- The alignment of executive remuneration with risk appetite or risk-adjusted returns
- The inclusion of risk management behavior as a metric in adjustments to employee performance evaluations

These are traditional levers for encouraging change within an organization. However, insurers may find it difficult to make these changes if the maturity and stability of their risk measurement processes have not yet reached the required levels for use in the business.

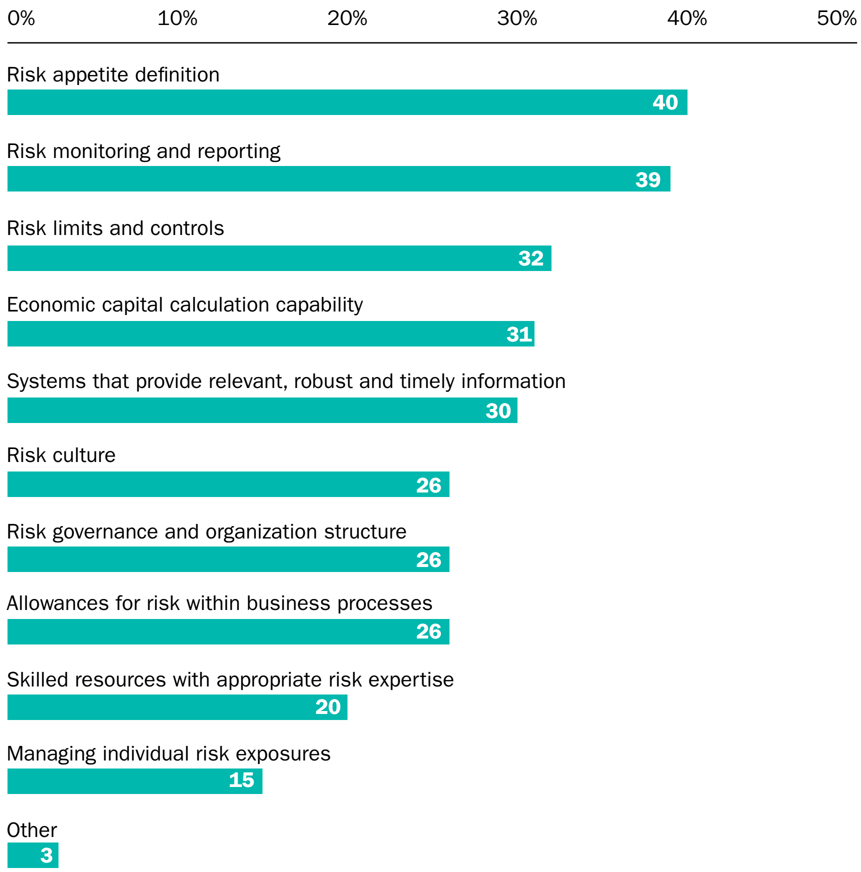
> "Through access to Towers Watson tools and expertise, we are looking to gain a more specific insight on our risk culture to help shape our training and awareness agenda."
>
> — Stephen Haynes, CRO of LV=

Finding Five: Defining risk appetite and monitoring against it are key short-term priorities

Our 2010 ERM survey highlighted risk appetite as a key priority for insurers, and our experience over the past two years has been consistent with this observation, with many companies making significant progress. Notably, the proportion of respondents that have documented risk appetite/ tolerance statements has increased from 59% in 2010 to 74% in 2012.

Even so, aspects of risk appetite feature heavily in companies' current short-term priorities. *Figure 5* shows that the tools to make risk appetite operational are still very much on the agenda for insurers, including: risk appetite definition (40%), risk monitoring and reporting (39%), risk limits and controls (32%), and systems that provide relevant, robust and timely information (30%). A geographic bias exists, with Asia giving more attention to risk appetite definition (46%), North America more focused on risk monitoring and reporting (52%), and Europe more concentrated on developing systems that provide reliable, robust and timely information (44%).

Figure 5. Risk appetite definition and risk monitoring are key short-term priorities



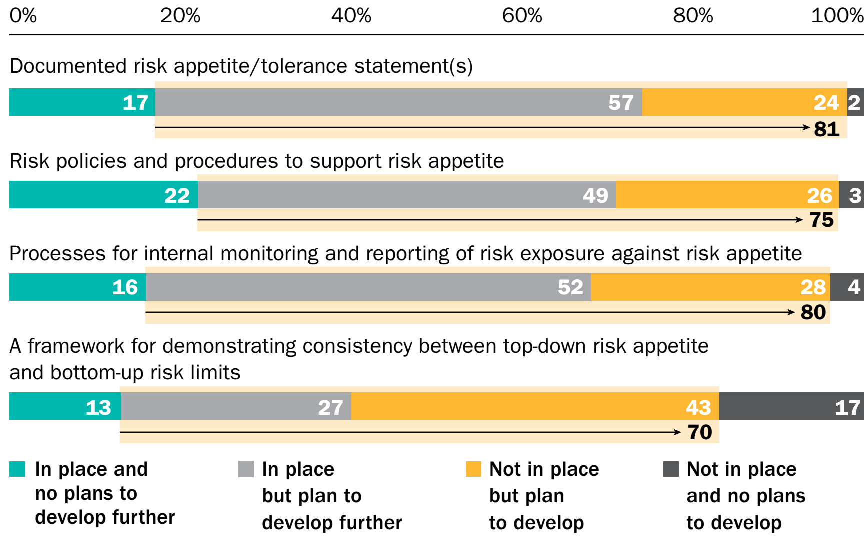
The recent focus on risk appetite has also led to its increased use in many business areas. Since our 2010 survey, the use of risk appetite has increased substantially, particularly in areas such as asset/investment strategy (increasing from 66% to 77%), and strategic planning and capital allocation (increasing from 55% to 71%). European insurers referenced risk appetite in more business processes than insurers in other geographies, presumably due largely to their preparation for Solvency II. For example, 84% of European participants currently reference risk appetite in strategic and capital allocation, compared to 70% of North American insurers and 61% in Asia Pacific.

The survey also reveals that there are a number of key areas where risk appetite is still not referenced by many insurers and where there appears to be significant scope for the industry to improve. For example, only about half of participants explicitly reference or monitor risk appetite in risk transfer decisions (e.g., reinsurance, securitization or hedging), which is an area where risk appetite considerations would appear to be particularly relevant.

Overall, the results indicate that many insurers recognize the importance of ensuring there is strong control of risk-taking activities in line with stakeholder expectations. However, there is still much work to be done. The survey provides some further detail on the specific areas *(Figure 6)* that are targeted for development in order to make risk appetite operational.

- Globally, most insurers still expect to make further developments to their risk appetite statements and risk tolerances, with 81% of insurers planning further work in this area. Development plans include expansion of the range of key balance sheet, earnings, liquidity and franchise value metrics that are used. It is noteworthy that the most significant plans for expansion of balance sheet metrics include the use of economic capital metrics in risk appetite or tolerance statements.
- Approximately 80% of participants indicated they plan to develop or enhance their systems for internal monitoring and reporting of risk exposures against risk appetite. Implementing a robust and timely monitoring system that covers risk exposures at the necessary level of granularity is a significant challenge, but is still a critical step in the overall risk-control process.

Figure 6. Substantial work is planned to make risk appetite operational



- Three-quarters of insurers plan to further develop the risk policies and procedures that support their risk appetite. The importance of this task should not be underestimated, as these procedures will ultimately be relied on in times of stress — striking the right balance between clarity and conciseness is important.
- 70% of participants plan to demonstrate the consistency of their risk appetite statements with their risk limit structures; 43% are performing the work for the first time, and a further 27% are building on an existing framework. Without taking this step, it is difficult for an insurer to have confidence that day-to-day risk taking at all levels of the organization is consistent with its overall risk appetite and tolerance statements.

"Focusing on strategic risk metrics that are consistent with our customers' interests aligns our decision making with adding economic value and more efficient use of capital."

— Elizabeth Ward,
Executive Vice President and Chief Enterprise Risk Officer of MassMutual Financial Group

Economic capital methodology

The majority of insurers (of all types) now use a one-year risk assessment period. This approach is most prevalent among reinsurers (81%) and life insurers (74%). The percentage of P&C insurers using a one-year period for economic capital calculations, meanwhile, has increased since 2010 (from 49% to 56%).

The use of VaR (value at risk, or risk of ruin) as the primary measure of risk tolerance to calculate economic capital also continues to increase for all types of insurers. The increase is most notable among P&C insurers, from 67% in 2008 and 70% in 2010, to 79% in 2012. The use of VaR among P&C insurers is now in line with use among life insurers.

6

Finding Six: The potential of economic capital is yet to be realized

Many insurers recognize the role of economic capital as a key measure of risk and capital within an ERM framework. According to our 2012 survey, 64% of insurers already calculate economic capital, with a further 24% planning or considering the introduction of this metric.

However, there is still much to do to realize the full potential of economic capital as a tool to actually drive business decisions. For example, of all insurers that calculate this measure, only around half use it in business processes such as strategic planning, capital allocation and setting investment strategy. This is surprising, as these are key areas that would benefit from the information it provides about the level of risk assumed.

Further analysis shows that progress made embedding economic capital in these areas has been much slower than planned. For example, in 2010, 86% of those that calculated economic capital aspired to use it for strategic planning and capital allocation by 2012 — far higher than the 53% that were actually using it in 2012. This lack of progress might be ascribed to the challenges insurers face in both the *calculation* of economic capital and the *use* of it in the business.

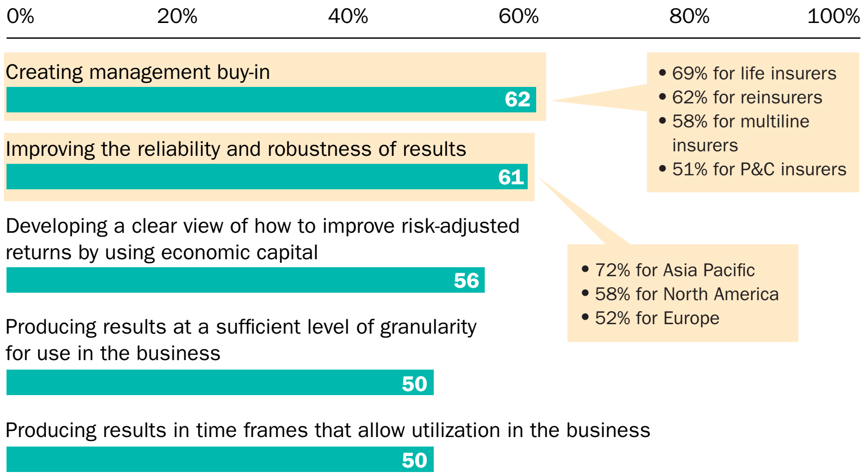
When calculating economic capital, a key challenge is establishing an appropriate methodology. Fifty-eight percent of 2012 participants said this was a concern, a substantial increase from 44% in 2010. This is somewhat unexpected, since economic capital is a fairly well-established concept. Much of the difficulty may relate to issues around the appropriate "base" balance sheet valuation methodology, particularly the allowance for illiquidity/matching, a question that has been a focal point since the financial crisis. There has been much research in this area, particularly in Europe, as stakeholders try to reflect such features of the Solvency II framework.

Half of the insurers that calculate economic capital also find it is a challenge to apply and justify expert judgment. This is not surprising, because such judgment needs to come from those with special expertise in each of the key aspects of an economic capital model, and such resources may not be readily available. Also, this judgment needs to be developed, applied and communicated clearly, which can be a difficult task.

Management buy-in is cited as the main hurdle to using economic capital to drive business decisions (62%) *(Figure 7),* especially for life insurers (69%). This is followed by the need to improve the reliability and robustness of results (61%), with more insurers from Asia Pacific (72%) than any other region recognizing this as a barrier to using economic capital in decision making. A large proportion of respondents also cite issues with the granularity and timeliness of results as barriers to increased use of economic capital. These findings may be linked — if the economic capital models are not yet sufficiently robust, then it is difficult for management to buy in to the use of economic capital in the business.

More positively, those that do calculate economic capital are significantly more likely to be satisfied with the performance of their ERM capabilities. Within this group, 61% of participants are satisfied with ERM performance, compared to just 39% for companies that do not calculate economic capital.

Figure 7. Management buy-in and robustness of results are the biggest barriers to increased use of economic capital in decision making



This suggests that economic capital is an important component of a fully developed ERM framework and one that can be used to drive risk/return decisions in an appropriate manner. Not only does economic capital provide a suitable metric with which to measure risk, but the process of developing and calculating economic capital also helps to generate additional insight into the nature of the risks the business is running. So economic capital is an "enabler" for other aspects of ERM, ranging from risk appetite, risk monitoring, and risk limits and controls, to risk culture.

This view is further supported by the survey results showing substantial planned growth in the calculation and use of economic capital. For example, 77% of insurers aim to include an economic capital threshold within their risk appetite statements in the next two years, up from 54% currently doing so.

Almost all of the companies (96%) that calculate economic capital plan to develop their capabilities further, and this is consistent with the investment that we see in tools and new methods to increase the robustness, timeliness and granularity of calculations.

> "The impact on economic capital is a key metric that we consider as part of any significant business decision."
>
> — Ian Carey,
> Head of Capital Management, Prudential plc

Finding Seven: ORSA/ICAAP is seen as beneficial by participants globally

The vast majority of respondents (90%) state that key aspects of the ORSA will generate either significant or moderate benefits for the business. Aspects regarded as valuable include the comprehensive analysis of risk profile, solvency and capital projections, scenario testing and continuous solvency monitoring. This suggests that many respondents intend to use the ORSA to improve the way their businesses are managed. We regard this as a positive step in ERM's evolution because it provides the opportunity for insurers to better integrate business planning, strategy and risk/return management.

However, technical challenges are also very evident. About 30% of respondents believe key aspects of the ORSA pose significant challenges, and a further 50% to 60% indicate they pose moderate challenges. This is especially the case for life insurers in Europe, which indicate significant difficulties posed by solvency and capital projections (40%) and continuous solvency monitoring (36%).

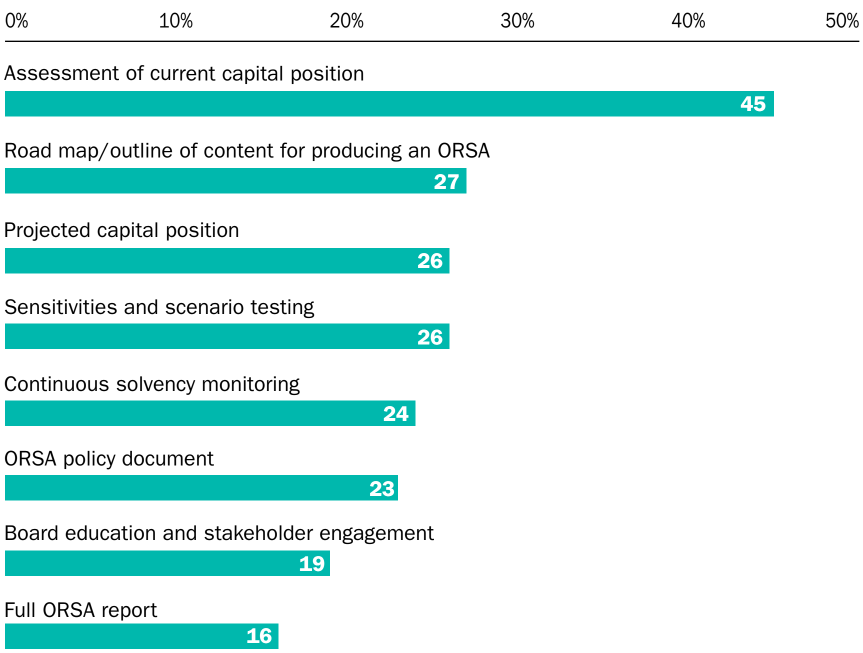
These technical challenges will depend in part on the basis that companies use for their ORSA. In Europe, Solvency II encourages economic balance sheet and capital calculations that may add to the technical challenges underlying the ORSA. In contrast, North American companies are more likely to use their existing regulatory basis for the ORSA — just 20% of North American participants see the development of solvency projections as a significant challenge.

Insurers generally still have some way to go before completing their ORSA, with each key aspect of the ORSA having been completed by only approximately one-quarter of participants. The level of progress across most key geographic regions is similar, which is surprising, given the different stages of evolution of the relevant regulations. For example, the ORSA in Solvency II has been reasonably well defined for a number of years, but Continental European companies do not indicate more progress than other regions.

Across the globe, insurers have made the most progress in their assessments of their current capital positions (45%), compared to just 16% that have completed their full ORSA reports *(Figure 8).*

Figure 8. Insurers still have some way to go before completing key ORSA components

% of participants having completed a particular component



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Appendix

Select List of Participating Companies

AAA Life Insurance Company
AAA Northern California, Nevada & Utah
Accident Fund Insurance Company of America
ACE Asia Pacific Services Pte. Ltd.
Achmea Holding N.V.
AEGON Asia
AEGON Life Insurance Company, Ltd.
AEGON Seguros y Reaseguros de Vida, Ahorro e Inversión, S.A.U.
AEGON UK
AEGON USA, Inc.
Aetna, Inc.
Ageas Insurance International
Ageas Insurance Limited
Aioi Nissay Dowa Insurance Co., Ltd.
Allianz
Allianz China Life Insurance Co., Ltd.
Allianz Life Insurance Company of North America
Allianz México, S.A. Compañía de Seguros
Allianz SE
Allianz S.p.A.
Allianz UK
Allied World Assurance Company, Ltd.
Allstate Corporation
Ally Financial
Alm. Brand Forsikring A/S
American Agricultural Insurance Company
American Family Insurance Group
American International Assurance Company (Bermuda)
American International Group, Inc.
American Modern Insurance Group, Inc.
American National Insurance Company
Ameritas Mutual Holding Company
AMP Limited
Apollo Munich Health Insurance Company, Ltd.
Arbella Insurance Group
Arch Capital Group, Ltd.
Asahi Mutual Life Insurance Company
Asia Capital Reinsurance Group Pte Ltd.
Assicurazioni Generali S.p.A.
Assomption Vie
Asuransi Jiwa Manulife Indonesia, PT
Aviva Ltd.
Aviva USA
AXA Asia
AXA China Region Insurance Company Limited
AXA UK plc

Bajaj Allianz Life Insurance Company Limited
Baloise Holding AG
Banca Mediolanum S.p.A.
Bharti AXA Life Insurance Company Limited
Biharko Aseguradora Compañia de Seguros y Reaseguros SA
Birla Sun Life Insurance Company Limited
Blue Cross Life Insurance Company of Canada
BNP Paribas Cardif
Builders Mutual Insurance Company
BUPA

Canopius Managing Agents Limited
Capital Insurance Group
Catalina Holdings (Bermuda) Ltd.
Catholic Financial Life
Catlin Group Limited
Chartis Europe Limited
China Continent Property & Casualty Insurance Company Ltd.
China Life Insurance Co., Ltd.
Cholamandalam MS General Insurance Co.
Chubb Corporation
Church Mutual Insurance Company
CIGNA Taiwan Life Insurance Company Limited, Taiwan Branch
CIMB Aviva Assurance Berhad
Civil Service Employees Insurance Group
CNO Financial Group, Inc.
Commonwealth Life, PT
Companhia de Seguros Açoreana, S.A.
Co-operative Insurance
Co-operators Life Insurance Company
COPIC Insurance Company
Cumberland Insurance Group
CUNA Mutual Insurance Group

Dai-Ichi Frontier Life Insurance Co., Ltd.
Dai-Ichi Life Insurance Company, Limited
Daido Fire and Marine Insurance Company
Daido Life Insurance Company
Defence Health Limited
Delta Lloyd Groep
Desjardins Sécurité financière

Ecclesiastical Insurance Group
Edelweiss Tokio Life Insurance Company
EMC Insurance Companies
Endurance Specialty Insurance Ltd.
Engage Mutual Assurance
Erie Insurance Group
Everest Reinsurance Company

Family Assurance Friendly Society Limited
Family Heritage Life Insurance Company of America
Farmers Mutual Hail Insurance
FCCI Insurance Group, Inc.
Federated Mutual Insurance Company
Fidelity Life Association
Finans Emeklilik ve Hayat A.S.
Flagstone Reinsurance Holdings Limited
Founder Meiji Yasuda Life Insurance Company Limited
Friends First
Friends Life Services Limited
Fuji Fire & Marine Insurance Co. Ltd.
Fuji Life Insurance Company, Limited
Fukoku Mutual Life Insurance Company
Fukokushinrai Life Insurance Company Limited
Future Generali India Life Insurance Company Limited

Generali Deutschland Holding AG
Generali USA Life Reassurance Company
Generali Vietnam Life Insurance Limited Liability Company
Genworth Financial, Inc.
Gjensidige Forsikring ASA
Goldman Sachs International
Great Eastern Holdings Limited
Groupama Seguros y Reaseguros, S.A.U.
Groupe Desjardins, Assurances générales
Groupe Promutuel
Guardian Life Insurance Company of America
GuideOne Insurance

Hana HSBC Life Insurance Co., Ltd.
Hannover Life Re of Australasia Ltd.
Hannover Rückversicherung AG
Hanover Insurance Group
Hartford Financial Services Group
Hiscox Insurance Company (Bermuda) Ltd.
Housing Authority Insurance
HSBC Insurance (Asia-Pacific) Holdings Limited
HSBC Insurance Bermuda Limited
HSBC Insurance Holdings Limited
HSBC Insurance Services
Huatai Life Insurance Company Limited

Icatu Hartford
ICICI Prudential Life Insurance Company Limited
IFFCO-TOKIO General Insurance Co. Ltd.
Independent Order of Foresters
ING Americas
ING Asia/Pacific Limited
ING Life Insurance Korea Ltd.
ING Vysya Life Insurance Company Limited
Injured Workers' Insurance Fund
Integrale CCA
Irish Life Assurance Plc

Japan Post Insurance Co., Ltd.
Just Retirement Limited

Kansas City Life
KB Life Insurance Ltd.
Kemper Corporation
Kinsale Capital Group, Inc.
Kyoei Fire & Marine Insurance Co., Ltd.

Legal & General Assurance Society Ltd.
Liberty Seguros, Compañía de Seguros y Reaseguros, S.A.
LIFENET Insurance Company
Lincoln Financial Group
Liverpool Victoria Friendly Society Ltd.
Lucida plc
Lusitania, Companhia de Seguros, S.A.

MAA Takaful Berhad
MACSF
Malaysian Reinsurance Berhad
Manulife Financial
Manulife Insurance Bhd
Mapfre S.A.
Marketform Management Services Ltd.
Max New York Life Insurance Co. Ltd.
Maxum Specialty Insurance Group
Meadowbrook Insurance Group Inc.
Merchant Investors Assurance Co. Ltd.
Merchants Group, Inc.
Meritz Fire & Marine Insurance Co. Ltd.
MetLife Europe Ltd.
MetLife Insurance Company of Hong Kong Limited
MetLife México, S.A.
MGM Advantage
Midland National Life Insurance Co.
Missouri Employers Mutual
Mitsui Sumitomo Insurance Co., Ltd.
Mitsui Sumitomo Primary Life Insurance Company, Limited
MLC Limited
MMG Insurance Company
Modern Woodmen of America
Montpelier Re Holdings Ltd.
Motorists Mutual Insurance Company
MTL Insurance Company
Muang Thai Insurance Public Company Ltd.

Nationwide Mutual Insurance Company
New York Central Mutual Fire Insurance Company
New York Life Insurance Company
NFU Mutual Insurance Society
Niederösterreichische Versicherung AG
Nipponkoa Insurance
Northwestern Mutual Life Insurance Company
Nuclear Electric Insurance, Ltd.

Ocean Life Insurance Company Ltd.
Ocidental Vida — Millenniumbcp Ageas Grupo Segurador
Odyssey America Reinsurance Corporation
Ohio National Financial Services
Old Mutual-Guodian Life Insurance Co., Ltd.
Old Mutual Plc
OneAmerica Financial Partners, Inc.
OneBeacon Insurance Group
ORIX Life Insurance Corporation

Pacific Life Insurance Company
Partnership
Pekin Insurance Company
Penn Mutual Life Insurance Co.
Penn National Insurance
Pension Corporation LLP
Philadelphia Contributionship
Pioneer State Mutual Insurance Company
Platinum Underwriters Holdings Ltd.
Preferred Professional Insurance Company
Principal Financial Group, Inc.
ProAssurance Corporation
Prudential Life Insurance Company of Korea, Ltd.
Prudential Plc
Prudential Seguros México, S.A.

QBE The Americas

RBC Insurance
Reaseguradora Patria, S.A.
Reinsurance Group of America, Inc.
Reliance Mutual Insurance Society Ltd.
RenaissanceRe Holdings
Royal London Group
RSA Insurance Group plc

SAIF Corp.
Samsung Air China Life Insurance Co. Ltd.
Schweizerische National-Versicherungs-Gesellschaft AG
Scor Reinsurance Co. (Asia) Ltd.
Scor Reinsurance Company
Scor SE
Scottish Widows Group
SEB Trygg Liv Holding AB
Securian Financial Group, Inc.
Security Benefit Life Insurance Company
Segurcaixa Adeslas S.A. de Seguros y Reaseguros
Seguros Atlas, S.A.
Signal Iduna Gruppe
Sino Life Insurance Company Limited
Sirius America
Società Reale Mutua di Assicurazioni
Sompo Japan Insurance Inc.
Southern Farm Bureau Life Insurance Company
Sparta Insurance Holdings Inc.
SPP Livförsäkring AB
Standard Insurance Company
Standard Life
Standard Life plc
State Auto Insurance Companies
State Fund Mutual Insurance Co.
Sul América Cia. Nacional de Seguros
Sumitomo Life Insurance Company
Sunshine Life Insurance Corporation Limited
Swiss Re Life & Health Canada

Taiyo Life Insurance Company
Talbot Underwriting Ltd.
TAL Life Limited
Tapiola General Mutual Insurance Company
T&D Financial Life Insurance Company
Teachers Federation Health Ltd.
Teachers Provident Society
Terra Brasis Resseguros
Thanachart Insurance Company Limited
Third Point Reinsurance Company, Ltd.
TIAA-CREF
Tokio Marine & Fire Insurance Co. (UK) Ltd.
Tokio Marine & Nichido Financial Life Insurance Co., Ltd.
Tokio Marine Compañía de Seguros, S.A. de C.V.
Tokio Marine Life Insurance Malaysia Bhd
Tokio Marine Life Insurance Singapore Limited
Tokio Marine & Nichido Fire Insurance Co., Ltd.
Tokio Marine & Nichido Life Insurance Co., Ltd.
Tokio Millennium Re Ltd.
Topa Insurance Company
Tower Group Companies
Transatlantic Reinsurance Company
TransGlobe Life Insurance Inc.
Travelers Companies, Inc.
Trisura Guarantee Insurance Company

Union Mutual
United Fire & Casualty Company
Unum Group
Unum Ltd.
USAble Life

Validus Reinsurance, Ltd.
Vereinigte Postversicherung VVaG
Verenigde Assurantiebedrijven Nederland N.V.
VidaCaixa, S.A. de Seguros y Reaseguros
Vittoria Assicurazioni S.p.A.

Wanaartha Life
Wesleyan Assurance Society
Western World Insurance Group
West of England
Wilton Re

XL Group plc

Yapi Kredi Emeklilik

Zurich North America
Zurich Vida, Compañía de Seguros y Reaseguros

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