



TOWERS
PERRIN

Embedding ERM — A Tough Nut to Crack

An ERM Update on the Global Insurance Industry



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EXECUTIVE SUMMARY

Towers Perrin's fifth biennial enterprise risk management (ERM) survey was conducted in May and June 2008 against the backdrop of the developing financial crisis. The survey reveals six major findings regarding risk and capital management among insurers worldwide.

- **Embedding ERM is proving to be a significant challenge.** Although companies have made progress in integrating ERM into their business, challenges remain. The majority of insurers believe that significant work is required to use economic capital (EC) in decision making and performance management. Less than a

fifth believe they have an appropriate capability in place for risk control, monitoring and reporting.

- **Size matters.** Larger insurers are significantly more advanced in most aspects of ERM implementation and are increasingly looking to realize their competitive advantage.
- **European insurers are better positioned.** North American insurers trail their European counterparts in EC implementation and its use in decision making. Under Solvency II, these capabilities are expected to lead to lower capital requirements and create competitive advantage.

- **ERM is influencing decisions.** Significant numbers of respondents indicate that their ERM program has resulted in key business changes, including such aspects as risk strategy or appetite, asset strategies and product pricing.
- **EC standards are emerging.** EC methodology is moving toward a one-year value at risk (VaR) approach; the majority of respondents use a market-consistent terminal balance sheet.
- **Operational risk remains a weak spot.** Very few participants believe they have an appropriate operational risk capability in place, and many indicate that significant work is required.

“The year 2008 has been blighted by the crisis in the financial markets, the fragile state of the global economy and a U.S. hurricane season that has resulted in huge insured losses. Together, these factors have culminated in a wake-up call to insurers that underscores the importance of having clearly defined risk strategies and tolerances in place. There has never been a more critical time for insurance companies to take a holistic approach to ERM. This means connecting a company's risk tolerance to the decisions it makes and the capital it holds, while fostering a culture of prudent risk management and risk taking at every level of the organization.”

— *Patricia Guinn, Managing Director
Risk & Financial Services*

More than 350 insurance and reinsurance executives participated in the survey, making this the largest global insurance industry survey on ERM to date.

While our survey results reflect the perceived state of ERM implementation just before the latest stage of the financial crisis erupted, our key findings remain highly pertinent in the current environment. We anticipate that senior insurance executives who read this report will find this information valuable in shaping their future risk management efforts as they strive to control risk taking and add value for their organization.

RESPONDENT PROFILE

This report details findings from our Web-based survey of senior risk and finance executives in insurance companies around the world.

Survey respondents included many of the world's largest insurers; more than half have revenues in excess of \$1 billion, and approximately 16% take in over \$10 billion annually. Smaller firms — those with revenues of up to \$1 billion — were also well represented, contributing 45% of the survey's respondents.

Participants represented a wide geographic spread of insurers, including companies from North America (50%), Europe (31%), Asia/Pacific (17%), Latin America (1%) and Africa/Middle East (1%).

In addition, all lines of insurance business were covered, including life insurance (34%), property & casualty insurance (33%), reinsurance (10%) and health (4%). Multiline insurers and other financial groups represented the remaining 19% of participants.

We are grateful to the 359 executives from around the globe who took the time to participate in this survey and share their thoughts on these important issues.

INTRODUCTION

The year 2008 was a hard one for the insurance industry, with big drops in major equity markets, high levels of volatility and credit spreads reaching levels not seen since the 1930s. While the loss of funding/liquidity that has hit the banks is of less importance in the insurance sector, most insurers have significant exposure to market and credit risk. Even with a highly effective ERM framework, 2008's market movements would have been expected to trigger major losses.

Judged in this context, the insurance industry has — with certain exceptions — not performed badly. While policyholders' confidence in the industry may have been shaken and regulators suffered numerous sleepless nights, policy benefits have remained secure. However, many shareholders have incurred significant losses, and in some cases those losses have been catastrophic. The worst-hit insurers remain solvent but are struggling to recapitalize so they can maintain their credit standing and continue writing business.

So where do we go from here? There is an implication in many commentaries that companies should de-risk to avoid a repeat of the current situation. While

this may be the appropriate remedy in some cases, in general, it is not. Reduced risk implies lower potential reward; shareholders buy stock to reap rewards, and exposure to risk is part of the equation. But risk taking must be well controlled, in line with capitalization and stakeholder communications, and efficient — that is, aligned with the company's strategy and its core capabilities. Key questions insurers need to ask now are:

- Have we defined the amount and nature of the risks we plan to take (our risk appetite), and communicated this to our key stakeholders?
- Does our organization and governance structure place adequate controls on risk taking (in line with our appetite and model results)?

- Does our culture and remuneration structure support an appropriate balance of risk and reward?
- Do we have appropriate systems and processes in place to monitor and manage fast-emerging risks?
- Are our product designs consistent with our ability to manage the risks?
- Do we have the capability to quantify the risks we take on, and do we take sufficient note of the results?
- Is our board of directors sufficiently aware of all these issues?

SIX MAJOR FINDINGS

FINDING 1

EMBEDDING ERM IS PROVING TO BE A SIGNIFICANT CHALLENGE

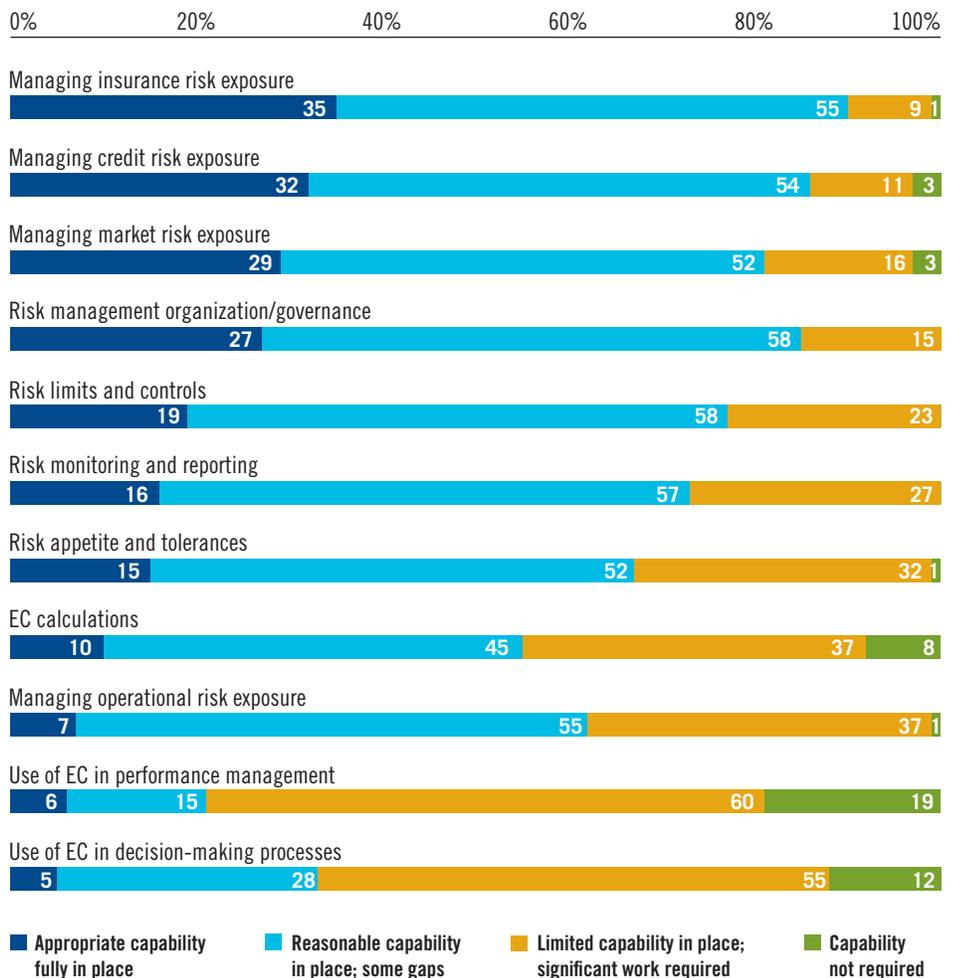
Although companies have made progress in integrating ERM into their business, the results of our 2008 survey suggest that insurers worldwide continue to struggle with the challenge of embedding ERM.

Considering first the adoption of EC metrics, it is clear that a significant percentage of insurers are still focusing on calculating EC as opposed to using it. Thirty-seven percent of respondents indicate that calculating EC is an area where significant work is needed, with just 10% of insurers believing they have an appropriate capability in place (*Exhibit 1*).

This is reinforced by the fact that planned improvements to EC calculations are concentrated on getting the basics right, with insurers looking to enhance modeling methodology for individual risks (46%), improve data quality (45%) and extend the risks covered by their models (42%). Factors that are integral to using EC in decision making, such as the timeliness (25%)

EXHIBIT 1

Significant work remains to be done in relation to EC calculations, and even more on using EC in the business



Insurers admit that they have significant work to do before they are able to use EC in performance management and decision making.

and granularity of results (16%), and the ability to allocate diversification benefits (22%), are not yet a high priority (*Exhibit 2*).

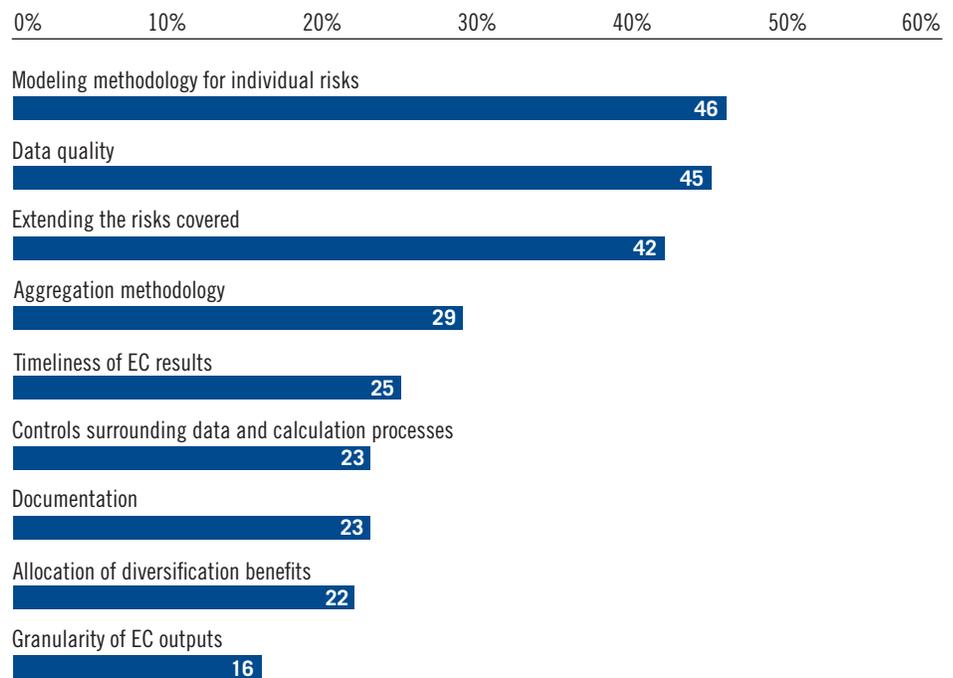
Insurers also admit that they have significant work to do before they are able to use EC in performance management (60%) and decision making (55%). However, neither is being treated as a top priority. This suggests these “difficult” issues are being deferred until the quality of core EC calculations improves.

In Europe, approval of an internal capital model under the proposed Solvency II framework requires the model to be embedded in the management of the business. Rating agencies have similar requirements for recognizing internal model results. However, only 11% of European insurers believe their internal capital models would currently meet the Solvency II requirement, and they consider “embedding the model within your company’s business” to be the greatest prospective challenge to achieving internal model approval (cited by 63% of participants).

Moving away from EC, less than a fifth of participants believe they have an appropriate capability in place for risk control, monitoring and reporting — as

EXHIBIT 2

Improvements to EC calculations are focused on getting the basics right, as opposed to facilitating its use



well as for setting risk appetite and tolerances to guide these activities. These capabilities are essential if risks are to be maintained in line with stakeholder expectations.

When asked about the nature of the challenge in implementing ERM, participants highlighted issues concerning data, systems and people skills. These challenges relate primarily to calculation processes. Issues of leadership, culture and business processes,

which are often major challenges in the embedding process (as opposed to the risk quantification processes), were not mentioned as frequently.

Finally, in what we see as a critical indicator of the integration of ERM in the business, only 30% of insurers currently incorporate risk measures into incentive compensation arrangements.



FINDING 2 SIZE MATTERS

A detailed analysis of the survey results shows that larger insurers (those with revenues in excess of \$10 billion) are significantly more advanced in most aspects of ERM implementation and are increasingly looking to realize their competitive advantage.

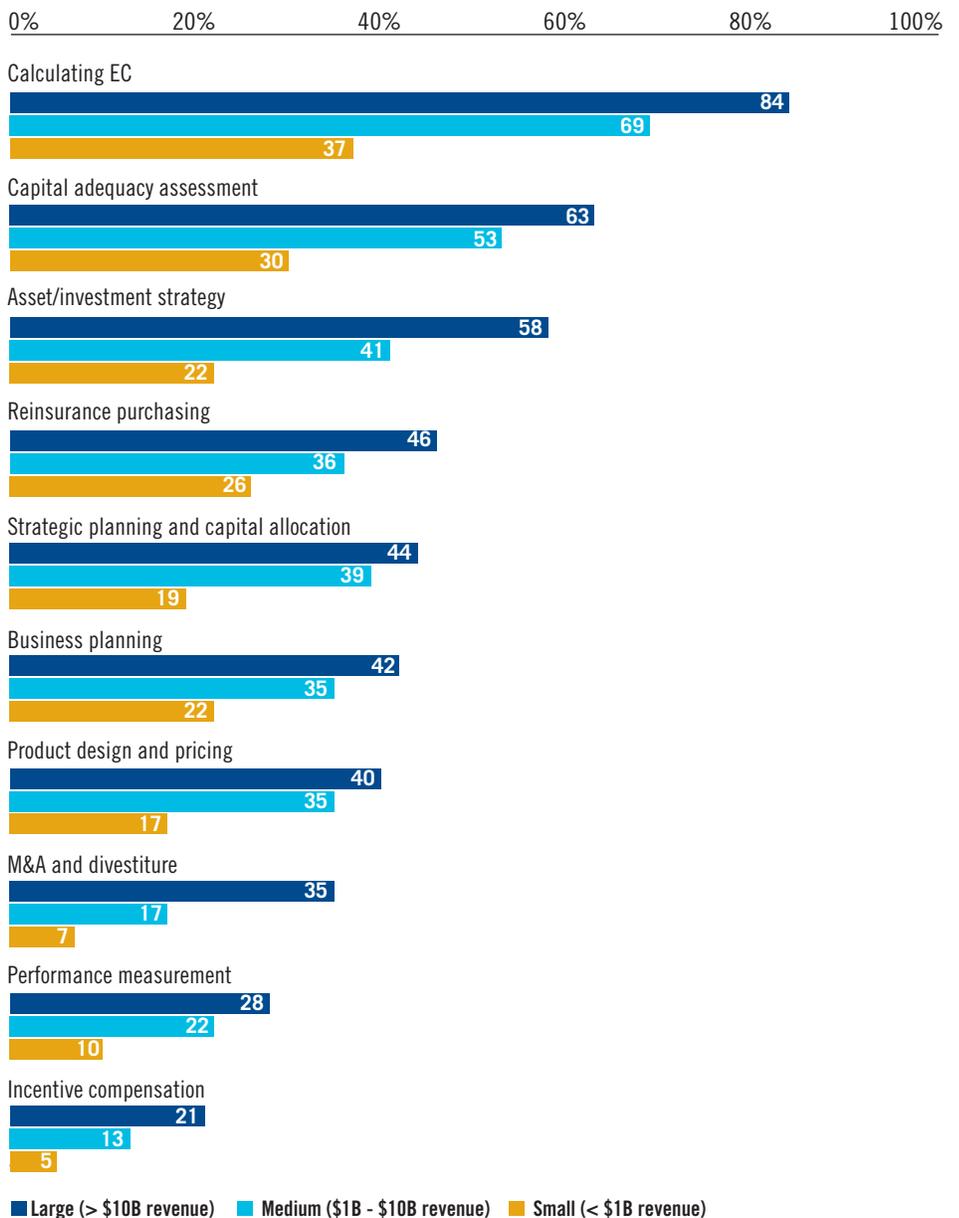
Large companies demonstrate a superior level of commitment to EC, with 84% already calculating EC, compared to 69% of medium-size companies (firms with between \$1 billion and \$10 billion in revenues) and 37% of small organizations (those with less than \$1 billion in revenues).

Larger firms are also already leading the way in utilization of EC. For example, 44% of larger companies use EC in strategic planning and capital allocation, compared to 19% of small firms. Similarly, 40% of larger insurers use EC in product design and pricing, compared to 17% of small organizations (*Exhibit 3*).

This lead will likely be maintained. While 61% of large insurers are giving short-term prioritization to using EC in decision-making processes, only 29% of smaller firms are doing so. Within two years, a high percentage (84%) of

EXHIBIT 3

Size matters when it comes to whether or not companies calculate EC and how they use it in their business



Almost 90% of European respondents have set limits for the day-to-day management of market risk, compared to less than two-thirds of North American respondents.

large companies plan to be using EC in performance measurement, but only 46% of small companies plan to do so.

In addition to greater EC utilization, competitive advantage features much more strongly as a driver of ERM activities among larger organizations (65%) compared to smaller ones (40%). Market consolidation seems inevitable as larger companies achieve growth through consolidating with smaller, less sophisticated firms that are unable to keep pace. This is particularly supported by the responses from European insurers. Since our 2006 survey, the expected impact of Solvency II on European insurance markets has swung strongly toward consolidation (up from 40%, to 50% of respondents) and away from the need to raise more capital or resort to more innovative financing techniques (down from 55% to 39%).

FINDING 3

EUROPEAN INSURERS ARE BETTER POSITIONED

Analysis of survey results by region shows that North American insurers are trailing their European counterparts in key aspects of ERM implementation. These include the calculation and use of EC, which, through the internal model option under the proposed

Solvency II framework, are expected to lead to lower regulatory capital requirements for European insurers and, therefore, a competitive advantage over their regional and global peers.

European insurers are generally more comfortable with their ERM capabilities. For example, 23% of North American firms feel significant work is needed in relation to managing market risk exposure, compared to only 7% of European insurers. This is further evidenced by the extent of documentation of risk policies, where European insurers and those in Asia/Pacific lead North American firms in most respects. In relation to EC calculations, 45% of North American insurers feel there remains much to be done, compared to 27% of European firms and 31% in Asia/Pacific.

Risk control is another key aspect of ERM implementation. Here it is notable that a higher proportion of European companies have documented their risk appetite (52% of respondents, versus

40% in North America) and set risk limits for day-to-day management. For example, 88% of European respondents have set limits for management of market risk, compared to 61% in North America.

Returning to EC, more European insurers calculate EC than other respondents (78% in Europe, compared to 45% in North America and 59% in Asia/Pacific). Perhaps as a consequence of this, European firms are giving greater short-term priority to using EC in their decision making (56% of respondents), compared to North America (40%) and Asia/Pacific (38%). Within 24 months, 80% to 90% of European insurers expect to be using EC in most major decision-making processes, compared to 60% to 75% of North American firms and 50% to 65% of insurers in Asia/Pacific. Moreover, 74% of European insurers expect to be using EC in performance measurement within two years, compared to 54% of North American insurers and 50% in Asia/Pacific.

“Solvency II is having a tremendous impact on how insurers in Europe are addressing capital requirements and risk. Solvency II is driving European insurers to more sophisticated risk analyses, which puts them in a stronger negotiating position for lower capital requirements. Regulatory drivers are also raising awareness about risk mitigation, including the need to purchase reinsurance.”

— *Steve Taylor-Gooby, Managing Director
Insurance Consulting Business*

Nearly 80% of participants reported that their ERM program had influenced important business decisions over the last two years.

FINDING 4

ERM IS INFLUENCING DECISIONS

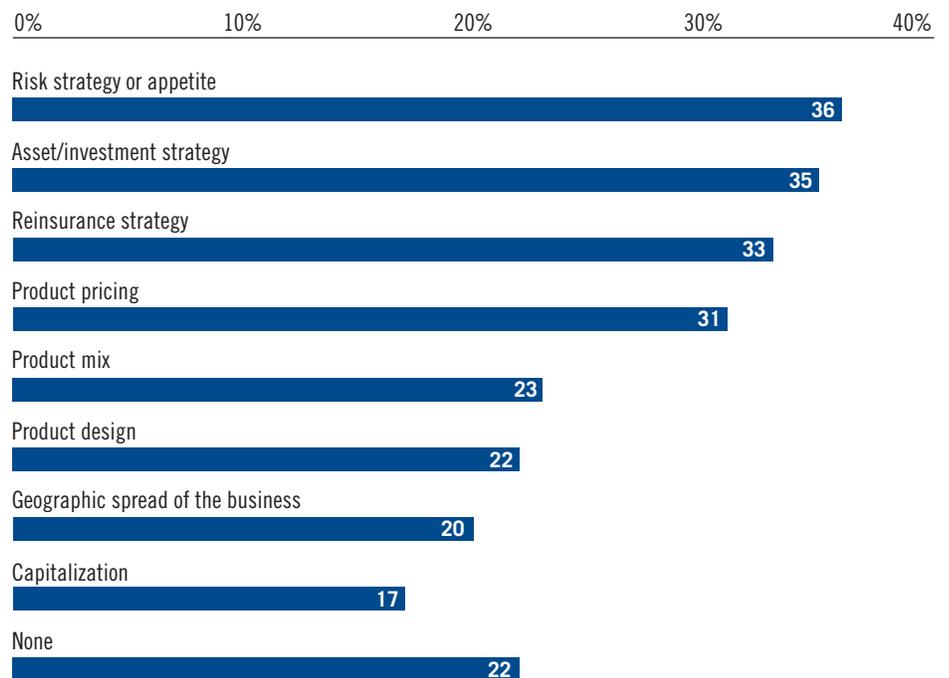
In spite of the challenges of embedding ERM, significant numbers of respondents indicated that their ERM program has already resulted in key business changes.

Nearly 80% of participants reported that their ERM program had influenced important business decisions over the last two years. Major aspects highlighted include (*Exhibit 4*):

- changes in risk strategy or appetite (36% of respondents)
- changes in asset strategy (35%)
- changes in reinsurance strategy (33%)
- changes in product pricing (31%).

EXHIBIT 4

Key business changes have resulted from ERM activities





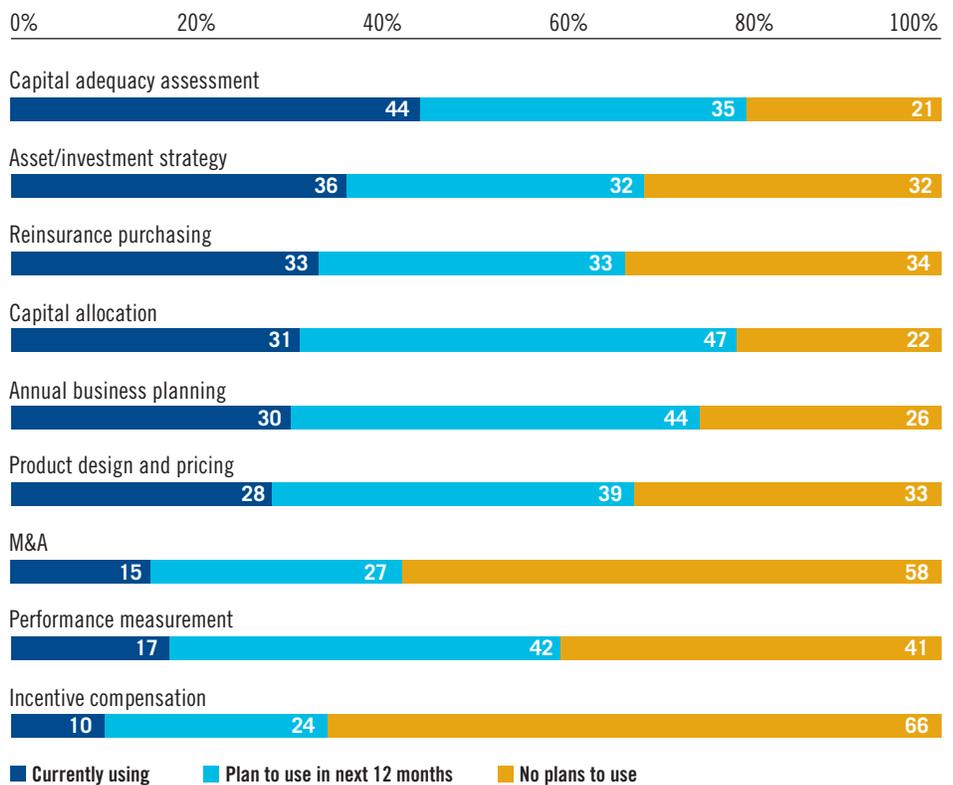
Life company respondents most frequently reported changes to asset strategy (44%), while property & casualty insurers reported changes to reinsurance strategy (42%), and reinsurers most frequently reported changes in pricing (50%).

In addition, a reasonable proportion of insurers indicate that they are already using their EC results in decision-making processes — including capital adequacy/capital management (44%), asset strategy (36%) and product design and pricing (28%) (*Exhibit 5*).

Looking ahead, 44% of respondents highlighted use of EC in decision making as a priority for 2008 and 2009; this proportion increases to 82% for Bermuda respondents and 70% for U.K. respondents. Over the next 24 months, insurers anticipate significantly greater use of EC in a number of areas of their business — for example, in product design and pricing (up from 28%, to 67%) and in performance measurement (up from 17%, to 59%).

EXHIBIT 5

Use of EC in decision making is set to change dramatically



However, the impact of ERM may be limited unless approaches to incentive compensation change. Currently, only 30% of respondents incorporate risk measures of any kind into incentive

compensation arrangements, and only 10% use EC for this purpose. Furthermore, 66% of insurers globally have no future plans to use EC in incentive compensation.



FINDING 5 ECONOMIC CAPITAL STANDARDS ARE EMERGING

Comparing the results of our last three ERM surveys, it is clear that a global standard for EC methodology is now emerging. Companies are increasingly adopting a one-year VaR approach, with the majority using a market-consistent terminal balance sheet.

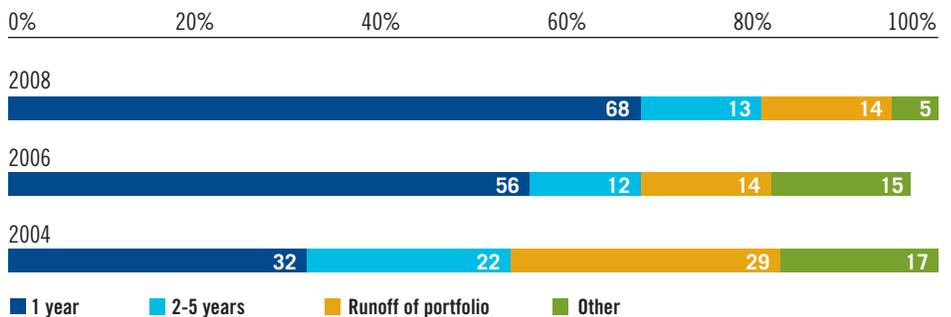
Over the last four years, there has been a substantial global shift toward calculating EC over a one-year risk assessment period, from 32% of participants in 2004, to 56% in 2006 and 68% in 2008 (*Exhibit 6*). Even in North America, where this approach is less common, the percentage has increased from 43% in 2006 to 57% in 2008.

While 85% of larger insurers apply a one-year risk assessment period, a significant percentage of medium-size (35%) and smaller (39%) companies continue to use alternative methods, particularly two-year to five-year time horizons and the runoff of the portfolio. Overall, the use of these alternative time horizons changed little from 2006 to 2008 (at just over 25%, in aggregate).

The use of VaR (or risk of ruin) as the primary measure of risk tolerance used to calculate EC has increased from 52% in 2004 to 67% in 2008. During

EXHIBIT 6

Use of a one-year time horizon is increasingly the standard for EC calculations



the same period, the use of tail value at risk (TVaR) or conditional tail expectation (CTE) has fallen from 31% to 21%. Other measures have largely fallen away.

The growing popularity of VaR is consistent across the industry, with only marginal differences among smaller (61%), midsize (69%) and larger (75%) firms. VaR is most often adopted as a risk measure among multilines (81% of respondents), whereas TVaR is most commonly used among reinsurers (33%) and life insurers (28%).

Where a fixed period is used for calculating EC, more than half of respondents (56%) use a market-consistent terminal balance sheet. Although this approach is common among multilines (85%) and life (67%) companies, just 37% of property & casualty insurers adopt this approach. As alternatives, property & casualty insurers adopt GAAP/IFRS (35%) or regulatory (24%) balance sheets.

FINDING 6 OPERATIONAL RISK REMAINS A WEAK SPOT

While major losses often emerge as market, credit or insurance risk events, in many cases, operational risk is a key component of the underlying causes. Nevertheless, our survey shows that insurers continue to struggle with operational risk.

Globally, just 7% of participants believe they have an appropriate operational risk management capability in place, and 37% indicate that significant work is required in this area. This is in marked contrast to views expressed on insurance, credit and market risks, which 9%, 11% and 16% of participants, respectively, highlight as requiring significant work. However, operational risk management ranks only

The recent wave of losses in the financial services industry is resulting in a reassessment of the role of operational risk and the need for its active management.

seventh among 2008 and 2009 ERM priorities, mentioned by 41% of respondents globally (*Exhibit 7*).

Placing controls around operational risk taking also appears to be proving problematic. Of those companies that have set limits to govern day-to-day risk taking, over 70% now have limits for market, credit and insurance risk, but just 26% have limits for operational risk.

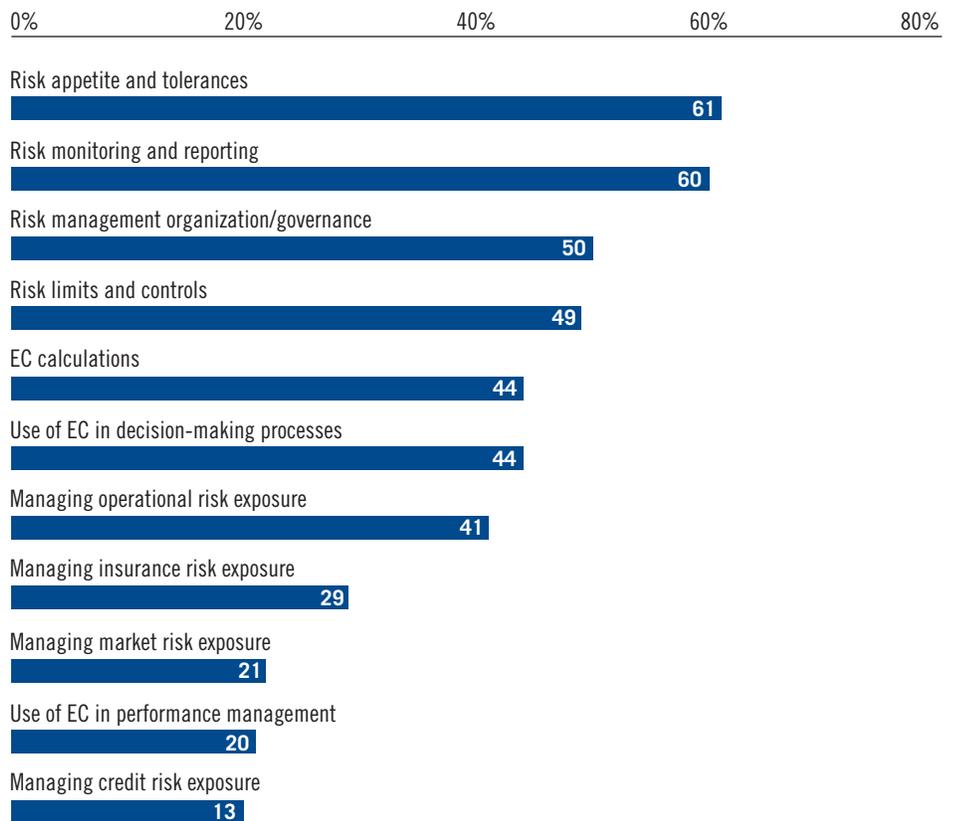
In part, this may relate to the difficulty companies have in quantifying operational risk. The wide range of risks and the lack of immediately available data often require techniques quite different from those used for other risks. In calculating EC for operational risk, relatively simplistic factor-based methods remain the most commonly

“Organizations are increasingly recognizing the importance of successfully managing their entire risk landscape, and not just those risks that are either familiar or easy to quantify. Every risk can be viewed as both a threat and an opportunity. Market leaders of the future will be those companies that have developed a strong risk-based culture that is fully aligned and actively engaged in their risk analytics and business processes.”

— **Prakash Shimpi**, Practice Leader
Enterprise Risk Management

EXHIBIT 7

Managing operational risk is not high on the overall list of ERM priorities for 2008 and 2009



used approach (43%), with only 17% using stress testing and 16% using stochastic methods.

Finally, the percentage of European insurers expecting to use an internal model for operational risk (51%) lags significantly behind the corresponding percentages for insurance, market and credit risks (86%, 80% and 65%, respectively). While this may relate,

in part, to the relative intractability of operational risk, it is also a function of the perceived capital advantage to be obtained.

We believe that the recent wave of losses in the financial services industry is resulting in a reassessment of the role of operational risk and the need for its active management.

APPENDIX — Select List of Participating Companies

Accident Fund Insurance Company of America	AXA UK	Fondiaria SAI S.p.A.
Achmea	Beaufort Underwriting Agency Limited	Fortis SA/N.V.
Aetna Inc.	BES-VIDA, Companhia de Seguros, S.A.	Frankenmuth Financial Group
AFLAC International, Inc.	BlueCross BlueShield of Minnesota	Fukoku Mutual Life Insurance Company
AIG Companies, Japan and Korea	Blue Cross Life Insurance Company of Canada	Generali USA Life Reassurance Co.
AIOI Insurance Company	Caixasabadell Vida, S.A. de Seguros y Reaseguros	Genworth Financial, Inc.
AIX GroupAlleanza Assicurazioni S.p.A.	Canopus Managing Agents Limited	Global Seguros
Allianz of America Corp.	CastlePoint Reinsurance Company, Ltd.	GMAC Insurance
Allianz Insurance plc	Catlin Group Limited	Gothaer Finanzholding AG
Allianz Life Insurance Japan Ltd.	China Life Insurance Company Limited	Great Eastern Holdings Limited
Allianz S.p.A. (Ras)	Church Mutual Insurance Company	Great Eastern Life Assurance (China) Co. Ltd.
Allianz SE	Cincinnati Financial Corporation	Groupama Central
Allstate Insurance Company	Citadel Reinsurance	Groupe Promutuel Féd. Soc. Mutuelle d'Ass. Gén.
American Family Insurance Group	ClearView Retirement Solutions	The Guarantee Company of North America
American Fidelity Assurance Company	CNA Financial Corporation	Guard Insurance Group, Inc.
American International Group, Inc.	Conseco, Inc.	GuideOne Insurance Company
American International Group Australia Pty. Ltd.	Co-operators Life Insurance Company	Guilford Specialty Group Inc.
American Modern Home Insurance Company (Inc.)	Country Insurance & Financial Services	Hannover Rückversicherung AG
Ameriprise Financial, Inc.	Daido Life Insurance Company	Hardy (Underwriting Agencies) Ltd.
Arab Insurance Group (B.S.C.)	The Dai-ichi Mutual Life Insurance Company	Harleysville Insurance Companies
Arch Capital Group Ltd.	Delta Lloyd Deutschland AG	The Hartford Financial Services Group, Inc.
Argo Group U.S.	Delta Lloyd Groep	Hartford Life Insurance K.K.
Ariel Reinsurance Limited	Desjardins Financial Security	HBOS plc
Asahi Mutual Life Insurance Co.	EFG Eurolife Insurance	Helvetia Compañía Suiza, S.A. de Seguros
Assicurazioni Generali S.p.A.	Electric Insurance Company	Horizon Blue Cross Blue Shield of NJ
Assumption Mutual Life Insurance Co.	Empire Financial Group	Hortica Insurance Company
Assured Guaranty Ltd.	Engage Mutual Assurance	The Independent Order of Foresters
Atradius Credit Insurance N.V.	Entraide Assurance-Vie	ING Antai
Aviva plc	Equitable Life of Canada	ING Australia
Aviva Canada Inc.	Erie Insurance Group	ING U.S. Financial Services Group
AXA Australia	Everest Reinsurance Company	IPCRE Limited
AXA France Solutions	FaithLife Financial	Just Retirement Limited
AXA Life Insurance Co., Ltd.	Faraday Underwriting Limited	Kansas City Life Insurance Company
	Folksam Ömsesidig Livförsäkring	

La Mondiale Partenaire	Northwestern Mutual	Sirius International Försäkrings AB
Lincoln Financial Group	Norwich Union Life Services Ltd.	Skandia Life Assurance Company Ltd.
Louisiana Medical Mutual Company	Nuclear Electric Insurance, Ltd.	Solidarity
Lusitania-Companhia de Seguros, S.A.	OneAmerica Financial Partners Inc.	Sony Life Insurance Co., Ltd.
Lusitania Vida, Companhia de Seguros, S.A.	One Beacon Insurance Company	Sparta Insurance Holdings Inc.
Main Street America Assurance Co.	Pan-American Life Insurance Company	Spectrum Syndicate Management Ltd.
Manulife Financial	Partner Reinsurance Company Ltd.	The Standard Life Assurance Company
MAPFRE TEPEYAC	Partnership Assurance	Standard Mutual Insurance
Maryland Medicine Comprehensive Insurance Co.	Penn National Insurance	State Auto Insurance Company
Maxum Specialty Insurance Group	Pennsylvania Lumbermens Mutual Insurance	State National Insurance Company, Inc.
Meadowbrook Insurance Group	Philadelphia Insurance Companies	St. James's Place Wealth Management Group plc
Mediolanum S.p.A.	The Phoenix Companies, Inc.	Sun Life Financial of Canada
Meiji Yasuda Life Insurance Company	Physicians Mutual Insurance Co.	Swiss Re Australia
Mercer Insurance Group	Platinum Underwriters Re	Swiss Re Life & Health Canada
Missouri Employers Mutual Insurance	Podiatry Insurance Company of America	Systemax Inc.
Mitsui Sumitomo Insurance Co., Ltd.	Pohjola Insurance Ltd.	Tapiola Group
Mitsui Sumitomo MetLife Insurance Co., Ltd.	Principal Financial Group, Inc.	Tokio Marine & Nichido Financial Life Insurance Co.
MLC Life Limited	Promutual	Tokio Marine and Nichido Fire Insurance Co. Ltd.
MMG Insurance Company	Prudential plc	Tokio Marine & Nichido Life Insurance Co., Ltd.
Motorists Life Insurance Company	Prudential Life Insurance Company, Ltd.	Tokio Millennium Re
Mutual & Federal Insurance Company Limited	Prudential Life Ins. Co. of Taiwan Inc.	Topa Insurance Company
National Agricultural Cooperative Federation	Reliance Mutual Insurance Society Ltd.	Travelers Insurance Company Ltd.
National Western Life Insurance Company	RGA Reinsurance Company	Tryg Vesta A/SUNIFI Mutual Holding Company
Nationwide Financial	RGA Reinsurance UK Limited	Union Labor Life Insurance
Navigators Insurance Company	RLI Insurance Company	Unipol Gruppo Finanziario S.p.A.
New Jersey Manufacturers Insurance Co.	The Royal London Mutual Insurance Society Ltd.	United Heritage Life Insurance Company
New York Life Insurance Taiwan Corp.	SCF Arizona	USAA
Nexgen Financial Solutions Ltd.	SCOR Switzerland Ltd.	Vanliner Insurance Company
NFU Mutual Insurance Society Ltd.	Scottish Re Holdings Ltd.	Western United Life Assurance Company
Nipponkoa Insurance Co., Ltd.	Scottish Widows plc	White Mountains Re Group Ltd.
Nissay Dowa General Insurance Company, Limited	Scottsdale Insurance Company	Woodmen of the World Life Insurance
NLC Mutual Insurance Company	Securian Financial Group	Zurich Financial Services
Norfolk & Dedham Group	Shenandoah Life Insurance Company	Zurich Investments Life S.p.A.
	Sinatay Life Insurance Company, Ltd.	



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