Evaluation of Scenarios

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In the following, the expression “company” is understood to mean legal entity, whether single, group or conglomerate.

Scenarios are an essential component of the Swiss Solvency Test (SST). Within the SST they serve several purposes:

- They allow the supervisor to ascertain whether there are systemic risks which affect other companies (contagion effect)
- They allow an analysis on the effect of scenarios on the stability of the financial market
- They allow the modelling of rare events which might not have been captured adequately by analytical models
- They give incentives for risk management by allowing an intuitive analysis of possible economic states of the company

Within the SST, a scenario is different from a stress test. In a stress test, a single or a small number of connected risk factors are stressed in isolation from other risk factors and the effect on the economic balance sheet is calculated. A stress test can therefore serve to analyse the exposure of a company to specific (individual) risk factors. In contrast, a scenario tries to define and include all risk factors to which a company may be exposed. It therefore posits a possible future state of the world. Below is the definition of what is meant by a scenario for the SST from the SST glossary:

Definition of Scenario:
Scenarios can be seen as thought experiments about possible future states of the world. Scenarios are not forecasts. In that they do not predict future development, but rather illuminate extreme but still possible situations. Scenarios are also different from sensitivity analysis where the impact of a (small) change of a single variable is evaluated.
Scenarios are especially useful to assess a situation where there is no historical experience. Hermann Kahn expressed this in the context of the cold war and studies on possible nuclear war succinctly as “Ersatz experience is a better guide to the future than the real past and present.”

FOPI expects that the formulation and evaluation of a scenario would not be a compliance exercise but, rather, that it would entail a detailed and comprehensive discussion of both primary and secondary effects.

An evaluation of a scenario should be done in two steps: First, the scenario should be defined and then the direct and indirect impact of the scenario on the company evaluated.

The formulation of the scenario has to entail both a description and an analysis of the global effect of the scenario:

- Description and estimation of the primary effects of the scenario
    - Total global loss
    - Total insured and reinsured market loss
    - Number of deaths and injured
    - …

- Description and estimation of secondary effects
    - Impact on the financial markets with projections on the impact on equity, bond and real estate markets;
    - impact on FX rates
    - drying up of liquidity
    - Possible spread widening
    - Possible global downrating of insurers and reinsurers
    - Impact on new business
    - Etc.

- An assessment of the probability of the scenario

First example: A scenario ‘Dirty Bomb in a European City’ should not only specify the financial impact due to loss of life but should in addition discuss the impact on real estate prices, airline travel, financial markets, consumer confidence, long term effects on mortality and morbidity, etc.

Second example: A scenario ‘Earthquake in Tokyo’ should not only specify the financial impact due to loss of life and to the collapse of buildings, but also discuss the implication for the financial markets (e.g. the collapse of the global financial market for a given duration, the effect on global financial markets of Japan having to rebuild the infrastructure, etc.).

When formulating scenarios, the company should aim to choose scenarios which capture its specific exposure to a conjunction of risks.

The possible state of the world should – as far as possible – be internally consistent. For instance, a flu pandemic without impact on shares of companies working in the travel industry can not be considered internally consistent.

An assessment of the impact of the scenario on the company is not just a loss number but should encompass:

- a mapping of the loss to
    - different lines of business;
    - different risk types (insurance, market and credit risk)
    - component legal entities
- The effects on risk bearing capital in different legal entities (e.g. group, subsidiaries)
    - before
    - and after group-internal retrocessions;
- the impact on the credit rating of the company;
- the impact on the credit risk of reinsurers to which the company has ceded or retroceded business;
- the impact on fungibility of capital;
- group-internal capital transfers;

- The strategy of the company to deal with the effects of the loss event;
- and other impacts the company deems to be relevant.

The impact of a scenario has to be assessed on the economic balance sheet of the company, i.e. the impact on risk bearing capital, where risk bearing capital is defined according to the SST.

Both the formulation and the evaluation of scenarios is a interdisciplinary task and relevant experts should be involved

The scenario should be specified in such a way that they are unlikely but not too unlikely. FOPI envisages the probability of a scenario actually occurring to be within the range of 0.001 and 0.02.

The more detailed the description of a scenario is the lower the probability of it occurring. Therefore, a scenario should be understood to be the representative of a whole class of possible events, so that the probability of the scenario equals the probability of the whole class of which the scenario is a representative.

Some further guidance on scenarios can be found from the following sources:
Stress Testing by Insurers Guidance Paper, October 2003, IAIS
(http://www.iaisweb.org/185stresstesting03.pdf)