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Actuarial Models in an IFRS 17 World

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And you thought your models were important before? Wait to see how vital models become to insurers around the world in the next few years.

The importance of and reliance on actuarial models has increased significantly over the past decade with moves to principle-based reserves and increasingly risk-focused solvency assessment regimes globally. Equity-linked guarantees and hedging programs, increasing demand by management for realistic what-if investigations, and sophisticated asset-liability management (ALM) risk analysis all contribute to the need for higher corporate dependence on the actuary and the models actuaries control.

But suddenly in the past year, a new International Accounting Standard has raised the bar immensely. Over the next few years, compliance with this standard promises to bring the greatest disruption ever seen to insurers' financial reporting systems and processes, by forcing companies to integrate actuarial models deeply within public and management reporting processes. Why is this happening, and what are the keys to successful transformation of the total financial reporting process for insurers?

After many years of discussion, the International Accounting Standards Board released new International Financial Reporting Standard (IFRS) 17—*Insurance Contracts* in May 2017, with an effective date of January 2021. This standard impacts publicly listed insurers in many countries around the world, and, in cases such as Canada, South Africa, Malaysia, Portugal and some others, all insurers are required to file statements under IFRS accounting rules, whether listed or not. Companies domiciled in the United States are typically not impacted unless they are subsidiaries of or own subsidiaries in affected countries. Nonetheless, the changes under IFRS 17 are fascinating to all actuaries.

A primary motivation for the development of the new IFRS was to bring consistency and transparency to the financial statements



used by insurers across jurisdictions and product types. It is a difficult challenge. Actuaries have long coped with varied methods of calculating policy or claim liabilities across jurisdictions and by products and also between regulatory, GAAP and tax accounting frameworks. While imposing a common framework, IFRS 17 also changes the playing field with fundamental impact both on the balance sheet liabilities and on the reporting of earnings.

WHAT CHANGES IN FINANCIAL REPORTING ARISE FROM IFRS 17?

At its heart, the standard applies a General Measurement Model for calculating the policy liabilities of long-term contracts as the sum of three components: (1) a forward-looking present value reserve reflecting current estimate assumptions; (2) an extra provision reflecting the level of risk assumed; and (3) a final provision designed to defer, if necessary, all profit at issue. While the first two components are familiar point-in-time calculations performed by a capable valuation or modeling platform, the final component, referred to as the *contractual service margin* (CSM), has several complicating features.

In particular:

- The CSM must be established for a group of policies in total as at their initial recognition, and the value of the CSM must be calculated at this group level at all future reporting dates by rolling forward the previously reported value with a multiple-step formula. Some components of that formula can only be obtained by multiple projections of member policies by an actuarial system that must be then aggregated to the identified groups.

- Insurance companies expect to have hundreds or thousands of individual groups each with their own CSM balances to store and roll forward.
- The basic policy reserve and risk margin components are adjusted regularly for changes in current and assumed future experience, with portions of these adjustments impacting earnings and the remainder offset by increases or decreases in the CSM.
- A portion of the CSM balance for a group is released into profit each period using an allocation ratio that reflects the current and future service patterns of all surviving member policies.

The need to manage the CSM balance storage and recalculation is a major focus of companies' reassessment of their financial reporting systems and processes under IFRS 17, and the actuarial elements of these calculations are pervasive.

Another fundamental change under IFRS 17 is the definition of reported revenue. This is no longer based on insurance premiums paid, but rather on the expected costs of those benefits in the reporting period based on the actuarial estimates in the latest valuation. This again requires a timely actuarial calculation reflecting detailed policy characteristics, and most likely based on both the opening in-force file and policy transactions during the period.

The remainder of any paid premium above the reported revenue must be accounted for by a change in one of the three components of the liability, and again an actuarial calculation is needed to decide how much each component is adjusted. Remember that the CSM component is deferred future profit, which is regularly amortized into income, but since its balance is also being adjusted by regular experience gains and losses and by assumption changes, this pattern becomes rather difficult to predict or explain.

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Accordingly, an intrinsic feature of the new standard is a requirement for disclosures that help to reveal the movement of the various components of liabilities and their contributions to revenue and earnings. This again will require a multiple-step analysis of the various components of the liability calculations and the impacts of changes in assumptions from the prior reporting date, which is effectively a much more sophisticated movement of reserves analysis than has been seen before.

HOW WILL THIS IMPACT FINANCIAL REPORTING PROCESSES?

Insurance companies have long lived with complex reserve calculations that have been managed and explained (with varying degrees of success) by valuation actuaries, typically days or months after the reporting has been done. The actuarial processes within the reporting cycle culminated in much simpler communication from actuary to accountant that confirmed the new reserve balance for each reporting line of business. The accountant would report the general ledger premiums and investment income as revenue, and deduct the claims, expenses and increase in reserves. The net balance essentially was the earnings before tax. It was up to the actuary to maintain controls, and satisfy the auditors on his reserve calculation systems and processes, and his impact on statements were not much more than that one line.

Now the game is changing. Actuarial systems must track possibly thousands of group-level CSM balances, perform multiple projections on starting and ending in-force files that contribute to income statements, balance sheets and required disclosures. They contribute key elements to the initially recognized CSM balances from new business actually issued, generate multiple other components of CSM changes, and help support the amortization of CSM into earnings. Yet it is likely that the actual roll forward of the CSM balances at group level will be done in a new engine outside the actuarial platform.

In addition to the generation of the CSM and other components of the actuarial policy liabilities, the actuarial systems must produce detailed calculations of expected insurance service costs to feed the revenue lines of the income statement and any related disclosures or reconciliations.

All these calculations must be performed in a timely and controlled fashion and the results must be aggregated from policy to group level, or to portfolio and other reporting levels, according to reporting needs. This will most likely require a new comprehensive IFRS 17 subledger that smoothly and reliably feeds posting entries to the general ledger to drive the new financial statement formats. In addition, that subledger must support all the public disclosures and internal analyses that will be required.

Clearly it must be friendly to multiple actuarial systems and to the actuaries who manage them, yet meet auditing standards. And those standards will imply a pervasive governance and control framework, transparency and auditability of all data lineage, and runtime efficiency.

It is no wonder that as this article is being written, a mere eight months after the publication of IFRS 17, companies, by and large, are still wrestling with many thorny questions. How will we accomplish the enhancement and integration of these complex calculations and data management processes in an efficient and controlled way?

It will take time to come to a full understanding of this new standard, and learn how to explain the earnings volatility and patterns of emerging financials to both management and the public. We will need to adapt our assumption-setting processes, reconsider accounting policy decisions, and develop new insurance policy design and pricing. And all that adaptation will require a progressive and complementary evolution in our analytic tools and reporting processes.

The answer will almost certainly involve adopting a flexible and scalable technology backbone. This technology backbone must be well-understood and controlled across the full solution—that is, a combination of actuarial modeling software driving the production of needed reporting data and the accounting sub-ledger and data management solution that accepts, aggregates and generates reports from that actuarial data. Clearly a complete integration of the actuarial engine and IFRS 17 accounting assembly system into a single product solution is extremely unlikely as long as companies depend on multiple actuarial platforms. At a bare minimum, however, there must be strong actuarial input into the initial design of the data layer and continuing actuarial coordination of the inevitable evolution in the overall solution design that will occur. ■



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