

An insurance conundrum: The Internal Model or the Standard Formula?

“An organization’s ability to learn ... is the ultimate competitive advantage.” - Jack Welch, the former Chairman and CEO of General Electric.

Introduction

The sayings of business gurus are often difficult to penetrate - deliberately obscure, we’re tempted to say. Jack Welch is different. He’s been there and done it, of course, unlike most business theorists, and if GE weren’t solidly pragmatic then nobody was. So if he takes the time to say something, it’s probably worth giving it some thought.

Why is this particular quotation relevant? Well, we believe that the current conundrum for insurers as they consider their choice on measuring risk for Solvency II - an internal model or the standard formula - is very much about the organisation’s ability to learn. There are circumstances where insurers will legitimately decide to go with the standard formula, if only for the short term, and we’ll outline those openly here. Let’s reveal our prejudice, however. In our view the internal model is the only long-term solution for almost all insurers - that without it, you let slip away an ability to learn that will be fundamental to your competitive position.

Of course, the decision isn’t always that easy. There are timing, cost and resource issues around building an internal model (or following the compromise partial model approach); the model will be complex and its deployment within the business will involve change and therefore its own element of risk. The extent of change should not be underestimated - if an internal model is put in place a necessary condition of regulatory acceptance is that it is actively used for strategic decision making. That demonstrates that the choice is itself a strategic issue - an issue for the board and executive rather than for the actuarial or risk management teams alone. If the board elect for an internal model, they become key users. If they decide to use the standard formula they need to think about whether or not they are ceding competitive advantage, and if so, for how long.

This paper sets out some of the respective high level benefits of using the standard formula and internal model approaches. These should at least be considered when constructing the business case either way. They may also be useful to firms considering which areas of their internal model might be simplified by using the standard formula (the partial model approach).

Benefits of using the standard formula

There is no doubt that the standard formula approach has advantages and these are, in many ways, more tangible than those of the internal model. As such they are more certain of being achieved and more readily quantifiable for a cost-benefit analysis. It should also be noted, not exactly as an advantage but as a reality, that you have to get to grips with the standard formula whatever your strategic choice of approach - the FSA requires all firms, including those opting to build an internal model, to calculate the standard formula result for the first two years under the new regime.

Costs: The standard formula is simpler and demands less work and expertise. There will be many layers of additional development involved in getting an internal model in place and it is likely that you will need IT upgrades, increased data storage capacity and actuarial software. To this should be added the cost of the staff needed to build and subsequently use the software, recruitment or training costs, and the additional external expert resource probably needed for the model design and build to allow your own internal teams still to ensure that their regular work is done. Using the standard formula you are likely to incur costs under broadly those same headings (any firm that has been engaged in QIS4 will vouch for that) but the level of cost could be expected to be quite a lot less.

Time: By the same token, standard formula requirements will take less time to meet than those for an internal model. Design, build, testing, documentation, operating procedures, control frameworks, all the necessary components of any new systems introduction, will be correspondingly more complex and time-consuming for an internal model.

Regulatory approval: The standard formula is already approved, by definition. You will need to be able to demonstrate that it has been implemented sensibly and is being used appropriately, but this would seem to be a manageable task. For the internal model there are many hurdles to jump. Deadlines in relation to the first dry run bring everything into sharp focus. By June 2010 UK-regulated firms wishing to implement internal models must (a) demonstrate they meet the dry run criteria, (b) have made significant progress towards meeting the model requirements and, (c) set out their implementation plans. 14 months may sound a fairly relaxed timescale but scratch a little beneath the surface of the second requirement and things get compressed - to demonstrate significant progress, the FSA are likely to demand that you have been using your dry run internal model for several months. That probably means that the deadline for having a workable internal model that will allow you to get early approval is less than a year away.

Early knowledge of capital levels: It may seem odd to view capital position as a benefit of using the standard formula approach when the working hypothesis of most firms is that an internal model will produce lower capital requirements. At this stage, however, while we can consider that to be highly likely, we also know that it is not inevitable. Some products, perhaps some complete business units, may demand greater capital allocation when the results of the internal model are reviewed. We know, for example, that QIS4 indicated that many life insurance companies were producing higher overall capital requirements under an internal model than under the standard formula equivalent (although the FSA is likely to recalibrate following this result). So the reality is that, until internal models are developed and results compared, it is almost impossible to be certain either way. The standard formula is less sophisticated, and a less realistic reflection of the risk in your business, but it does provide a relatively quick way of determining likely capital under the new regime. Planning today for tomorrow's capital requirements is made a little easier.

Awareness of imperfections: Using the standard formula will not calculate the level of capital needed to sustain the true inherent risks of your business. Importantly, though, you will be well aware of that and can compensate for it by adopting an appropriately prudential approach, with the right focus on risk management controls and procedures. There is a real risk in using a complex internal model that you start to believe the results uncritically - that the model is assumed to refine your capital need definitively. The more complex the model (the harder the model is for non-technicians to understand it) the more likely this is to occur. Too much reliance on model output is dangerous, as the current banking crisis demonstrates conclusively. Rating agency (and internal bank) models set market default expectations at AAA levels on U.S. securities backed by sub-prime borrowers who had provided no proof of income and no (or even negative) deposit. Was this a flaw in the models, or lack of critical review of the model results, or lack of verification of the assumptions and data fed into the model? A highly complex model encourages all those things.

Benefits of using an internal model

Expected capital benefits: With a model that tracks risk more accurately, we still think (despite the observations above), that internal model capital will be lower than that required by the standard formula. If that isn't broadly the case across the industry then, frankly, something somewhere hasn't worked. Less capital leads to lower costs of capital, leading to cost advantages and the potential to deploy capital more advantageously within the business. The impact on capital is the big, tangible advantage of internal models that you will seek to quantify when constructing your business case. There are less tangible benefits, however, that also need to be included in the analysis.

Due diligence and consequential risk awareness: Simply undertaking a project to build an internal model, requiring risk identification and assessment, modelling, reporting and intelligent commentary, will aid the business in understanding its risk, quite apart from the actual numbers that flow from the project. Firms that invest time and resources in the development of an internal model are investing in an understanding of the risks themselves at a more fundamental level. Risk management procedure and controls, decision making at all levels and overall governance structures are all likely to change positively as a result of the lessons learned during the build phase.

Internal models as sources of competitive

advantage: In its paper, “The Path to Solvency II,” the FSA catalogues the uses to which the internal model might be applied in order to gain approval. It includes reinsurance analysis and strategy, pricing, performance measurement, performance management, business strategy, communication and asset management. We would expect all of these areas to yield benefits in due course. Some of them are already starting to be targeted by insurers with more advanced risk models – in a recent reinsurance optimisation exercise we were able to apply to a reinsurance analysis the sorts of techniques that we would also expect to see in an internal model. The results were compelling, with expected cost savings of tens of millions of Euros for the same reinsurance premium.

With standard formula exercises of this sort, the associated savings are unlikely to be possible. Best practice internal models can also be expected to be used to improve pricing (more informed return on capital calculations resulting in better focus on profitable product lines and guidance on areas for innovation); asset management (improved ALM modelling and portfolio optimisation); and business strategy (merger and acquisitions decision making, portfolio retrenchment and new market entry strategies). All other things being equal, firms that have models capable of providing understandable and accurate output will outperform those that don't.

Kudos, capital raising and branding: Demonstrable, good risk management is increasingly becoming a pre-requisite for financial services organisations. Shareholders and bondholders alike are likely to perceive firms using approved internal models as better risk managers than those that aren't. So capital availability through equity or debt issuance should be cheaper for firms with the “internal model approved” badge. It may be that canny firms may pick up on the current market turmoil and associated market jitters by unearthing ways of creating marketing collateral out of their push towards internal model approval.

Conclusions

The choice between internal model and standard formula is an important one. We're firmly on the side of the internal model, but the cost, time, complexity and risk involved are not to be dismissed. Some insurers may well think things through carefully and choose the standard formula, at least for the meantime. That's a perfectly respectable choice. However, we would emphasise that it is a strategic decision, and shouldn't be made without a clear analysis of the options and an eye on the medium to long-term.

In that medium to long-term the internal model will be a central part of business improvement. Over time what the model tells the business will improve performance and improve decisions and improve the model itself – a virtuous circle. That would be improving the organisation's “ability to learn”, we think, so if you've started down the internal model road you should be able to look Jack Welch in the eye should you chance to bump into him.

And just on a final note, as you try to balance costs and benefits, we have two very recent quotes from Mr Welch.

“pure focus on quarterly profit increases is ... the dumbest idea in the world”

“shareholder value is a result, not a strategy”

So possibly the investment in building a fit-for-purpose internal model should be seen as a short-term hit to this year's expenses line in return for the long-term strategic returns brought about by excellent risk-balanced decision making.

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