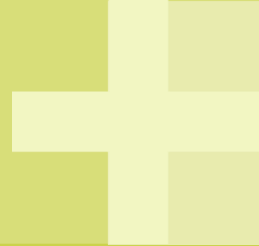


CEIOPS Consultation Paper No. 56

Draft L2 Advice on Tests and Standards for Internal Model Approval

September 2009



Barrie & Hibbert's Response to CEIOPS-CP 56: Draft L2 Advice on Tests and Standards for Internal Model Approval

CEIOPS REFERENCE: 5.167

Expert judgement may be subject to biases or other shortcomings. These limitations must be acknowledged and solutions be implemented to reduce their detrimental effects, taking into account the materiality and significance of the expert judgement used. The requirements of Article 119(2) also apply to expert judgement (cf. Section 5.3.3.5) where suitable. In addition, expert judgement is only admissible if it was derived using a scientific method and meets the following three requirements:

- Empirical testing: Expert judgement must be falsifiable, refutable
 - and testable.
 - Validation and documentation: Expert judgement must be validated and documented (cp. Chapter 8 and 9).
 - Error rate: Expert judgement must have a known or potential error rate, and standards concerning the operation of its methodology must exist and be maintained.
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We recognise that the definition, management and control of expert judgment is a particularly problematic area for CEIOPS. So far as we are aware, there is no consensus on expert judgment methodology. We would describe the exercise of expert judgment as a situation where *an individual or expert group makes use of a number of sources of information including (but not limited to) quantitative/statistical models, mental models, heuristics, past experience, results in similar fields of analysis and then weights information to form subjective overall opinions*. For certain questions, different experts may come to quite different conclusions i.e. there is genuine uncertainty about the 'true' model and parameters. As such, the idea that expert judgment must be '*derived using a scientific method*' seems to suggest that, in reality, much expert judgment – as we would define it – cannot be used at all. Further, asking the expert to codify every decision could be viewed as being much like asking a tennis player to write down the rules they had used to calculate the position and speed of a moving tennis ball. Judgment, by its nature will not be easy to describe.

We (a model and assumption provider) seek to codify as much of our modelling and model calibration practice as possible. Nevertheless, there are a number of judgments made by our analysts which are material to results but which we believe actually fall within a range of reasonable answers to difficult questions. This uncertainty may be reduced by careful analysis but it cannot be eliminated given that finance is not the same as hard science. As a result, models of social systems are exposed to a greater level of model risk. It would be helpful if the 'soft' nature of expert judgment were recognized in some way in the level-2 text.

As an aside, this genuine uncertainty surrounding key assumptions does create a real dilemma. Does a regulator allow different experts to reach different (reasonable) conclusions or impose consistency for the sake of comparability across firms?

The requirement that expert judgment 'must have a known or potential error rate' cannot always be complied with. Consider the data used in an ESG supporting an internal model and calibrated to a 1-in-200 year market shock. The error rate in the expert judgment involved in this calibration cannot be known. There are not enough credible and reliable years of data to allow a calibration to be produced without using expert judgment. The same limitation in available data that require the expert judgment do not allow the error rate in the expert judgment to be calculated (other than many years into the future). In reality, if the error rate is known, we probably don't need to exercise expert judgment. This looks to us an awful lot like the classic 'Catch 22'.

CEIOPS Reference: 10.29

The use of External models and data increases an undertaking's dependence on third parties (service providers), which may increase or at least could change the risk profile of the undertaking. Some of the risks related to the outsourcing activity include:

Strategic risk (For example, failure to implement appropriate oversight of the service provider, inadequate expertise to oversee the service provider, intellectual black box),

- *Reputational risk* (For example, poor service from the service provider, service provider practices not in line with practice of the undertaking),

- *Compliance risk* (For example, service provider not adequately complied with standards and practices, inadequate compliance systems and controls by the service provider),

- *Operational risk* (For example, technology failure, fraud or error, risk that undertakings find it difficult or costly to undertake reviews of the service provider, the service provider might fail to perform),

- *Exit-strategy risk* (For example, the risk that appropriate exit strategies are not in place, over-reliance on the service provider, the loss of relevant skills in the undertaking itself preventing it from bringing the activity back in-house, contracts which make a speedy exit prohibitively expensive, limited ability to return to an in-house approach due to lack of staff or loss of intellectual history),

- *Contractual risk* (For example, the ability to enforce contract, settlement of disputes),

- *Access risk* (For example, the outsourcing arrangement hinders ability of regulated entity to provide timely data and other information to regulators, additional layer of difficulty in regulator understanding activities of the service provider) and

- *Concentration and Systematic risk* (For example, the overall insurance industry has significant exposure to a small set of service providers and systematic risk to the insurance industry as a whole.)

The comment on concentration and systematic risk could be applied to an ESG supplier such as Barrie & Hibbert. We would like to respond to the comment. We presume the text means "systemic" when it refers to "systematic".

We believe external model suppliers bring considerable benefits to insurance groups in terms of cost, efficiency and operational risk (particularly in reducing key-man risk in highly technical areas). Economies of scale allow many clients to benefit from investment by external model providers in people, intellectual property and technology. Typically external suppliers offer modelling solutions at a fraction of the cost of firms building and maintaining models and software in-house. Any systemic exposure must be compared to this benefit.

The delivery of models and related tools and assumptions for economic scenario generation is the core activity of our (Barrie & Hibbert) business. We take this responsibility very seriously. We believe that our strong market position in the delivery of ESG model software is simply the result of the quality and cost effectiveness of our products and services. There are no inherent barriers to entry of competitors to this business.

In response to the question: "Is there a systematic risk if all companies are using the same model?" we have a number of comments (see footnote¹):

- 1) Our clients do not use models blindly. Firms validate key assumptions and outputs and use their own judgment to make critical choices of individual model components and model parameters. Users are able to concentrate their limited technical resources on how they use the model rather than the major challenges of designing, building, documenting and maintaining complex software and related hardware solutions.
- 2) We do not provide a single unique model. Users have access to a library of different models in an integrated, economically coherent framework so it is not the case that all firms are using the same model. Many clients calibrate to their own data, liability profiles, methodology and assumptions. Our

¹ See also the comment on this question at http://www.barrhibb.com/blog/entry/too_dominant_in_the_esg_space/

surveys highlight these differences and this information is shared with users and interested regulators.

- 3) To the extent there is systemic risk in the model itself, this lies within the control of the regulator and the principles set down within the regulatory regime. Asking many firms to implement model X (instead of a very small number) does not remove the risk.
- 4) The exposure of firms to the operational risk of simultaneous software failure at a point in time does exist, but we make considerable effort to manage it to a minimum through robust software development, testing and release procedures. We are (and have always been) willing to expose these processes to model users.
- 5) If such systemic risk does exist, it should be the concern of the system regulator not individual firms (because individual firms are not in a position to manage it).

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