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Complexity and Solvency II

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The regulation of insurers perhaps inevitably involves some complexity. However, stepping back for a moment, the most prominent impression of the documentation for Solvency II is that it is dense, particularly complex and unlikely to be meaningfully accessible to a non-mathematician.

Even a simple addition, perhaps applying factors, is typically introduced in the standard formula documentation as a visually elaborate equation with extensive notation, followed by definitions of the notation. There is normally little, at best, preamble setting out what the equation does and the reasoning behind it. Root mean square calculations, correlation matrices and even more elaborate notation are common features of the specifications. The material reads, in truth, like a financial mathematics textbook.

Regulators must also contemplate supervising internal models, which can be hard to understand and normally involve, for example, stochastic simulation exercises driven by an economic scenario generator.

Does Solvency II need to be quite so complicated and should simplification eventually become an objective? This article discusses a selection of issues around Solvency II, for which complexity is a common theme.

We have to live with complexity

An advantage of detail in specifications is greater consistency of application, and a more uniform regulatory framework across territories certainly is one of the hoped-for advantages of Solvency II. Accuracy is, in principle, another advantage of complexity, though there are no guarantees in this respect. Hidden assumptions, insufficient challenge and over-engineering for a system that ultimately requires judgement as well to work properly, are among the issues that require management.

As regards complex documentation, it is a fact of life that legal documents, such as the Delegated Acts and Implementing Technical Standards (ITSs), often are difficult to understand, but few would contest the principle "the simpler, the better".

Multiplicity of interested regulators will persist

It was initially hoped that Solvency II would simplify the management of large insurance companies through a reduction in the number of regulatory conversations for European insurers. Complexity was, in large part, seen as the price for an overarching system that would function across territories. However the outcome probably will disappoint by this measure.

New supervisory mechanisms are emerging that will function alongside the Solvency II process. The International Association of Insurance Supervisors (IAIS) has proposed a "basic capital requirement," which will be simple and factor based, will be applied to global systemically important insurers and will use factors at a level to achieve an appropriate outcome without the various diversification calculations that feature in the Solvency II standard formula. The IAIS released the calculation of the Basic Capital Requirement in October 2014. Initial industry reaction has been fairly muted.

The IAIS also is looking to implement a capital regulation project to apply to a more extensive list of internationally active insurers (IAIs).

In addition, although Solvency II will apply within the EU and at group level, other territories will still regulate local subsidiaries as they see fit.

Even within the EU, the role of national regulators has been enhanced by the recovery and resolution programme being pursued by the IAIS. On this issue, the IAIS is responding to a Financial Stability Board (FSB) initiative. Each

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national regulator is required by the FSB to demonstrate how it would ensure satisfactory resolution of an insurance company solvency issue, and they may therefore seek to ensure minimum levels of assets are available locally, adding again to the insurer universe of regulatory conversations.

The complexity of internal models presents a particular challenge for regulators, although their use remains a valuable option for some insurers. Regulators have had unhappy experiences with banks' internal models, which highlights the difficulties of using internal models as a medium for meaningful conversations. A consequence is that national regulators may use simplified, factor-based early warning indicators (EWIs) to inform their view of internal models. The Prudential Regulation Authority (PRA) in the U.K. has already embarked on this course.

> *"The PRA intends to monitor the on-going appropriateness of Solvency II internal models post approval through the use of early warning indicators."* (Andrew Bailey, PRA CEO and Bank of England Deputy Governor, July 2013)

A.M. Best's approach to risk based capital and internal models

There are some similarities between the standard formula and A.M. Best's proprietary BCAR model in that both are factor based with allowances for diversification, but the BCAR model is a highly evolved tool which is used in a different context. For example the BCAR model is only one part of a rating methodology designed to discriminate between levels of solvency, analysts have a degree of discretion to make adjustments to the model as appropriate and A.M. Best normally completes the model on the basis of data supplied.

A.M. Best considers internal models primarily as part of its review of enterprise risk management (ERM), itself a key component of the rating process. Internal models should, in A.M. Best's view, inform decisions, but their results are expected to be appropriately challenged so that they can provide a valuable basis for discussion, and they are not expected to replace judgement.

Risk Margin

The definition of the risk margin has presented difficulties for insurers using internal models for Solvency II. It is defined as the cost of capital incurred in holding the Solvency Capital Requirement (SCR). The definition is circular in the sense that the SCR must be known to calculate the risk margin, but at the same time the risk margin is part of the technical liabilities, and the SCR is defined as the capital required to ensure technical liabilities are covered at a 1:200 confidence level. So the risk margin in each projection must be known to calculate the SCR.

In principle, solutions for the risk margin and SCR could be obtained through a process of nested simulations, though the number of simulations required then increases dramatically and becomes impractical. The issue is therefore normally tackled through approximations. An alternative would have been to set the risk margin by reference to a confidence level, say at 75 per cent.

Insurers' public financial reporting

Disclosure obligations, which recently have been clarified in an ITS, mean that Solvency II will add to a volume of public financial reporting for insurers that is high to start with, which acts as a barrier to the interest of generalist asset managers in the sector and, in the opinion of many, already deters investors. The complexity and disclosure of Solvency II data will be a considerable challenge for insurers seeking to engage with more generalist counterparties in public markets.

Looking forward

Now that the timetable for Solvency II appears more settled, it may be the right time to consider objectives beyond its implementation. Initially, solutions can sometimes be complex. But it must be a cause for concern that, whilst recognising the advantages of complex ideas where applicable, a sustainable system for a healthy industry is likely to look less complex than Solvency II.

> *"I would not give a fig for the simplicity this side of complexity, but I would give my life for the simplicity on the other side of complexity."* (Oliver Wendell Holmes, U.S. Supreme Court Judge 1902–1932)

The EU Commission currently is committed to preparing a report on the operation of Solvency II by December 2018. It would be a worthwhile objective if the Commission took the opportunity to focus on simplification.