



INSURANCE

Solvency II Briefing

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Foreword

A warm welcome to the third instalment of our SolvencyIIBriefing series.

The European Commission published the draft framework Directive on 10 July, setting out some high level principles for the industry. This Briefing examines some of the pressing issues to come out of the Directive that insurance companies should consider.

In this regard, the opening article deals with the main issues and some of the practical implications resulting from the Directive. We then look at who are likely to be the winners and losers in the new Solvency II world – and some of the losers are already identifiable. We also explore how IFRS Phase II and Solvency II interact – as both projects develop, we see conceptual differences emerging and explore why it will be worthwhile keeping track of those differences.

Also this issue investigates the similarities and differences in the US and EU Solvency systems, the rising importance of internal economic capital models and with Solvency II and Pensions exploring its potential effect on the pensions industry.

Finally, we're delighted to present two guest articles, the first by Jaap Maassen, Member of the Board and Director of Pensions, ABP and Vice Chairman, EFRP (European Federation for Retirement Provision), who explains why Solvency II could spell catastrophe for pensions provision across Europe – and the second by Professor Alexander Klee and Professor Klaus Peter Wiedmann who help us consider reputation management and its relationship with the forthcoming Solvency II proposals.

As always, we're striving to improve our Briefing, so we would be delighted to receive your feedback. If you have any suggestions for future editions, then please do not hesitate to contact the editor, Nicholas Hopwood at nahopwood@kpmg.com.

Until the next time...

A step forward

The EC Solvency II framework is a step forward in terms of harmonisation, modernisation and transparency

The complete overhaul of European regulatory capital for insurers and reinsurers came a major step closer in July with the publication of the European Commission (EC)'s proposal for a Solvency II Framework Directive. The Framework Directive presents the preliminary views of the EC on the supervision of insurance and reinsurance undertakings, which is intended to replace the current Solvency I framework that dates back to the 1970s.

The industry has been given its biggest opportunity for decades to assist in the development of the new regime and create a truly competitive European-wide market where each organisation can demonstrate its capital strength as well as give a fair account of its past activities. It is proposed that Solvency II will be a risk-based economic framework which gives insurers an incentive to measure and monitor their risks and have their capital requirements determined by this risk assessment. Some of the key issues raised in this section are expanded on later in this Briefing.

Aim of the Solvency II framework

One of the key aims of Solvency II is that it should contribute to the objectives of the EU Financial Services Action Plan (FSAP) by encouraging a deeper single market in insurance services. It will do this by introducing a unified legal framework for prudential regulation of all EU insurance and

reinsurance entities and will be consistent with the principles used in banking supervision. It will be a maximum harmonisation directive, so that the bases for valuing assets and liabilities and for setting capital requirements will be consistently applied throughout the EC. The Framework will follow the Basel Accord approach, with a three pillar structure, which will bring insurance and reinsurance regulation into line with that applying to the banking community.

The new framework will adopt a risk-based approach, which will be more dynamic, but will also be a non-zero failure regime. Capital requirements will provide a better reflection of an insurer's individual risk profile and this should encourage major insurers to develop their own internal models for setting the Solvency Capital Requirement (SCR), while smaller companies will have the option to use a standard formula approach to the SCR calculation. This is likely to lead to a supervisory need for companies to show greater competency in risk assessments. Additionally, the new system requires a more harmonised approach for evaluating technical provisions.

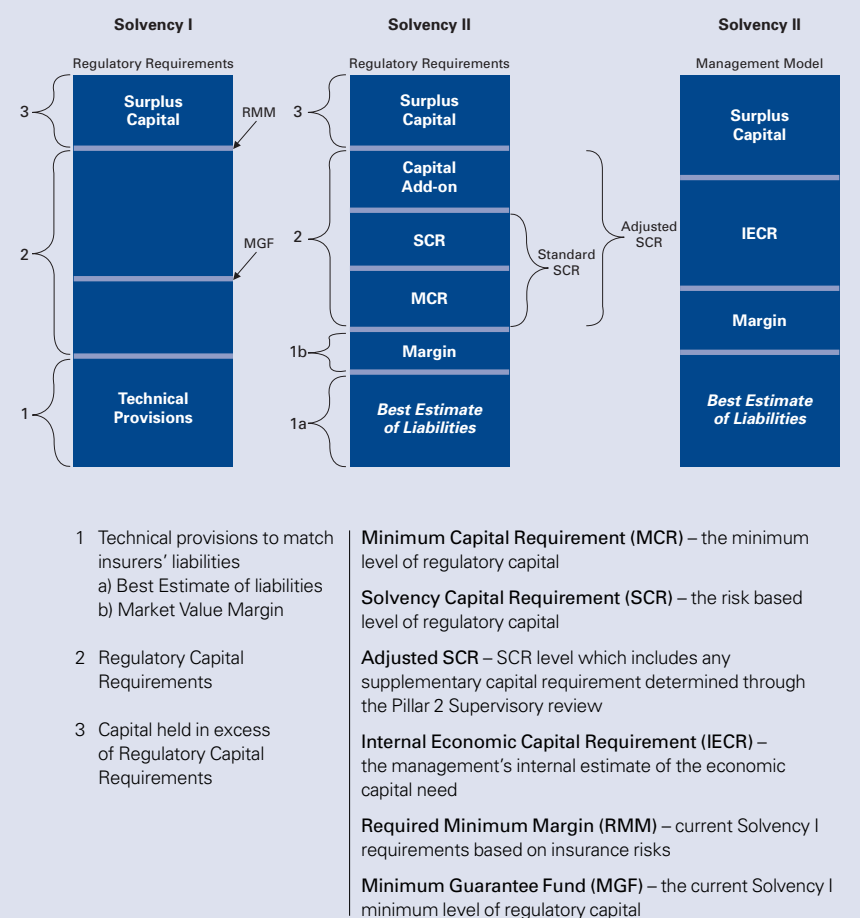
In summary the regime is intended to provide the following:

- alignment of economic and regulatory capital including giving appropriate recognition to diversification benefits within firms and between subsidiaries;
- freedom for companies to choose their own risk profile and match it with an appropriate level of capital;
- an early warning system for deterioration in solvency by active capital management; and
- by better aligning risk and capital management, encouraging an improvement in the identification of risks and their mitigation.

The basic design is shown in Figure 1 where the first two columns compare the Solvency I and Solvency II regimes in terms of the regulatory requirements. The third column depicts the economic capital model that a firm might use to run the business which is known as the Internal Economic Capital Requirement (IECR). Whilst the diagram shows a similar level of surplus capital under Solvency I and Solvency II, the actual situation will vary from company to company, with some seeing more surplus capital under the new regime and some less.



Figure 1



Source: KPMG International, 2007

Key issues

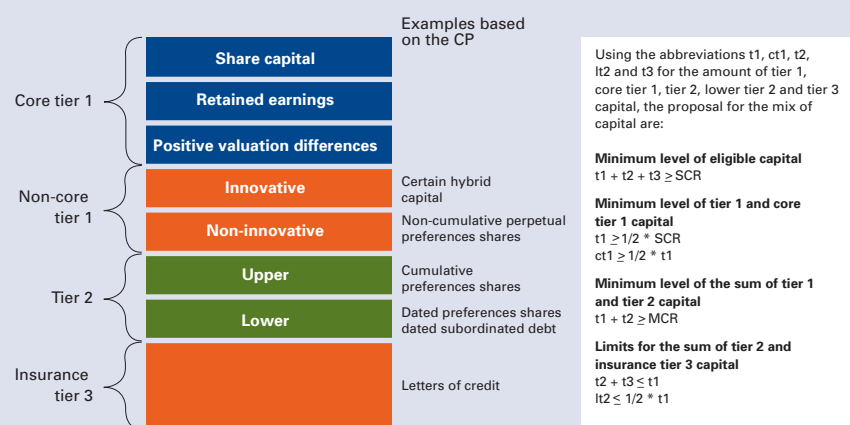
Valuing insurance liabilities

The use of a market consistent valuation basis for insurance liabilities as a basis for determining solvency requirements represents a significant expansion of the use of fair values, and will challenge the views of many in the industry. In many cases, insurers cannot transfer the liabilities to a third party and would not wish to do so, and many significant estimates relate to variables (such as mortality or the frequency and severity of claims) that cannot, in general, be observed directly from the transaction prices or other market prices.

A critical element of the calculation will be the methodology to be adopted for quantifying the market value margin to be added to the best estimate of the liabilities and early indications from the recent Quantitative Impact Study (QIS) 3, commissioned by the Committee of European Insurance and Occupational Pensions (CEIOPS), is that this needs further work.

It should be noted that the fair value model suggested by the International Accounting Standards Board (IASB) would permit the recognition of a profit on inception of a contract. However, many parties believe that the risk margin in the valuation model should be calibrated to the observed price for the transaction with the policyholder, so that an insurer would not recognise a profit at inception.

Figure 2 Capital is categorised into different 'tiers'. Solvency II will mandate the minimum and maximum capital by tier



Source: KPMG International, 2007

Finally, there should be a greater link to the IASB's work on insurance contracts (Phase II). Whilst Solvency II and Phase II contain a number of common features, a closer inspection reveals that there are in fact a number of differences between them. One example is the cashflows taken into account in deriving the valuation of the insurance liability – under Phase II it is only the contractual and constructive obligations under the contract itself, whereas under Solvency II it is all the cashflows to settle the liability. KPMG member firms believe it is vital that the valuation of technical provisions for both financial reporting and regulatory reporting converge and that this should be added before the final implementation date of 2012.

There are likely to be legitimate differences between the financial statements and solvency information given the different needs of investors and regulators. However, there should be consistency between the two sets of figures, with any differences being identifiable, reconcilable and explainable.

Internal models and risk management

The EC encourages the use of internal models for calculating solvency capital in order to enhance risk management. Although there is a willingness to approve models to be used for calculating the solvency capital provided they fulfil certain criteria, the approval process presents

a considerable challenge in meeting these. In particular, the introduction of a suitable risk management function, the granularity of the data requirements and the degree of use that must be demonstrated represent significant challenges. If the regulatory approval process identifies weaknesses in the risk management processes within a firm or the model assessment criteria not fully met, then there is likely to be a loading applied to the calculated SCR, or the company may be forced to use the standard model for the SCR, leaving its own model to form the basis of the Pillar 2 own risk and solvency assessment (ORSA) review.

Article 43 on Risk Management further iterates the need for a risk management system that is well-integrated into the organisational structure of the organisation, and that the risks covered should not only include risks identified in the calculation of the Solvency Capital Requirement, but also risks which are not fully included in the calculation.

Disclosure requirements

The Pillar 3 requirements under Solvency II will set out disclosure requirements for insurance and reinsurance companies, including potentially some very sensitive items. If the UK is taken as an example, whilst about half of all insurers avoid having a capital add-on in the form of ICG, UK insurers are not permitted to disclose the level of the add-ons as they are considered to be too market sensitive, particularly in situations

where add-ons increase from one year to the next. Under Solvency II, such capital add-ons are only meant to apply in exceptional circumstances, but the Framework Directive proposes that (subject to a five year transitional period) all such add-ons will be disclosed on at least an annual basis.

Other considerations

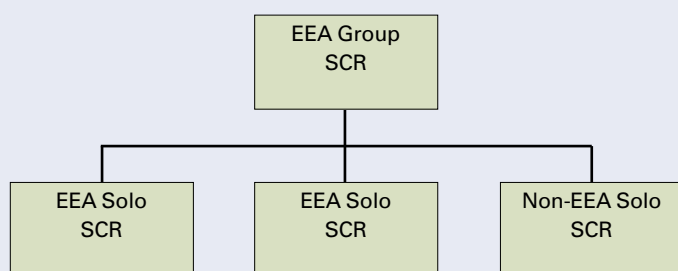
Taxation

The issue of taxation may require further attention following the conclusion of the various QIS exercises and the Impact Assessment Questionnaire conducted by the Comité Européen des Assurances (CEA), as many firms have concluded that the new valuation rules based on market data will have a tax consequence. In the UK, some elements of the life assurance taxation regime are based on the regulatory returns that may cease to exist, and a major reform of life assurance taxation is under review.

Groups and Capital issues

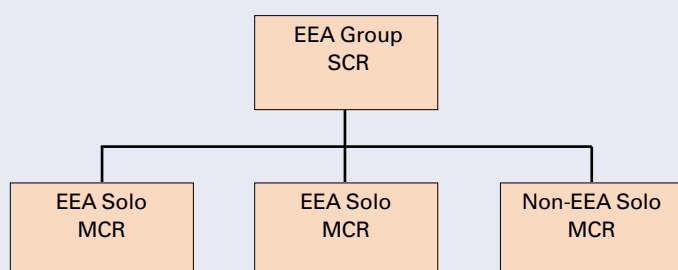
There is considerable debate about the reform of the Insurance Groups Directive (IGD) as part of the Solvency II exercise. The main issue is whether the IGD should be brought into line with the Financial Conglomerates Directive (FCD) and the Capital Requirements Directive (CRD) which have a much greater focus on the supervision of group structures and less emphasis on the solo entity (which is the cornerstone of the IGD). The alteration of the IGD in this respect would bring supervision of the

Figure 3 CEIOPS proposal



Source: KPMG International, 2007

Figure 4 HMT proposal



Source: KPMG International, 2007

insurance sector into greater harmony with the methods used in banking. The proposals to allow, in certain circumstances, group support to cover part of a subsidiary's SCR is a significant step forward in increasing the fungibility of capital within a group.

The two proposals originally put forward to deal with the supervision of insurance entities that have led to the current hybrid set out in the Framework Directive are:

CEIOPS proposal (see Figure 3)

Scope of group solvency requirements based on Insurance Groups Directive (IGD) (QIS 3 pre-test specification):

- The group should include the ultimate EEA insurance parent undertaking / insurance holding company and all related insurance undertakings: subsidiaries (>50 percent control) and participations (20 percent–50 percent control).

- Required group capital should be calculated by the use of an internal model or by:
 - applying the SCR standard formula to the group's statutory consolidated accounts so that diversification benefits are automatically recognised, plus
 - an amount reflecting group risks and any barrier to the full transferability of profits between different entities; and
 - under certain conditions (e.g. use of internal model) positive group diversification effects might be allocated to solo entities as contingent capital support (final advice on CP 14).

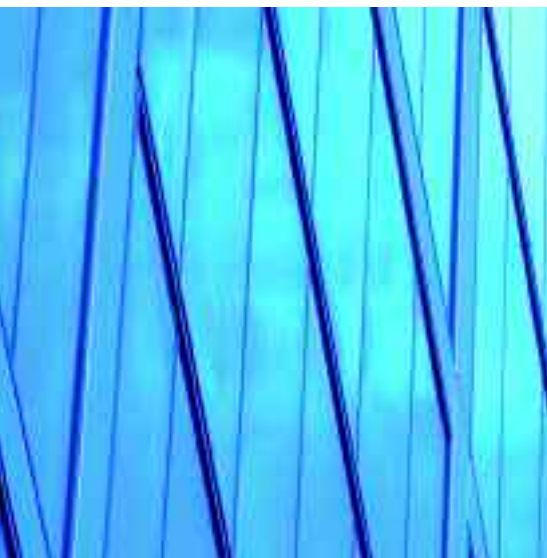
HMT proposal (see Figure 4)

- The solo SCR is disapplied as a solvency control level and each legal entity within the insurance group must hold eligible assets at least up to the level of the solo MCR.

- Solo SCR is an informational requirement and not at a solvency control level.
- The EU-wide group must meet the group SCR, taking into account group risk and transferability of capital, including any Pillar 2 capital adjustment.
- This avoids the provision of notional capital in the form of group contingent support at subsidiary level.
- Maximum level of supervisory harmonisation reduces the significance of the focus of supervisory control and avoids duplication of supervisory burden at solo and group level.

This is likely to lead to the following practical considerations for groups:

- Group structure
 - EU location for holding company would depend on third country supervisory equivalency review.
 - Emphasis on branch structure if diversification across entities is not permitted and full capital mobility is not possible.
- Capital
 - Potential to free capital from subsidiaries if they are only required to hold MCR as per HMT proposal.
 - Consequently more freedom to allocate capital across subsidiaries to best meet their business needs.
- Inter-group reinsurance
 - Review of inter-group reinsurance depending on equivalency of third country reinsurers.



KPMG member firms urge companies not to delay starting their early preparations for Solvency II. Companies aiming to adopt an internal model approach to setting their SCR, or wishing to keep their options open, need to be thinking about what this is likely to require now.

Capital Markets Innovation

The Solvency II regime will give insurers incentives to measure and control risk and will recognise forms of risk mitigation in the Solvency Capital Requirement. Innovative products from the capital markets such as Catastrophe Bonds, Securitisations and Alternative Risk Transfer (ART) may play an important part in mitigating risk. Further guidance will be needed on how to introduce these instruments to the capital model.

International developments in Prudential Regulation

Finally, it should be noted that the changes to supervision being contemplated by Solvency II are being made with full recognition of what is happening in other major markets particularly in North America. The

International Association of Insurance Supervisors (IAIS) has drafted a number of position papers in order to establish a global standard for supervision. EU regulators have contributed to these papers and it is expected that the ultimate shape of Pillar 2 (supervisory review) rules will be informed by these global standards.

Practical implications

There are a number of practical implications of the Solvency II Framework, including:

- 1 Balance sheet changes due to market consistent valuation of assets and liabilities;
- 2 Investment strategy
 - Capital requirement for investment risks is likely to lead to firms looking more closely at



- their investment management strategies; and
- ‘Cash-flow’ underwriting will be discouraged – cycles resulting from swings in financial markets expected to be dampened as Solvency 2 will explicitly account for investment risks;
- 3 Solvency II will put risk management at the heart of business and transform the way in which business is run on a day-to-day basis. Enterprise-wide risk management framework is also important for rating agencies;
 - 4 Companies may revisit their product design and risk transfer strategies to focus on areas that require a lower capital charge;
 - 5 Cost transparency and cost-efficiency could become more important, increasing outsourcing and offshoring trends;
 - 6 Solvency II will impact the insurance market e.g. it may exacerbate the pricing/ underwriting cycle leading to consolidation/ driving up barriers to entry/ changing product design and pricing;
 - 7 There will be winners... and losers from Solvency II, the latter including embedded value products, niche mono line players, non-EC reinsurers.

Insurance companies should start early preparations now

Whilst it will be a while before some of the detailed requirements will be fully defined and finalised, KPMG member firms urge companies not to

delay starting their early preparations for Solvency II. Companies aiming to adopt an internal model approach to setting their SCR, or wishing to keep their options open, need to be thinking about what this is likely to require now. In the UK, whilst ICA has taken firms some way towards risk-based regulatory capital, Solvency II is set to be much more prescriptive and firms need to consider the pre-requisites for model approval.

Data should be an early focus area, as it can take years to build the required quantities. Data needs to be collected at a sufficiently granular level to support the modelling of all the different risks and is likely to far exceed current data requirements for reserving purposes. Some insurers will need to consider data infrastructure and capacity issues.

Article 80 on Data Quality emphasises the need for processes that would ensure the appropriateness, completeness and accuracy of the data used in the calculation of technical provisions. If insufficient data of appropriate quality is available to apply to a subset of insurance or reinsurance obligations, a case-by-case approach may be taken for calculations of best estimate.

It is not just the models that will need focus, with risk management processes within which models operate also attracting regulatory attention. Models not only need to be built but need to be used widely

in the firms in making business, risk management and strategic decisions if they are to qualify for use for Solvency II. This ‘use test’ is seen as one of the biggest challenges to firms, including UK firms with agreed ICAs, in securing approval from the regulators. Those firms taking the opportunity now to lay the groundwork by bringing risk management practices and model use in line with Solvency II thinking will be best placed for implementation.

Those already contemplating business projects in areas where Solvency II will have an impact, such as organisational infrastructure or operational transformation or corporate re-structuring, need to build the anticipated Solvency II implications into their plans. Companies also need to consider how they will deal with the interactions with, and differences from, Phase II of the insurance accounting standard.

The debates around Solvency II are only just beginning, and the Directive has a way to go before its final implementation, now expected in 2012.

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Solvency II

Winners and Losers

With implementation not expected before 2012, Solvency II, which aims to overhaul the European solvency regime for insurers and reinsurers, may appear still some way away. However, with the key underlying principles agreed and outlined in the Framework Directive published on 10 July 2007, some broad areas of impact can already be seen. It is clear that there are likely to be both winners and losers, and some potentially significant practical implications for the structure of the European insurance industry.

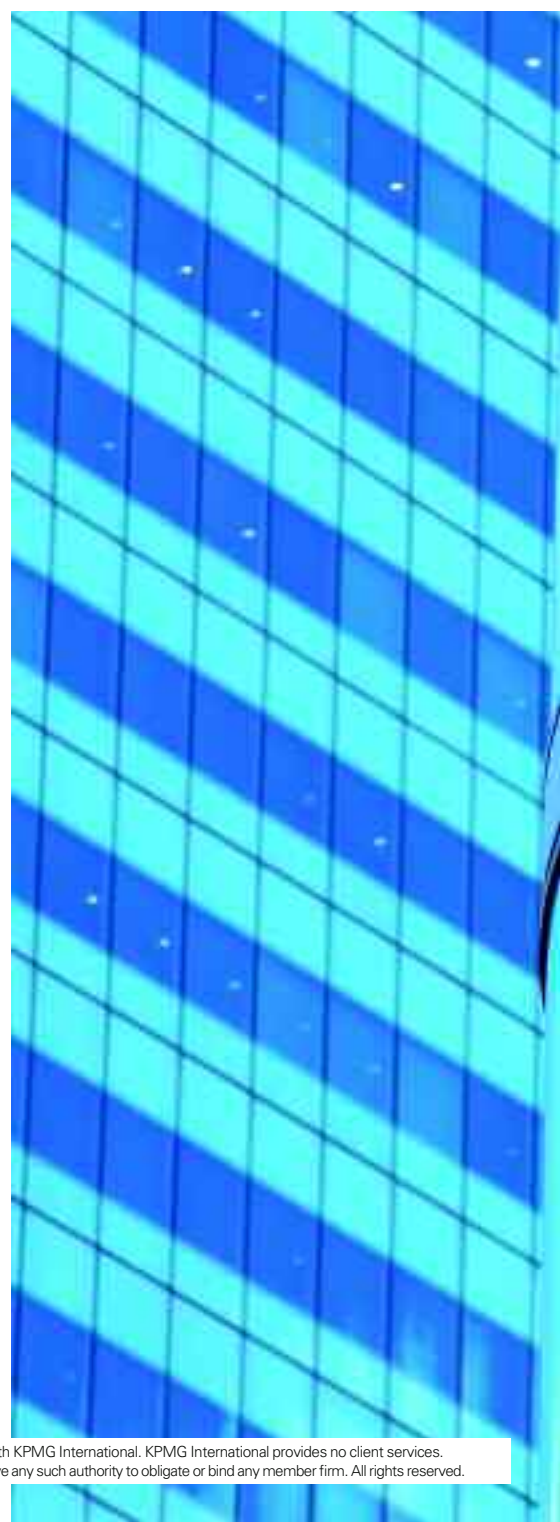
The Solvency II process follows the four-stage Lamfalussy structure. The Framework Directive ('Level 1'), published on 10 July 2007, has set out high level principles. Subsequently, the European Commission will consult in more detail over Implementing Measures ('Level 2') with the industry and trade associations. Many of the specific measures to be incorporated into national legislation and regulatory frameworks will be determined during this phase. A process of Supervisory Co-operation ('Level 3') will seek to promote consistency of implementation between member states, while a final Enforcement stage ('Level 4') will ensure member states' compliance with EU legislation.

There is clearly some way to go along the process. Member states still have fundamental differences over how the basic principles of the Framework

Directive should be incorporated into national regulations, with some preferring a rules-based approach and others a risk-based one. But the Commission appears determined to stick to the timescale, even though it is likely that some transitional arrangements will be needed post-2012 towards achieving maximum regulatory harmonisation across the EU – so as to ensure a level playing field among member states. For example, in the UK, the Financial Services Authority (FSA) already operates a sophisticated risk-based system.

But despite the fact that many details remain to be clarified, some broad conclusions on the likely industry impact can already be drawn. In terms of assessing the likely winners and losers, the primary driver is the level of regulatory capital which individual insurers will be required to maintain. Those who can avoid the economic penalty of high regulatory capital requirements will benefit from a higher return on total capital and, all other factors being equal, should expect to enjoy a competitive advantage.

Some of the obvious potential winners are the larger, more diversified insurance groups. Unlike the current regime, Solvency II will take into account the full range of risks and benefits arising out of an insurance portfolio and its management. Since portfolio diversity carries clear and



Smaller and more focused firms could also gain an advantage if they pragmatically implement a risk management framework that is fit for their purpose

quantifiable benefits, large and diversified groups are likely to be at an advantage: they will face a lower regulatory capital requirement since diversification benefits will be recognised.

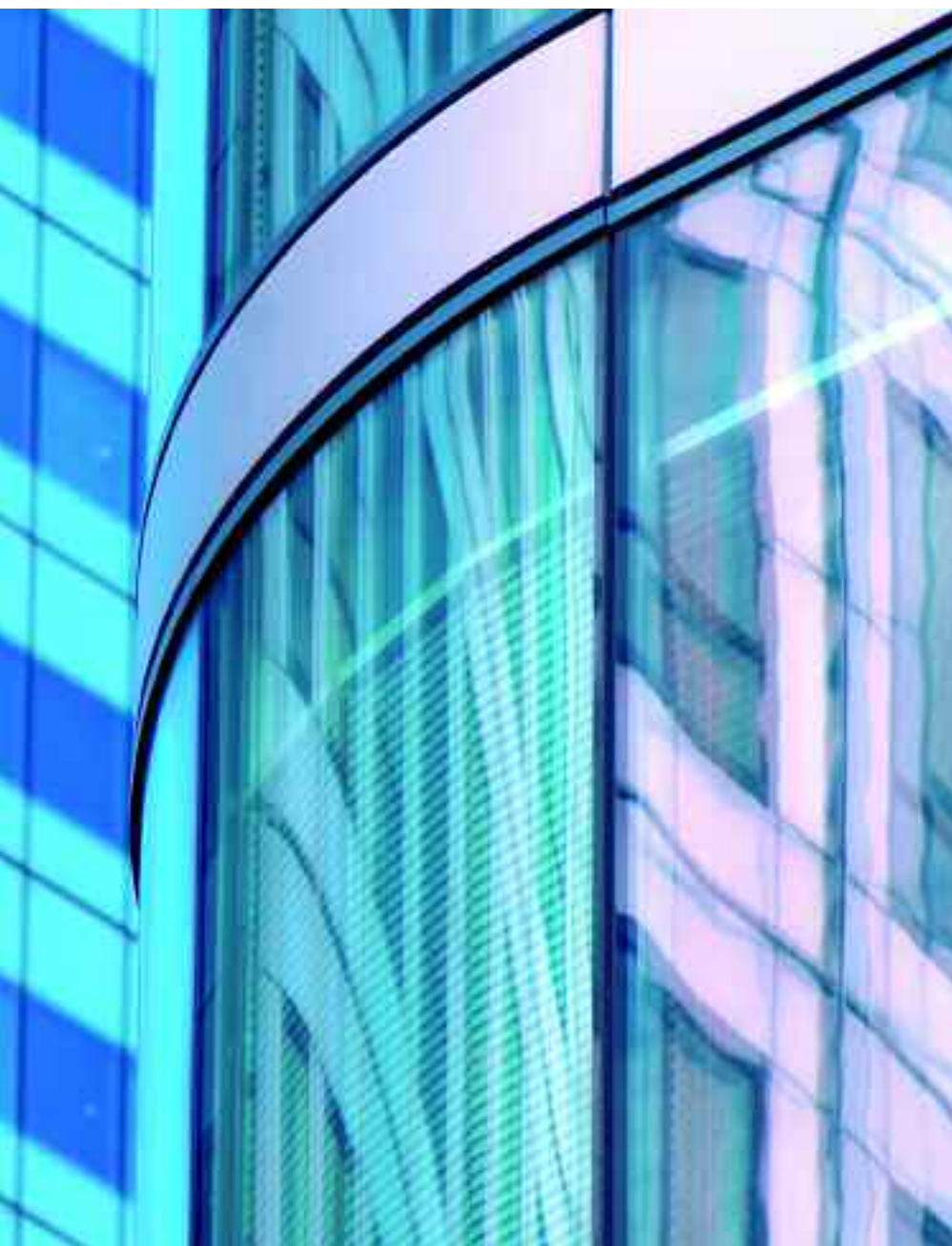
But portfolio diversification is not the only significant parameter which will divide winners from losers. The level of risk management sophistication will be an additional key factor (see Figure 5). While Pillar 1 of Solvency II will focus on capital measurement and valuation of assets and liabilities, Pillar 2 will focus on the adequacy of internal controls, risk management and corporate governance. So firms with a sound and broad ranging enterprise risk management (ERM) framework will also be favoured by the Solvency II approach (see article on page 29). These may well include many of the larger groups; but smaller and more focused firms could also gain an advantage if they pragmatically implement a risk management framework that is fit for their purpose.

Conversely, a large and diversified group may still have a risk management framework which does not fully reflect the real risk to its business. For example, a European insurer with many subsidiaries, including outside of the EU, may find it difficult to attest to the adequacy of its control framework group-wide and as a result could incur a higher capital requirement.

The explicit incorporation of risk management considerations in Solvency II runs parallel to the fact that rating agencies are progressively reflecting the same factors in their rating models. It is to be expected that firms with good ERM systems would qualify for higher ratings in future, which would then translate into a lower cost of capital with obvious benefits for shareholder returns.

Turning to potential losers, a disadvantaged category is likely to be single-line firms. The second Quantitative Impact Study (QIS2) undertaken by CEIOPS to assess the potential impact of different implementation options specifically identified small non-life undertakings, most of these monoline and/or mutuals, as at risk from having to raise new capital: "The main contributing factor seems to be the non-life underwriting risk charge since small undertakings lack the diversification benefits between lines of business and also receive the maximum size factor for the placeholder SCR risk." QIS 3 is addressing the issues raised by QIS 2 and it would be interesting to see whether the results of this third impact study identify the same industry segments as potential winners or losers.

Given that Solvency II will take into account a firm's whole risk spectrum – insurance, credit, market and operational risks – it is expected that



firms, especially non life, will no longer be as able to make up for their underwriting losses with their investment income, as market risk will also be reflected in the capital requirement. Therefore this would place more emphasis on underwriting for profit.

Smaller primary insurers will face potential disadvantage not only from the lack of diversification benefit, but also from the compliance burden itself of Solvency II. The investment in systems and resources necessary to comply with the new framework could represent a significant cost for small firms. One critical decision they will face will be whether to develop their own internal model or to adopt the standard model approach. It is likely that the standard model will be aggressively calibrated, partially as a means of encouraging firms to move to internal models and of course this does not negate the requirement of the effective governance around it. Therefore, it is likely that smaller firms need to undertake a rigorous cost-benefit analysis before the decision to implement their own internal capital model.

Potential losers, as Figure 5 shows, could include those firms providing inherently risky insurance products – such as terrorism cover. The explicit risk-based approach of Solvency II will expose the higher risk and translate it into a capital charge which would

Solvency II could trigger some consolidation in the European insurance market and drive all firms to prune their riskier activities

need to be translated into these products' pricing.

Prudent firms in the *at risk* categories are already considering how to respond. Some may successfully develop the risk management sophistication which can partially offset the penalties of small size. But others will be considering whether their current business model is sustainable, or whether to exit from certain classes of business. Solvency II could trigger some consolidation in the European insurance market and drive all firms to prune their riskier activities. By making more explicit the capital-

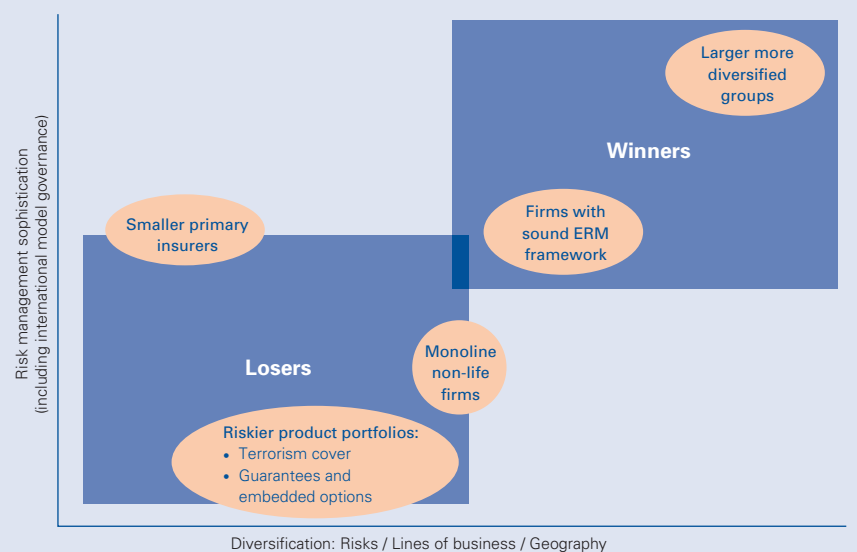
related costs associated with different portfolio components, Solvency II is also likely to lead to further rationalisation, cost-reduction and outsourcing. The reinsurance sector is also likely to benefit, since reinsurers will gain from their greater portfolio diversification – although reinsurers themselves may face additional restrictions on permissible asset categories for their investments which are not applicable under the Reinsurance Directive.

In summary, the potential losers under Solvency II that have currently been identified will have to adapt and respond one way or another.

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Figure 5 Potential impacts



Source: KPMG International, 2007

IFRS Phase II and Solvency II

The International Accounting Standards Board (IASB) issued International Financial Reporting Standard (IFRS) 4 *Insurance Contracts* in 2004, which was the culmination of the first phase of its project on insurance contracts. Significantly, this standard did not include a comprehensive model for the measurement of assets and liabilities arising from insurance contracts. The IASB issued a discussion paper on 3 May 2007 entitled *Preliminary Views on Insurance Contracts*, which sets out for the first time the IASB's proposals in relation to measurement. The discussion paper presents the components of accounting for insurance contracts by direct insurers and reinsurers, and applies to all types of insurance contracts: life and non-life, direct insurance and reinsurance. The comment period closed on 16 November 2007.

Many participants hoped that an IFRS would be developed in the same timescale and with as much commonality as possible with the measurement requirements for Solvency II. In fact, it appears that Phase II may slip behind Solvency II. A final standard is not expected until 2010 at the earliest. Also, it is proving difficult to develop a set of measurement criteria that will be very similar for both financial reporting and solvency purposes. It is therefore looking likely that there will be the need for more prudential filters than some originally anticipated.



Proposed model

The proposals make no changes to the definition of an insurance contract, although this will be discussed in developing the exposure draft. Rights and obligations created by an insurance contract should be recognised when an insurer becomes a party to that contract, and the insurance liability should be derecognised when the liability is extinguished.

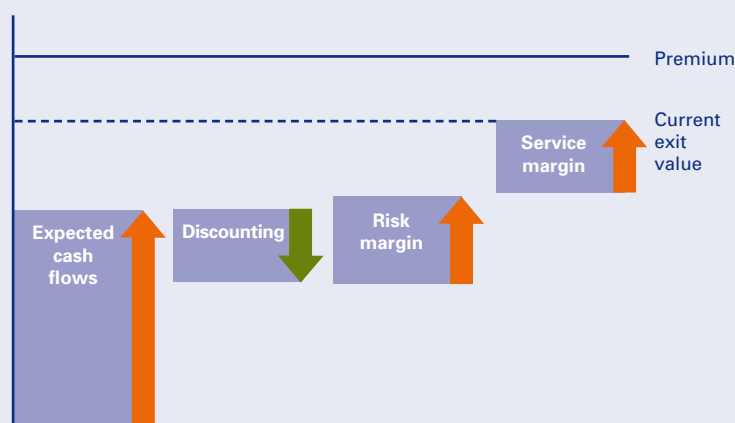
Measurement

Insurance contracts should be measured using the following building blocks:

- explicit, unbiased, market-consistent, probability-weighted and current estimates of the contractual cash flows
- current market discount rates that adjust the estimated cash flows for the time value of money
- an explicit and unbiased estimate of the margin that market participants require for bearing risk (a risk margin) and for providing other services (a service margin).

The discussion paper describes this approach as 'current exit value', which is the amount that the insurer would expect to pay at the reporting date to transfer its remaining contractual rights and obligations immediately to another entity. Significantly, this may permit the recognition of a profit on the inception of a contract.

Figure 6 Building blocks for the measurement of insurance contracts



Source: KPMG International, 2007

Risk margins should be determined for a portfolio of insurance contracts that are subject to broadly similar risks and are managed together as a single portfolio. They should not reflect the benefits of diversification or negative correlation between portfolios.

Some insurance contracts contain both an insurance component and a deposit component. In some circumstances, the proposals would require 'unbundling' into the insurance and deposit components.

The liability should reflect the contract's credit characteristics. Therefore, the insurer's own credit rating is taken into account (amongst other factors) when determining the appropriate discount rate.

There is widespread support within the European insurance industry for a prospective valuation model. However, some of the proposals will be difficult to apply and could be controversial, because:

- many significant estimates relate to variables (such as mortality or the frequency and severity of claims) that cannot be observed directly from transaction prices and other market prices
- reflecting credit characteristics in measuring insurance liabilities could lead to counter-intuitive results, because when the liabilities credit ratings decline the value of the liabilities would decrease.

Figure 7 A summary comparison of IFRS Phase II and Solvency II

	IFRS Phase II	Solvency II
Value concept	Exit value	Mark to market if hedgeable. If not, best estimate plus a risk margin
Risk margin	Unbiased estimate of margin that market participants require	Cost of capital used to set the market value margin
Gains at inception	No definitive view. Under one implementation, no profit is recognised on inception. In another, profit is recognised on inception if the valuation model produces a value that is lower than the premium (less acquisition costs)	Acceptable
Policyholder participation	Include discretionary participation features in the measurement of the liability where there is a contractual or constructive obligation	Includes discretionary benefits in the measurement of the liability (taking into account their ability to absorb future losses)
Cash flow assumptions	Unbiased and probability-weighted (an expected value approach)	Realistic
Discount rate	Current market risk free rate	Relevant risk free yield curve
Group issues	Partially recognised	Fully recognised
Deferred acquisition costs	No – acquisition costs are expensed as incurred	No
Credit risk of contract	The credit risk of the contract must be taken into account in the measurement of the liability	The credit risk of the contracts is not relevant to its measurement

Source: KPMG International, 2007

The reaction and support of the US insurance industry will be important in trying to achieve a consensus around the industry's aspirations of having a global standard on insurance accounting

Policyholder behaviour and acquisition costs

An insurer's ability to derive economic benefits from future premiums that the policyholder must pay to retain guaranteed insurability should be recognised as an asset (measured at current exit value). In practice, this asset would be recognised as part of the net insurance liability, rather than separately. Costs incurred to acquire insurance contracts should be expensed when incurred.

Policyholder participation

Some contracts, such as with-profits contracts traditionally sold by UK life insurers, contain features that allow policyholders to participate in investment returns.

The estimated cash flows used to determine current exit values should incorporate for each scenario an unbiased estimate of the policyholders' dividends resulting from a legal or constructive obligation that exists at the reporting date.

In measuring a contract with participating features, an insurer should measure asset-dependent cash flows on a basis consistent with the measurement of those assets. This will provide a measure of matching in the accounting for assets and liabilities, although the IASB has recognised that other accounting mismatches may exist, where assets are not measured at fair value.

Changes in the valuation of insurance contracts

Profit or loss should include all changes in the carrying amount of insurance contracts, although the IASB has not yet formed a view on whether premiums should be recognised as revenue or as deposits.

US reaction

The US Financial Accounting Standards Board (FASB) has published an invitation to comment containing the discussion paper. It will use the responses in deciding whether to develop an insurance contracts standard jointly with the IASB. This will be crucial in affecting the timing of the final standard.

The reaction and support of the US insurance industry will be important in trying to achieve a consensus around the industry's aspirations of having a global standard on insurance accounting.

Differences with Solvency II

Both Solvency II and the IASB's proposals are prospective valuations of the present value of insurance business, adjusted for risk and the time value of money.

For insurance companies affected by the Phase II proposals as well as Solvency II, a key aspect of the implementation will be to determine

how the two projects should interact. One key area is in relation to the source data used for projecting cash flows, for which there is likely to be significant commonality.

The way forward

Some commentators and insurance companies consider it desirable for there to be as much consistency as possible in the valuation of insurance business under Phase II and Solvency II. Insurance companies deal with a number of measurement bases currently, including local GAAP, IFRS, embedded value and a number of regulatory reporting measures. Anything that reduces this diversity should lead to clearer reporting and cost efficiencies. However, as both projects develop, conceptual differences are emerging – which may lead to differences in the valuations themselves and also how the valuations are calculated, which may, in turn, have systems and data implications. For those companies affected, it will be worth keeping track of those differences and their implications to avoid surprise later.

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Solvency II and pensions: industry pushes back

European Commission proposals to include pension funds under the Solvency II framework could spell catastrophe for pensions provision across Europe. Key industry players are squaring up for a hard campaign, as Jaap Maassen, Member of the Board and Director of Pensions, ABP and Vice Chairman, EFRP (European Federation for Retirement Provision), explains.

The European Commission is driving forward with a proposal to extend Solvency II – the supervisory framework designed for insurance companies – to include pension funds. This is causing consternation amongst key pension industry players, who are worried that it will irretrievably damage benefits to pensioners and cause some funds in the countries worst affected to close completely.

Stand up, those in favour

The Commission has promised a review during 2008 which could take the industry a step nearer to the proposal becoming reality. The Commission takes the view that insurance companies and pension companies are more or less the same, so it makes sense to have a single solvency regime for both.

Influential parties within CEIOPS (the Committee of European Insurance and Occupational Pensions Supervisors) are also in favour. A number of financial supervisors find the idea appealing because developing

Is Solvency II on the horizon for pensions?

The EC's proposed Solvency II directive applies to life insurance, non-life insurance and reinsurance. It aims to protect policyholders' interests by making prudential failure less likely – reducing the probability of consumer loss or market disruption.

Pension funds are currently outside the scope of Solvency II, but the European Commission has said it will review solvency requirements for both pension funds and financial conglomerates in 2008.

a supervisory framework which matches up to the complexity of the pensions industry is a massive challenge. Many would prefer to take the easier route and adopt the existing regime.

For their part, EU parliamentarians can't be expected to have the technical pensions knowledge to understand whether the proposition makes sense or not: again, they see the attraction of simplicity in having one set of rules to cover insurance and pensions.

Obviously, insurance companies also favour the idea – they stand to gain a competitive advantage, because the supervisory regime for pension funds is currently less strict than the equivalent insurance regime.





“The content of the ‘pension promise’ should dictate the content of the supervisory framework.”

Jaap Maassen

And those against?

Jaap Maassen disputes there is any need to apply Solvency II to pension schemes. He believes his members would all suffer through such a move: “It would cripple (pan)-European defined benefit pension funds, and put an end to corporate-sponsored pension plans, because they would become prohibitively expensive,” he says. The EFRP has member organisations from most EU countries, and most fully support the idea that Solvency II should not apply to them.

Maassen’s organisation, along with a number of other national bodies and individual pension funds, is already making approaches to the EC to highlight the problems with Solvency II.

At a country level, it would have a major impact on countries such as the UK, The Netherlands and Ireland, all of which have capitalised pension funds – meaning that the funds are organised on a savings basis.

Why is Solvency II unsuitable for pensions?

“It’s impossible to have a universal supervisory framework for insurance and pensions: they are completely different animals.” Jaap Maassen

Many proponents of extending Solvency II to pensions will say “Don’t we want the same rights for pensioners as for insurance beneficiaries? Don’t they have a right to certainty?”

Whilst the sentiment is understandable, this kind of comment reveals a misunderstanding, both of the basic differences between the two products, and how risk assumptions in pension funds are different from insurance companies. “Pensions are a completely different animal,” says Maassen, “and they need very different solvency provisions.” He points to five basic differences which demonstrate why pensions need much more flexible treatment than insurance products:

- The pension ‘promise’ is different and much more flexible: pensions trustees can change the nature of the product – the contributions, even the benefit range. You can’t do that with an insurance contract, which is much more ‘buttoned down’ and guaranteed, and therefore needs much stricter solvency measures.
- Pensions generally have a longer-term investment horizon: they therefore have a better chance of balancing peaks and troughs in performance. This allows them to invest in high-return, higher-risk assets like private equity. Equities are largely off-limits to insurance companies, which have to maintain higher liquidity rates and therefore tend to invest in fixed income.
- Pension funds tend to have compulsory participation, giving them a much broader base.



So the moment you apply the higher safety margin to pensions, you generate lower returns – which means a deteriorating pension product, or a more expensive one, or both

- Pension products normally have a sponsor – and the pension promise can vary depending on the strength of that sponsor.
- There is no guaranteed indexation with pensions: companies can choose to index fully, partly or not at all depending on the circumstances. Less indexation means less strict solvency provision is needed.

It is because of these fundamental differences that opponents believe there is no sense in trying to enforce a universal insurance and pensions supervisory framework. “I believe that it’s the content of the pension promise that should dictate the content of the supervisory framework,” says Maassen.

Major implications for pensions and the wider market

If Solvency II comes into force, pension funds will have to apply the same strict certainty margins as insurance companies – they will need a much bigger financial buffer to ensure that they can meet all their liabilities. The risk level currently applied to insurance companies is 99.5 percent. Pension funds, which do not have to build in the same level of guarantees as insurance companies, have a much lower current margin of 97.5 percent. Under Solvency II they will have to match the 99.5 percent level of certainty.

This is where an old pensions rule will come into play, as Maassen explains. “The saying goes: ‘The more I promise, the less you get; the less I promise, the more you get’. In other words, the moment pensions products guarantee any sort of outcome, risk taking has to stop: the trustees have to invest much more safely to ensure they can live up to their promise. And safer investment – which basically means moving out of equities and into fixed income – means substantially lower returns for the fund and its pensioners.”

So the moment you apply the higher safety margin to pensions, you generate lower returns – which means a deteriorating pension product, or a more expensive one, or both. There’s also a risk of grave damage to equities markets, because pension funds are huge stock owners and would have to sell off equity assets in vast quantity. In 2005, when the issue of Solvency II for pensions was first discussed, Maassen’s Netherlands pension fund ABP calculated that, to reach the required 99.5 percent certainty levels, it would have to sell off €60 billion (or 30 percent) of its equities, which would have caused a complete collapse of the stock market.

EFRP leads the charge

Having helped to stave off the application of Solvency II to pensions

two years ago, the EFRP is now returning once more to argue the case with the CEIOPS and the Commission. “We are all for change, as long as it’s appropriate change,” explains Maassen. “We fully appreciate that it’s a good idea to develop more risk-sensitive solvency requirements overall, to reflect the risks assumed by pension funds.”

The hope is that those who oppose the Solvency II extension will be able to gain sufficient time to develop a more differentiated approach. “We’re up against strong opposition, a lack of technical understanding, and a good deal of inertia from several member states,” Maassen says, “so we have a lot of challenges to overcome. As with anything, you have to lobby, lobby, lobby.”

The challenge for the industry now is to come up with an alternative regime that is capable of embracing the massive variety of pension products across 27 EU member states. “We are currently hard at work developing a principles-based framework,” says Maassen, “and we hope to have something ready to show the Commission by the end of the year.”

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What's in the regulatory cooking pot?

A comparison of the US and EU solvency systems

The time may well be right for the insurance industry to engage in a debate about the merits of a single global standard for insurance regulation of risk and capital adequacy. To inform that discussion, Frank Ellenbürger, Global Head of Insurance, KPMG, and Giselle Lim, Director, Global Services Center, KPMG in the US, look at some of the key differences between the US and EU approaches.

Although the Risk Based Capital (RBC) standards in the US and the EU's proposed Solvency II share the common goal of protecting policyholders and strengthening insurers through sound regulation, in many ways their differences are acute. Most notably, Solvency II adopts a broad, enterprise-wide view of risk management and takes into account the whole risk profile of the company, while the current RBC method focuses solely on the adequacy of capital. Filling this void, rating agencies, and in particular Standard & Poor's, have started to address the enterprise wide view of risk.¹

In order to have a system up and running quickly, the US made it a priority to come up with RBC requirements that govern the minimum capital necessary to cover an insurer's risk profile. The pragmatic approach taken was bottom up and from the outset the focus was on the measurement of the various risk categories. The result is an extensive

factor based approach to the measurement of risk capital. However, recent enhancements to the measurement of interest rate risk and market risk for variable annuities with guarantees have resulted in a principles-based stochastic method. While RBC does not currently address catastrophe risk, this is now generally perceived as a shortcoming. Just as in the measurement for interest rate risk, it appears likely that the RBC framework will base catastrophe risk estimation on advanced internal modelling.

The drive for Solvency II, in contrast, was borne out of the European Commission's desire to build a

broader framework that has a number of key features:

- A risk-based evaluation based on market values
- Enhanced risk management requirements
- The utilisation of market forces through disclosures
- The creation of a level playing field between banks and insurers

As a basis for the Solvency II project, the Internal Market Directorate General of the European Commission had commissioned KPMG to perform an extensive study into methodologies for assessing the solvency of insurance companies.²



In contrast to the US, the Commission chose a top-down approach, based on the articulation of high-level principles and a clear structural framework. Solvency II's holistic approach has three supporting pillars:

Pillar 1: Capital adequacy, implemented through capital requirements on two tiers, a Solvency (target) Capital Requirement (SCR), and a Minimum Capital Requirement (MCR). The SCR can be calculated with a relatively simple, conservatively calibrated standard model or with an 'internal model' which more accurately reflects the company's risk profile. Regulators are in fact encouraging the use of internal models as it will enhance risk management. (See Figure 8).

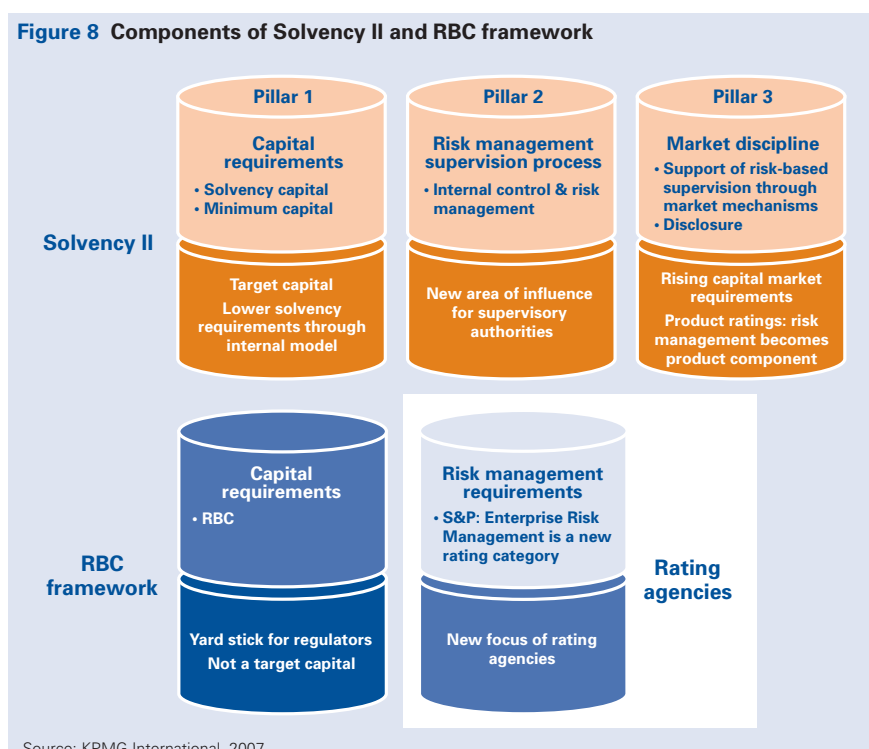
Pillar 2: Risk management requirements with capital adjustments to the SCR in the case of deficiencies.

Pillar 3: Disclosure requirements to reinforce market discipline. In Solvency II, risk management and disclosure requirements are viewed as equally important as capital requirements.

Regulatory action

There is a defined hierarchy of regulatory action for both the RBC framework and Solvency II (see Figure 9). In the RBC framework, this hierarchy is defined in terms of how much the capital exceeds the RBC as a percentage. Within this spectrum ultimate regulatory action³ would be

Figure 8 Components of Solvency II and RBC framework



Solvency II adopts a broad, enterprise-wide view of risk management and takes into account the whole risk profile of the company, while the current RBC method focuses solely on the adequacy of capital

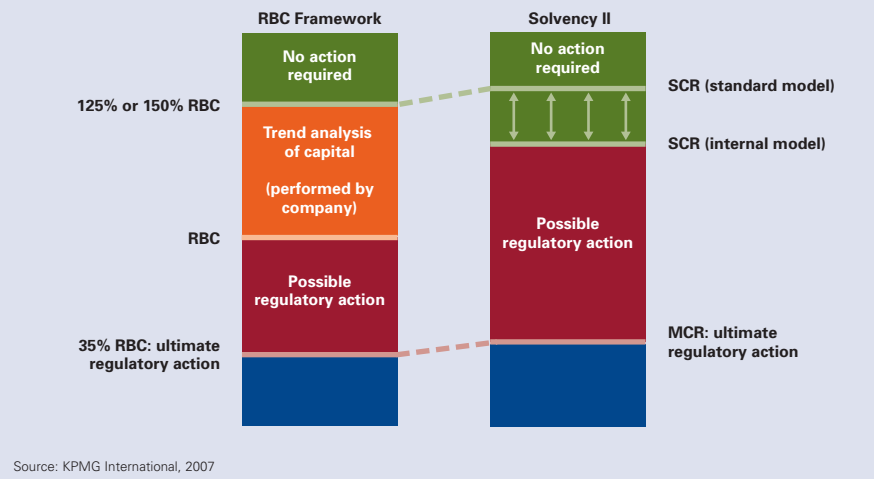
triggered when less than 35 percent of the regulatory RBC is held.^{4,5} In the Solvency II framework, the hierarchy is defined in terms of the capital with respect to two regulatory levels – the MCR and the SCR. Failure to cover the MCR will result in ‘ultimate supervisory action’.

As the RBC does not have the function of a target level of capital, its regulatory function is more closely aligned with the regulatory function of the MCR. However, in terms of complexity and risk sensitivity, the RBC formula appears to be much closer to the calculation of the standard model of the SCR.

Capital calculation

With the exception of interest rate risk and market risk for variable annuities with guarantees the RBC is calculated using statutory accounting values. This implies that two companies with the same balance sheet figures but with different risk profiles would end up having the same capital charge. In addition, capital is added to, already conservative, formula based statutory reserves. For variable annuities with guarantees these formula-based reserves will be replaced with a stochastic risk based definition at the end of 2007.^{6,7} It is planned to extend the stochastic approach to other life products in the future. In contrast, the SCR calculation is based on market values, independent of statutory accounting, and is

Figure 9 Regulatory action under RBC and Solvency II. (The capital levels in this figure are not based on a quantitative comparison)



Source: KPMG International, 2007

There is a defined hierarchy of regulatory action for both the RBC framework and Solvency II



therefore more closely aligned to the risk profile of each company, giving companies an incentive to better manage their risks. The SCR will be required on top of assets covering the fair value of liabilities rather than on top of statutory reserves.

Quantitative differences

A direct quantitative comparison between the American and European systems presents a challenge as they are based on slightly different definitions of surplus capital. There is also no uniform calibration level for all components of the RBC, and the implicit safety levels of the RBC components vary.

The SCR has been calibrated uniformly to a 1-year safety level of 99.5 percent, which represents the ability of an insurer to withstand a catastrophic 1 in 200 year event. This high and uniformly defined safety level has the following consequence:

The SCR can serve as a target that can be used to benchmark the actual capital held by an insurance company. Product raters and policy holders will have more information at their disposal than under the current European system. This increase in information supports enhanced market discipline, which is one aim of the third pillar of Solvency II.

In contrast, American regulators have stated that the making, publishing of

any advertisement, announcement, or statement with regard to RBC levels of any insurer is prohibited.⁸ For capital comparisons the public has to refer to ratings where they exist.

Relative advantages

A fundamental difference between the two approaches is that Solvency II will be based on economic fair value concepts, while the RBC calculation is currently based on statutory reserves. For variable annuities with guarantees this will be replaced by a direct estimation of risks⁹. In using fair values Solvency II implicitly addresses long-term effects such as future changes of interest rates. However, because they involve projections far into the future there are substantial uncertainties involved in such fair-value calculations. In addition, there are two very different competing proposals for the definition of the fair value of liabilities^{11,12}, which suggests that there is a large model error component.

Overall, Solvency II is more risk sensitive than the RBC framework, since the calculations are based on best estimates and explicit risk modelling rather than (prudent) statutory values. An exception would be the RBC corresponding to interest rate risk and market risk for variable annuities with guarantees, which is calculated using a stochastic methodology.

Examples of different calibrations levels of the RBC:

For Property and Casualty insurance (P&C) reserving, risk appears to correspond to a safety level, which would represent the ability of an insurer to withstand an unexpected 1 in 10 year event. This would be in line with the safety level of the MCR. For default risk of bonds, the calibration of the RBC was based on a 10-year period and a safety level of 95 per cent. Due to the length of this 10-year period, the risk factors for default risk exceed the corresponding factors currently under discussion for the SCR^{10,11}. This appears to be more conservative than a 1 in 200 year event.

Boardroom discussion points:

- How prepared are we for a convergence of regulatory systems? Are we optimising synergies through company models to qualify for capital relief from both rating agencies and future regulation?
- Do we have the organisation in place to manage risk effectively? Do we have enterprise-wide risk management processes in place to qualify for capital relief?
- How can we leverage regulation of risk and capital adequacy to improve our business and stakeholder value?
- How will the far reaching disclosures on risk and capital management for European insurers affect relationships between American insurers and their stakeholders?

The Solvency II top-down approach is designed to lead to a coherent system, which will bring together quantitative and qualitative risk management. This unified measurement approach helps in two ways. It makes risks more transparent for management and it further integrates risk and performance management.

The RBC bottom-up approach, meanwhile, has made a quick implementation possible and its estimation of risks can be based on practical considerations. In addition, the flexibility of using different time horizons enables long term risks to be modelled more accurately than under Solvency II.

Outlook

Solvency II and the RBC framework take different approaches to establishing risk-sensitive capital requirements. However, if the first signs are anything to go by, developments in the RBC framework for interest-rate risk and market risk for variable annuities with guarantees indicate that the thinking around the measurement of risk are reaching greater alignment on both sides of the Atlantic. For P&C insurance, recent work on a catastrophe-risk charge also shows the potential for greater alignment of the two approaches.

A meeting of minds may be accelerated by major ratings agencies, who are now including enterprise risk management (ERM) criteria in their quality assessments and taking internal models into account.



A fundamental difference between the two approaches is that Solvency II will be based on economic fair value concepts, while the RBC calculation is currently based on statutory reserves

Figure 10 RBC and Solvency II at a glance

Topic	RBC Framework	Solvency II
Risk management	Not prescribed	Extensive principle based requirements
Disclosure	Not prescribed	Extensive requirements taking up IFRS disclosure requirements are expected
Target capital level	Not prescribed, use of RBC as target capital is discouraged	SCR
Definition of surplus capital	Based on statutory assets and statutory liabilities Some life products: risk based evaluation of liabilities for market and interest rate risk	Based on the fair values of assets and liabilities. The fair value of liabilities will likely be estimated through a cost of capital concept ¹¹
Safety level	No explicit level	MCR: approx. 90% (VaR). Some charges are simply half the corresponding SCR charges Uniform safety level for SCR and its components SCR: 99.5% (VaR)
Catastrophe risk	Not (yet) present	Part of SCR In discussion for MCR
Ultimate regulatory action	35% RBC	100% MCR

Source: KPMG International, 2007

The International Association of Insurance Supervisors (of which the American National Association of Insurance Commissioners (NAIC) is a member) is also likely to be a catalyst in the convergence process. They are developing global guidance for solvency regulation. Initial drafts have come to the same conclusions as Solvency II, and in particular, the three pillar architecture has been taken up.

Overall, during the next few years it seems likely that the regulatory cooks will add a sprinkle of European spices to the RBC framework, so that it will further converge towards the ideas that will be implemented for Solvency II.

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Notes

- Standard & Poor's. Insurance criteria: *Evaluating the enterprise risk management practices of insurance companies*. Standard & Poor's, RatingsDirect, October 2005.
- European Commission, Internal Market DG. *Study into the methodologies to assess the overall financial position of an insurance undertaking from the perspective of prudential supervision* ('KPMG Report'), 2002.
- The consequence of 'ultimate regulatory action' or 'ultimate supervisory action' is that the company will lose control over the portfolio. It will usually be sold or sent into run-off.
- S. Feldblum, NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements. Proceedings of the Casualty Actuarial Society Casualty Actuarial Society, 297-435, 1996.
- We refer to the (unscaled) outcome of the RBC calculation. American regulation refers to control levels, which are derived from this number. If less than 50 percent of RBC is held and the local regulator deems it necessary it can place the insurer under regulatory control.
- KPMG US. *A financial executive's guide to the new risk-based capital requirements and proposed changes in statutory reserving for variable annuities*. Actuarial Report, July 2005.
- KPMG. *The financial executive's guide to the principles-based approach to statutory reserves and risk-based capital for life insurance*. Actuarial Report, 2007.
- National Association of Insurance Commissioners (NAIC). *Risk-Based Capital Model Act, Section 8B*, as quoted by³.
- While the fair value is based on the market price of the risk, which would in turn imply a safety level felt by the market to be appropriate, in a direct approach the safety level is chosen first.
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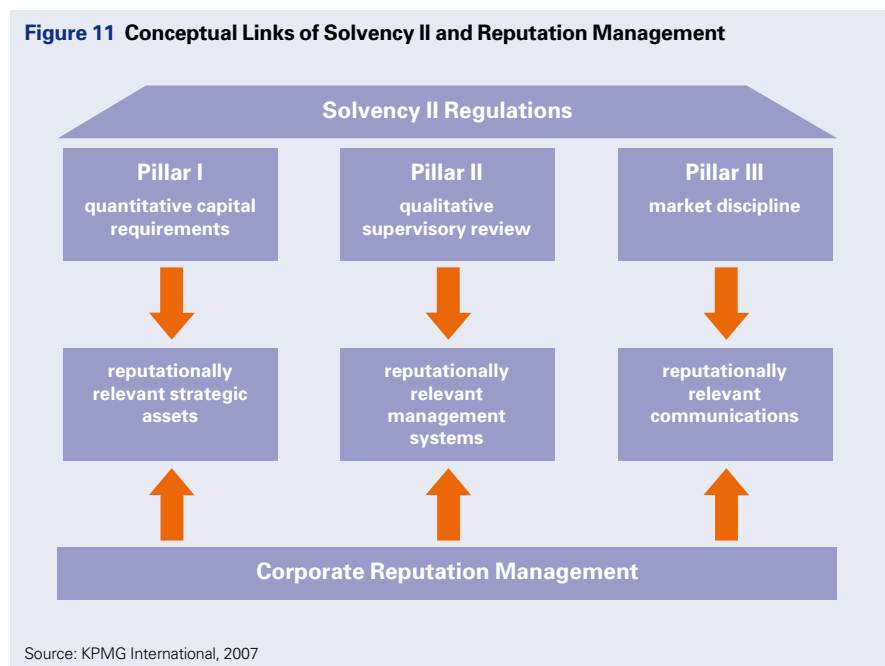
How will Solvency II requirements affect reputation management?

Reputation – strategic key asset for insurance companies

Reputation is a key success factor for any insurance company. Corporate reputation produces trust, the amount and quality of which generally is one of the most influential variables for the behaviour of internal and external stakeholders: customers' inclination to signing a contract, investors' readiness to provide capital, journalists' willingness to provide positive coverage to the public and the favourable behaviour of any other stakeholder. All these factors critically depend on the respective stakeholder's trust and benevolence which are substantially rooted in a strong and positive corporate reputation. The asset reputation, immaterial and difficult to grasp as it may be from a managerial perspective, will heavily impact the bottom line and therefore needs to be considered as one of the most important strategic assets for insurers.

Solvency II has the potential to revive and strengthen the industry's efforts towards a systematic treatment of reputation management if executives are willing to perceive Solvency II as not only being merely a regulatory hurdle but also to embrace the managerial opportunities it brings for their insurance companies.

Figure 11 Conceptual Links of Solvency II and Reputation Management



How is reputation management relevant within Solvency II?

Whether or not reputational risks should be formally included in the Solvency II catalogue of relevant risks has been subject of some discussion. Reputational risks are usually considered a manifestation of operational risks, and the Basel II Accord does currently exclude reputational risks from its operational risk catalogue.

However, the question as to whether reputational risks are formally included in the set of operational risks in a risk management system according to Solvency II regulations is merely

analytical. Reputational risks are so closely and inseparably intertwined with other operational risks that discrete approaches to the management of reputational risks on the one hand and the management of other operational risks on the other hand simply would be impossible. Indeed, for many operational risks the imminent reputational implications are often expected to be far more severe than some of the primary effects such as compensation due to legal claims. Therefore, an integrated risk management system has to incorporate reputational risk management as a core element, regardless of its inclusion or exclusion in any formal setting.



Reputational risk exposure severely impacts the economic strength and risk of capital loss of an insurer and thus has to be incorporated into the corporate risk management system

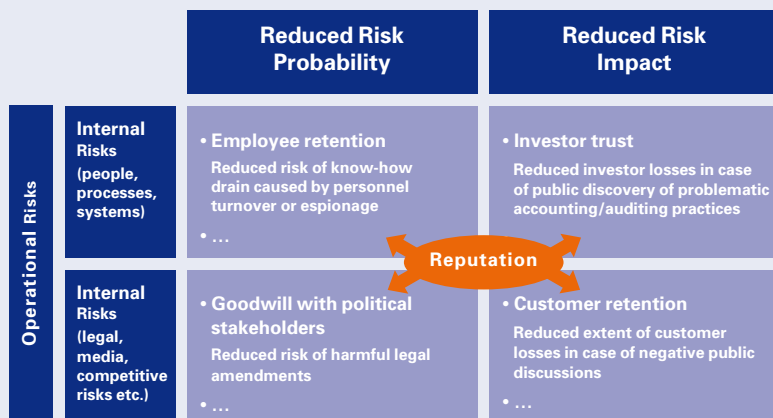
Reputation management in the Solvency II era

The three pillars of the Solvency II architecture each address a core aspect of reputation management (Figure 11).

The most universal link comes from Pillar II which generally exacts the implementation of a risk management system, especially with regard to the respective capital requirements resulting from risk exposure. Reputational risk exposure severely impacts the economic strength and risk of capital loss of an insurer and thus has to be incorporated into the corporate risk management system.

The implications of Pillar III for reputation management are equally strong. Stipulating disclosure rules, the Pillar III regulations affect and regulate the external communication of insurers which is crucial to reputation building. Public disclosure rules will effectively force insurers into an active reputation communication with its stakeholders. This opens up new opportunities for reputation communication and most insurers will be able to increase stakeholder goodwill by taking on a proactive approach to reputation communication instead of just complying forcedly with minimum requirements in this field.

Pillar I is concerned with a pivotal aspect with regard to concrete subjects and topics of reputational risk

Figure 12 Risk mitigating effects of reputation

Source: KPMG International, 2007

management and reputation communication. It sets up rules for the company's capital resources which are of paramount importance not only from a technical but also from a reputational perspective in insurance markets.

Reputation management as risk management

The closest link between reputation management and risk management arises in the field of operational risks i.e. the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. These events are most likely to produce reputational damage and most often concern single companies (as opposed to market risks, for instance, which may cause significant capital losses, but less likely lead to

reputational damages for a single company as they often are attributed to external causes and often concern the industry as a whole).

On the other hand, a strong corporate reputation significantly hit by negative internal and external events (such as disloyal employee behaviour or negative press coverage). And in the case of any negative events it has the potential to dampen their consequences (like the extent of customer losses due to negative press coverage). This essential risk mitigation effect of reputation thus results from decreasing the risk probability as well as the risk impact. Figure 12 exemplifies these risk mitigating effects for reputation for several kinds of typical operational risks.

Outlook

Risk management according to Solvency II regulations and reputation management are so closely intertwined that it would neither be reasonable nor possible to separate these two aspects. Solvency II will offer a wide array of opportunities to strengthen the company's position towards all relevant internal and external stakeholders by invigorating the strategic core asset reputation. The current focus of the Solvency II discussion does not reflect this potential. Tapping the full strategic potential of Solvency II will require executives in the industry to move away from an often figure oriented and sometimes formalistic approach which largely equates risk management with defining capital requirements. Efforts to gain a broader perspective on Solvency II which embraces its 'soft factor' (i.e. reputational) implications are a managerial investment which is very likely to pay off in terms of bottom line impact as well as in terms of a strengthened strategic market position.

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Time to take a look under the hood of your economic capital models?

Economic capital models

Internal economic capital models are continuously gaining in importance due to regulatory and business drivers which include:

- **Regulators:** for EU insurers internal economic capital models are encouraged as an alternative to the standard economic capital model for the calculation of the Solvency Capital Requirement (SCR) under Solvency II. There will be quantitative incentives for firms to invest in their own internal models which will more accurately reflect their individual risk exposures and mitigation strategies. Integration of such models into business processes and decision making should lead to better risk management and deliver Pillar 2 benefits.
- **Ratings:** rating agencies are placing increasing weight on firms' internal modelling as a key part of their Enterprise Risk Management framework. This focus is likely to increase over time and be reinforced by the changes brought about by Solvency II. The insurance industry is expecting that internal economic capital models will become part of the key criteria used to assess a well managed insurer and thus impact the views of financial analysts.

• Risk and return optimisation:

internal models are not just about regulatory capital, they can provide information to support key business decisions around capital allocation, assessment of risk adjusted return on capital by line, risk or deal. Models can also support technical pricing, active portfolio management, concentration analysis, risk transfer analysis and optimal reinsurance structures.

What is the case for objective economic capital model assessment?

While the drivers for models are universal, internal models exhibit – more often than not – highly complex and company specific features reflecting firms' individual business plans, market views and management assumptions. On the one hand these features are part of their appeal. On the other hand they make it difficult for senior management to assess their quality and accuracy. Proper quality assurance is essential because of the importance of internal models in modern business management, to regulators, and to rating agencies.

While the high level architecture of most internal economic capital models will have some commonalities, there are a multitude of possibilities when it comes to detailed implementation, including issues such as the approach to the model's integration into the firm's business processes.



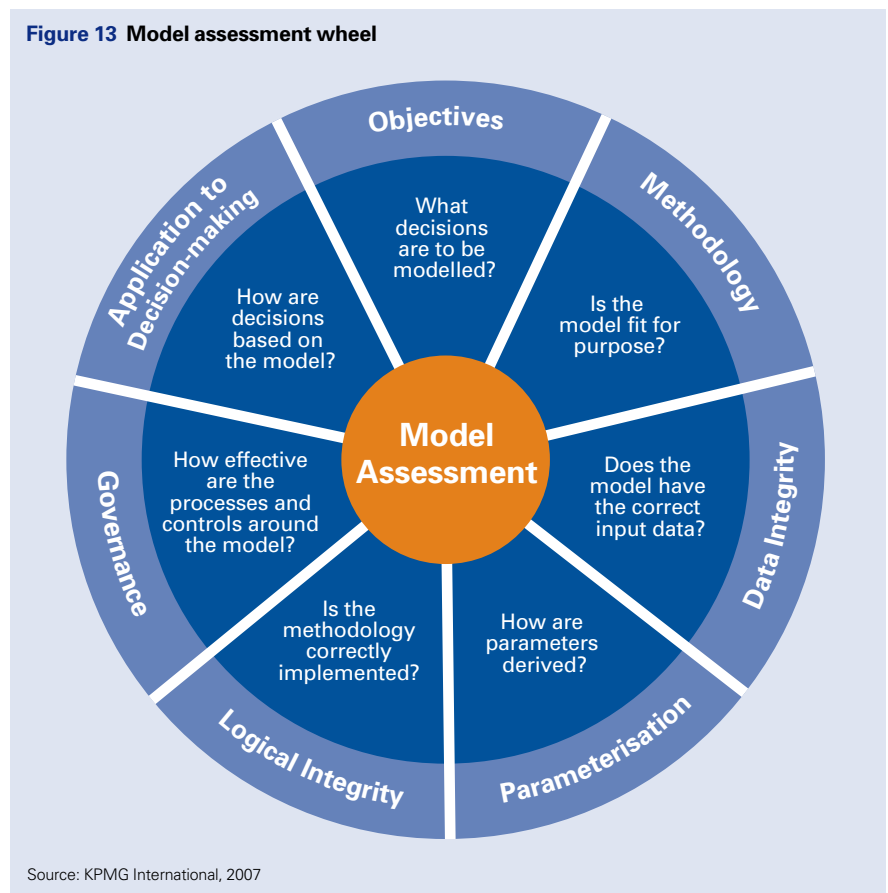
For model reviewers it is good practice not to have been directly involved in the development or deployment process of the model, to be able to make a knowledgeable evaluation of the entire modelling process, and to be able to draw comparisons with leading industry practice. The scarcity of such resources is a key issue, and in many instances makes the case for an external review.

In addition, external stakeholders such as rating agencies and regulators may explicitly require external reviews. Moody's has explicitly raised the subject of external reviews in a recent document¹ concerning the impact of internal models on its ratings. Solvency II is likely to require an annual model assessment exercise. Board and senior management members will gain comfort in the knowledge that the model on which they plan to base far reaching decisions has been independently reviewed and assessed to a high professional standard.

An approach to economic capital model assessment

Models are validated against their objective and their intended use. A broad ranging model assessment will include reviews of the modelling methodology and approach, the accuracy and robustness of the technical implementation, the data driving the model, and the procedural and governance aspects surrounding its use. Figure 13 depicts this approach to model assessment.

Figure 13 Model assessment wheel



The investigation of *objectives* is a fact gathering step identifying senior management's goals for the model and its use. This step should sketch the basic facts about the business environment the model is to be used in, the types of decisions it will support, and the benefits and value it is expected to create. Creating a model suitable for both current and future use is a considerable challenge and it is important to understand these objectives fully. Ultimate findings would compare the 'as is' state with these objectives.

Due to the complexity of economic capital models, structure and *methodology* are typically described and assessed in several complementary layers of abstraction. This is usually a substantial part of the assessment exercise. Its main purpose is the assessment of the methodology and its appropriateness for achieving the objectives identified above. This stage considers whether the model is 'fit for purpose' in terms of what it is trying to do and how management wants to use it.

Modelling and use of models is by itself an extensive process which requires the support of clear governance

The output of a model depends as much on the data it uses as on the modelling methodology which is employed. The assessment of data *integrity* addresses the adequacy of the data gathering process for the purpose of the model. It also assesses whether the interpretation of data in the model's methodology is consistent with the data collected by the insurer. Where appropriate it will also be investigated to what extent the data used in the modeling are consistent with the data used for business planning and other financial reporting.

Model parameters are derived from collected data. Since for the purpose of economic capital calculation collected data is typically very scarce, *parameterisation* often requires actuarial judgment as a decisive component. The objective of this step is the assessment of the quality and appropriateness of the process used for choosing parameters.

The *logical integrity* of a model is distinct from its methodology and refers to the physical implementation of the model's logic in a computer program or simulation. The objective of this step is to assess whether the model is materially free of logical errors, and that the approach taken in the physical implementation matches the intended methodology.

Modelling and use of models is by itself an extensive *process* which requires the support of clear *governance*. The responsibilities are usually distributed over several departments and levels of hierarchy. Economic capital models generally attempt to model the company as a whole, requiring interaction with and data from many areas and departments. Care has to be taken that the incentives to support the modelling effort outweigh possible conflicts of interest. The objective of this step is to assess the processes and governance covering the models, including model build and development, and the use of the models in the organisation.

In the final step the *application to decision making* is investigated. This step identifies any gaps between the objectives of modeling, the perceived implementation, and its actual use. It also links in very much to the regulatory and rating agency desire to see the 'use test' being fulfilled within the business. In other words it is where an organisation is able to demonstrate that the model is more than a black box that is dusted off once a year to calculate a capital number.

Note

¹ Moody's Investors Service. *Company built internal capital models expected to play greater part in Moody's insurance rating process.* June 2006.

Conclusion

Models are often key to enabling management to improve corporate decision making, and economic capital models are fundamental to an insurer's pricing, financing, and capital decisions. As such, management and the Board would be well advised to undertake the quality assurance necessary to satisfy themselves that the company's internal economic capital model possess all the elements of integrity presented above.

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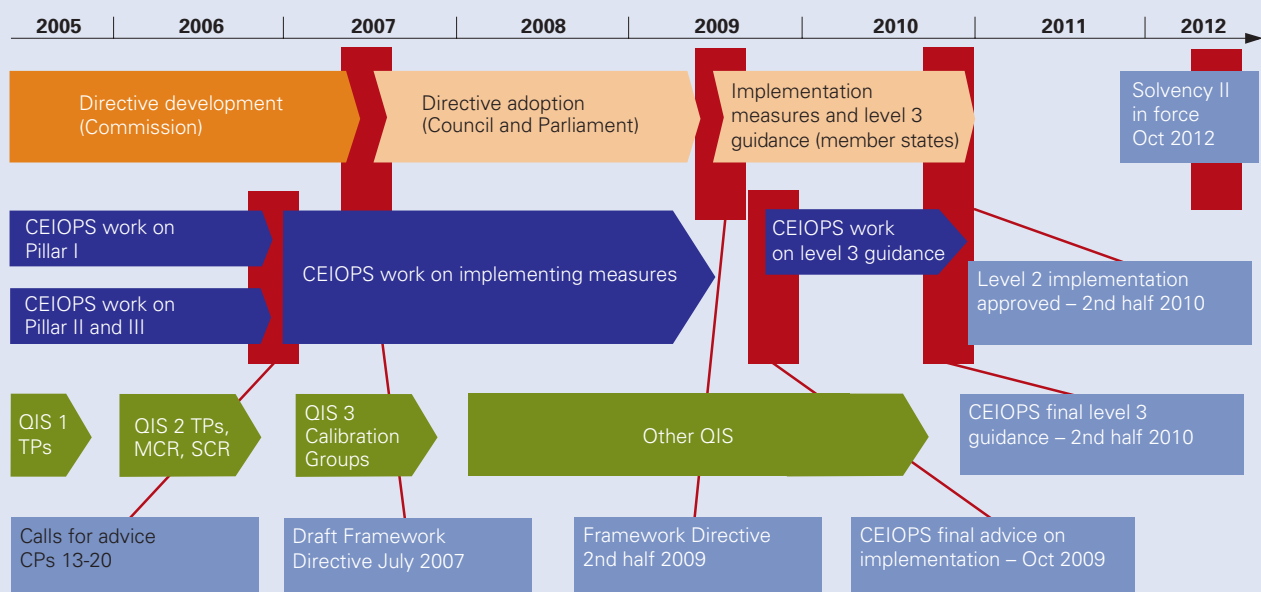
Solvency II – background and timeline

Solvency II is the 'next big thing' in the insurance world. It will create a framework within which European insurance and reinsurance regulation can operate. The introduction of the new regime is a highly complex process which the EU Commission expects to be implemented by 2012.

The Commission issued the Framework Directive for Solvency II on the 10 July 2007. The Framework Directive will then be negotiated in the Council of Ministers and European Parliament before more detailed EU legislative measures.

The Commission for European Insurance and Occupational Pension Supervisors (CEIOPS) is running a process of consultation that will inform the make-up of the Directive, through three waves of Calls for Advice. In addition, the Quantitative Impact Studies are continuing to inform the debate on the structure of the Framework and the technical content of Solvency II.

Figure 14 Solvency II regulatory timeline



Source: KPMG International, 2007

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KPMG has an international network of regulatory and risk and capital management professionals. To discuss any of the matters raised in this edition of SolvencyII Briefing, or any other regulatory, risk management and data management matters please contact:

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