The lessons learned from internal model approval

An InsuranceERM/EY/
Internal Model Industry Forum Roundtable

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IERM/EY Roundtable

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Insurers' use of internal models to calculate regulatory capital under Solvency II was a major point of debate in the run-up to 1 January 2016. Now, with more than a year's experience under their belts, firms have much to share about the approvals process, ongoing maintenance and future development of internal models. In this roundtable, held in conjunction with EY and the Institute of Risk Management's Internal Model Industry Forum, model experts at UK insurers discuss their experiences

David Innes, RSA Insurance

Rajiv Jethwa, AIG Europe

Ian Collins, Pacific Life Re

Neal Writer, EY

Matthew Gold, MS Amlin

Philip Whittingham, XL Catlin

Alberto van Rensburg, Chubb

Perry Thomas, Lloyds Banking Group

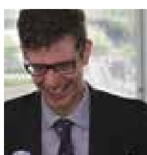
Jim Collins, Pension Insurance Corporation

Loubna Benkirane, Aviva

Callum Tanner, InsuranceERM

Nimol Rajkumar, Legal & General

Stewart Gray, Standard Life Assurance Co


Co-chaired by Christopher Cundy, InsuranceERM

Co-chaired by James Tufts, EY

Chris Cundy: **What would be your number one recommendation to firms thinking about going through the internal model application process?**

David Innes: The number one priority is engagement with the PRA. It is continuous, relentless; you have to stay positive and smile even when things get difficult.

Stewart Gray: You also have to hold your line with the PRA. Your approved model may have features that do not reflect your own view, so it's important to maintain your own economic capital model in the background. The PRA are challenging and they can differentiate between a firm that is trying to game a lower answer from a firm that has a view based on evidence and judgement about a particular characteristic of the model.

Loubna Benkirane: If there is a college of supervisors, there is a greater need for engagement; it is very important not to underestimate this, as they may have divergent opinions and this has to be managed carefully.

Jim Collins: Ideally, by the time the application goes in, you will be pretty confident you are going to get it. You need to have had all the discussions, answered the questions and settled the arguments well in advance.

Alberto van Rensburg: In terms of your major changes, I try and prioritise them before your submission: try to get all those major changes approved, because,

once your model is approved, you might find that between getting major changes approved again and you actually using them in your business, there might be a big time gap.

Nimol Rajkumar: Just to be aware of the level of granularity that you might need to go into. We were comfortable with the level of validation we had done, but, when that was presented to the PRA, their challenge took it down to a lower level of granularity than we thought we ever needed to go to.

James Tufts: Has there been a better outcome because you have raised your game?

Nimol Rajkumar: The jury is still out on that one but we are engaging with our board much more heavily on technical content. I don't think they ever thought they would need to get involved with things like different copula approaches.

Perry Thomas: There is a major issue, begging the question: do you have to be an actuary or a statistician to get on a board nowadays? It is getting to a ridiculous level. Do you really expect your board members to understand the difference between Gaussian and T-copulas?

Nimol Rajkumar: In reality, no, but I think boards are feeling a bit exposed on this because the PRA, in their approval letters, pointed directly at the level of validation that our board had done and were asking questions.

> "Do you have to be an actuary or a statistician to get on a board nowadays? "
> Perry Thomas

CALIBRATIONS

Chris Cundy: **Where you needed to make compromises to your calibrations to achieve approval, have you sought to revisit these with the PRA? Have you had any success?**

Ian Collins: We had one specific area of compromise in our calibration as part of our original application and the PRA have engaged proactively subsequently and we have been having discussions relating to additional validation work. We are yet to formally revisit this calibration and in part this is due to not knowing clearly the detail of objections to our proposed approach.

Philip Whittingham: There are always questions from the regulator around why, for example, your correlation relationships are different to what is in the standard formula. The frustration is that we have no insight into the data they have used and the expert judgements they have made.

Stewart Gray: The regulator does to an extent determine the capital requirements, and provided you have established your own view, the opportunity may come round again for revision. We can have a conversation with them and, when they consider the calibration a little bit more, they may recognise that benchmarking can cause firms to converge on a particular calibration which may not necessarily be appropriate for all firms.

Chris Cundy: Has anybody had concrete examples of success so far in changing calibrations?

Perry Thomas: On major model changes? Yes.

Chris Cundy: **Were they successful and in your favour?**

Perry Thomas: Define success? Not in terms of capital reduction from the initial model, but understandably, we can go through and benchmark ourselves with our consultants and there will be areas where whatever we put through in the first model is probably not as we would have liked.

Stewart Gray: An element of prudence occurs naturally in the internal model application process. The PRA have said they do not want to see firms putting forward proposals that are systematically reducing capital, but you have to expect that because, as we learn more about the model, opportunities will arise to remove

prudence that was necessary in the pre-application process in order to reach agreement. So, I would expect that you would see model changes leading in the near term to lower capital requirements, but the PRA will be nervous about model drift.

Loubna Benkirane: Some of the changes are driven by regulator feedback, so it is not only changes that we are making to the model, but also what the PRA or college of supervisors are proposing.

MODEL CHANGE POLICY

James Tufts: Knowing what you know now, are you happy with your model change policy and process? If you had your time again, would you make some alterations?

Nimol Rajkumar: Over this last year we have had to upgrade it, to recognise some specific checkpoints along the way, because we have found some of the material going into that application was not at the right standard.

Philip Whittingham: To my mind there are ways to improve the model change approval process. If a large, given event, like that portrayed in the Market Turning Event exercise, results in very significant losses across the industry, insurers need to revisit their models and may decide that they were understating the required capital because they underestimated the given event in the models. So, you would be in a strange situation that you know your capital requirement should be higher but you have to go through a six to nine-month process with the regulator to agree the number. Ideally, the industry needs to work with the regulatory community to allow more expeditious changes to models in such unusual circumstances so that the models can reflect the best view at the time.

> "The differences between our economic capital in the ORSA and the actual Solvency II basis, adds a whole raft of complexity in terms of running and analysing the business effectively with two increasingly disparate bases"
> Ian Collins

Stewart Gray: Which is challenging if you already have a major model change underway, because that is your one opportunity for the year. So, your economic capital model has to be maintained to recognise changes in your risk profile.

James Tufts: There is such a lot of change going on whether it is cyber, economics, politics; you would feel that your model is going to be quite out of date relative to the data that you now have.

Callum Tanner: Chris Moulder, the ex-head of general insurance at the Bank of England has said the PRA would look to capital add-ons instead of an immediate internal model change approval after a major event. Do you see that as a very crude way of doing things?

Perry Thomas: It could be seen as playing with semantics. If it comes out in the numbers it encumbers real capital, so then to hear the argument, 'an out of model adjustment is not in the model, you just have to hold more capital,' would be odd.

If a firm's model did not allow for negative interest rates after June last year it probably had to make an adjustment. Such an adjustment might not have added much capital and been assessed internally as minor, but seen as major as it changed a key limitation of the model. If it was constructed as an out of model adjustment or capital add-on then would it go through

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the same process and governance.
Loubna Benkirane: But you would still need to do a major model change to remove the add-on. And in some cases, it is much more difficult to remove an add-on afterwards than just to make sure that your calibration fits.

SKILLS AND COSTS

James Tufts: Do you believe firms have the right skills in the risk function to do the necessary work?
Stewart Gray: With illiquid assets coming on the balance sheet, the question I have asked is does my team have all the skills necessary to understand the risk exposures? Unlikely in all circumstances, but do they have the skills to be able to understand the statistics in the model? Yes. So there is a gap there. We are likely to draw on external independent expertise to assist in such circumstances.
Loubna Benkirane: There is a big assumption that models will be more stable in the future anyway, and so validation will be important but won't require as many people as when we did the initial internal model application.
Chris Cundy: In terms of overheads for your internal model, are you expecting them to decrease overtime, stay steady or increase?
Stewart Gray: Material changes in the risk profile like those that can arise via M&A will give rise to lumpy costs. I do not think we will ever have a steady state. Take driverless vehicles, for example, this will change the nature of a general insurer's risk profile. The first and second line teams of today might not have the skills for that; you might need more lawyers than actuaries.
Ian Collins: We also have a situation where our own economic view has increasingly diverged since the IMAP approval. The differences between our economic capital in the ORSA and the actual Solvency II basis, adds a whole raft of complexity in terms of running and analysing the business effectively with two increasingly disparate bases. I cannot see that improving in the short term.
Philip Whittingham: For some firms, there is also a potential cloud on the horizon if you fall in the category of international active insurance group or global systemically important insurer. As yet it is unclear how they will involve internal models, and, if they indeed involve internal models, what sort of approval process that will be? Will it be a parallel approval process, a dual approval process, or it will just be, 'Well, you've already got it, so that's fine?'.

VALUE TO THE BUSINESS

Chris Cundy: Obviously, models were intended to be actively used. How much value does the model bring to your business? And how has that changed since the approval has been gained?
Philip Whittingham: At end of the day, senior management and the board are seeking high quality information to make a decision. They have an interest in the provenance, but that interest is very much around, 'have we go robust processes for producing this information?'. They do not necessarily want to know whether that piece has come from the internal model or not.
Jim Collins: At our firm the internal model and the consequences of it are discussed and used a lot. Any decision is based on the key questions such as 'what will this do to market risk capital?' or 'what will this do to longevity risk capital?', and then going on to consider risk margin and transitionals, and all the other aspects of Solvency II and how they interact. The whole Solvency II balance sheet is now much better understood around the organisation.
Ian Collins: The board gets to see how well the model has performed quite frequently. They are building up a sense of confidence around where the models sits in terms of plausibility and accuracy.
Chris Cundy: Has the model changed the pace of business development in your organisation? Has it slowed things down?
Perry Thomas: It has informed a hell of a lot; it can provide a common language in which to speak about issues or developments. If everybody gets on the same page because of the things we learn from the internal models, then developments will go through much quicker, particularly on the credit side.
Alberto van Rensburg: We have definitely seen our investment team make decisions based on different functions' view of the business and in different ways based on where they want to go with the investment portfolio. At the moment, any big change

> "If you go back six or seven years, the PRA were almost encouraging firms to go down the internal model route."
> Neal Writer

to that portfolio is discussed with the internal model team first and run through scenario testing.

STANDARD FORMULA

Chris Cundy: **So, having been through the process of getting a model approved and running one in practice, if you were to go back five years, would you go through it again or would you look to use the standard formula?**

Stewart Gray: We would go through it again, but in a different way. The firm has spent a lot of money trying to develop methodologies, processes and tools to a schedule determined by the regulator. I remember when I was programme director of Solvency II at Standard Life, I came under a lot of pressure from the regulator to choose a proxy model almost four years before we made our application but we weren't ready at that stage to make such a choice. The pressure was unhelpful and led to costs that with the benefit of hindsight were unnecessary.

Neal Writer: If you go back six or seven years, the PRA were almost encouraging firms to go down the internal model route. At one stage 140 firms were planning to go for one. Then very quickly it was 100, and then it was 60, and it gradually went down month by month as firms were whittled down. Then the rating agencies would also say, 'No, in actual fact, we expect you to do it. You may delay for another year or 18 months, but we still expect you to do it eventually'

Philip Whittingham: My concern is the other way around. If you look at what has happened under Basel in the banking world around operational risk with the standardised measurement approach coming in, they have taken firms' freedom to develop their own model away. Within market risk, they are reducing flexibility around internal models again because they are not getting what they expected. The worry is that regulators will look at the insurance segment and come to similar conclusions and remove that tool. Since the industry has invested so much in models that we believe in, my concern is that the regulators phase them out to a more prescribed approach.

MODEL APPROVAL PROCESS

Chris Cundy: **Do you think there should be any changes to the IMAP process itself?**

David Innes: The PRA needs to avoid scrutinising the same part of the model multiple times. That should help going forward because they now have more experience reviewing models and so should understand individual modules better.

Loubna Benkirane: We need to make sure that bureaucracy is reduced. At the moment, there are quite a number of processes that take a lot of time but they are not efficient, so I think there is a need to recognise what should be enhanced. Take the example of the Common Application Package (CAP); I'm not sure if this tool is been used by the regulators and it requires a lot of effort.

James Tufts: If you speak to firms going through the second wave of internal model calculations, they are not finding it that much quicker; it is a bit quicker but obviously the PRA is still learning to use feedback, and of course, it has a lot of other distractions right now, with Brexit and so forth.

What underlines a lot of this is the regulator's own resourcing inability. That is having an impact on their engagement with firms going through IMAP. So, I agree it should be more streamlined.

Nimol Rajkumar: There is also the six-month window the PRA insists on for internal model changes; you have to wonder why that is required if the point is to thrash out all of the issues in a pre-application phase? I suppose if we were discussing this with the PRA, that would be something I would suggest.

The views expressed in this article are those of the individual, rather than necessarily of the firm.

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