



INSURANCE

Risk and Capital Management for Insurers

Second annual survey of capital assessment practice in the insurance sector

FINANCIAL SERVICES

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Foreword

Risk and capital management for insurers

Risk and capital management are core processes at the heart of every successful business and as such should be integrated into corporate strategy and organizational culture. Regulators and stakeholders will expect nothing less.

The very nature of insurance – underwriting risk – has led to the creation of risk management. Yet ironically most insurers have tended to view risk management more as a regulatory compliance activity rather than an integral part of the business.

In this second annual survey, KPMG International is seeking to gain a better understanding of the current capital assessment practices, in relation to overall risk management, and future expectations of insurers.

The survey also explores how insurance providers are shaping up ahead of Solvency II, a project initiated by the European Commission in 2000. This initiative aims to review insurance prudential rules at a European level, to establish an EU-wide solvency system that reflects the true risks of an insurance company.

This research is part of KPMG member firms' ongoing commitment to help insurance organizations worldwide achieve a more integrated approach to risk and capital management.

Peter de Groot*

Partner, Global Head of Risk and Capital Management (Insurance)

Our approach

The survey was carried out between October and December 2005, principally through an online survey in association with Risk Magazine. This online survey was supplemented with face-to-face meetings and a postal questionnaire. The individual respondents ranged from insurance practitioners to risk professionals including managing directors, heads of actuarial, chief risk officers, finance directors, heads of capital planning and compliance directors.

A total of 294 companies across Life, Non-Life, Bancassurance and Reinsurance responded from 43 countries (see Figure 1). The range of questions covered included:

- types of risks covered by a risk policy or within a risk management framework
- risk-based capital valuation and interaction between types of risk
- adoption of an internal versus an external capital model
- how the capital allocation process is used
- drivers of economic versus regulatory capital
- preparedness for Solvency II.

Figure 1 Participating countries

Australia	India	Puerto Rico
Belgium	Indonesia	Russia
Bermuda	Ireland	Saudi Arabia
Brazil	Italy	Singapore
Canada	Japan	Slovenia
Croatia	Korea	South Africa
Czech Republic	Malaysia	Spain
Denmark	Mexico	Sweden
Finland	Netherlands	Switzerland
France	New Zealand	Thailand
Germany	Pakistan	U.A.E
Greece	Peru	U.K.
Guatemala	Philippines	U.S.
Hong Kong	Poland	
Iceland	Portugal	

Source: KPMG International, June 2006

Executive summary

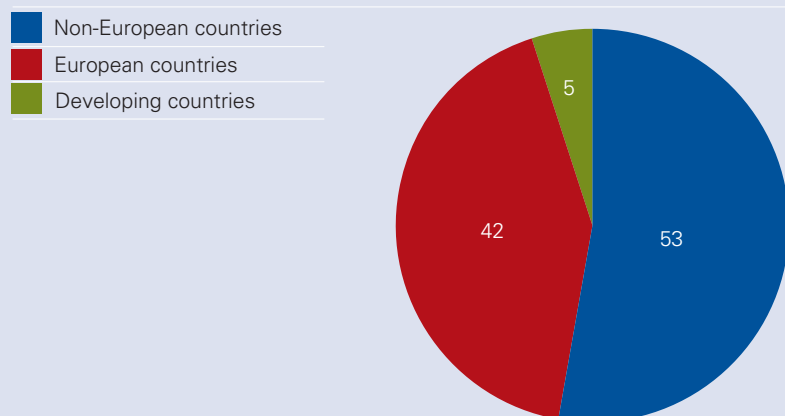
KPMG International's risk and capital management survey shows that this topic is right at the top of the executive agenda. With nearly 300 respondents, the significant worldwide interest and response to the survey reflects growing interest in this important area. The interest is not just confined to Europe which is planning to introduce Solvency II (see Figure 2). The worldwide response illustrates management's awareness that capital management is the key topic for insurance executives. There are many good business reasons to take a close look at risk and capital management:

- recent catastrophe losses (e.g., Katrina)
- the fall in equity prices and lower interest rates
- capital not being freely available and providers being more selective and demanding an adequate return when subscribing for new capital.

As the survey shows, while many could perceive European insurers to be ahead, as a result of the forthcoming Solvency II regime, there is, in fact worldwide interest, spurred no doubt by the IAIS interest in Solvency II and the rating agencies. In fact our survey shows that there is growth in risk management practice on a worldwide basis. Those who do not engage in the near future are likely to be left behind by their peers who may have better information with which to inform their business decisions.

Notwithstanding the interest, though, the survey highlights some of the key difficulties around the implementation of risk based capital models and these include challenges around modeling approaches, sourcing data and finding the right risk management professionals for the organization.

Figure 2 Overview of participating countries %



Source: KPMG International, June 2006.

Moving forward

The results of the survey indicate a healthy and growing awareness of risk and capital management, although only about a half of all respondents currently use a model to calculate their capital needs. Interestingly, ratings agencies are now taking a keen interest in insurers' risk and capital management frameworks – a wake up call if ever one was needed, as poor ratings can affect access to capital.

The industry has clearly come a long way forward when compared to a few years ago when it was rare for companies to look beyond insurance risk. Indeed, the fact that well over half of all the respondents are outside the EU shows a growing interest in the whole subject. The key messages from the survey are:

- The main drivers for improving risk and capital management appear to be for business rather than regulatory purposes. Fifty-eight percent of respondents to this survey were located outside the EU. Their reasons for improving risk and capital management can be assumed to be commercial, a sign of growing acceptance of this practice.
- The effects of correlation and diversification represent major conceptual and practical challenges. Companies are struggling to aggregate risks accurately and lack data and knowledge on the interactions between events. About 70 percent of companies surveyed use some form of methodology for aggregating risks with the correlation matrix being the most popular.

- Just under a third of those surveyed use the Risk Adjusted Return on Capital (RAROC) methodology to measure performance. Bancassurers remain ahead in calculating RAROC, followed by Life companies, Multilinear groups and Non-Life companies.
- Seventy-one percent of the respondents use some type of risk management framework and around 18 percent claim to be measuring and modeling insurance risk. About 50 percent of respondents have a capital model in place and of those who don't, 68 percent of them hope to have one in place in the future. There is quite a variety across sectors, with Non-Life and reinsurers ahead in their use, and only a very small proportion of Health and Multilinear groups choosing to use a model.
- Two major concerns emerge from the survey in implementing risk management frameworks and capital models – lack of staff with appropriate knowledge leading to constraints in making rapid progress and availability of data resulting in the use of more subjective estimates.
- Despite the looming arrival of Solvency II, it's interesting to note that there is no real difference between those within and outside of the EU in terms of current and future usage of capital models. However, looking more closely at specific sectors, EU Non-Life, reinsurance and financial services conglomerates are more likely to use models than their non-EU counterparts.

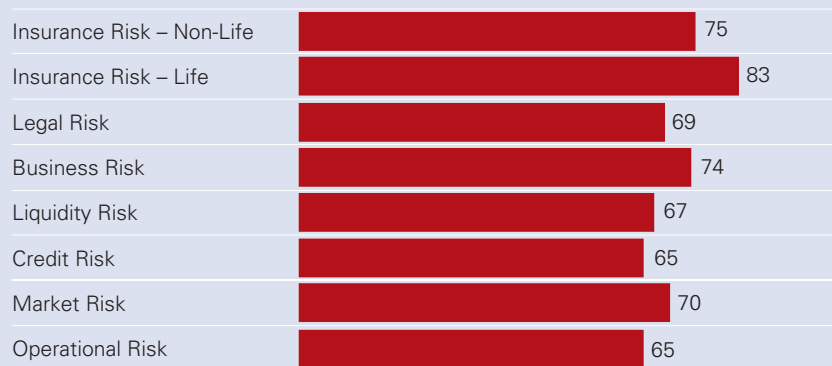
Recognizing and measuring risk

The overall picture from the survey is positive with most of the respondents using some type of risk management framework (see Figure 3). Operational Risk is the cause of many insurance failures, with individuals underwriting outside guidelines, firms failing to reinsure adequately or systems failing, so it's reassuring to learn that almost two thirds of those taking part are trying to measure and understand this area. However, the very fact that Operational Risk covers such a broad range of issues makes it difficult to quantify.

Among the different groups of insurers, reinsurers are more likely to have a risk management framework for credit risk, a reflection of the exposure they have to their policyholder default risk. Life and Bancassurers on the other hand appear to be more concerned about liquidity risk, which reflects the need for detailed Asset Liability Management (ALM) in this sector. Bancassurers in particular risk having insufficient cash provisions to meet their short-term liabilities.

Interestingly, not all insurers claim to be measuring and modeling insurance risk, suggesting that more informal methods are employed.

Figure 3 For which risk types has your institution developed a risk management framework?* %



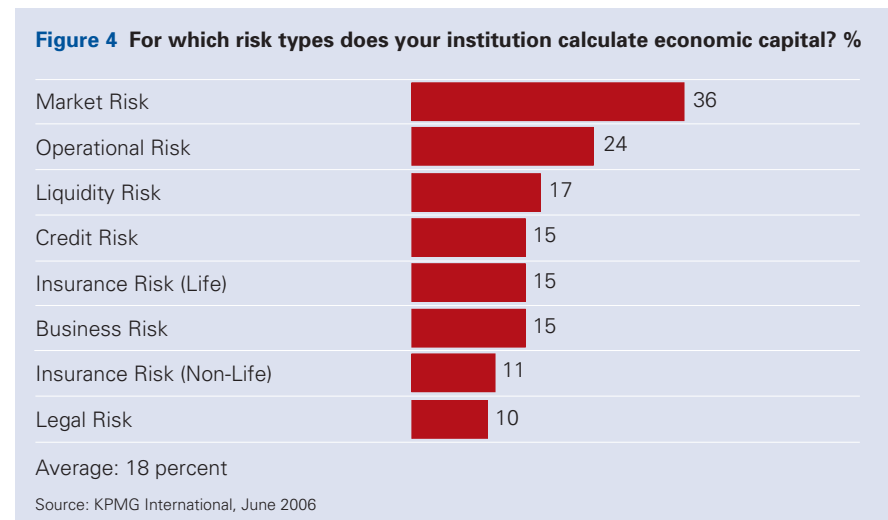
Average: 71 percent

*Not all percentages are equal to 100 since this is a multiple choice question

Source: KPMG International, June 2006

Over a third of firms in the survey calculate economic capital for Market Risk and just under a quarter do so for Operational Risk (see Figure 4). As mentioned earlier, quantifying the operational risk events such as losing key staff can be very difficult, so it's not surprising that many of the respondents are focusing more on processes and systems risk, as they are relatively easier to measure.

For Market Risk, insurers are paying particular attention to interest rate, equity and currency risk, which it to be expected, as these are the key variables facing an insurance firm. There are also a number of different techniques available for quantifying such risks, making it easier to develop a framework.



The challenge of creating a robust model

Many of the respondents are struggling to aggregate risks accurately, lacking both the data and the knowledge of the interaction between risks.

The very process of putting together a risk and capital management framework is an invaluable journey of discovery. This learning process is arguably more important than the ultimate accuracy of any model.

Measuring Operational Risk is proving a major challenge, due to the wide range of risks insurers are exposed to – failure of people, processes, systems and adverse external events. It's estimated that a good five years' worth of information is needed to construct a reasonably accurate model, so it's no surprise that data gathering is seen as a restricting factor. However, given that these are early days for operational risk management, one can turn to a range of pragmatic alternatives to the modeling of loss data. Ultimately insurers require models that use both internal and external loss data as well as more 'deterministic' alternatives such as scenario building.

Correlation between a number of different risks presents another big challenge. The practice of aggregating risk is based on the reduced likelihood of several 'disasters' happening simultaneously and thus reducing total capital requirement. However, many of the respondents are struggling to aggregate risks accurately, lacking both the data and the knowledge of the interaction between risks.

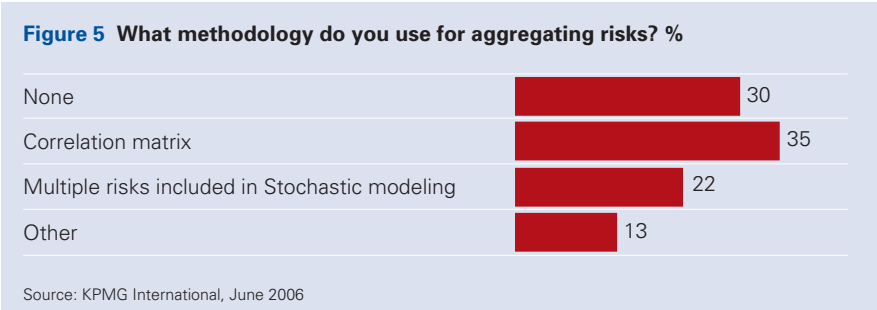
The relative novelty of risk and capital management means that high quality, experienced risk specialists are few and far between in the industry, making recruitment and training a high priority. Insurers are beginning to realize that risk management is an important skill set that has value way beyond one-off compliance or actuarial exercises.

While the quest to develop and improve models is laudable, it's also important to acknowledge that such an approach can never give you 100 percent accuracy in predicting the probability of risk or the capital required to mitigate that risk. However, the very process of putting together a risk and capital management framework is a valuable journey of discovery, helping insurers gain a greater understanding of the risks facing them. This learning process is arguably more important than the ultimate accuracy of any model.

Risk frameworks and economic capital

Most of the respondents (70 percent) use some form of methodology for aggregating risks with the correlation matrix mentioned as the most popular (see Figure 5). The main objective of aggregation is to determine the total capital required from various risk sources identified but allowing for diversification benefit. In general the higher the allowance for diversification benefit the lower the total capital required. The rationale behind this approach is that the chance of more than one major risk hitting you at the same time is less than the individual probability of each risk.

However, building a truly effective correlation matrix can be very challenging, especially as there is often a lack of good data to start with. With regulators increasingly focusing on this area, we're likely to see a growing interest in aggregation.



Why develop risk and capital models?

The main drivers for improving risk and capital management appear to be business – rather than regulatory-based.

The main drivers for improving risk and capital management appear to be business – rather than regulatory-based, according to the survey findings (see Figure 6).

Post 9/11 and Hurricane Katrina, the market has been flooded with fresh capital and insurers are looking for ways to maximize their returns. On top of this, investors are now challenging insurers to show that they are underwriting ‘good’ business and managing the volatility of their books to a reasonable level.

A well-built capital model should give firms a good idea of the level of funds needed to support their business and survive potential disasters. Fifty-eight percent of those taking part in the survey are outside of the EU and most have no regulations pending. Their reasons for improving risk and capital management can therefore be assumed to be a commercial strategy, a sign of growing acceptance of this practice.

Investors are now challenging insurers to show that they are underwriting ‘good’ business and managing the volatility of their books to a reasonable level.

Figure 6 What are your three top objectives for improving risk and capital management?* %



*Not all percentages are equal to 100 since this is a multiple choice question

Source: KPMG International, June 2006

Risk management across the organization

Developing an effective framework takes resources and above all time.

Developing an effective framework takes resources and above all time, and the survey results suggest that data availability (or the means to generate it) – along with a lack of appropriate staff, are the two biggest obstacles (see Figure 7). The lack of qualified and experienced insurance risk specialists is another big concern, which is in contrast to banking, where such skills have been established for some time. Banks took the initiative in moving technical specialists into the oversight and challenge function of the risk department – a practice that insurers have been reluctant to follow.

Data gathering is clearly a challenge, and in the earlier stages of building a risk and capital management framework there will inevitably be more use of subjective estimates. Over time, insurers can create a system for capturing and processing data on an ongoing basis.

Gathering data is particularly challenging for Operational Risk, where many different things can go wrong, such as breaching regulations, inappropriate underwriting, and mismanagement of claims. It can take up to five years' worth of data before a model can be considered valid.

However, no model is 100 percent accurate and at best can only indicate the range of likelihood of the risks. In this respect the 'journey' of building the model is as important as the model itself, in that insurers can learn a great deal about the risks facing their businesses. The very process of reviewing and challenging the risk model (looking at the input, output, assumptions and parameters) should lead to a healthy internal debate over the risks facing the business and the extent to which these are being controlled and monitored.

The lack of qualified and experienced insurance risk specialists is another big concern.

Figure 7 What are the main obstacles for implementing a risk and capital framework? (Scale 1–5, 1: of no significance, 5: very significant)

Lack of consensus in management	2.7
Risk that model is inappropriate for whole organization	2.8
Missing methods	2.8
Long implementation costs	2.9
High implementation costs	2.9
Other priorities more important	3.0
Risk that the model will be generating inaccurate results	3.1
Lack of staff with appropriate knowledge	3.2
Data gathering/availability of data	3.3

Source: KPMG International, June 2006

Use of capital models

Although just under half of respondents actually have a capital model in place, a further 68 percent plan to use one in future (see Figure 8). There is quite a variety across sectors, with Non-Life and reinsurers ahead in their use, and only a very small proportion of Health and Multilinear groups choosing to use a model (see Figure 9).

Despite the looming arrival of Solvency II, it's interesting to note that there is little difference between those within and outside of the EU in terms of current and future usage of capital models. However, looking more closely at specific sectors, EU Non-Life, reinsurance and financial services conglomerates are more likely to use models than their Non-EU counterparts (see Figure 10).

There is no real difference between those within and outside of the EU in terms of current and future usage of capital models.

Figure 8 Do you have an overall capital model in place? (Aggregated results) %

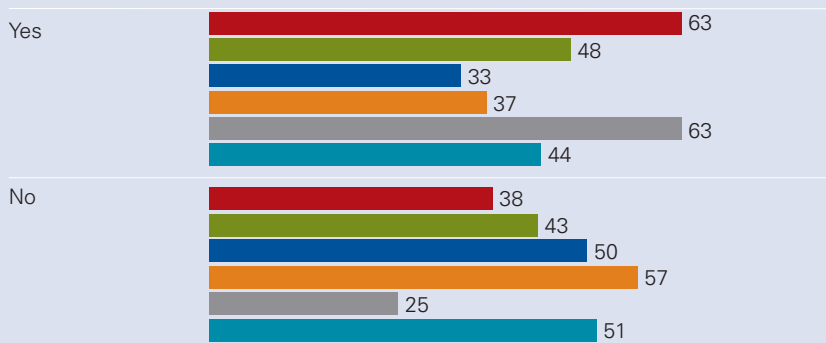


Key

- Yes ■
- No ■

Source: KPMG International, June 2006

Figure 9 Do you have an overall capital model in place? %

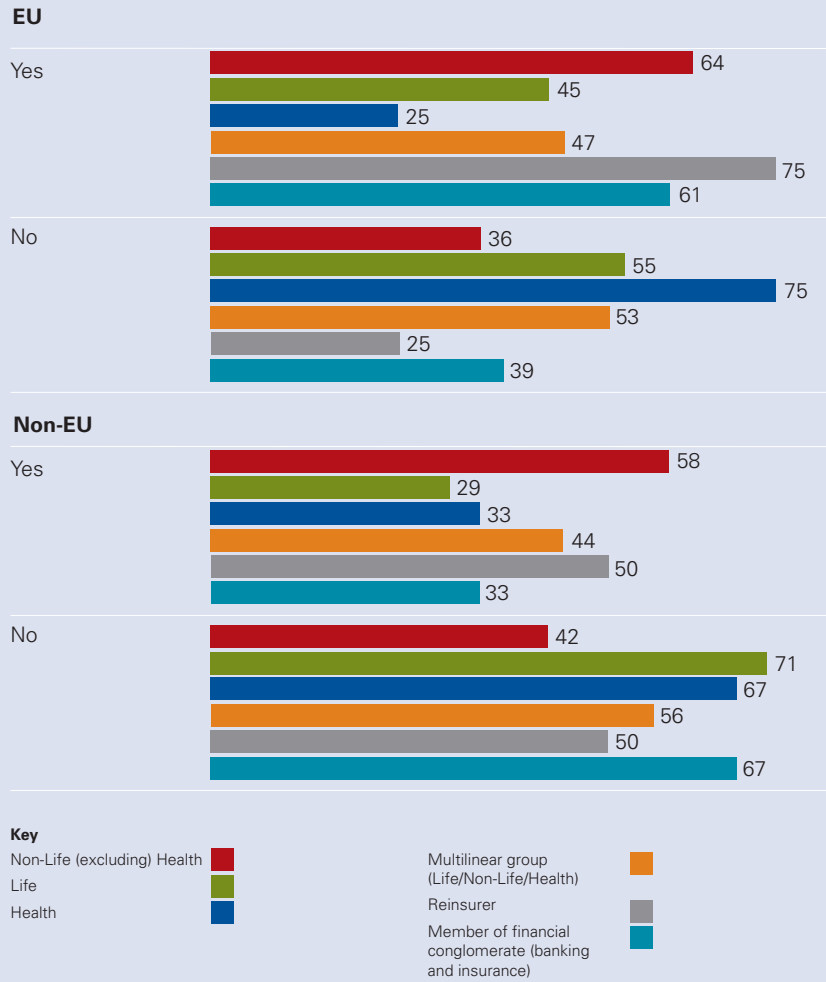


Key

- Non-Life (excluding) Health ■
- Life ■
- Health ■
- Multilinear group (Life/Non-Life/Health) ■
- Reinsurer ■
- Bancassurers ■

Source: KPMG International, June 2006

Figure 10 Do you have an overall capital model in place? (EU/Non-EU comparison) %



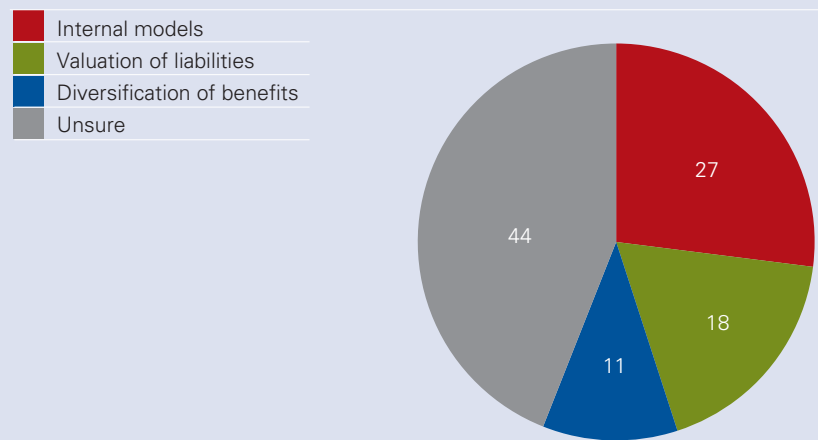
Source: KPMG International, June 2006

Solvency II

Solvency II is still a bit of a mystery for the insurance industry. Forty-four percent of those asked were unsure as to what it may bring (see Figure 11). As we have shown, building a robust internal model takes considerable time and investment and accordingly 27 percent of firms responding saw this as a big issue to overcome.

Twenty-seven percent of firms saw (building robust internal models) as a big issue to overcome.

Figure 11 Main challenges for implementing Solvency II requirements %



Source: KPMG International, June 2006

Measuring performance for investors

Given that as recently as five years ago, very few insurers would have looked beyond premium volume and loss ratios as a key measurement, the use of risk adjusted return on capital (RAROC), is a big step forward, with just under a third surveyed adopting this approach (see Figure 12). By calculating economic capital, firms are thinking carefully about the real needs of their business in contrast to regulatory capital, which is a broader, requirement and not tailored to their unique situation.

RAROC performance measures take into account risk based capital allocated to the exposure portfolio and therefore provides a better understanding of the risk and reward strategy pursued in the business. Among respondents, Bancassurers were the largest users of RAROC; this is not that surprising, given that they must comply with both Basel and Solvency II and would therefore need to use more sophisticated analysis. It's also in part a reflection of the organizational structure of banks, making them more adaptable to changes.

Figure 12 Which performance measurement framework is (will be) adopted in your organization? %

Return on equity and/or return on assets	31
Risk adjusted return on regulatory capital	10
Risk adjusted return on economic capital	31
Other Risk adjusted return on risk adjusted capital measures	8
Change in embedded value or appraisal value	19

Source: KPMG International, June 2006

Conclusion

It is clearly evident from the survey that companies have made large strides in enhancing their risk and capital management frameworks. The industry has some way to go to overcome challenges arising from the inherent complexity of insurance products. However, the evolution of the Solvency II initiative, capital markets and rating agency pressures all add to the compelling reasons to enhance risk and capital management frameworks.

Country analysis

Bermuda

Canada

Czech Republic

France

Germany

Hong Kong

Ireland

Italy

Netherlands

Poland

Singapore

Sweden

Switzerland

U.K.

U.S.

Bermuda

Small is beautiful

With a concentration of talent and a sophisticated approach to risk and capital management, it's no surprise that the Bermudian insurance industry is continuing to attract investment.

Bermuda has become a major centre for international insurance and reinsurance over the past twenty years, taking on risks from all over the world, with a strong focus on the U.S.. In the aftermath of Hurricane Katrina, Bermuda was once again one of the markets of choice for new capital. In 2005 the capital was sourced not only from the traditional U.S. markets but also from the U.K. and the hedge fund industry.

The market is characterized by a number of operations containing highly experienced people, a large proportion of whom are actuaries. This has led to an approach to risk modeling that is the envy of many other markets.

Given that Bermudian companies are primarily reinsurers, it's little surprise that the survey shows insurance risk as being the number one priority. Many of the island's companies are global players, so business and operational risk are also important.

All the companies that responded claim to have an overall capital model in place, with the fundamental features of the Bermudan market being return on risk and capital allocation. Much of the recent capital has come from the hedge fund industry in the form of collateralized facilities, which leverage existing markets' intellectual capital and are an efficient use of economic capital for peak-zone exposures. From a regulatory perspective the focus is on capital adequacy.

Looking ahead, Bermudian insurers are seeing Solvency II as driving a global standard for risk-based capital management. However, they don't feel that this will represent a major change, as risk modeling and economic capital is already well established in this market, so at most it should lead to fine-tuning. The disasters of 2004 and 2005 have demonstrated on a worldwide basis that models are not quite as infallible as many had previously thought, and that even in a highly developed environment such as Bermuda, continuous improvement is essential.

Canada

Life insurers setting the pace

The life sector has been at the forefront of risk and capital management in Canada, partly for regulatory reasons and partly because actuarial methodology is so well embedded in these companies.

Risk and capital management in Canada has been seen largely as a defensive activity, helping to identify unexpected risks and lay off risks that are not wanted at the margins. Insurers do not typically calculate economic capital, preferring to use regulatory risk-based capital as a proxy. Regulatory capital models are also being used for aggregating risk.

Some of the larger players in the Canadian market employ increasingly sophisticated techniques such as stochastic modeling to better understand and manage some risks, although the use of these models to support regulatory capital requirements is limited at present. Such an approach is less popular with small to medium-sized companies due to the prohibitive costs.

In the face of increasing regulatory requirements, there is a continuing focus on trying to squeeze down capital requirements. The survey shows that a number of Canadian insurers are looking to protect shareholder value and manage earnings volatility; with greater earnings predictability, investors are more willing to pay a higher multiple. In North America in general, Non-Life insurers attract a lower earnings per share multiple, due to the perception that this business is more volatile and its risk management practices less robust. Many insurers have taken this factor on board and have made real efforts to deliver more consistent results.

Given the common use of regulatory capital, Canadian insurers are less adept at using capital requirements to charge business units for their use of capital. Half of those surveyed use regulatory or economic capital calculations to allocate capital at company level, but few apply this method to performance measurement to determine bonuses.

There has been a long history of scenario testing and dynamic financial analysis techniques in Canada, and while these practices have become highly developed over time, they are still less advanced than the proposed new economic capital models under Solvency II. Whatever type of model is eventually chosen, insurers should be aware that it can take several years to develop a refined version with reliable results.

Canadian insurers have been using GAAP accounting in their regulatory reporting, which is consistent with the approach in Solvency II. Both performance measurement and communication with analysts are also based on GAAP accounting results, and consequently return on equity and risk adjusted return on economic capital are the most popular measures reported in the survey.

A recognized shortcoming of the current regulatory capital model is that it does not give explicit credit for measuring diversification. Regulators claim that diversification is considered when agreeing capital target levels with insurers. However, as diversification has such a major effect on economic capital requirements, measurements need to be developed to enhance both capital management and regulatory practices.

Czech Republic

Wait and see

With risk and capital management at a relatively early stage in the Czech market, the major players are awaiting Solvency II before deciding upon their next steps forward.

There is currently very little use of risk-based or capital regimes in the Czech Republic, so even adopting a standardised model could be a big challenge for many insurers. With limited contact between regulators and the insurance industry in general, there has been no real pressure on companies to advance their practices, although the emergence of a single regulatory body should lead to clearer guidance.

Once the content of Solvency II has been established, the two big local insurers should start to develop some firm risk methodologies. However, concerns over the potential costs of creating an internal model may cause both these to choose a standardised Solvency II model to meet minimum compliance requirements. Those firms which are subsidiaries of international insurers may have their risk and capital management directed by their parents.

The absence of actuarial staff at the smaller insurers means that they are unable to focus on operational, credit or market risk. Indeed, even some of the larger companies elect to manage their risk management issues through internal audit, although pressure on ratings has led to a concerted effort to manage risk more effectively.

At a company level, the survey revealed that Czech insurers are keen to measure risk-adjusted performance to help evaluate their senior managers, by assessing the amount of capital consumed by various business lines.

The respondents confirmed that lack of appropriate staff is a big obstacle to the development of risk and capital management in the Czech Republic, mainly because economic capital modeling is so new. The Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) should bring in some potential methodologies, but there is still a lack of faith in Czech regulators' ability to assess the accuracy of models.

Performance measurement tends to be based on the premium raised in life or Non-Life portfolios, which is essentially a rule of thumb approach to calculating capital adequacy. The adoption of standardized models will hopefully mean that regulators can push insurers to base capital requirements on more sophisticated calculations, which should lead to a more risk-sensitive approach.

France

A continuing evolution

In an increasingly regulated environment, French insurance companies of many sizes are showing an increasing interest in risk and capital management.

As part of the preparation for Solvency II, CEIOPS, including the French regulator, has been working to define a standard format for calculating allocated capital. In all, 47 French insurers took part in the recent initial study (QIS 1).

Currently only a few large French insurers have a comprehensive internal model. New French regulations have refined the main principles of the second phase of Solvency II (Pillar II) – and as this survey revealed, one of the biggest challenges for implementing Solvency II is producing effective internal models, as these are both costly and complex.

One of the biggest risk types for which French insurers calculate economic capital is liquidity risk, due to ‘surrender’ options included in the life insurance contracts, and this is particularly relevant to Bancassurers. There is also a degree of interest in market and operational risk, although the latter is notoriously difficult to quantify.

Naturally, regulatory concerns are a factor in helping to improve risk and capital management, but many companies do see the potential broader business benefits and are also keen to use capital more effectively and protect shareholder value.

As with many other countries, one of the big obstacles to developing a risk and capital management framework is data gathering and availability, lack of staff and high implementation costs. There is also a concern that too many assumptions built into a model will lead to inaccuracy; French insurers are currently not obliged to calculate allocated economic capital and instead only have to estimate a percentage of their reserve, in line with the Solvency Directive.

The survey also reveals that many French insurers are using risk adjusted return on capital as a performance measurement framework, indicating an increasingly sophisticated approach. This shows that they are becoming more aware of the need to calculate accurate economic capital levels for different types of risk.

Germany

Driving Solvency

German insurers have combined forces to actively influence the outcome of Solvency II. Being on their way to capital modeling they are now turning their attention to integrated risk management.

German insurers have been early to recognize that the European Union's Solvency II project is likely to affect their business profoundly. This represents an even greater challenge for those small to medium-sized companies which will continue to use local GAAP for their accounting after the implementation of Solvency II.

Rather than simply wait for what is to come the Association of German Insurers (GDV) has taken the initiative and put forward a proposal for the future Standard Model for Solvency II. German companies have spent considerable resources in developing and field testing this model. This widely implemented model has broad support from various German stakeholders including from the German regulator (BaFin) which participated in its development. The model put forward by the GDV was published at the end of 2005 and has strongly influenced both the model proposed by the European Association of European Insurers (CEA) as well as the requirements put out by the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) in the recent Quantitative Impact Study II (QIS II).

German insurers were enthusiastic participants in the first Quantitative Impact Study (QIS I) in which the valuation of reserves was investigated. With over 90 insurers taking part they represented a third of all respondents. One result coming out of QIS I is that the life sector is likely to find it very difficult to calculate the fair value of liabilities should it be defined as a 75 percent quantile over the remaining duration of the insurance contracts. Life insurers made this clear by opting for an approximation calculated through deterministic stress tests which was offered by the German regulator as an alternative.

Larger insurers have internal projection models. These models are very diverse in their depth and in their application. In particular life insurers are stressing the importance of multi-year projections rather than a simple one-year risk capital. There is support among large insurance groups for the European Embedded Value concept and there are movements to take this concept to fully integrated risk and capital management. The German insurance setting is widely populated with mutual insurers and has its share of smaller insurers. For these companies the shareholder perspective is of secondary importance and the calculation of risk adjusted returns is of less urgency than for listed companies. Nevertheless future regulations should provide the building blocks flanked with capital incentives for better risk and capital management. This can intensify competition and strengthen management's ambition not to fall behind.

In many companies management priorities lie in qualitative improvements to risk management in particular relating to the better integration of risk and performance management.

Hong Kong

Steady progress

The use of risk and capital management among Hong Kong's insurers is likely to be driven by future regulatory demands.

The Hong Kong insurance industry is currently regulated along fairly traditional lines. The main regulator (The Office of the Commission of Insurers) has recently publicly stated that it will start to look more deeply into the issue of economic capital sometime in 2006.

It's therefore no surprise that the use of risk-based economic capital is probably a little behind other Asian markets where regulators have moved faster, such as Taiwan and Singapore. Hong Kong is relatively over-insured on the Non-Life side, with a lot of small players who are comfortable with solid risk and capital management practices. These involve premium-based and claims-outstanding tests, applying a simple formula to derive the required margin of solvency and comparing this with the overall net asset position, which is subsequently adjusted. The life side on the other hand is dominated by global firms, whose activity is determined primarily by the wider group policy.

One of the biggest single influences on risk and capital management practices, however, is the business environment facing Hong Kong insurers. With almost a decade of uninterrupted economic growth of close to double digits in China, the prime concern for most companies is to find ways to resource operations on the Mainland to support ambitious expansion plans. This situation is exacerbated by the movement of a fair amount of Hong Kong's talent to insurance operations in the Mainland, putting even greater pressure on the remaining workforce. There are also plenty of commercial opportunities within Hong Kong, with the proliferation of new distribution channels and greater acceptance of investment-related life products. With such intense demands on their time, firms are understandably struggling to find the resources to carry out large, risk based capital projects.

The survey does show that change in embedded value is a popular choice for measuring performance, and indeed a few local insurers have included this in their balance sheet.

Any future change is therefore likely to be regulatory-driven, with the Hong Kong authority tending to prefer a steady move towards more sophisticated models. One factor that could drive a more proactive approach would be an insistence from ratings agencies for greater use of economic capital models.

Ireland

Towards greater sophistication

Many Irish insurers have yet to develop truly integrated risk and capital management systems, but a tougher regulatory environment should start to force changes.

Up to now there has been a lack of robust economic capital models, with many companies taking a deterministic approach. There is genuine concern over future regulatory change, and indeed Irish reinsurers should begin to be regulated during 2006 with the implementation of the EU Reinsurance Directive, details of which are currently being finalized by the Irish Financial Regulator.

A large number of insurers have risk management frameworks in place for liquidity, operational and legal risk and those Non-Life companies surveyed have fairly well-developed market risk practices. Life insurers on the other hand write largely unit-linked business, where policyholders bear the investment risk, and they have consequently focused less on market risk and more on insurance risk.

Interestingly, the survey revealed that Irish-based subsidiaries of international insurance companies were more likely to have some form of economic capital model in place, due to internal group reporting requirements.

As a small country, it's no real surprise that lack of staff with the appropriate modeling expertise one of the biggest obstacle to implementing a risk and capital management framework. This, combined with an inability to gather sufficient and appropriate historic data, is likely to hinder the implementation of economic capital models.

Embedded value is the favoured performance measurement framework for Irish life insurers and is traditionally used by life companies, particularly for assessing the profitability of new products.

The Irish Financial Regulator is looking to bring in a forerunner to Solvency II for reinsurance companies as part of the regulation of the Irish reinsurance industry, although any such initiatives may not actually pre-empt Solvency II. Indeed, Irish insurers are waiting to hear the details of Solvency II before making any significant changes. It's clear that until Solvency II is fully established, the overall approach to risk and capital management is likely to be driven by internal requirements and therefore should continue to follow existing regulatory standards.

Italy

Slow progress

With limited use of risk and capital management, Italian insurers are anticipating Solvency II before taking any further steps.

New regulations in December 2005 for insurance companies ('Circolare ISVAP 577/D') outlined a new framework for risk management, with companies required to demonstrate risk management and internal controls. All firms will be expected to have a unit that takes ownership of risk management measurement and control, notably for quantitative models. In response to this and in advance of Solvency II, the two or three of the biggest insurance groups in Italy are now developing risk-based internal models for calculating economic capital.

Of the companies surveyed, very few had developed risk management frameworks. Fewer than 25 percent of Italian insurers appear to use a capital model, and those that do only cover liquidity, credit, market and insurance risk, but not operational, business or other risks. The techniques for measuring these risks are still being developed with no overall consolidated approach.

The development of internal models is focused on Asset Liability Management (ALM) models, which are very relevant for Life businesses to measure technical and financial risks. Such models are frequently used for products where policyholders' benefits are directly linked to the return on the assets (e.g., 'rivalutabili'). This is for both regulatory reasons ('Provvedimento ISVAP 1801') as well as to help strategic and tactical decisions on allocation and management of assets. These are slowly taking on a more stochastic approach, in order to meet new standards such as European Embedded Value and Solvency II.

Companies that use Economic Capital models are measuring meaningful risks for both life and Non-Life business (underwriting, reserve, market and credit risk) but don't use correlation matrices to calculate the total Economic Capital.

One of the most important uses of economic capital calculations is for allocation of capital. This is because the internal models being developed are trying to achieve a more efficient distribution between different lines of business. Clearly such models present a major challenge ahead of Solvency II, with almost half of the respondents citing this as their biggest single concern.

Lack of staff with appropriate knowledge in modeling is a big concern for Italian insurers and they may have to train and attract relevant people from the banking sector; there are transferable skills between the two industries, particularly in financial – market and credit – and operational risk. Banks are adopting a new risk management framework (Basel II) that has a number of similarities to Solvency II. It's even possible that actuaries may deal with core business risks such as insurance, underwriting and reserve, which could ultimately lead to a risk management unit composed of actuaries and financial life personnel.

Change in European Embedded Value is a highly popular approach for measuring performance in Italy, as it allows truer comparisons between companies and countries and aims to tell you whether a company has really created extra value or not.

Netherlands

Meeting the challenges of Solvency

Dutch companies have some way to go before they can be confident that that their risk and capital models are robust.

The survey shows that few insurers in the Netherlands have developed a risk management framework, which is an accurate picture of the market as a whole. Many Dutch companies are multilinear and have to split results between life and Non-Life. Market risk is clearly an important factor for life companies and a number carry out asset liability management studies, while Non-Life companies place greater emphasis upon insurance risk.

Although almost a third of respondents claim to calculate economic capital for operational risk, it's unclear as to whether they actually have complete models, as these take several years to develop.

Solvency II is some time away and most are waiting for clear guidelines before developing methodologies or formulas. Some of the larger players have started to build independent economic capital models. Not surprisingly, very few Dutch insurers use stochastic models for aggregating risk, often preferring correlation matrices.

There is increasing pressure from ratings agencies to measure economic capital particularly for those international companies (or their subsidiaries) who are listed on NYSE. The ratings agencies are starting to give credit for more highly developed risk and capital management, so insurers need to be sensitive to these demands.

Surprisingly, over half of those surveyed claim to use economic capital calculations to measure risk-adjusted performance, which is contrary to general perception. There is a lot of risk management at product and business unit level but this is not typically aggregated at a company level. Companies tend to build economic capital models to quantify risk and typically don't link this to performance and business plans.

The more enlightened insurance companies are aware that good risk and capital management can improve risk-based decision-making, and they link this to performance by calculating risk adjusted return on capital. There should be increased interest in risk-adjusted return on capital after the introduction of Solvency II, as this will be firmly based on economic capital and fair values.

In implementing Solvency II, Dutch insurers must pay attention to diversification benefits, which can have a big effect upon regulatory capital, reducing it by up to 40 percent. The challenge is to justify the size of these benefits and insurers may have to apply complex methodologies such as correlation matrices or stochastic approaches, and may well struggle to get hold of the right data.

Poland

Eager to improve

Although risk and capital management in Poland is not as advanced as in many other EU countries, there is a strong desire among insurers to bring their practices up to speed.

As an EU member, Polish insurance companies are well aware that Solvency II aims to raise the bar for their risk modeling. A few of the companies surveyed have developed a risk management framework and these firms tend to only really cover insurance risk for life and Non-Life. Calculating economic capital is mainly the domain of subsidiaries of larger multinational groups who benefit from the collected knowledge of the organization to deal with market, liquidity, insurance and credit risk.

Many obstacles to implementing a framework appear to be technical, notably a lack of data and concern over the model's inaccuracy. As with many other markets, there are not enough experienced risk staff to go around, while the small and medium-sized companies are worried about the high cost of implementation. At a company level, economic capital calculations tend to be used for making strategic or tactical decisions and allocating capital.

The Polish Insurance and Pension Funds Supervisory Commission is starting to put pressure on Polish insurers to manage risk more effectively and bring in more formal systems. The survey clearly shows that Polish insurers are not threatened by such developments and actually see potential business benefits in terms of greater shareholder value, more effective use of capital and improved ratings from the agencies.

There is, however, a big concern over cost, and many Polish insurers are waiting for a standard model to be defined, as they are keen to avoid developing expensive internal models. Looking forward to Solvency II, they also see the valuation of liabilities as a big challenge.

Singapore

A regulatory-driven approach

Although risk and capital management is fairly well developed in Singapore, we have yet to see the emergence of truly sophisticated and comprehensive internal models.

With the 2004 risk-based capital regulations now in place in Singapore, many insurers are likely to have a basic risk management framework that measures all the specified risks. Some companies are going even further and are making efforts to develop a framework for operational, legal and business risks.

Almost 40 percent of the respondents calculate economic capital for market risk, which is not surprising; asset values have a direct effect on capital and if the market values drop, the capital immediately goes down, so companies monitor this very closely. Liquidity risk on the other hand is not considered as important as there is plenty of liquidity in the Singapore market. Singapore is an insurance hub for reinsurance business so legal risk and concentration risk are also starting to become a bigger factor.

Although the majority of insurers do have some kind of model in place, it's likely to be a regulatory model that has not been fully developed, and at least a third of the respondents are keen to customize these to meet their own unique circumstances.

Economic capital calculations tend to be used at the company and business level (but not the product level), primarily for measuring risk-adjusted performance and allocating capital, and 40 percent of those surveyed use it for making strategic or tactical decisions. Going forward, the regulators are likely to be paying attention to the effectiveness of risk-based capital measurement, and may refine it as more experience is gained. Since the regulatory system is generally felt to be well structured and responsive, compliance should result in sound business decisions.

The survey responses suggest that respondents are unable to reach a consensus on risk and capital management practices, which is mainly due to the arbitrary nature of many internal models. However, given that there are a number of European insurers based in Singapore who will have to follow Solvency II, we should start to see a more consistent approach emerging.

Performance management frameworks are only in the early stages of development and consequently many insurers are looking to initially get their basic economic capital calculations right. The impact of Solvency II is likely to be felt around the world, with Singapore insurers adopting the standard in some form or other, viewing the regulations as industry best practice. The effects may not, however, be that great as Singapore insurers already have a fairly well developed approach for measuring insurance liabilities for life and Non-Life businesses, based upon historical statistics and expected outcomes.

Sweden

High on the agenda

Swedish insurers are recognizing that risk and capital management is a valuable business tool and not just a regulatory burden.

The move towards a more sophisticated solvency system is gathering pace in Sweden. After considerable input from the industry, the Finance Ministry and the Swedish Financial Services Institute (FSI), a revised version of the local solvency regulations is expected by mid 2006 and will hopefully be in place by the start of 2008.

At the same time the Swedish FSI has developed a new tool to help companies recognize when their risk exposures are too high. This currently only applies to the life and pensions sector but by 2007 will be extended to Non-Life companies as well. Many insurers have put a lot of time and effort into developing models to satisfy such new information requirements, and although this only applies to financial risk at present, insurance risk is gradually being worked into the model.

Apart from the larger companies, most of the Swedish insurers are probably a little behind some of their Western European peers in their risk and capital management practices, but equally are very keen to move forward. The larger bancassurers in particular have a longer tradition of using models so it's no surprise that they are relatively advanced.

There is clearly a concern over meeting new and existing regulatory demands, so not surprisingly corporate governance is receiving plenty of attention. However, more and more companies are now realizing that economic capital models are not merely a hurdle to be overcome, but also present an opportunity to make the business more efficient.

The biggest obstacle to implementing a risk framework is data gathering and availability of data. The more established companies typically have a number of IT systems, some of which are fairly old, so extracting the information they need, in the right format, is quite a challenge. The younger companies on the other hand have newer and more flexible systems, but of course have less historical data to go on.

The use of risk-adjusted return on economic capital is fairly limited amongst Swedish insurers and probably a little behind the country's banking industry, but encouraging progress is being made.

Most of the companies in the survey – and in the Swedish market as a whole – are eagerly anticipating and preparing for Solvency II and the new Swedish Solvency regulations. The earlier caution has been replaced by a genuine optimism that more advanced economic capital models can produce positive benefits.

Switzerland

Going their own way

Driven by demanding new internal regulations, the larger Swiss insurers are relatively advanced in their use of risk and capital management.

As a non-EU country, Switzerland will not be implementing Solvency II, but has already developed the Swiss Solvency Test. This rigorous approach means that the larger players are developing their own internal models, with smaller companies preferring standard models.

The Swiss Solvency Test is just one of a number of changes to the regulation and supervision of insurers in the country, with each company now required to have a responsible actuary reporting directly to the Federal Office of Private Insurance. Appointing and empowering such a figure is a tough and costly challenge for smaller insurers, many of whom have no actuary. Even outsourcing such a position may prove expensive and the overall costs may well reduce the competitive advantage of niche players and could ultimately lead to consolidation in the market.

Despite the regulatory pressure, Swiss insurers are not panicking, as historically they have been more solvent than many of their European counterparts. However, due to the limited home market, a majority of the business of larger Swiss insurers is outside their home country, meaning that foreign exchange fluctuation is a key risk, for which they naturally need to hold more capital. Given the historically lower interest rate in Switzerland, many insurers also invest a significant amount of their funds in foreign exchange products which also in turn leads to higher capital requirements.

The 2005 Swiss Solvency Test run identified market risk as the largest single risk for insurers. Protecting shareholder value is also a big focus for Swiss insurers (particularly in light of market performance over the past five years), along with more effective use of capital. Complying with regulatory changes and improving risk-based decision-making, Swiss companies have traditionally been very keen to minimize earnings volatility to please stakeholders.

One of the main obstacles to implementing risk and capital management is data gathering and availability, with many insurers still relying upon software that falls short of being state-of-the-art. The cost of developing new models is also considered a big constraint. One of the most common performance measurement for the bigger players is risk adjusted return on economic capital, while the smaller companies may probably not use any economic capital model, preferring return on equity.

U.K.

Waiting for Solvency

U.K. responses demonstrate the impact of the FSA regime.

Since December 31 2004, the U.K. regulator, the Financial Services Authority (FSA) has applied the Prudential Sourcebook to all U.K. insurers. The rules within contain requirements for insurers to calculate their own risk based capital requirements (the Individual Capital Assessment, or 'ICA') to a 99.5 percent certainty (12 month time horizon) across all the FSA risk groups (insurance, market, credit, liquidity, operational and group risk). As such, the responses from the U.K. reflect the effort that has been put into building the models required to calculate the ICA, with the clear majority having a capital model in place.

However, the survey also demonstrates that the focus on the quantification of capital requirements has sometimes meant that wider aspects of the risk management framework for each area of risk have either been over-looked or remain under-developed. This can be seen in the range of responses that indicate that few areas of risk have a complete risk framework in place. Most developed in this area is operational risk where some 29 percent felt they had a risk management framework in place, while the area of life insurance risk is the least developed (10 percent).

Many U.K. capital models were built in response to regulations but nevertheless the survey response indicate an awareness of wider business benefits, with the top objectives of over 20 percent of the respondents being more effective use of capital and improving risk-based decision-making. This is not surprising since many of the firms surveyed are looking to embed the models they have built within the business and to derive a wider value than merely using them for pure regulatory compliance. This is reflected in the 27 percent of respondents who wish to use their economic capital calculations for strategic or tactical decisions and the 41 percent who intend to use risk-adjusted return on capital as a measure.

As the U.K. experience has shown, and in common with other countries, one of the single biggest obstacles to implementing a risk and capital management framework is lack of staff with appropriate knowledge, with data gathering and availability a further constraint. The latter is likely to be particularly important given the expectations around data validation for Solvency II.

Looking ahead to Solvency II, U.K. firms are beginning to engage more widely in the debate with very few undecided on the challenges ahead, reflecting the U.K. experience in building internal models for ICA (65 percent saw this as the main challenge) rather than suggesting a lack of awareness of the challenges surrounding diversification.

U.S.

Playing catch up

U.S. insurers are a little behind in terms of managing risk across the organization and are still learning which models and methodologies are most appropriate.

Of the 27 companies surveyed, 40 percent had developed a risk management framework for legal risk, which is not surprising, given the scrutiny the insurance industry has come under in the past two years. With internal investigations into contingent commissions and bid rigging, and appropriateness of variable annuity sales, the industry in the U.S. has been under a heightened regulatory attack. In addition there have been more recent corporate failures, as well as long-term health claims and class action suits against asbestosis that have all impacted insurers' results.

Sarbanes Oxley has put operational risk very much in the spotlight, so it's no real surprise that 40 percent of respondents claim to have a framework for this. However, it is one of the hardest types of risk to identify and quantify and many U.S. insurers are still trying to come to grips with this area. There was also a big interest in countering liquidity risk, as this relates to overall solvency.

Given that Standard and Poors has recently asked insurers to demonstrate their risk and capital management, it's interesting that pleasing ratings agencies is not seen as a priority for those surveyed. They tend to be more concerned with core business issues such as using capital more efficiently and improving risk-based decision-making. U.S. insurers are not completely ignoring the issue of ratings, and the survey shows that communicating to agencies (as well as to shareholders) is one of the main uses of economic capital calculations.

The management of enterprise-wide risk is still at an early stage in the U.S. and not fully ingrained in the culture, and consequently there is a lack of consensus over the main obstacles to implementing a risk and capital management framework. Many insurers feel that they are good at modeling insurance risk but it's only in the past two to three years that companies have started to hire Chief Risk Officers, reflecting the fact that the industry as a whole is playing catch up.

Solvency II will not affect U.S. owned insurance companies, but a number are looking to this – and also to Basel II – as laying the foundation for industry best practice, particularly over valuation of liabilities.

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