

## **Sessional Research Discussion Meeting – 19 March 2012**

**Royal College of Physicians, Edinburgh**

### **What Solvency II Firms Can Learn from Swiss Solvency Experience**

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Switzerland introduced the Swiss Solvency Test (SST) as a regulatory requirement in 2006. Since 2011, the capital requirements are in force and insurers have to have their internal models approved by the regulatory authority.

While the SST is not identical to Solvency II, there are many commonalities and Switzerland is likely to obtain equivalency from Solvency II.

The SST differs from Solvency II in that many insurers and reinsurers have to use an internal model to determine their regulatory capital requirements. In contrast to Solvency II, using an internal model is the norm, rather than the exception. All reinsurers, insurance groups and all insurers for which the standard model is not applicable have to develop an internal model. Overall, close to 100 insurers use partial or full internal models, among them most life insurers.

We present our experiences with the SST, in particular relating to internal models and their validation and supervisory approval. We also present the Swiss experience with smaller companies, many of which also use at least partial internal models.

Model validation has become an important topic for the Swiss industry. We present the experiences and challenges of model validation. Model validation is complex, requiring many different specialities. Model validation is at the (sometimes uneasy) intersection of philosophy, mathematics, natural sciences, actuarial science, audit, forensic science, psychology and much more.

The process of model validation has to be well defined and well planned. Validations can be done for different components of the models and for different levels of depth.

Validations have to be done against clearly defined standards. While both the SST and Solvency II have a list of requirements relating to models, they nevertheless are often open to interpretation. It is then important that the interpretation of a (subjective) requirement is clearly formulated.

We present our understanding what constitutes a model and the different elements of models and how they can be validated. We discuss some of the challenges we encountered and pitfalls to avoid. Some of the challenges relate to model documentation, which is very rarely sufficient to allow for a model validation without further discussions with the modellers. Another area relates to parameterization. The way a model quantifies risks can depend very sensitively on the data that is used, the way data is transformed and then used to parameterize the model. Sometimes very small and seemingly insignificant changes to data can lead to a completely changed SCR. Model validation has to take into account these sensitivities.

During the presentation, we will relate the more theoretical aspects of model validation with our actual experiences of the Swiss Re model review. We will also point out the changing model landscape in Switzerland, especially the convergence of valuation and risk quantification that we can observe. This already has implications in how insurers and reinsurers run their business, set their strategy and make investment decisions. Another aspect of internal models is the quantification of group effects. We will discuss also how this had implication in group structures, the web of intra-group transactions and recovery and resolution planning.