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# ERM Practices: A Comparison of Approaches

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## Abstract

The concept of enterprise risk management (“ERM”) has been gaining in importance across industries globally in recent years, not least because of the fallout from the global financial crisis. Advanced ERM capabilities are recognised by some as a competitive advantage, helping companies to not only avoid unacceptable risks but also to actively take on acceptable risks. However, there is certainly no consensus as to the ideal model for embedding ERM within an organisation. There is a wide range of practice in the ways companies are going about doing this, and success is difficult to measure. Certainly, the financial crisis of 2008 has highlighted serious failings in risk management within a number of organisations, particularly in the financial services sector.

The paper provides an introduction to key concepts in ERM, then compares and contrasts ERM practices between Australian and global insurers, by drawing on the results of two surveys of ERM practices undertaken in 2008:

- a survey of ERM practices in Australian insurance companies, jointly conducted by the Macquarie University Applied Finance Centre and the Institute of Actuaries of Australia; and
- a survey of ERM practices in the global insurance industry, conducted by Towers Perrin.

The paper concludes by reviewing the aspects of Australian insurers’ current ERM practices that appear to fall short of their international counterparts and suggesting possible actions Australian insurers could take to remedy the gap.

*Key words: risk management, enterprise risk management, risk management culture, risk management strategy, risk control, risk appetite*

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## 1 INTRODUCTION

The concept of Enterprise Risk Management (“ERM”) has been gaining in importance across industries globally in recent years. This has never been more true than in the past year, as companies, regulators, shareholders and rating agencies worldwide try to understand the widespread damage suffered by the very organisations which should have had the best ERM practices, and therefore be least susceptible to a major risk management failure.

One recent analysis conducted by the Senior Supervisors Group<sup>1</sup> into the risk management practices of a sample of major global financial services organisations concluded that;

*"Firms that avoided such problems demonstrated a comprehensive approach to viewing firm-wide exposures and risk, sharing quantitative and qualitative information more effectively across the firm and engaging in more effective dialogue across the management team."*

But in the organisations that did not manage to escape the impact of the recent economic turmoil, did it happen because ERM failed, or because ERM was never fully embedded? And for that matter, what does it mean to have fully embedded ERM and how does an organisation achieve this?

Many companies recognise the need for a basic level of ERM, if for no other reason that it is required by regulators and rating agencies. Some companies aspire to more advanced ERM capabilities, recognising that it can provide a competitive advantage and help to grow the long term value of the company. However, there is no consensus as to the ideal model for embedding ERM within an organisation and some companies' perceptions as to the state of their ERM capabilities may not align with the reality when benchmarked against their industry peers.

This paper begins with a discussion of some basic concepts in ERM, starting with a summary of alternative definitions of ERM then looking at the key themes that underlie most if not all of these definitions.

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<sup>1</sup> The Senior Supervisors Group consists of seven supervisory agencies; the French Banking Commission, the German Federal Financial Supervisory Authority, the Swiss Federal Banking Commission, the U.K. Financial Services Authority, and, in the U.S., the Office of the Comptroller of the Currency, the Securities and Exchange Commission, and the Federal Reserve.

The paper then compares and contrasts ERM practices between Australian and global insurers, by drawing on the results of two surveys of ERM practices undertaken in 2008:

- a survey of ERM practices in Australian insurance companies, conducted jointly by the Macquarie University Applied Finance Centre (“MAFC”) and the Institute of Actuaries of Australia (“IAAust”); and
- a survey of ERM practices in the global insurance industry, conducted by Towers Perrin.

The paper concludes by reviewing the aspects of Australian insurers’ current ERM practices that appear to differ from of their international counterparts and suggests a number of possible lessons that Australian insurers could learn from the differences.

## 2 DEFINITION OF ERM

There is no agreed definition of ERM. Following is a list of some of the more popular definitions.

### 2.1 RIMS Definition:

One of the better definitions of ERM is that of RIMS (Risk and Insurance Management Society):

*“ERM is the culture, processes and tools to identify strategic opportunities and reduce uncertainty. ERM is a comprehensive view of risk from both operational and strategic perspectives and is a process that supports the reduction of uncertainty and promotes the exploitation of opportunities.”*

### 2.2 COSO Definition:

In its 'Enterprise Risk Management - Integrated Framework', COSO<sup>2</sup> defines enterprise risk management as:

*“a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance of entity objectives.”*

The COSO framework emphasises rightly that risk management starts at the board level (at the centre of corporate governance). It also recognises the importance of internal controls and organisational infrastructure for carrying out the risk management functions.

While the COSO framework has made a large contribution to the field of ERM, it has drawn criticism for its bias toward risk control, audit, and avoidance.

### 2.3 CAS Definition:

The Casualty Actuarial Society (CAS) developed the following definition:

*“ERM is the process by which organizations in all industries assess, control, exploit, finance, and monitor risks from all sources for the purpose of increasing the organization’s short and long term value to its stakeholders.”*

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<sup>2</sup> COSO is the Committee of the Sponsoring Organizations of the Treadway Commission, an organisation sponsored by 5 US professional accounting associations and institutes.

The CAS definition represents an attempt to emphasise both the threats and the opportunities created by business and financial risk.

#### 2.4 Rating Agency Definition:

Rating agencies<sup>3</sup> now often include an ERM evaluation as part of their rating review of an insurance company. Standard and Poor's (S&P) evaluate ERM quality in five areas:

1. Risk management culture
2. Risk controls
3. Emerging risk management
4. Risk and economic capital (EC) models
5. Strategic risk management

S&P defines excellence in ERM for an insurer if:

*“[the] insurer has extremely strong capabilities to consistently identify, measure, and manage risk exposures and losses within the company’s predetermined tolerance guidelines. There is consistent evidence of the enterprise’s practice of optimizing risk-adjusted returns. Risk and risk management are always important considerations in the insurer’s corporate decision-making.”*

#### 2.5 AS/NZS4360:2004 Definition

The Australian and New Zealand Risk Management Standard (AS/NZS4360:2004) defines risk management to be:

*“The culture, processes and structures that are directed towards realizing potential opportunities whilst managing adverse effects.”*

The International Standards Organisation (ISO) will release a new standard later in 2009, which has been substantially modelled on AS/NZS4360: 2004 as regards its 'risk management processes'. This new standard, ISO31000: 2009, has trimmed back the definition of risk management to be simply “the coordinated activities to direct and

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<sup>3</sup> In particular Standard & Poor's, Moody's and A.M. Best have all published proposals on how public ratings of corporations, not only in the financial services sector, will take into account risk management capabilities.

control an organization with regard to risk”, where the definition of risk is the “effect of uncertainty on objectives.”

## 2.6 Common Elements in ERM Definitions

The key points that can be drawn from the above definitions are that ERM is:

- strategic, aimed at improving the long-term value of the firm;
- driven by the highest levels of management in an organisation, typically the Board;
- a process, with formal methods for identifying, managing and reporting risks across the organisation;
- concerned with reducing uncertainties/risks, particularly those related to the achievement of business objectives;
- also concerned with exploiting opportunities, particularly those related to business strategies; and
- comprehensive, covering all risks and opportunities across an organisation, including strategic and non-strategic risks and opportunities.

Traditional risk management views risk as a series of single independent risk types, or 'silos'. Each risk stands alone unrelated to the other risks in the same organisation and optimising risk management in the organisation overall is achieved by optimising risk management individually for each silo. Another feature of traditional risk management is that it focuses on mitigating and avoiding downside risks of an event and doesn't attempt to exploit the potential opportunities that the organisation could derive from taking on risk exposures in an appropriately controlled manner.

In contrast, an organisation that has adopted an ERM approach takes a portfolio view across all types of risk, recognising the correlations and diversification effects within its portfolio. Embedding ERM within its business and decision making processes enables an organisation to understand and manage the impact of its plans and activities on its overall risk profile and exposure.



### 3 COMPONENTS OF ERM

Even a brief review of the relevant literature reveals that there are as many ways to slice and dice ERM as there are definitions. However it is done, all approaches are intended to capture the many elements of ERM within a framework that facilitates its implementation and ongoing management.

For our review of ERM practices, we have chosen to break ERM down into the following three components:

- Risk Management Culture and Governance;
- Risk Appetite and Risk Management Strategy; and
- Risk Control.

A high level description of these components and an outline of the practices we are looking at when we are considering each one are described in the following sections.

#### 3.1 Risk Management Culture and Governance

As the name suggests, risk management culture refers to the specific risk management aspects of a company's broader culture. A strong risk management culture is one where there is clear understanding of the company's risk tolerances, freedom and encouragement to raise risk management concerns, and an acceptance and willingness to incorporate risk management considerations into decision-making and business processes. Risk management culture is concerned with the awareness, acceptance and 'embeddedness' of risk management in the company.

One of the levers an organisation can use in establishing a strong risk management culture is its risk governance framework. Risk governance covers the rules, conventions and policies which govern the way in which an organisation's risk management activities are conducted. Risk governance is also concerned with the organisational aspects of risk management, including how roles and responsibilities are defined and delegated, whether the individuals involved with risk management process possess adequate competencies and authorities, and whether they are appropriately incentivised.

In today's highly complex and highly decentralised business environments, organisations are more dependent than ever on not just the formal controls that are a part of the

governance framework, but also on the informal controls that come from a strong culture. For this reason, understanding the state of an organisation's risk culture and governance framework is more important than ever.

When examining a company's risk management culture and governance, we might ask the following questions:

- Who bears the ultimate responsibility for the company's risk management activities?
- Are leaders providing the direction needed to build and maintain a strong risk culture (i.e. are they seen to be taking ERM seriously)?
- How are the company's risk management functions structured? That is,
  - at what level are risks identified and monitored?
  - at what level is the risk appetite defined?
- Is the organisation properly staffed?
- What are the company's risk management objectives and have these been communicated effectively throughout the organisation, such that they are widely known and understood?
- Do staff feel free to speak up and surface issues?
- What are the main challenges that the company faces in terms of implementing ERM?
- Are rewards aligned with the risk management objectives?
- What is the form/frequency of risk reporting to key stakeholders (in particular, the board, management, rating agencies etc)?
- Do different departments share information and work together to solve problems?
- Are risk management controls in place and being applied?
- Are policies and procedures properly documented?
- Is the framework reviewed periodically?

### 3.2 Risk Appetite and Risk Management Strategy

Broadly<sup>4</sup>, risk appetite is the term used to describe the level and nature of the risk that an organisation is willing and able to take on, where the nature of the risk refers to the risk type (market, insurance, credit etc), the risk/reward profile (i.e. the margin over the cost of risk) and any other aspect or feature that could be used to characterise the risk. A statement of risk appetite, usually articulated and formally endorsed by an organisation's board of directors and senior management, attempts to identify the risks to be avoided, risks to be minimised, and the parameters around which acceptable risks should be taken on by the organisation.

Following the development of a formal risk appetite, which may be specified in either qualitative or quantitative terms, senior management should then develop a set of 'risk tolerances' that will allow monitoring of a company's 'risk profile' against its articulated risk appetite. At the level of individual business units, these risk tolerances will be turned into specific 'risk limits' that may be used to control day-to-day risk taking.

An organisation's risk appetite, and its risk tolerances and limits underpin each of the ERM components we consider below and, arguably, form the foundation of an organisation's ERM.

Referring back to the common elements found in the various definitions of ERM, ERM is aimed at maximising a company's long-term value by aligning risk management with the company's business strategies and optimising risk adjusted return.

In examining how well this is done within a company, we might ask the following questions:

- Does the company have a fully articulated and clearly documented risk appetite statement?
- What measures of risk are used in the risk appetite statement?
- Is there clear alignment between the risk appetite and a company's strategy?
- Is there consistency between the risk appetite statement and any risk limits in place?

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<sup>4</sup> As for example, ISO 31000 defines risk appetite as the "amount and type of risk an organization is prepared to pursue or take"

- What methodology (if any) is used to calculate risk-adjusted returns?
- How is ERM incorporated into decision-making processes (e.g. product design, pricing, reinsurance, asset allocation)?
- How has ERM been integrated into performance measurement (internal reporting) and performance management (incentive compensation)?

### 3.3 Risk Control

The first step in controlling risk is to understand the nature and degree of risk taken, through processes designed to identify, assess and monitor the risk. Once the risks have been identified and understood, organisations may use a variety of methods to mitigate and control their risk exposures, including:

- Staff competency requirements and ongoing staff training and development programs;
- Separation of duties;
- Implementation and compliance with procedures intended to mitigate certain operational risks (e.g. dual processing, levels of authorities);
- Business continuity planning and testing;
- Daily calculation and reporting of various risk metrics;
- Monitoring and enforcement of risk limits;
- Access controls to premises and IT systems; and
- Hedge programs.

Regular audits of the risk management process and procedures should be conducted to assess the effectiveness of the methods used by an organisation to mitigate and control their risk exposures and, where a process is found to be ineffective, to identify and recommend an alternative.

If risk mitigation fails to maintain risk exposures within the organisation's risk limits and no viable alternative method of control is identified, the organisation may choose to either avoid the risk altogether (e.g. by selling the relevant business), or to transfer/transform the risk exposure (e.g. through outsourcing or reinsurance).

In examining how effective a company's risk controls are, we might ask the following questions:

- What processes are in place to identify emerging risks?
- For each risk type, what methods are employed to assess the risk?
- For each risk type, what measures of risk tolerance are used, for example: Value at Risk (VaR), Conditional Tail Expectation (CTE), etc?
- How are risks aggregated?
- Are there policies and procedures in place regarding appropriate risk avoidance/mitigation/transfer actions for all risks?

## 4 COMPARISON OF INTERNATIONAL ERM PRACTICES

In the last quarter of 2008, the results of two surveys of ERM practices became available. The first of these, conducted on behalf of the Institute of Actuaries of Australia, was designed to benchmark the maturity of ERM in Australian insurance companies (“the MAFC/IAAust Survey”), while the second, conducted by Towers Perrin, surveyed global insurers on all aspects of their ERM (“the TP Survey”). These two studies asked participants many of the questions we have outlined in Section 3 above, and therefore provide us with data we can use to assess how effective Australian and international insurers have been in developing and embedding ERM within their organisations.

As the purpose of this paper is to compare and contrast Australian and global ERM practices, we have examined the results of the MAFC/IAAust Survey and the TP Survey looking for similarities and differences in the responses of Australian insurers compared to their international counterparts. The results of this analysis are provided in the sections below.

We note that the results of the surveys were not always comparable. Where possible, we identified questions from the two surveys which examined the same or related aspects of the respondents’ ERM practices. In these instances, the results from both surveys have been discussed in the sections below. Where there was a response available to a question below from one survey but not the other, we have discussed only the results from the relevant survey or, in one case, drawn on the results of another publicly available survey (a survey into the ERM practices of UK life insurers, conducted by the Institute of Actuaries in the UK in September 2004).

Further details regarding the two surveys, including the number and profile of participants, are summarised in Appendix A. The results of the TP Survey have been broken down and presented separately for 3 regions: Asia/Pacific (hereafter referred to as AsiaPac) which covers AsiaPac excluding Japan, Europe and North America. In the case of AsiaPac, there were 38 respondents, the majority being Australian (15), followed by mainland Chinese (11) and South Korean (7).

### 4.1 Risk Management Culture and Governance

Both surveys asked participants a number of questions relating to risk management culture and governance.

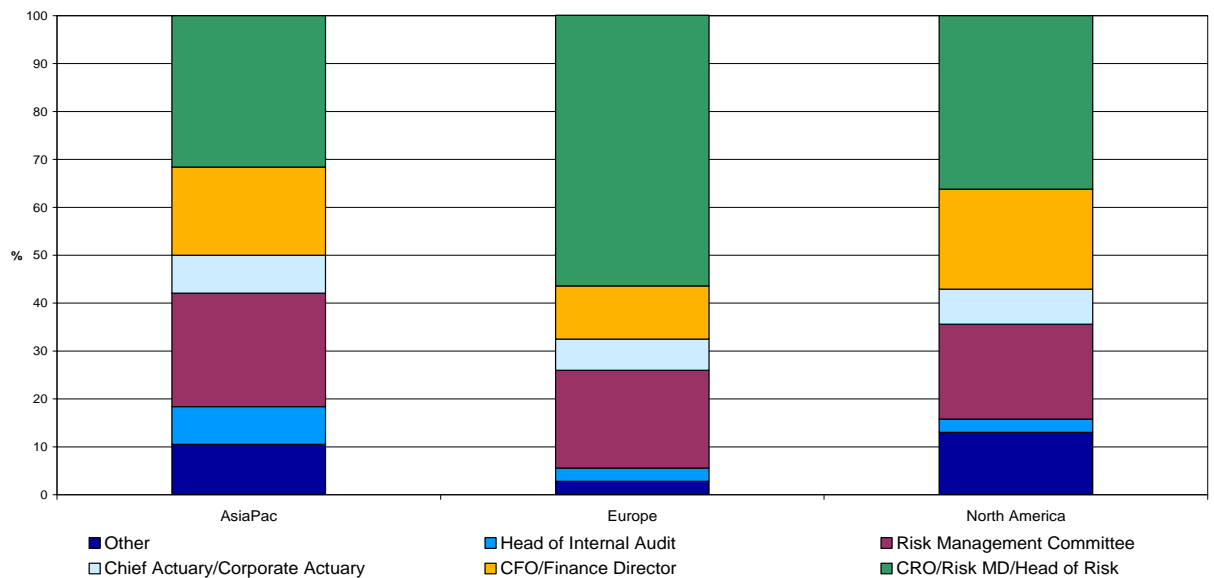
*Who bears the ultimate responsibility for the company’s risk management?*

Both the MAFC/IAAust Survey and the TP Survey asked respondents this question with slightly different results. Nearly half (48%) of the respondents of the MAFC/IAAust Survey indicated that the head of the ERM function was the Chief Risk Officer (“CRO”), with the next most popular response (28%) being someone other than the CRO, Chief Financial Office (“CFO”) or the Appointed/Chief Actuary.

The CRO was also the most popular response (32%) in the TP Survey, with the next most popular (24%) being the Risk Management Committee. We note that the Risk Management Committee as head of the ERM function would fall into the ‘other’ category on the MAFC/IAAust Survey, since it was not one of the explicit alternatives.

For ease of comparison with European and North American respondents, the complete results for this question are represented graphically in Figure 4.1.1 below.

**Figure 4.1.1. Who, below the Board of Directors, is primarily responsible for risk management in your organization?**



Source: TP Survey

Figure 4.1.1 indicates that AsiaPac is in line with North American practice in terms of responsibility for the ERM function. AsiaPac is also in line with non-UK European practice, however, when compared with the practice of UK insurers, AsiaPac seems to be somewhat behind in having a dedicated C-level ERM role.

***What are the key drivers of the company's risk management efforts?***

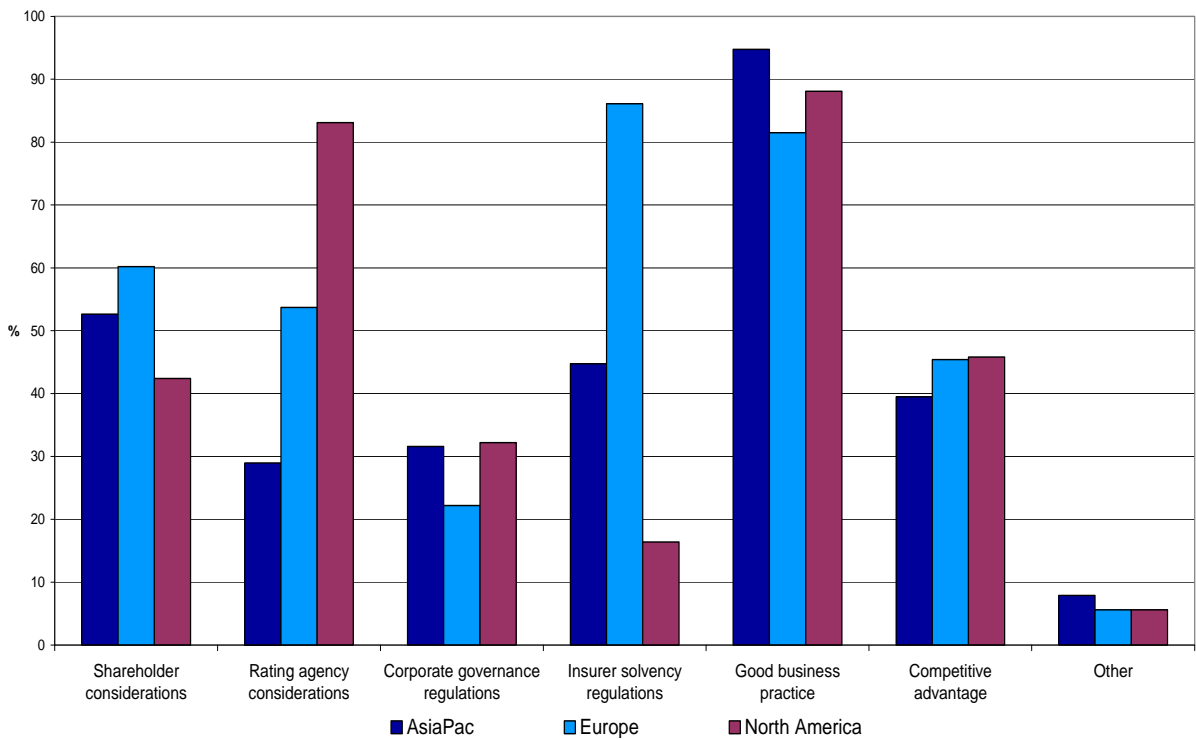
Participants of the TP Survey were asked to choose between the following options regarding the key drivers of their current risk management efforts:

- shareholder considerations;
- rating agency considerations;
- Sarbanes-Oxley or other corporate governance regulations;
- Solvency II or other insurer solvency regulations;
- good business practice; and
- competitive advantage.

Responses to this question indicated that across all regions the key driver of risk management efforts is good business practice. More interesting (and perhaps indicative), however, were the second most popular responses. In AsiaPac and Europe, risk management efforts appear to be driven primarily by regulation, whereas respondents in North American are less concerned about regulatory requirements than rating agency requirements. These results are shown in Figure 4.1.2 below.



Figure 4.1.2. What are the key drivers of your current risk management efforts?



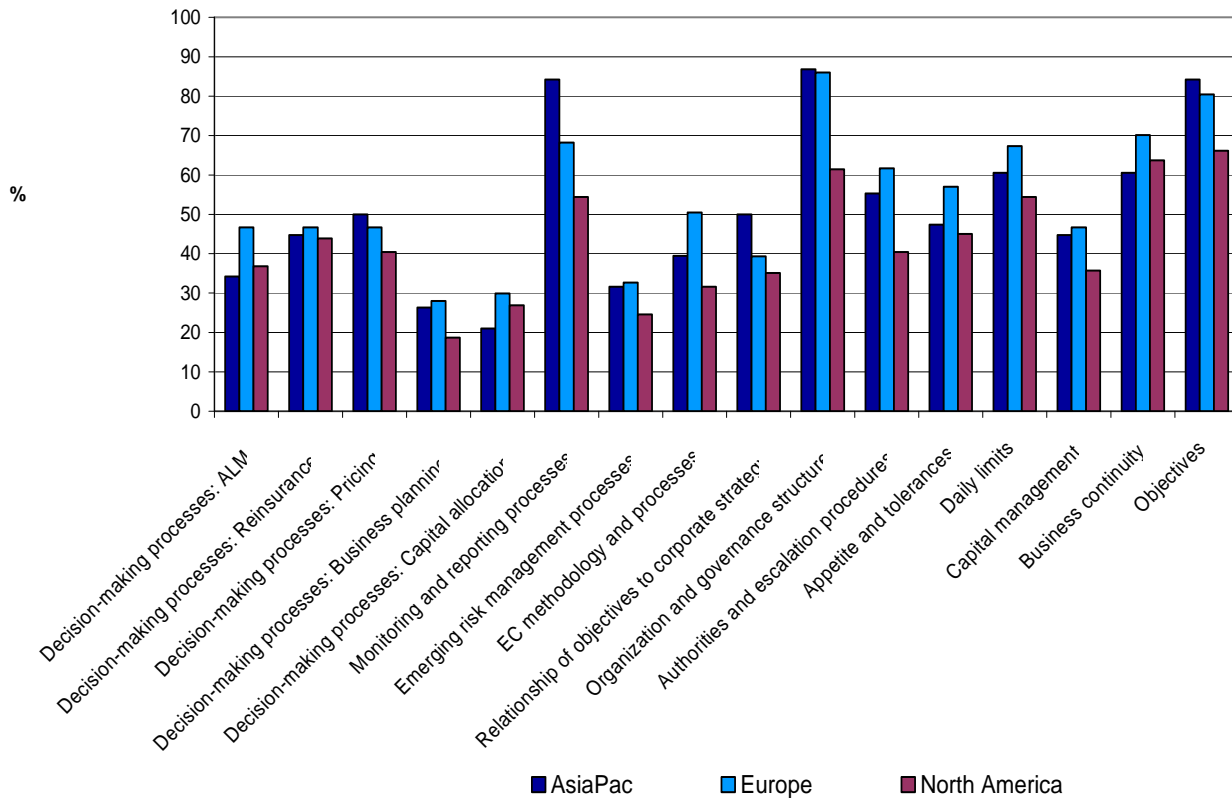
Source: TP Survey

The results of the MAFC/IAAust Survey confirm that the results above for AsiaPac are representative of those for Australia alone. Good business practice was the most popular reason for adopting ERM among Australian respondents, followed by compliance with Australian Prudential Regulation Authority (APRA) requirements and corporate governance.

*Are policies and procedures properly documented?*

Regional results from the TP Survey are provided in Figure 4.1.3 below.

**Figure 4.1.3. For which of the following do you have clearly documented risk policies (whether in one or more documents)?**



Source: TP Survey

The first five categories in Figure 4.1.3 above relate to an insurer's risk-based decision-making processes. The results show that, with the exception of pricing, insurers in AsiaPac have not documented their risk-based decision-making processes to the extent that European insurers have. AsiaPac insurers are also less likely than European insurers to have documented Economic Capital ("EC") methodology and processes. However, other aspects of AsiaPac's ERM documentation practices are comparable with their European and North American counterparts.

Does this indicate that insurers in AsiaPac simply have a gap in their documentation, or does it imply that they are less likely than European insurers to have incorporated ERM into their decision-making processes? This forms part of an insurer's risk management strategy, and is addressed below.

***What are the main challenges that the company faces in terms of implementing ERM?***

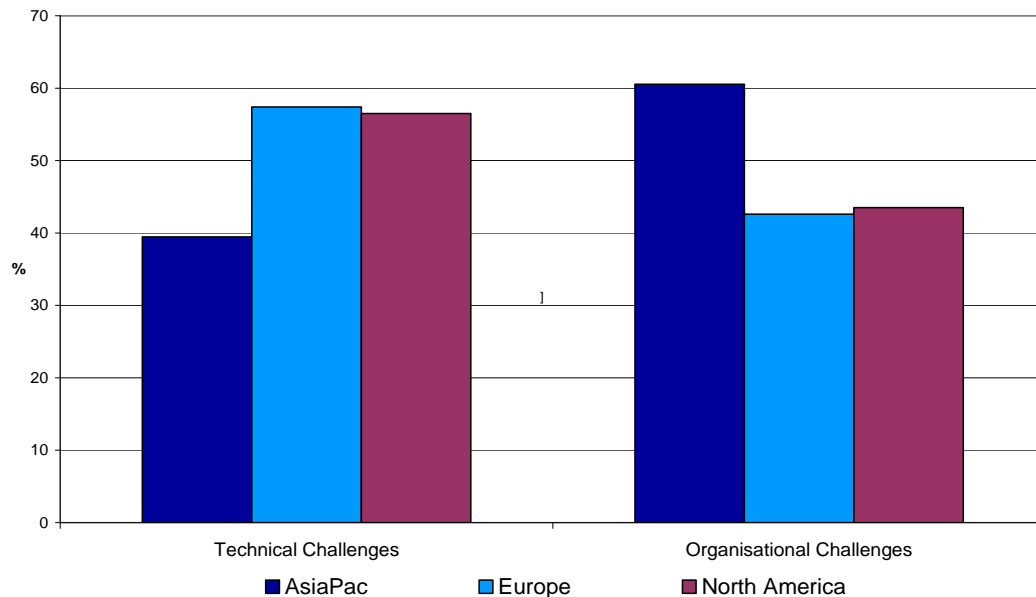
The TP Survey asked participants to rank the following challenges in implementing ERM in order from the greatest to the least:

- technical actuarial or analytical challenges (e.g., defining appropriate risk-based measures such as EC);
- systems challenges (e.g., building systems to provide timely information for decision-making);
- data challenges (e.g., gathering adequate data on which to model risk distributions and their correlations);
- business process challenges (e.g., redesigning decision-making processes such as pricing, ALM, reinsurance);
- people challenges (e.g., availability of resources, training, skills and capabilities);
- leadership challenges (e.g., obtaining leadership acceptance of new risk-based decision-making processes); and
- cultural challenges (e.g., convincing management and staff to adopt new processes).

Broadly, if the first four challenges above are thought of as technical/system challenges and the last three are thought of as organisational challenges, the results of the survey indicate a clear difference between challenges faced by insurers in AsiaPac compared to Europe and North America.

Specifically, as can be seen in Figure 4.1.4 below, insurers in AsiaPac generally rated organisational challenges more highly than technical/system challenges, while European and North American insurers did the opposite.

**Figure 4.1.4 What are the main challenges the company faces in terms of implementing ERM?**



Source: TP Survey

Responses to a question regarding obstacles to ERM in the MAFC/IAAust Survey confirm that organisational challenges are the biggest obstacle to ERM for Australian insurers. Almost half (45%) of the respondents to the MAFC/IAAust Survey reported that insufficient resources were a significant obstacle to effective ERM, with the second most popular response being that ERM was given low priority.

In combination, these results suggest that insurers in Australia may still have some ground to make up in terms of gaining buy-in from leadership and putting in place appropriate resourcing for the ERM functions within the company.

***What is the form/frequency of risk reporting to stakeholders (i.e. reporting to the board, management, rating agencies etc)?***

Although the above result may imply that not all Australian insurance company boards recognise the importance of ERM to their organisation, based on responses to the MAFC/IAAust Survey it appears that almost all boards receive reports on material risks (89%). This reporting appears to be mostly related to potential losses under various stress testing scenarios (79%) and probabilities of sufficiencies (55%), with less than half reporting on EC (41%) and even fewer on VaR (21%). This suggests that Australian insurer's place less emphasis on EC than their international counterparts. This is examined further in section 4.2.

#### 4.2 Risk Appetite and Risk Management Strategy

***Does the company have a fully articulated and clearly documented risk appetite statement?***

The MAFC/IAAust Survey results indicate that only 24% of respondents have a fully articulated and clear statement of risk appetite. The results for AsiaPac from the TP Survey look slightly better, with 40% of respondents indicating that they have a documented risk appetite statement. However, given that a risk appetite statement is a building block of ERM, these figures are lower than might be expected, particularly given APRA's requirement under the prudential standards (LPS 220 and GPS 220) for an insurer's risk management framework to include a statement of their risk appetite.

Comparable figures from the TP Survey for Europe and North America were 52% and 40%, respectively. So it appears that insurers in AsiaPac are on par with North American insurers, but slightly behind European insurers. At 24%, it seems that Australian insurers are lagging behind in this area.

When Europe is broken down into UK and non-UK insurers, UK insurers appear to be among the best with insurers there much more likely to have a fully documented risk appetite statement than non-UK European insurers (67% UK and 40% non-UK). We note that the Financial Services Authority (FSA) requires UK insurers to have an articulated risk appetite statement, which might explain the difference in results for UK and non-UK European insurers.

***What measure of risk is used in the risk appetite statement?***

The responses to this question on the TP Survey are consistent with the earlier finding that ERM efforts in AsiaPac and Europe are driven by regulatory requirements, whereas those in North America are driven more by rating agency requirements.

Regulatory capital was by far the most common measure of risk to appear in risk appetite statements of insurers in AsiaPac (80%), followed by EC (60%). The same measures were most likely to be used in European insurer risk appetite statements, though there was slightly less emphasis on regulatory capital (68% regulatory capital, 61% EC).

While North American insurers are also likely to include these measures in their risk appetite statements (44% regulatory capital, 47% EC), they are more likely than either AsiaPac or European insurers to include rating agency capital and the risk of a rating agency downgrade as measures (39% rating agency capital, 36% risk of rating agency downgrade).

***Does your organisation calculate EC?***

Of the AsiaPac respondents to the TP Survey, 53% calculate EC, with a further 24% indicating that are either planning or considering calculating EC. Responses from international insurers reveal that use of EC is broadly similar in North America (45% currently calculating EC and 35% planning or considering), but significantly more widespread in Europe (78% currently calculating EC and 18% planning or considering).

The result is not surprising since Solvency II, being the regulatory framework with which all European insurers must comply by November 2012, is based on an internal economic capital model. In contrast, the regulatory capital requirements (and quasi-regulatory capital in the form of target surplus) with which Australian life insurers must comply are not directly compatible with EC, and are generally considered to result in higher capital requirements than a company's desired EC. Given this, Australian life insurers focus on regulatory capital for capital management purposes, and place less emphasis on EC.

However, the majority of insurers in AsiaPac do calculate, or plan to calculate EC. This is because EC has many advantages over regulatory capital in terms of its uses and versatility. Unlike regulatory capital, EC is a consistent measure that can be used across all risks types and business lines (including non-insurance businesses), and as such

provides companies with a powerful tool to manage risk at an enterprise level. It is also responsive to changes in risk profile, which is not always the case with regulatory capital.

***Is there clear alignment between the risk appetite and company strategy?***

The MAFC/IAAust Survey asked respondents how well aligned they believed the company's risk and business strategies to be. The results from this question are relatively positive, with 68% of respondents indicating that risk management is either closely or reasonably well aligned. However, it is worth remembering that only 24% of the respondents to the MAFC/IAAust Survey reported that they have a fully articulated risk appetite statement, so the responses may be more indicative of a lack of clarity around the risk management strategy than actual alignment with business strategy.

***Is there consistency between the risk appetite statement and any risk limits in place?***

The TP Survey asked respondents to indicate whether they had demonstrated the consistency of their bottom-up risk limits with their top-down risk appetite statement. A small majority of North American insurers were able to answer yes to this question, while most insurers in AsiaPac and Europe answered in the negative (nearly 70% in both regions).

Once again, however, we note that the results for this question would be affected by the fact that insurers with a fully articulated risk appetite statement are in the minority in all regions.

***How is ERM incorporated into decision-making processes (e.g. pricing, reinsurance, asset allocation)?***

Decision-making processes in an insurance company typically involve weighing one option against a benchmark and/or an alternative option based on the expected level of profit/reward. Incorporating ERM into these decision-making processes means considering not just the expected level of profit/reward associated with an option, but also the amount of risk associated with it. Internationally, the most widely accepted risk-based performance metrics are based on EC (e.g. risk adjusted return on capital). On this basis, respondents to the TP Survey were asked whether they use, or planned to use, EC in decision making for the following areas:

- strategic planning and capital allocation;

- annual business planning;
- product design and pricing;
- asset / investment strategy (including hedging);
- reinsurance purchasing;
- capital adequacy assessment / capital management;
- M&A and divestiture;
- performance measurement; and
- incentive compensation.

For AsiaPac, the main areas of use of EC in decision-making are capital adequacy assessment/management (42%), asset/investment strategy and annual business planning (both 29%). The least common use is for reinsurance purchasing.

EC use in decision-making is less common in AsiaPac than Europe across all of the areas above, with the exception of performance measurement and incentive compensation. The biggest difference was in the area of reinsurance purchasing, which is the second most common use of EC in decision-making in both Europe and North America (behind capital adequacy assessment/management).

It is worth noting that the use of EC in decision-making in Europe is particularly pronounced in the UK, such that the use of EC in decision-making by insurers in AsiaPac significantly lags that by UK insurers.

It is also worth noting that a question in the MAFC/IAAust Survey regarding the uses of risk reporting indicates that it is relatively uncommon for risk reports to be used for allocating capital and calculating business performance. Rather, the most common uses are for management information, risk limit setting, reinsurance and management of exposures. These results appear to contradict the results of the TP Survey, or at least imply that Australian insurers may be lagging the rest of AsiaPac in incorporating risk measures into decision-making. However, as the questions from the two surveys are not directly comparable, it is difficult to draw firm conclusions.



***How has ERM been integrated into performance measurement (internal reporting) and performance management (incentive compensation)?***

The TP Survey asked respondents to indicate how performance measures are incorporated into incentive compensation arrangements. It appears that the majority of insurers in AsiaPac are linking risk with performance via either the inclusion of a risk-adjusted value measure in performance targets (75%) or return on risk-based capital or EC (58%).

The majority of European and North American insurers are likewise incorporating a risk allowance into performance targets, but it appears to be slightly less common than in AsiaPac, with a preference to use risk-based capital or EC rather than a risk-adjusted value measure.

We note that the TP Survey results for AsiaPac do not appear to be consistent with the MAFC/IAAust Survey, in which only 7% of Australian respondents indicated that information from risk reports was taken into account in calculating remuneration. However, it is difficult to draw too much from this inconsistency, as the questions are not directly comparable.

#### 4.3 Risk Control

***What processes are in place to identify emerging risks?***

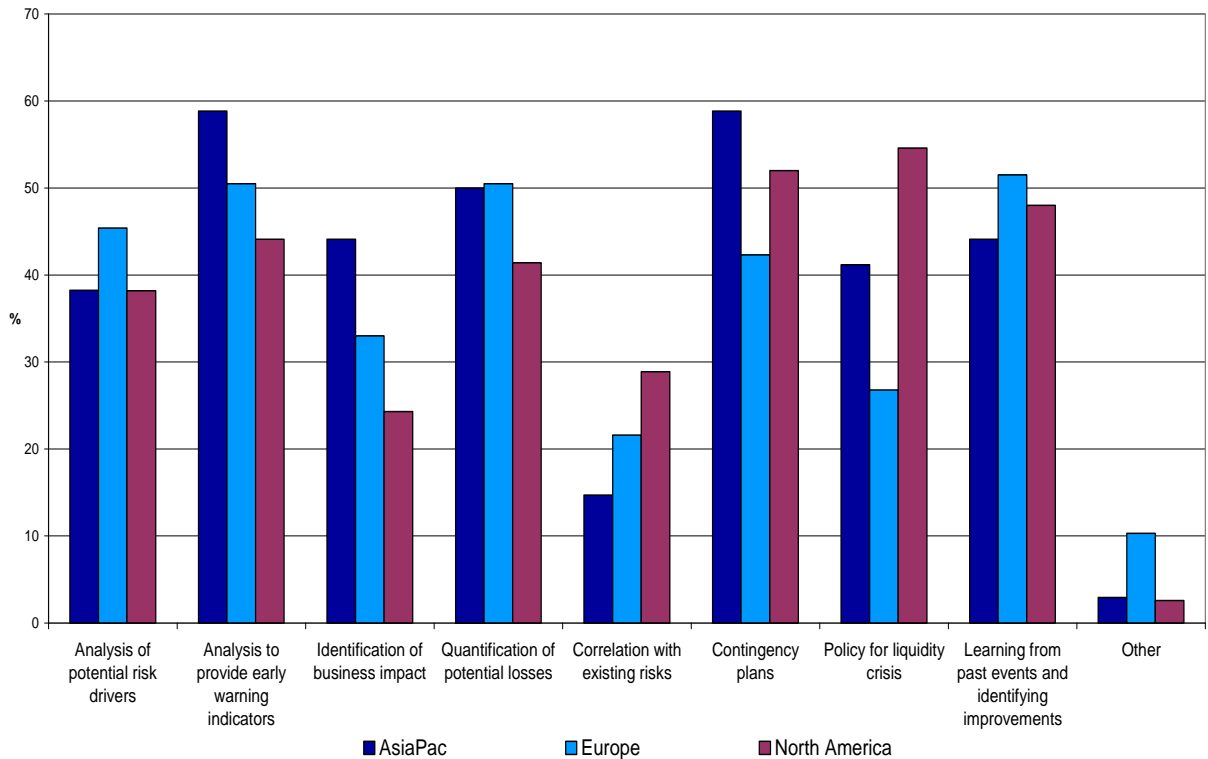
Respondents to the TP Survey were asked to indicate which of the following processes (if any) they had in place to identify and control emerging risks:

- wide-ranging analysis of potential risk drivers to proactively identify new and future emerging risks;
- data gathering and analysis to provide early warning of risk emergence;
- comprehensive identification of business impact of emerging risks;
- quantification of potential losses resulting from emerging risks;
- consideration of correlation of emerging risks with existing risks;
- contingency plans to deal with identified emerging risks (e.g., risk mitigation, transfer, reinsurance);

- policy to deal with liquidity crisis (e.g., asset-selling priorities, credit facilities); and
- processes for learning from past events and identifying improvements to be added to the risk controls.

As can be seen in Figure 4.3.1 below, results were relatively consistent across regions.

4.3.1. Which processes do you have in place to identify and control emerging risks?

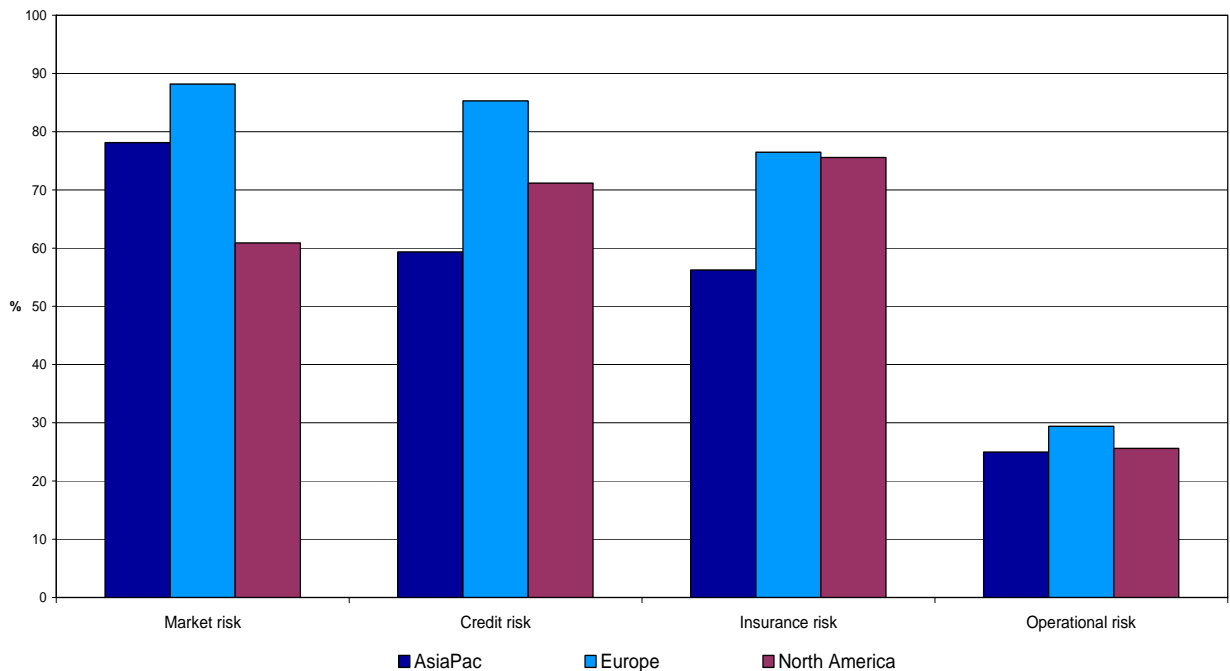


Source: TP Survey

***Have risk limits been set for all risk types?***

While not covering all risk types, respondents to the TP Survey were asked whether risk limits had been set for the following major risks: market risk, credit risk, insurance risk and operational risk. The results for this question are provided in Figure 4.3.2 below.

Figure 4.3.2. For which of the following types of risk have you set limits to govern day-to-day risk taking within the business?



Source: TP Survey

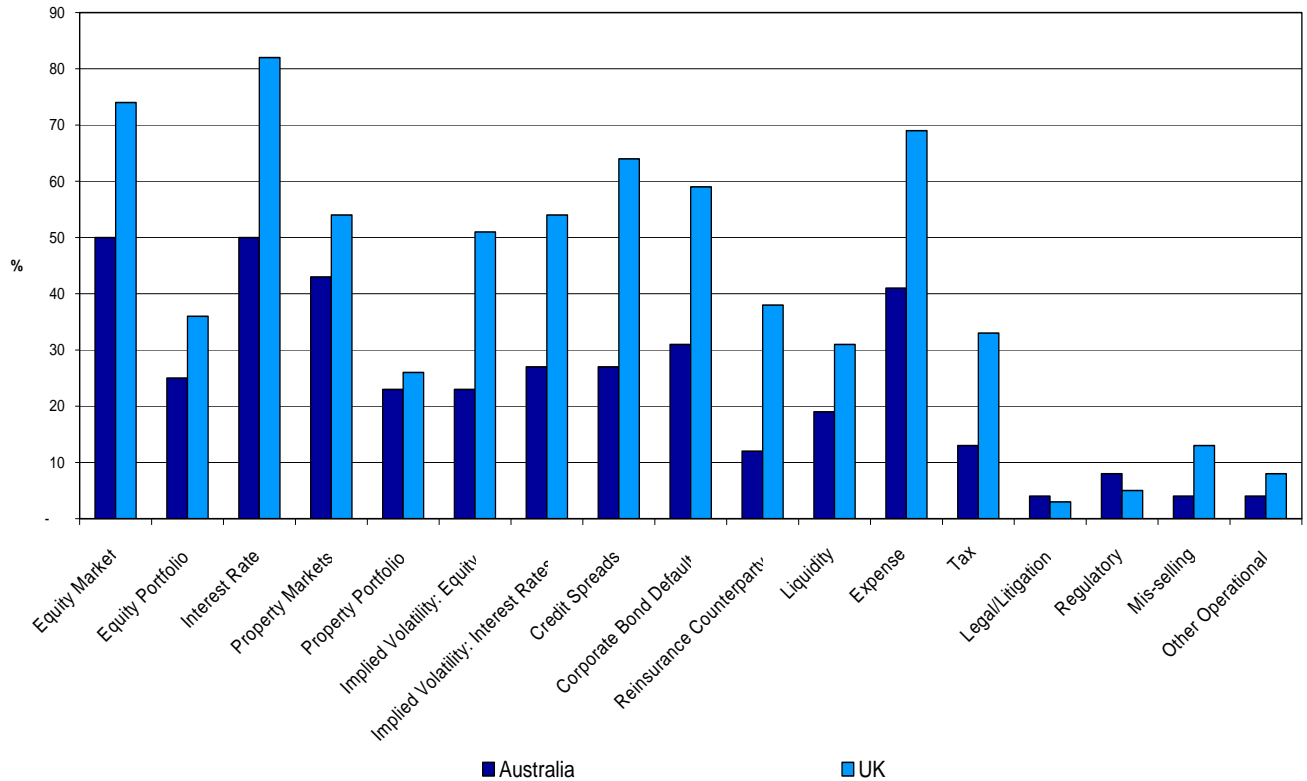
These results are reasonably comparable across regions. They indicate that, in all regions, operational risk is the least likely to have risk limits in place while, in Europe and AsiaPac, market risk is the most likely. While the relativities between North America and AsiaPac and Europe vary by risk type, it is worthy of note that insurers in Europe are more likely than AsiaPac to have daily risk limits in place for all risk types.

***For each risk type, what methods are employed to assess the risk?***

The MAFC/IAAust Survey asked respondents about the various assessment methods employed. The responses indicate that Australian insurers are most likely to be using advanced methods to model market risk, retention and risk accumulation. Not surprisingly, ad-hoc and subjective assessment is most likely to be applied to assess operational risk.

Figure 4.3.3 below compares the Australian insurer responses to the responses of UK life insurers to a survey into their ERM practices, which was conducted by the Institute of Actuaries in the UK in September 2004.

**Figure 4.3.3. Level of Complex Modelling - Deterministic and Stochastic Models**



Source: TP Survey

Based on this comparison, it is clear that the use of advanced risk assessment techniques among Australian insurers in 2008 was lagging the use of these techniques by UK life insurers four years earlier.

### ***How are risks aggregated?***

Respondents of the TP Survey were asked to choose between the following methods of risk aggregation:

- correlation matrix applied to risk capital results for each risk or business unit;
- simple correlation of individual risk distributions to give combined distribution;

- copulas used to combine individual risk distributions;
- structural model (i.e., multiple risks included in stochastic modelling); or
- other.

Results were similar across all regions, with the correlation matrix the most common methodology in all regions, followed by a structural model.

## 5 LESSONS FOR AUSTRALIAN INSURERS

The results from the responses to the TP Survey and the MAFC/IAAust Survey show that the global insurance industry has not yet achieved fully embedded ERM, and is finding it challenging to do so. Australian insurers are no exception, and appear to be lagging international best practice in some areas.

The sections below focus on the areas in which the responses indicated that the ERM practices of Australian insurers are lagging compared to their international counterparts. For this purpose, we have assumed that, unless otherwise indicated in the analyses above, the ERM practices of Australian insurers are in line with the rest of AsiaPac.

We recognise, however, that international ERM standards represents a moving target, since all insurers will be moving forward with their ERM programs relative to the position shown in the survey. To give an indication of the likely direction of future ERM developments, in each of the sections below we have commented on the areas where international insurers have indicated that they intend to focus their ERM efforts in the next two years.

### 5.1 Risk Management Culture and Governance

The survey results suggest that the ERM practices of Australian insurers with respect to the risk management culture and governance in their organisation could be improved by:

- the appointment of a CRO to take ultimate responsibility for ERM;
- implementation of programs (e.g. recruitment and training) aimed at addressing a shortfall in the availability of staff with the appropriate skills and training;
- implementation of programs aimed at obtaining buy-in from leadership regarding the importance of ERM in the organisation;
- placing more emphasis on non-regulatory risk management objectives (for example, increasing the importance of growing shareholder value while maintaining a strong regulatory capital position); and
- where applicable, better documentation regarding the incorporation of risk-based information into decision making processes.

Internationally, the TP Survey suggests that the focus of ERM efforts in the areas of risk culture and governance are likely to be centred around dealing with the challenges they face concerning data, systems and people skills. This contrasts with Australian insurers for which issues of leadership, culture and business processes were more important.

## 5.2 Risk Appetite and Risk Management Strategy

The survey results suggest that the ERM practices of Australian insurers with respect to the risk appetite and risk management strategy could be improved by:

- better articulating and documenting their risk-appetite;
- expanding the risk-appetite statement to incorporate measures of risk other than regulatory capital, in particular EC;
- increasing the level of reporting of risk measures and associated risk-based decisions to stakeholders;
- better alignment of the insurer's business strategies with its risk appetite;
- implementation of a process to ensure that risk limits are consistent with the risk appetite statement; and
- expanding the use of risk-based decision-making into areas beyond incentive compensation and performance management.

The results of the TP Survey showed that, like Australian insurers, North American insurers trail their European counterparts in EC implementation and its use in decision-making. This is largely due to the impact of Solvency II on the European market, which requires a company's internal capital model to be embedded in the management of the business, as a pre-requisite for the model to be accredited for regulatory capital purposes.

However, even European insurers are still focused on the basics of EC calculations, reporting that their priorities are to enhance modelling methodology for individual risks, improve data quality and extend the risks covered by their models. Factors integral to using EC in decision making are not yet a high priority.

On that basis, it appears that EC calculations are likely to be the focus of ERM efforts in the short term, with the more complex aspects of EC implementation being deferred until

the quality of core EC calculations improves. This is more of a priority for European insurers, as these capabilities are expected to lead to lower capital requirements under Solvency II.

### 5.3 Risk Control

The survey results suggest that the ERM practices of Australian insurers with respect to risk control could be improved by:

- more widespread use of risk limits across all risk types (including market, credit, insurance and operational risks); and
- more widespread use of advanced risk assessment techniques.

It appears that the practices of Australian insurers with respect to other aspects of risk control, such as procedures in place to identify emerging risks and methods used to aggregate, are comparable with that of European and North American insurers.

One area which is a weak spot for all insurers is operational risk. Very few participants of the TP Survey believe that they have an appropriate operational risk capability in place, and many indicate that significant work is required.

More generally, less than a fifth of participants believe they have an appropriate capability in place for risk control, monitoring and reporting — as well as for setting risk appetite and tolerances to guide these activities. The results of the survey indicated that this is a bigger issue for North American insurers than those in Europe, with a higher proportion of European companies reporting that they have set risk limits for day-to-day management. Regardless of the relativities, these capabilities are likely to be an area of focus for all international insurers going forward, since they are essential if risks are to be maintained in line with stakeholder expectations.

### 5.4 Summary

The results of the TP Survey and the MAFC/IAAust Survey indicated that there are some areas where Australian insurers lag overseas ERM practices and other areas where Australian practices are comparable with those of their international counterparts. Overall, the results suggest that Australian ERM practices are not significantly out of line with the ERM practices of European and North American insurers.



When it comes to the risk control aspects of risk management, including systems and methodologies, the ERM practices of Australian insurers are comparable. In contrast, in the areas of culture and strategy, the relatively low proportion of Australian insurers who have a fully articulated and strategically aligned risk-appetite statement, the limited use of risk-based measures in decision-making and the relatively high ranking of leadership issues they are facing in respect of ERM imply that Australian insurers are lagging in these aspects of ERM.

The results of the TP Survey provide valuable information about where the future ERM efforts of international insurers will be focused. Specifically, there is a strong emphasis on initially mastering EC calculations and, subsequently, on incorporating EC into decision-making and other business processes. This focus can be largely attributed to Solvency II in Europe and pressure from rating agencies in North America.

The EC momentum is just one example of the role of regulators and rating agencies in setting the future direction of ERM in the global insurance market. This role is likely to become more important going forward, as regulators and rating agencies re-evaluate their approach and strategies as the world emerges from the recent financial meltdown.

Regulators are expected to be granted greater powers and responsibilities to prevent a replay of the global financial crisis. Already APRA have announced that the principles-based regulatory framework will be extended to include executive remuneration of prudentially regulated organisations, and it is likely that other similar measures will emerge in future as regulators both locally and internationally collaborate in their attempts to deal with and prevent another global financial crisis. Rating agencies are also likely to take a more punitive view of organisations whose ERM practices are out of line with industry norms and, for their part, investors are being more cautious and can be expected to avoid companies who fail to measure up on ERM.

In this changed environment, it is more important than ever for Australian insurers to measure up to international best practice. Regulators and rating agencies in particular have a global perspective and will be benchmarking local insurers based on international standards. Australian insurers who recognise this and act to bring their ERM practices into line early will fare better under new regulatory and rating agency criteria, and can ultimately be expected to derive competitive advantage from this.

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## APPENDIX A - DETAILS OF SURVEYS

### A.1 Macquarie University Applied Finance Centre/Institute of Actuaries of Australia ERM Survey 2008

In mid 2008, a questionnaire was developed by the Risk Management Practice Committee of the Institute of Actuaries of Australia and researchers at Macquarie University Applied Finance Centre and sent to the Appointed Actuaries of all Life Insurance (including Friendly Societies) and General Insurance (GI) companies in Australia.

#### **Survey Responses**

In the questionnaire, Appointed Actuaries were asked to assess the state of Enterprise and Operational Risk Management in the companies for which they were responsible. In terms of responses:

- 29 completed questionnaires were received, a response rate of 30%;
- 61% of responses were related to GI and 39% to Life companies (almost exactly mirroring the mix of companies asked to participate); and
- 75% of responses were completed by the Actuaries to whom the questionnaire was addressed with the remainder completed by other officers such as the CFO or Chief Risk Officer (CRO).

The responses received were from mainly small to medium insurers, listed on exchanges, many with overseas parents and predominantly non-bank.

### A.2 Towers Perrin Global ERM Survey 2008

During May and June of 2008, the Tillinghast business of Towers Perrin conducted a Web-based survey among senior executives in major insurance companies around the world.

#### **Survey Responses**

Chief Financial Officers, Chief Actuaries and Chief Risk Officers were asked to document the approaches to, and current status of, ERM activity within their companies.

In terms of responses:

- A total of 359 executives responded, making this the largest global survey of the insurance industry on its topic;
- Respondents include a wide range of insurance organisations from;
  - North America – 177 companies, made up of 136 from the US, 30 from Canada and 11 from Bermuda;
  - Europe – 108 companies, made up of 46 from the UK and 60 from outside the UK;
  - Asia/Pacific – 68 companies, made up of 15 from Australia, 30 from Japan, 11 from China, 7 from South Korea and the remaining 5 from other parts of Asia; and
  - Latin America – 6 companies.
- Respondents come from all lines of business, including;
  - life insurance (34%);
  - P/C insurance (33%);
  - reinsurance (20%); and
  - multiline insurers (13%).