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Actuarial Function: Thriving on Uncertainty

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Abstract

The launch of the Solvency II Framework in July 2007 identified the Actuarial Function as one of four key control functions within an insurer. A similar requirement applies to all insurance supervisors as a result of the Insurance Core Principles of the International Association of Insurance Supervisors. Much has been written since 2007 regarding the opportunity for the actuarial profession that is presented by this regulatory recognition of the role of the actuary. Less has been written by regulators on their observations of the actuarial function in their respective jurisdictions. In this report, the author describes the progress made by the profession in Canada from a regulatory perspective and offers some lessons learned and identifies some remaining challenges and opportunities.

1. Introduction

The actuarial profession has always thrived on uncertainty, with its roots in the fundamentals of sound insurance, health and pension systems. Actuaries are experts at understanding many of the key aspects of managing these systems, not just their mathematical aspects. Regarding insurance, which is the focus of this paper, actuaries are active in various capacities such as product design, product pricing, underwriting, claims management, valuation, capital adequacy, risk management/risk mitigation etc. The importance of the work of the actuary in risk management has long been recognized, not just with respect to insurance risk but also market and credit risks, due to the need to consider the characteristics of the assets supporting the insurance obligations. Actuaries are increasingly becoming involved in studies of operational risk.

The ability of the actuarial profession to thrive on uncertainty stems from its ability to view and describe risk from multiple perspectives and over different time horizons. Ultimately, its success depends on its ability to communicate effectively with all of an insurer's risk stakeholders.

Recognizing the abilities of the profession, for decades regulators have relied on the actuary to fulfil specific statutory roles such as Appointed Actuary (AA), Chief Actuary or Signing Actuary. More recently, regulators have come to recognize the broader role of actuaries in providing risk oversight within insurers. Specifically, regulators have identified that actuaries provide an important control function within an insurer. The launch of the Solvency II Framework in July 2007 identified the actuarial function (AF) as one of four key control functions within an insurer. A similar requirement applies to all insurance supervisors as a result of the Insurance Core Principles (ICPs) and standards of the International Association of Insurance Supervisors (IAIS).

This paper provides observations of the actuarial function from my perspective as a Canadian-based actuary and a regulator with the federal Office of the Superintendent of Financial Institutions (OSFI) in Canada. This paper describes the progress made by the profession in Canada from a regulatory

perspective and offers some lessons learned and identifies some remaining challenges and opportunities.

The Actuarial Function in Canada

The Canadian market for insurance is well developed and mature. Life insurers provide life, health and pensions products. Property and casualty insurers (or general insurance, as it is known in other jurisdictions) provide a variety of personal (e.g. automobile and home insurance) and commercial (e.g. property, indemnity etc.) lines of coverage, while mortgage default insurance is provided by a few mono-line carriers. In addition, the market is served by several reinsurers. Canada is the home jurisdiction for four internationally active insurers.

The Canadian actuarial profession has been active in the affairs of (re)insurers[1] with Canadian business for many decades. Indeed, the Canadian Institute of Actuaries (CIA), the professional association for actuaries practicing in Canada, is celebrating its 50th anniversary in 2015. Throughout its history, the CIA and, more currently the Actuarial Standards Board (ASB), has been one of the most active actuarial associations in developing standards of practice for its members. The standards for insurance are extensive as they guide the valuation work (among other things) of the AA. In Canada, a single basis is used for both published and regulatory purposes. This basis is founded on the use of current estimate assumptions and limited margins for adverse deviation.

The federal regulator for insurers, OSFI, and its predecessor organization, the Department of Insurance, have long recognized the importance of the work of the actuary for insurers. The Canadian *Insurance Companies Act* (ICA) requires each insurer to appoint an actuary responsible for (among other things) opining on the value of the insurance liabilities[2] and the fairness of allocations for participating (with-profits) policyholders[3] and presenting a future financial condition report annually to the Board[4]. If, in the opinion of the AA, the insurer fails to rectify matters having material adverse effects on the financial condition of the company, the AA is required to report to the Superintendent and the Board[5]. Indicative of the importance of the role of the AA, the ICA grants the AA qualified privilege[6] for oral or written statements or reports made under the Act.These provisions of the ICA apply equally to all insurers.

In recognition of the important statutory roles assigned to the AA, OSFI has made use of the work of the AA in carrying out its supervisory mandate. Indeed, OSFI's Supervisory Framework explicitly

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[1] In the remainder of this paper, reference to "insurer" is intended to include reference to insurer as well as reinsurer unless otherwise specifically noted.

[2] ICA 365**.** (1) The actuary of a company shall value (*a*) the actuarial and other policy liabilities of the company as at the end of a financial year; and (*b*) any other matter specified in any direction that may be made by the Superintendent.

[3] ICA 460**.** The actuary of a company shall annually report in writing to the directors on the fairness and equitableness of the method used by the company for allocating its investment income and losses and expenses to a participating account maintained pursuant to section 456

[4] While ICA 368 allows for the report if specified by the Superintendent, the Superintendent has formalized the requirement since its introduction in the ICA in 1992

[5] ICA 369 (3)

[6] ICA 370**.** (1) Any oral or written statement or report made under this Act by the actuary or former actuary of a company has qualified privilege.

recognizes the AF as a control function distinct from others (e.g. risk management, internal audit etc.).

2. OSFI Supervisory Framework

OSFI defines seven oversight functions that may exist in a federally regulated financial institution (FRFI), which includes insurers: Financial, Compliance, Actuarial, Risk Management, Internal Audit, Senior Management, and the Board. Oversight functions are responsible for providing independent, enterprise-wide oversight of operational management.

OSFI believes it is important to balance the portfolio of risks to which an insurer is subject with an oversight function that is "fit for purpose". The presence and nature of these functions (e.g. suitable skills, experience, tools, resources etc.) will vary based on the nature, size and complexity of a FRFI and its inherent risks. It is understandable that smaller insurers or insurers that do not take on significant risks can be expected to operate with less formal or less sophisticated oversight functions.

To be independent, the oversight functions cannot be directly involved in the management, decision-making or execution of activities that create risk for the institution, since this might compromise objectivity and bring the credibility of their work into question. Where an oversight function is lacking, OSFI expects other functions, within or external to the FRFI, to provide the appropriate anticipated oversight.

3. Expectations for the AF

The AF is responsible for the provision of actuarial oversight within the insurer and extends beyond the legal requirements of the AA. The AF may be responsible for overseeing the management of risks for which the actuary can provide expertise, such as pricing, reinsurance, stress testing, modelling, asset liability management (ALM) etc. OSFI recognizes that the organization of the AF within an insurer should be tailored to the needs and circumstances of each insurer and therefore can vary considerably across the industry.

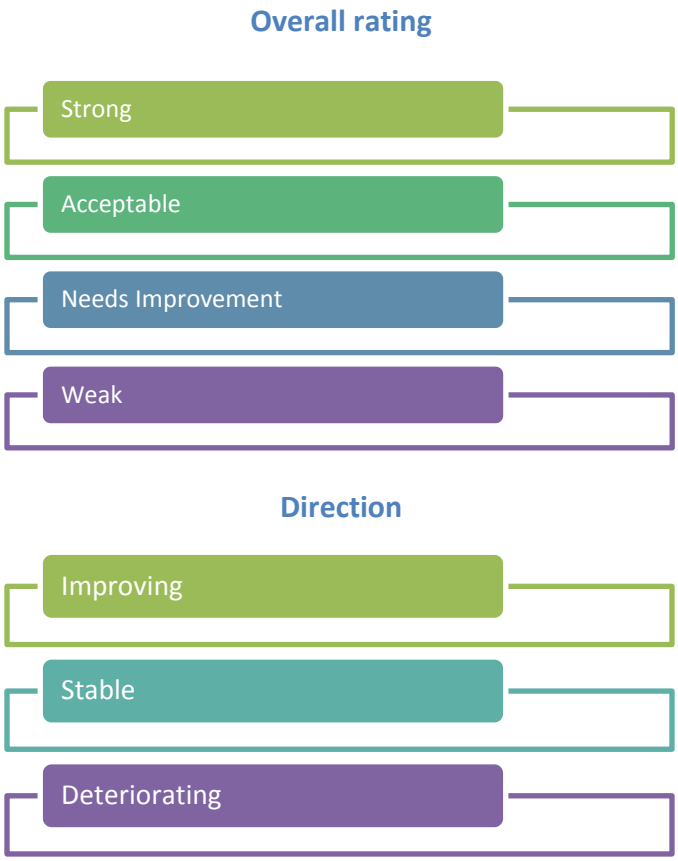
In OSFI's view:

- the AF must be independent of operational decision making;
- the AF Head (AFH) should have sufficient "gravitas" to adequately carry out his/her mandate;
- the AF should be clearly distinct from other oversight functions; and,
- the work of the AFH must not include directing or controlling the day-to-day operations of the significant activities of the insurer.

OSFI assesses the quality of the AF through an overall rating and a directional rating. Effective and independent actuarial oversight enhances the protection of policyholders. FRFIs are expected to demonstrate the effectiveness of such oversight. OSFI's revised Corporate Governance Guideline[7]

[7] OSFI's Corporate Governance Guideline can be retrieved at the following link: http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/CG_Guideline.aspx

reinforces certain expectations of the AF. OSFI uses Actuarial Function Assessment Criteria[8] to guide the determination of the insurer's overall rating/direction.



The overall rating of the AF measures both its characteristics and the effectiveness of its performance. The characteristics of an AF are assessed by comparing them to what is needed for the function to effectively oversee the management of the institution's inherent risks, including communication with key stakeholders. Examples of the characteristics used include the AF mandate, organization structure, resources, policies, practices, methodologies and reporting.

AF performance is assessed based on the demonstrated effectiveness of its oversight across all significant activities. Assessing performance considers the culture of the AF and the behaviour of staff in the AF in the execution of their responsibilities as defined by the characteristics of the AF. For example, AF staff is expected to be proactive in ensuring that their work complies with standards of professional practice. Ratings are not disclosed to each insurer, only recommendations (if any). Some examples of areas in which AF oversight performance can be demonstrated could include pricing, risk mitigation, claim management, stress testing, future financial condition, valuation of insurance obligations (i.e. technical provisions), capital adequacy etc. For insurers/groups with a decentralized structure, assessment of the AF occurs not only at the

[8] OSFI's Actuarial Assessment Criteria can be retrieved at the following link: http://www.osfi-bsif.gc.ca/eng/fi-if/rai-eri/sp-ps/pages/aac.aspx

decentralized level, but more importantly at the central head of the insurer or group. Important in the assessment of AF effectiveness is the working relationship with other oversight functions within the insurer.

In assessing the conduct of the AF, OSFI's supervisory team is supported by an Actuarial Division comprised of actuarial specialists, many of whom have considerable previous experience within the insurance industry.

4. Results of AF Assessments

Since 2012, OSFI has assessed the AF of more than 30 insurers, as follows:

Life insurers
- Approximately 20 large companies
- With a good supply of actuaries and large actuarial teams
- Almost all life insurers with an AF have now been assessed

Property and Casualty (P&C) insurers
- More but smaller companies (relative to life insurers) , with generally smaller actuarial teams (though they may have access to actuarial resources in their foreign parent)
- Roughly 15 P&C insurers have been assessed
- Majority of P&C insurers with an AF have now been assessed

Part of OSFI's normal supervisory activities include providing recommendations on each insurer's AF, based on its nature, size, complexity and risk profile. A summary report of OSFI's AF assessments was presented at a public meeting of the Canadian Institute of Actuaries in June 2014[9]. The following findings are drawn directly from that presentation.

General findings:
- Insufficient governance over actuarial judgment
- Inadequate disclosure (reporting) to senior management and the Board
- No threats to solvency or systemic deficiencies were identified

Life-specific findings:
- Enhance oversight of ALM framework
- Enhance oversight of pricing initiatives
- Enhance documentation of key actuarial oversight function processes and activities

P&C insurer-specific findings:
- Enhance actuarial policies, practices and methodologies
- Obtain additional resources
- Comply with OSFI Corporate Governance Guideline in terms of AF's expectations

[9] Results were communicated to the CIA at its June 2014 Annual Meeting by Chris Townsend. Presentation entitled "Role of the Actuarial Function in Managing Risks" is available through www.actuaries.ca

5. Lessons Learned

In considering the general findings from the AF assessments, it is very important to note that no threats to solvency were observed among the insurers studied. However, two other general findings, relating to governance over actuarial judgement and inadequate disclosure to senior management and the Board, require further explanation and context.

The AF assessments focused on the broader concept of actuarial oversight within an insurer rather than the narrower set of roles already assumed by the AA as part of its statutorily defined roles. As referenced above, Canadian insurers and their policyholders have benefited for many decades from an AA system rooted in statutorily defined roles for the actuary, along with a strong actuarial profession governed by rules of professional conduct and extensive actuarial standards. Indeed, the general finding of "no threats to solvency or systemic deficiencies" is due in large measure to the efforts of the AA and the actuarial profession in Canada. These two general findings (i.e. governance and disclosure) have arisen specifically from the new broader concept of the AF.

The following key lessons learned from the AF assessments help to illustrate the key findings:

- **AFH -** A regulatory request to "take me to your AF leader" is not always straightforward. Actuaries are involved in many aspects of the operations of insurers, especially life insurers, and the separation of actuaries into operational versus oversight roles is not always clear cut. The involvement of actuaries in pre-defined regulatory roles (e.g. AA, Signing Actuary etc.) may cloud the matter.
- **Scope of AF** - The scope of the AF within insurers may not be clearly defined. Despite some regulatory attempts to define the scope of the AF, it is frequently subject to wide interpretation.
- **Focus of AF assessment** - AF assessment should focus on AF performance, not just characteristics. The presence of certain organizational structures, lines of reporting, actuarial opinions and reports etc. afford no guarantee that the AF will work well in providing effective actuarial risk oversight.
- **AF Culture** - The AF should demonstrate broad actuarial risk ownership and influence in risk management at senior levels in the insurer, including at the Board. A narrow regulatory compliance focus of the AF based on completion of specific roles (e.g. valuation, filing of various regulatory reports) is not, by itself, indicative of a strong AF culture.

The following lessons learned in assessing the AF of life insurers help to illustrate their findings:

- **ALM -** For life insurers with long duration liability guarantees for investment returns (i.e. very common in North American products), the importance of integrated management of all asset liability management (ALM) issues is vital to insurer solvency and policyholder protection. Such decision-making extends from product design to pricing, to investing, to valuation, to financial projections, to insurer strategy etc. Many of these decisions require consideration of multiple time horizons (e.g. current market, future stress scenarios in the longer term). From an operational perspective, actuarial involvement in ALM decisions is critical, but so, too, is the need for comprehensive actuarial oversight by the AF.

- **Pricing -** Actuarial oversight over pricing should be enhanced as part of the AF. Perhaps due to the strength of the AA role in Canada, the AA tends to have a greater natural focus on roles such as valuation of insurance obligations, financial reporting and financial condition analysis.
- **Documentation -** The documentation of key actuarial oversight processes and activities should be improved to better define the work of the AF, which is broader than solely statutorily or AA-defined work.

The following lessons learned in assessing the AF of P&C insurers help to illustrate their findings:

- **Actuarial resources -** The breadth and extent of actuarial involvement in operational and oversight matters within P&C insurers can be more limited than is typical for life insurers. In part, this may be due to the different nature of the risks involved. Regardless, actuarial work in P&C insurers appears to be task focused, especially those tasks related to the AA's statutory roles. As a result, it would appear that some P&C insurers would benefit from increased resources to provide actuarial oversight.
- **External actuary** - It is common in Canada's P&C industry for the insurer to use an external consulting actuary to perform specific statutory roles such as valuation, financial condition reporting etc. However, this mandate is not as broad as that of the AF and, since the external actuary is not an employee of the insurer, he or she may not have the degree of influence expected of an AF head. In these cases, OSFI expects that the responsibility for the AF head would reside with an appropriate member of the insurer's management team. Note that this same issue arises with some smaller life insurers as well.

6. Challenges

The challenges for the AF in its continuing development for the benefit of policyholders, regulators and the actuarial profession include:

- **Adequate expertise** - Actuaries must have adequate expertise, experience and training (both within insurers and regulators) to be able to ask the right questions.
- **Improved communication** - Actuaries need to be able to communicate more effectively to all stakeholders regarding their actuarial oversight role.
- **One size does not fit all** - The organizational design and reporting structure of the AF must be responsive to the specifics of the insurer.
- **Culture and effectiveness** - The regulator's review of the AF requires assessing its culture and effectiveness. These qualities are much more important than simply identifying the characteristics of the AF. Unfortunately, culture and effectiveness are also much harder to assess than the characteristics.

7. Opportunities

The role of the AF provides a tremendous opportunity -- both for those who assume these functions and for the regulators involved in their assessment -- to play increasingly important roles in insurer financial stewardship and the protection of promises to policyholders. Strengthening the role of the AF in insurers will be key to activities such as own risk and solvency assessments, risk management and internal models – to name but a few.

Based on their education, skills and experience, actuaries are in an ideal position to capitalize on this opportunity, but will they seize on it? Will they rise above their models, parameters, copulas and TVARs to more meaningfully inform their stakeholders about insurer risks for the betterment of shareholders and policyholders alike? Will they recognize that they must take ownership of insurer risks, not just act in compliance of regulatory requirements?

The AF will be able to continue to thrive on uncertainty, by leveraging actuarial skills and multiple perspectives on insurer risk and through improved communications at all levels of the insurer, as well as with insurance regulators.