

Solvency II

Preparing for the Dawning of a New Day



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The stakes are high for the insurance industry as the Solvency II regulation heads towards a decisive phase where the building blocks of the future regime will be defined. Although the technical details are still under debate, there is increasing interest in the likely strategic impact that the new legislation will have on the non-life insurance industry. In this paper Guy Carpenter and Mercer Oliver Wyman, both part of Marsh & McLennan Companies Inc. (MMC), examine implications of Solvency II for primary insurers and re-insurers.

Executive summary

Solvency II aims to establish a solvency system that is better matched to the true risks of an insurance company. Insurers recognise that a closer alignment between the way companies manage themselves and the way they are regulated can only be beneficial to insurers, policyholders and shareholders alike. So far, the interim deliverables such as the Quantitative Impact Studies have been met, and the 2009-10 target for adopting and implementing the regulation looks to be on track. At the same time, we are seeing more pronounced signs of convergence between Solvency II and rating agency approaches to capital adequacy and risk management; a convergence that is also not lost on equity analysts and other interested parties. In particular, this has meant that for non-life insurance companies there has been increased interest from all stakeholders in:

- Understanding the significant risks of the enterprise in a quantifiable and integrated manner
- Developing well-embedded risk management and control systems
- Accurately managing accumulation risk
- Integrating risk management into broader business operations

The implementation of Solvency II in non-life insurance is not going to reveal a huge capital black hole. It will, however, create competitive advantage for those that use economic insights for *management* over those who rest at compliance-focused *measurement*.

This move by leaders from *measurement* to *management* will have its impact first at group level, where there are some relatively 'quick hits' such as strategic planning, management of reinsurance, and alternative methods of managing capital and leverage. Broader changes in the regulation of risk transfer instruments mean that innovative reinsurance and capital markets solutions will become increasingly important for this purpose. Longer term there are even bigger benefits in driving an understanding of economic risk and solvency down to the business unit level, for example in pricing and performance measurement. This creates a significant opportunity to move ahead of the pack for those companies with the strong leadership necessary to educate the business and challenge established ways of doing business.

In this paper we discuss four main topics:

- Current status of the Solvency II project, including the results and practical implications so far of the Quantitative Impact Studies (QIS)
- Related market developments, with particular focus on the increasing convergence of rating agency and regulatory views
- Likely impact of Solvency II on the industry, and the implications for the individual insurance company
- What should the insurance company executive be doing next?

Status of the Solvency II project

In this section we provide an outline of the Solvency II process and its current status, including the United Kingdom's Financial Services Authority's (FSA) requirement for companies to develop Internal Capital Assessments. In addition, we provide specific commentary on some of the practical considerations surrounding the modelling elements of the ongoing Quantitative Impact Studies (QIS). A fuller discussion of the business implications of the resultant enhanced modelling capabilities comes later in this paper.

Background

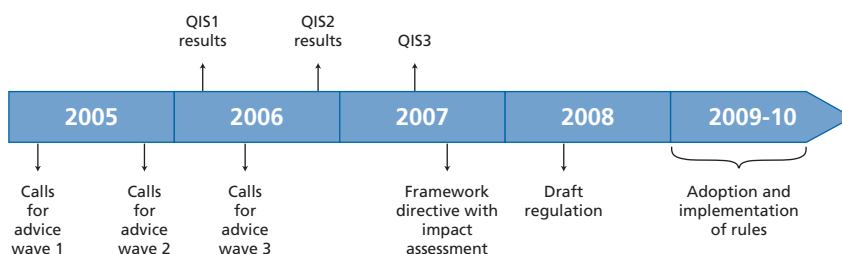
The new Solvency II framework for non-life, life and reinsurance entities within the European Union is one of the most significant regulatory developments for the insurance industry in recent history. In broad terms, the new system will have a three-pillar structure, conceptually comparable to the Basel II framework for the banking industry. The three pillars will govern:

- *Quantitative requirements* for measuring financial position and capital adequacy
- *Supervisory review process*, including review of risk management practices
- Increased *transparency* through greater disclosure and reporting requirements

The European Commission (EC) has asked the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) to advise them on the new Solvency II framework. CEIOPS is responding by looking at various subsections of possible regulation and bundling them into three waves of 'calls for advice' and supporting QIS.

CEIOPS aims to send the results of the QIS2 (currently underway) to the EC by October 2006. A third quantitative study QIS3 focusing on issues such as modifications to the SCR formula and capital requirements at a group level is planned for April to June 2007.

The EU intends to issue a framework directive in 2007, followed by a draft version of the Solvency II regulation in 2008. Adoption and implementation of the final directive is not expected before 2009-10.



Quantitative Impact Studies

The Quantitative Impact Studies are an integral part of the Solvency II process and (as in the Basel process for banks) are an important way to test EC proposals within the industry. To date there have been two such studies, namely QIS1 and QIS2.

QIS1

CEIOPS conducted its first study (QIS1) in 2005, to test the level of prudence in technical provisions. In total 150 life, 190 non-life and four reinsurance firms in 19 countries took part. Participants were asked to show technical provisions both at 'best estimate' and at predefined confidence levels of 60, 75 and 90 percent plus the standard deviation. For non-life insurers the discounted value of {best estimate provisions plus risk margins at 75th and 90th percentiles} was generally lower than current balance sheet values by between 10 and 15 percent.

QIS2

In May 2006 a second study began focusing on:

- The valuation approach and assumptions for assets and liabilities with emphasis on technical provisions (a continuation of QIS1)
- The calculation of the Solvency Capital Requirement (SCR) and Minimum Capital Requirement (MCR) by way of a standard formula and optionally by an insurer's internal model

Valuation of technical provisions

Under QIS2 participants are asked to measure technical provisions at best estimate plus the risk margin needed to achieve a 75 percent confidence level. In addition, QIS2 participants are invited to estimate risk margins for technical provisions using a Cost of Capital approach as recommended by the CRO Forum/CEA¹ and used in the Swiss Solvency Test.

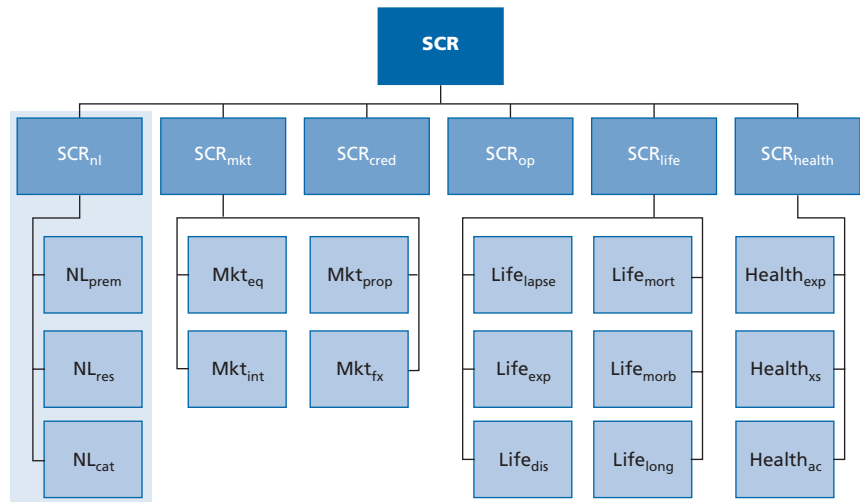
So far, our experience has been that calculating QIS2 technical provisions is not straightforward. For example:

- Care needs to be taken when selecting from the many well-accepted actuarial methods for determining the best estimate
- When looking at developing full loss distributions, the treatment of uncertainty is critical as it significantly impacts loss amounts at the extremes of possible outcomes
- Most companies have claims data available at the required level of detail on a gross basis, but often not on a net of reinsurance basis

¹ Solutions to major issue for Solvency II, joint submission by the CRO Forum and CEA, 2006

SCR calculation

The SCR formula calculation as set out in QIS2² is divided into modules as illustrated:



Source: CEIOPS: Quantitative Impact Study 2 Technical Specification – May 2006

For each module a single approach is used to derive a ‘placeholder’ risk capital charge. This calculation involves the use of defined SCR factors, algorithms and the company’s own financial data. The ‘target’ is a Tail Value at Risk (TVaR) measure at a 99 percent level of prudence (1 in 100 year return period) over a 12 month period. This is meant to be broadly equivalent to a Value at Risk (VaR) measure at a 99.5 percent (1 in 200 year return period) level.

Once again, we have seen a number of tricky practical and conceptual issues arising with the SCR calculation. Participants are invited to produce estimates of the required capital produced by full scale or partial internal models as supplementary information. However, it is recognised that it might be difficult to disaggregate the output from the models to the level of granularity suggested in the framework.

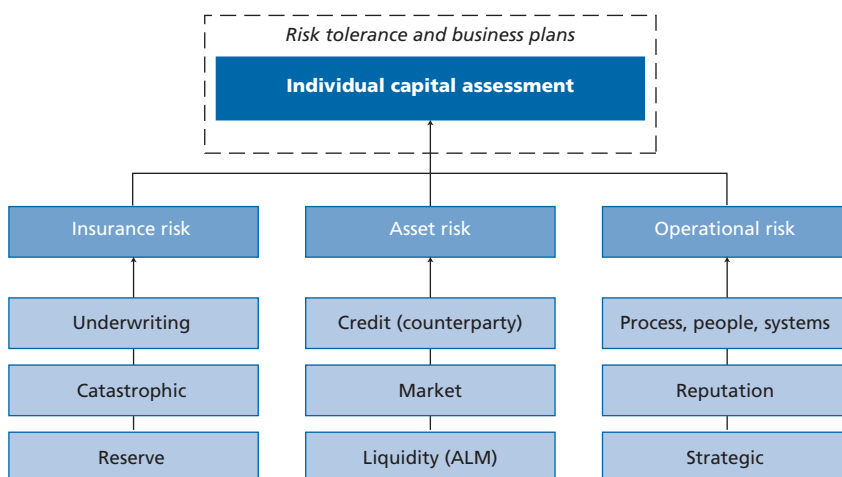
QIS2 allows the use of Dynamic Financial Analysis (DFA) models to estimate wholly or partially some of the ‘placeholders’ capital risk changes. This raises some further questions:

- How can the capital numbers from the internal model be reconciled to the SCR formulaic approach? Which approach will give the higher answer?
- For companies without DFA infrastructure today, is the significant investment of time, money and effort required to build one worth it?

We include more discussion of the business implications of QIS2 in the later sections of this paper.

UK FSA's Individual Capital Assessment (ICA) requirement

The UK's FSA is the first EU regulator to implement a fully risk-based solvency regulation framework with its Prudential Source Book, of which the ICA, and resulting Individual Capital Guidance (ICG) is a primary feature. The modelling requirement inherent in an ICA process closely resembles the 'placeholder' elements in the SCR calculation in that it requires capital to be rolled up from insurance, asset and operational risks as depicted below:



The FSA has targeted completion of its initial review of insurance companies' ICAs by December 2006.

So far, smaller companies have met the ICA requirements through stress testing whereas larger companies have met the requirements through a combination of dynamic financial modelling and stress testing. Experience to date suggests that the capital requirements for a 'typical' non-life insurer within this framework have been roughly 70 percent attributable to insurance risks, 20 percent attributable to asset risks and 10 percent attributable to operational risks.

Similar to the practical considerations regarding the QIS, some of the general areas of necessary improvement in modelling capabilities as expressed by the FSA have included:

- Treatment of uncertainty and parameter risk
- Utilisation of stress and scenario tests to validate modelled output
- Sophistication of operational risk modelling methods
- Correlation between perils

The FSA has also indicated that it will be developing a 'use test' to evaluate how risk modelling is being tied to risk management decisions and thus how seriously companies are moving from risk measurement to risk management.

Market environment and convergence

Market environment

The formal Solvency II development process is not the only factor driving the insurance market towards new ways of modelling and managing its capital base. In this section we focus on some of the most interesting developments happening alongside the Solvency II process, in terms of both innovation in capital and risk transfer among companies, and the ways in which the rating agencies are evolving towards enterprise risk modelling and management approaches that better reflect the underlying economics of the business.

The insurance and reinsurance markets are not standing still waiting for Solvency II to emerge. Insurers have made several important innovations in how they manage and finance their business as they have developed more sophisticated methods of measuring the risks and correlations on their books. At the same time there has been increased interest from banks and the wider capital markets in the potential for returns from insurance-related risk. The highest-profile innovations to date have been in the reinsurance market and in the areas of risk transfer and capital/financing; however, there have been initial indications of activity within the primary P&C market also, with the first securitisation of motor risk. We would expect the pace of innovations to accelerate further as the Solvency II process gathers momentum and regulators begin to provide formal recognition in solvency capital of innovative risk transfer mechanisms.

The highest-profile activity has been in the market for innovative routes for P&C and reinsurance risk transfer. The burst of activity in the reinsurance sector is the result of both demand- and supply-side pressure:

- Demand-side has been driven by significant claims events in various classes – notably US catastrophe – leading to rating agency pressure for more clarity on catastrophe exposures, and a shortage of insurance capacity for catastrophe risk
- Supply-side pressure has been driven by increasing interest in insurance risk as an alternative asset class for capital markets players such as hedge funds – in turn driven by modelling techniques which allow ‘outside’ investors to form their own view of the risk

The result has been a significant uptick in the establishment of new reinsurers, mainly in Bermuda, in late 2005 and 2006. Although many of these have sourced their capital from private funds, they have largely trodden the traditional path of seeking a financial strength rating to support their intention to write mainly short tail property risk. However, at the same time, there has been a significant increase in the volume and value of transactions based on capital market structures³.

³ The Catastrophe Bond Market at Year-End 2005: Ripple Effects from Record Storms, Guy Carpenter and MMC Securities Corp, 2006

Finally, there has been a growth in the number of reinsurance companies or other vehicles choosing to rely on collateralised reinsurance structures to access the risk instead of obtaining a sufficiently high financial strength rating: now commonly done using 'sidecars' or a swap counterparty where the risk is transferred without indemnification.

Rather less of this activity has taken place in the EU, where Solvency II and the Reinsurance Directive are being implemented. However, Solvency II is intended to develop a better understanding of the spectrum of risks faced by insurers, and is likely to lead to a consideration of a wider spectrum of admissible financial instruments that supply capital to support that risk – in effect creating a new asset class which is distinct from the underlying equity shares of the entity. The analogy is with Basel II, where new regulation has created a new market in innovative instruments (such as credit default obligations or CDOs) to transfer investment and credit risks.

Relevant to this paper there have been two significant regulatory developments in the EU separate from the Solvency II project:

- The Reinsurance directive⁴ which sets the stage for 'onshore' Special Purpose Vehicles (SPV) in the EU by allowing credit to be taken by the cedant for risk transferred to an Insurance SPV. This is a clear signal that regulators have become more comfortable with securitised risk transfer techniques
- The G30 paper⁵ of early 2006 which advocates greater use of capital market techniques in order to create scaleable growth in the insurance sector, while recognising that quantification and measurement lie at the heart of successful capital market techniques

In the primary non-life markets, there has also been some, though less, activity. For example, there have been a number of innovations in risk transfer, such as Catastrophe Linked Securities/Cat bonds for European risks⁶. These will ultimately find their way into the Solvency II system and allow the development of techniques to measure basis risk. It will be important to have a spread of risk types and geographical sources to allow this market to develop beyond its current size.

Another innovation in 2005 saw the first ever 'mass risk' securitisation for a subset of the AXA French motor portfolio – the closest thing so far in the non-life insurance market to an Asset Backed Security transaction. As such, it contained elements of insurance, reinsurance and securitisation; it was used to obtain rating agency capital relief and (possibly) capital relief under Solvency I. Clearly, this transaction is evidence that mass risk securitisation is possible, and will be a good test of the Solvency II understanding of basis risk and admissibility.

⁴ Solutions to major issue for Solvency II, joint submission by the CRO Forum and CEA, 2006

⁵ Quantitative Impact Study 2 Technical Specification, May 2006

⁶ Securities or investments, as applicable, are offered in the (i) United States through MMC Securities Corp. a US registered broker-dealer and member NASD/SIPC, and (ii) European Union through Marsh Advanced Risk Solutions Ltd. (MARS Ltd.), regulated by the Financial Services Authority for the conduct of investment business in the United Kingdom. Reinsurance products are placed through qualified affiliates of Guy Carpenter. MMC Securities Corp. and MARS Ltd. are affiliates of Guy Carpenter

This transaction may mark, in effect, a closing of the circle where the capital benefits achieved through risk securitisation and transfer are consistent between the regulatory position and the rating agency position. In turn, this will mean that decisions about capital management, including the structure of transactions, will benefit from consistent motivation. Combined with the final pieces of the jigsaw – including an acceptable accounting format under International Accounting Standard 39 and IFRS 4 (Phase II) and ancillary issues such as common collateral requirements – the huge effort which will have been expended should finally be worth it, leaving the insurance industry with an impressive and technically consistent framework.

In our view such a framework will provide a model for other jurisdictions allowing the framework to become consistent on a global basis.

Rating agency convergence

Rating agencies are also providing an external impetus to the industry, by focusing on the ability of insurance companies to quantify and manage risk. It is becoming increasingly accepted that the better an insurance company understands and manages its risks across the enterprise, the less capital it will need to support the uncertainty inherent in its operation. In concrete terms, some ratings agencies have already explicitly moved their static factor-based models towards stochastic enterprise risk capital models; all of them have explicitly stated their intention to take into account both internal capital modelling and wider risk management practices.

Two primary areas of convergence are:

- Consideration of Enterprise Risk Management in the ratings process
- Quantification of catastrophe risk in the rating agencies target capital calculations

Consideration of Enterprise Risk Management

Rating agencies are increasingly focused on the quality of companies' risk management over and above their modelling. For example, Standard & Poors (S&P) have explicitly created a new category of evaluation focused on risk management and processes, aimed to reward firms with "robust risk-management processes that are carried across the entire enterprise and that form a basis for informing and directing the firm's fundamental decision making"⁷. This is consistent with the stated risk measurement and management objectives of Solvency II: hence Enterprise Risk Management (ERM) is an area receiving attention from many companies and their stakeholders.

⁷ Insurance Criteria: Evaluating the Enterprise Risk Management Practices of Insurance Companies, Standard & Poor's, 17 October 2005

Quantification of catastrophe risk

Increasingly, therefore, it is becoming clear that modelled amounts of enterprise capital are just a guide and that what management actually manages to is in large part dependent on their business plans and the robustness of their risk management practices. Viewed from an external lens, the strength of risk management practices is often mirrored by how capital and risk modelling is coupled with risk management practices and embedded into operations.

Perhaps most importantly, rating agencies are starting to become transparent in terms of how ERM is considered in the rating process. Important factors in determining the level of recognition of ERM are the ability to absorb risk – as demonstrated by the physical capital and access to additional capital of the insurer – as well as the complexity of risks of the insurer. In an appendix to this paper we compare the key elements and current implications of ERM as used by the rating agencies in their evaluation process.

Clearly the ratings agencies regard ERM as encompassing a great deal more than just measurement and quantification of risk: for example S&P include “risk management culture, risk control, extreme-event management, risk and capital models, and strategic risk management”⁸. We agree that one of the biggest impacts from Solvency II on insurance companies will come when they can demonstrate improved management of their business and better decision-making as a result of their improved risk modelling.

Consistent with the objectives of ERM is an enhanced understanding of catastrophe risks. Historically, rating agencies have used a variety of different methodologies in measuring target capital needed to cover the exposure to catastrophic risks, ranging from:

- Applying standard factors to net premium by line of business for underwriting risk, including catastrophe risk, to
- Using results from catastrophe risk models, based on either company exposures or market share data

Post-Katrina, all rating agencies are using results from catastrophic risk models in their calculation of target capital, and several rating agencies have increased the amount of capital needed to cover this risk, either by increasing the probable maximum loss targets or strengthening stress tests against multiple catastrophic losses. Additionally, all rating agencies have published guidance with respect to key assumptions to be used when either they or the rated company are preparing cat model results. Such assumptions include coverages and perils, components of loss such as demand surge or storm surge, treatment of reinsurance etc.

Suffice to say, the changes could have a significant impact on the amount of capital required and/or reinsurance protection needed to achieve a given rating.

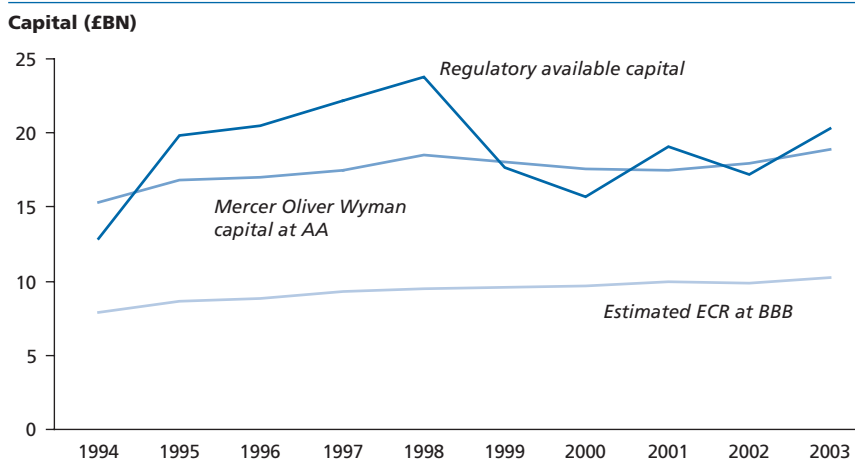
⁸ Insurance Criteria: Evaluating the Enterprise Risk Management Practices of Insurance Companies, Standard & Poor's, 17 October 2005.

Impacts – and challenges – for the insurance executive

Industry aggregate impact

Although the Quantitative Impact Studies are not yet complete, it seems likely that Solvency II will not cause a capital ‘squeeze’ in the non-life industry in aggregate. This is in contrast to the life insurance industry, where an earlier Mercer Oliver Wyman study⁹ estimated that the early capital crunch of the early 2000s had left the European life industry with a €100 BN shortfall in available capital against economic requirements. Given that the P&C primary and reinsurance industries have rebuilt their capital bases, the aggregate impact appears likely to be much smaller, as our high level ‘back-estimates’ for the UK industry suggests.

Estimated available capital vs. economic requirements for UK primary non-life industry



Source: Mercer Oliver Wyman estimates

Obviously the Solvency II requirements will increase capital requirements significantly versus the basic requirements of Solvency I. But given that regulators would in any case have been highly unlikely to allow any non-life firm’s capital to fall as low as this minimum level, the real change in requirements is significantly smaller. Solvency II will, however, significantly increase the transparency and quantification of regulatory ‘safety cushions’ and the degree to which these are comparable across geographies.

There will also be some differential impacts across industry sectors. For instance, rating agency capital requirements have *de facto* been significantly higher than those required by Solvency I, and it is likely that this will still be the case, though to a lesser extent, for Solvency II despite the convergence of rating agency and regulatory approaches discussed above. This will affect those sectors that rely on minimum ratings to carry on business, in particular reinsurance and large-commercial for whom a fall below a minimum A rating has immediate

9 Life at the End of the Tunnel? The Capital Crisis in the European Life Sector, Mercer Oliver Wyman 2004

and serious knock-on effects on new business volumes. In this regard, the reinsurance industry may be able to make a stronger case for minimum rate adequacy linked to capital requirements – though it would be optimistic to believe that this will remove incentives to compete on price at the margin.

In addition, the capital strain will increase for firms concentrated in certain lines of business – particularly the long-tail and high-severity exposures such as liability or speciality, as opposed to, say high-frequency personal motor lines. However, this effect is not one-way – discounting of reserves will have an offsetting effect, and our experience suggests that in volatile and complex lines such as employers' liability, the precise product design can have huge impact on the capital strain, so there will be benefit to those competitors that can take advantage of this.

Finally, to some extent, pressure on smaller firms will increase – particularly given the significant and lengthy costs involved in developing and maintaining advanced 'Pillar 2' internal measurement models. More generally, larger enterprises benefit from a virtuous circle of more resources, better access and ultimately cheaper capital than their smaller counterparts, and Solvency II may drive this competitive advantage to new levels. To some extent, therefore, this may catalyse pressure for consolidation.

One big remaining uncertainty in the development of the new regime is the future treatment of diversification. Once again, the exact shape of the future regime is uncertain, though several industry proposals have been tabled¹⁰. In the meantime, the challenge for firms is to work out how to realise diversification benefits in ways that are acceptable to investors and regulators: here we have already seen some interesting innovation. For example, multi-country primary insurers have increasingly centralised reinsurance purchasing to ensure that the 'correct' amount of reinsurance is bought at the enterprise level (and that this has been effectively evaluated against alternative methods of financing risk-taking such as securitisation). In the cases where local business units have been used to independent reinsurance purchasing, this centralisation may need to be accompanied by 'shadow' internal reinsurance structures to mimic the local earnings protection required. Once again, the benefits will come first to those insurers who can both build information systems of high enough quality and use them in front line management decisions – our next point of discussion.

Firm level impact

Solvency II will cause an immediate focus on measurement and modelling efforts. Even though most large multinational competitors have already started to build and use economic modelling tools, the example of the UK Individual Capital Assessment (ICA) regime suggests that there will still be a significant compliance effort needed as Solvency II's details are clarified.

¹⁰ e.g. A framework for incorporating diversification in the solvency assessment of insurers, The Chief Risk Officer Forum (June 2005)

Management will need to submit internal modelling efforts to a high level of scrutiny to ensure their quality and ‘fit for purpose’. Complementary to the modelling efforts is the need for high quality data sourcing, cleaning and management – we have seen many examples where the gap between what data was ‘in theory’ available and what was ‘in practice’ forthcoming from business units has been painfully large. In this respect, participation in QIS1 and 2 has provided companies with significant insights into the likely requirements under Solvency II and has allowed them the opportunity to amend and enhance their processes ahead of the implementation date. In particular, a number of companies have realised that their data collection and processing is not currently at a level that would allow them to complete the requirements with confidence. Those companies which did not participate in QIS1 and 2 have not had the advantage of testing their systems in a relatively benign but live environment, and we strongly recommend that they investigate their company’s data availability and quality both on a gross and net of reinsurance basis.

In addition, the experience of banks with the operational risk measurement requirements under Basel II would suggest the need for pre-emptive actions on some currently non-modelled risk types, given the need to capture several years’ worth of quality data before measurement can be truly rigorous.

However, these modelling efforts and issues are not the end of the story. To generate real competitive advantage from their efforts, companies will need to move beyond a ‘compliance’ mindset to using models to inform business decision making. This will not be an overnight process. The experience with Basel II implementation in banks, and economic capital initiatives in financial companies more widely, suggest that the transformation is slow but the benefits can be real and sizeable.

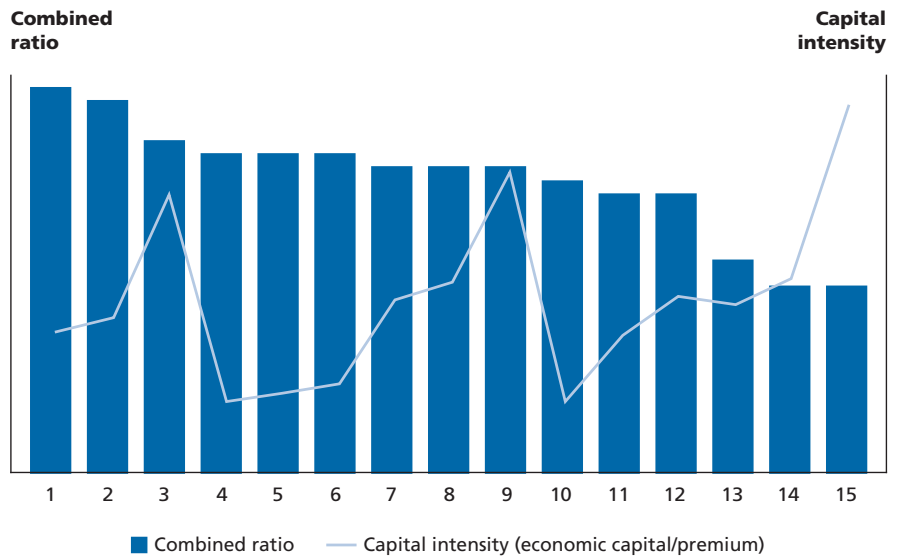
Typically, we see a gradual progression from capital *measurement* to *management* impact:



The first impact is likely to come at the group level, and will be relatively ‘macro’; as it is likely to take some time for full buy-in and embedding at the business unit level.

Typical ‘early stage’ group level impacts come from building closer links between strategic planning, capital management and performance management. Our experience suggests that even using a relatively simple and intuitive measure such as a ‘capital-adjusted combined ratio’

can make surprisingly large differences to the apparent attractiveness of one business line versus another, and can swing planning and capital allocation decisions radically.



In addition, visibility of capital consumption may make more attractive such options as multi-year contracts to lock in capital at certain rate adequacy levels.

Similarly, there will be incentives to make reinsurance buying more centralised, and to be able to benchmark reinsurance programmes against other (perhaps non-traditional) sources of capital. The nature of reinsurance transactions may change as the focus broadens from managing the P&L or statutory capital, to also include a more economic viewpoint linked in to the overall risk appetite of the firm.

As noted above, however, driving the impact of an ‘economic’ viewpoint through to business unit level will potentially have the biggest impact – but will take the biggest effort to get buy-in. The first hurdle is invariably the issue of capital allocation, where the actuarial ‘academically correct’ approaches rapidly come into conflict with pragmatic (and political) reality. Driving capital charges down to the product level (let alone customer or segment level) will require significant modification to Group-level models to be able to generate actionable insights in underwriting, pricing and performance measurement. But this will also be a challenge to many firms’ client models, especially those with ‘relationship’ models and significant underwriter discretion where Group ‘interference’ will not be welcome. To address this, there will need to be clear executive sponsorship and support, underpinned by clear, systematic communication and joint methodology development.

What needs to happen next?

Solvency II, and the related move of non-life insurers and reinsurers (and their investors) to 'economic' views of the world, will obviously be one of the key industry developments over the next few years. Just as certainly the final shape of the legislation is still unclear, and still subject to heated, sometimes political, debate.

But this is no excuse for inaction or delay. Our experience suggests clear and tangible benefits for firms that take early action in developing models and data infrastructure, and building management buy-in and understanding both at the Group level and at individual business units. These firms will be able to generate management insight and real capital and underwriting benefit – and can rightly see Solvency II as a business opportunity not (just) a compliance burden.

Appendix: Comparison of rating agency approaches to ‘Enterprise Risk Management’

Category	A. M. Best ^{1,7}	S&P ^{2,3,4,7}	Fitch ^{5,7}	Moody's ^{6,7}
Separate rating category	No (implicitly considered) within Capital Strength, Operating Performance and Business Profile categories)	Yes	No	To be determined
ERM rating	Not applicable	Yes (excellent, strong, adequate or weak)	Not applicable	Developing Risk Management Assessment reports that will characterise ability as strength, neutral or weakness
Paper on ERM	First paper February 2006, expected additional criteria to be issued September 2006	Original in October 2005, preliminary results May 2006 and revised in June 2006. More detail on use of companies' own models to be released by end of 2006	To be released third quarter 2006	April 2006 presentation at ERM symposium. Insurance ERM to be released by end of 2006
Consideration of ERM in ratings process	Already considered part of its procedures in evaluating Capital Strength, Operation Performance and Business Profile	Extent of consideration depends in part on company's abilities to absorb risks and its complexity of risks	To be determined	Meeting with companies to discuss its ERM process and will then determine how ERM will be incorporated into its rating methodology. Have developed Gold Benchmark standards for risk governance, risk management, risk measurement, risk intelligence
Changes expected in overall ratings due to ERM consideration	No	No	No	To be determined
Use of company's own economic capital model	Will consider	Will consider	Will consider	Will play an increasingly important role in ratings
Use of company's own economic capital model depends on	Management understanding of model Extent relied on for decisions Perceived quality of model Predictive capability Company's overall risk management program	By end of 2006 S&P will determine when they will rely on a company's own economic capital model, however, such models will only be considered if ERM rating is better than adequate	Amount of capital in excess of regulatory minimum Extent relied on for decisions Perceived quality of model Predictive capability	Fully embedded, sophisticated model could become a positive rating factor Must be clearly demonstrable part of day to day risk management and capital decisions
Weighting of models	Best will determine weight between BCAR and company's own model	To be determined	Fitch will weight subjectively between PRISM, company's own model and regulatory capital requirements	To be determined

1 A.M. Best Special Report: A.M. Best Comments on Enterprise Risk Management and Capital Models, February 2006

2 Standard and Poor's, Insurance Criteria: Summary of Recent Enhancements to Insurer Enterprise Risk Management Criteria, 2 June 2006

3 Standard and Poor's, Insurer Criteria: Refining the Focus of Insurer Enterprise Risk Management Criteria, 2 June 2006

4 Standard and Poor's, Insurer Criteria: Evaluating the Enterprise Risk Management Practices of Insurance companies, 17 October 2005

5 Fitch, Criteria Report, Exposure Draft: Assessment of Insurers' In-House Economic Capital Models, 6 June 2006

6 Moody's Special Comment, Company Built Internal Capital Models Expected to Play Greater Part in Moody's Insurance Rating Process, June 2006

7 Conversations with the rating agencies

MERCER OLIVER WYMAN

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