Final Standard

Final Standard Regarding the Revision of the Standards of Practice – Dynamic Capital Adequacy Testing – Section 2500

Actuarial Standards Board

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2500 DYNAMIC CAPITAL ADEQUACY TESTING

2510 SCOPE

.01 This section 2500 applies to the appointed actuary of an insurer when preparing a report on the insurer's financial condition pursuant to law.

2520 INVESTIGATION

.01 *The appointed actuary should make an investigation at least once during each financial year of the insurer's recent and current financial position, and financial condition, as revealed by dynamic capital adequacy testing for selected scenarios.*

.02 *The appointed actuary should make a report of each investigation in writing to the insurer's board of directors (or to their audit committee if they so delegate) or its chief agent for Canada. The report should identify possible actions for dealing with any threats to satisfactory financial condition that the investigation reveals.*

.03 *The appointed actuary should also make an interim investigation if there is a material adverse change in the insurer's circumstances.*

.04 *The appointed actuary should ensure that the investigation is current. The investigation should take into consideration recent events and recent financial operating results of the insurer.* [Effective December 31, 2011]

.05 The actuary's investigations would be done with a frequency sufficient to support timely corrective actions by management and the board of directors or chief agent for Canada.

Recent and current financial position

.06 The investigation would review operations of recent years (normally at least three years) and the financial position at the end of each of those years.

Dynamic capital adequacy testing

.07 Dynamic capital adequacy testing examines the effect of selected plausible adverse scenarios on the insurer's forecasted capital adequacy. It would be one of the actuary's primary tools for investigation of an insurer's financial condition.

.08 The purpose of dynamic capital adequacy testing is to identify plausible threats to satisfactory financial condition, actions that would lessen the likelihood of those threats, and actions that would mitigate a threat if it materialized.

.09 Dynamic capital adequacy testing is defensive, i.e., it addresses threats to financial condition rather than the exploitation of opportunity.

Satisfactory financial condition

.10 The insurer's financial condition would be satisfactory if throughout the forecast period,

under the base scenario and all plausible adverse scenarios, the statement value of the insurer's assets is greater than the statement value of its liabilities, and

under the base scenario, the insurer meets the supervisory target capital requirement.

Data, methods and assumptions

.11 The actuary would start the forecast period using the data as of the most recent available fiscal year-end balance sheet date.

.12 The methods and assumptions would reflect up-to-date studies and analysis available to the actuary.

.13 The policy liabilities would be revalued at the end of the first financial year of the forecast period if a change in method or assumptions that is expected to be made by the insurer would result in a material change to the financial position of the insurer.

.14 The actuary would consider recent events and recent operating results of the insurer up to the date of the report.

.15 If an adverse event occurs between the date of the report and the date of its presentation to the insurer's board of directors (or its chief agent for Canada), then the actuary would, at a minimum in the presentation to the insurer's board of directors (or its chief agent for Canada), address the event and its potential implications on the results of the investigation. If appropriate, the actuary would redo the investigation.

Forecast period

.16 The forecast period would begin at the most recent available fiscal year-end balance sheet date. The forecast period for a scenario would be sufficiently long to capture the effect of its adversity and the ability of management to react. The forecast period for a typical life insurer would not be less than five fiscal years. The forecast period for a typical property and casualty insurer would not be less than three fiscal years.

Scenarios

.17 The scenarios would consist of a base scenario and several plausible adverse scenarios. Each scenario takes into account not only in-force policies but also the policies assumed to be sold or acquired during the forecast period, and both insurance and non-insurance operations (for example, the operations of an insurer's trust company subsidiary).

Base scenario

.18 The base scenario would be a realistic set of assumptions used to forecast the insurer's financial position over the forecast period. Normally, the base scenario would be consistent with the insurer's business plan. The actuary would accept the business plan's assumptions for use in the base scenario unless these assumptions are so inconsistent or unrealistic that the resulting report would be misleading. The actuary would report any material inconsistency between the base scenario and the business plan.

Plausible adverse scenarios

.19 A plausible adverse scenario would be a scenario of adverse, but plausible, assumptions about matters to which the insurer's financial condition is sensitive. Plausible adverse scenarios vary among insurers and may vary over time for a particular insurer.

.20 The actuary would consider material, plausible risks or events to the insurer. Reverse stress testing can help assess whether certain risk factors need to be tested, on the grounds that certain risk factors could never deteriorate to the point where it would be a threat to the insurer's financial condition. The actuary can thereby determine whether a material, plausible risk or event exists for the insurer over the forecast period.

Risk categories

.21 For life insurers, the actuary would consider threats to capital adequacy under plausible adverse scenarios that include, but are not limited to, the risk categories

mortality,

morbidity,

persistency and lapse,

cash flow mismatch (C-3 risk),

deterioration of asset values (C-1 risk),

new business,

expenses,

reinsurance,

government and political issues,

counterparty,

off-balance-sheet items, and

related companies.

.22 For property and casualty insurers, the actuary would consider threats to capital adequacy under plausible adverse scenarios that include, but are not limited to, the risk categories

claim frequency and severity,

policy liabilities,

inflation,

premium,

reinsurance,

investment,

government and political issues,

off-balance-sheet items, and

related companies.

Integrated scenarios

.23 In many cases, plausible adverse scenarios would be associated with a low probability of occurrence. In such cases, it would usually not be necessary for the actuary to construct integrated scenarios by combining two or more low-probability adverse scenarios.

.24 In some cases, however, the probability associated with a plausible adverse scenario may be close to the probability associated with the base scenario. For example, a significant asset on the balance sheet may be showing early signs of distress. In such cases, an integrated scenario would be constructed by combining each more probable adverse scenario with a low-probability adverse scenario. The low-probability adverse scenario selected would be the one that has the greatest effect on the insurer's financial condition and is plausible when combined with the more probable adverse scenario.

.25 An integrated scenario would be included in the minimum of three plausible adverse scenarios required by paragraph 2520.33 if the integrated scenario was found to be one of the three most adverse scenarios.

Ripple effects

.26 In assuring consistency within each scenario, the actuary would consider ripple effects. Although most of the other assumptions used in the base scenario may remain appropriate under the plausible adverse scenario, some may require adjustment to reflect the interdependence of assumptions in the plausible adverse scenario.

.27 Ripple effects would include both policy owner action and the insurer's expected response to adversity. Selection of the assumptions for the insurer's response would, where appropriate, take into account

effectiveness of the insurer's management information systems and adjustment mechanisms,

insurer's historical record of promptness and willingness, when faced with adversity, to make difficult decisions, and

external environment assumed in the scenario.

.28 The actuary would report the expected response, so that users may consider its practicality and adequacy. The actuary may also report the results assuming that the insurer does not respond to the adversity.

.29 Ripple effects also include regulatory action, especially under any plausible adverse scenario where the insurer fails to meet the supervisory target capital requirement. The actuary would consider action that could be taken by the Canadian regulator(s) as well as action taken by regulators in foreign jurisdictions. Such regulatory action and associated management response would consider the local assessment of solvency regardless of the insurer's worldwide solvency position as measured by Canadian regulatory standards.

Corrective management actions

.30 For each of the plausible adverse scenarios that would result in a threat to satisfactory financial condition, the actuary would identify possible corrective management actions that would lessen the likelihood of that threat, or that would mitigate that threat, if it materialized. These actions could include but are not limited to

repricing the insurance products,

suspending dividend payments, capital reductions and transfers to the parent or home office, where applicable,

raising additional capital or adopting an approved plan to raise additional capital if and when needed within a reasonable timeframe, or, in the case of a branch, requesting transfer of adequate funds from the parent company,

strengthening risk management practices,

mitigating the risk causing the capital shortfall, and

an increased level of monitoring and reporting with respect to the insurer's capital position.

.31 Consideration would also be given to the effectiveness of planned management actions in a volatile or stressed environment.

Scope of the investigation and report

.32 The report would contain the key assumptions of the base scenario and the plausible adverse scenarios posing the greatest risk to the satisfactory financial condition of the insurer.

.33 The report would disclose each of the risk categories considered in undertaking the dynamic capital adequacy testing analysis, including those identified in these Standards of Practice. It is expected that the actuary would scenario test and report at least once during each financial year on the base scenario, and a minimum of three plausible adverse scenarios posing the greatest risk for the insurer. Fewer than three plausible adverse scenarios may be reported only in the rare event that it is not possible to develop such scenarios.

.34 The report would also contain the plausible adverse scenarios examined that cause the insurer to fall below the supervisory target capital requirement. The report would make it clear that under these scenarios the regulators may impose restrictions on the operations of the insurer, including its ability to write new business.

.35 If the investigation identifies any plausible threat to satisfactory financial condition, then the actuary would identify possible corrective management action that would lessen the likelihood of that threat, or that would mitigate that threat, if it materialized. For each such adverse scenario reported upon, the actuary would report the results both with and without the effect of corrective management action. The actuary would report the corrective management action so that users may consider its practicality and adequacy.

.36 The report would present the financial position of the insurer at each fiscal year-end throughout the forecast period.

Revaluation of the policy liabilities

.37 Ideally, for the base and each plausible adverse scenario, the insurance contract liabilities and, if applicable, other policy liabilities or reinsurance recoverables, would be revalued throughout the forecast period. But their revaluation only at the end of the forecast period may be a suitable compromise, unless the actuary believes, given the financial position at the end of the forecast period, that the financial condition would not be satisfactory at some point during the forecast period if revaluation were performed at that point.

Interim investigation

.38 In rare cases, a material adverse change in the insurer's circumstances since the last investigation may be so far-reaching that to delay reporting to the time of the next scheduled investigation would be imprudent. For example, failure to meet the supervisory target capital requirement, or adoption of a radically different business plan, may make an immediate report urgent. In such a case, the actuary would undertake and report on an interim investigation.

2530 REPORTING

.01 *In the case of a Canadian insurer, the appointed actuary should report to the board of directors or to their audit committee if they so delegate. In the case of a Canadian branch of a foreign insurer, the appointed actuary should report to the chief agent for Canada and may also report to the responsible senior executive in the parent head office.* [Effective December 31, 2011]

.02 In order to give the insurer's senior management an opportunity to react to the results of the investigation, the actuary would discuss the report with the insurer's senior management in advance of its submission to the board of directors or chief agent for Canada.

.03 The report would be in writing, but an additional oral report that permits questions and discussions is desirable. An interpretative report would be more useful than a statistical report.

.04 The timing of the report would depend on the urgency of the matters being reported and on the desirability of integrating dynamic capital adequacy testing into the insurer's financial planning cycle. The report would be submitted within 12 months following each fiscal year-end.

2540 OPINION BY THE ACTUARY

.01 *The report should contain an opinion signed by the appointed actuary.* [Effective December 31, 2011]

.02 In this opinion, "future financial condition" has the same meaning as "financial condition." The actuary may use the words "future financial condition" in order to comply with legislation or regulation in some jurisdictions.

.03 The wording of the opinion follows: [insert appropriate wording where indicated by square brackets]

"I have completed my investigation of the [future] financial condition of [insurer name] as at [date] in accordance with accepted actuarial practice in Canada.

I have analyzed the forecasted financial positions of the insurer during the [number] year forecast period under a series of scenarios. A description of these scenarios and their impact on the insurer is included within this report.

The most significant assumptions are described within this report. The investigation incorporates assumptions relating to business growth, investments, [mortality, morbidity, claims frequency, capital injections, other policy-related experience] and other internal and external conditions during the forecast period.

My report includes the identification of key risk exposures [and corrective management actions that could be taken to mitigate the effect of plausible adverse scenarios].

In my opinion, the [future] financial condition of the insurer [is satisfactory or is not satisfactory for the following reason(s)...]"

[Montréal, Québec] [Mary F. Roe]

[Report date] Fellow, Canadian Institute of Actuaries