XIX

The Global Game of Insurance Company Valuation

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When the American Academy of Actuaries Valuation Task Force was asked to employ a "blank piece of paper" approach to researching the subject of valuation in the United States, it seemed only natural to investigate what our counterparts around the world are doing. To that end, a working group, established in May 1997, completed an 80-page report 7 months later covering 14 countries on six continents. (The countries included in the study were Australia, Brazil, Canada, Chile, Hong Kong, Germany, Italy, Japan, Mexico, the Netherlands, Singapore, South Africa, Spain, and the United Kingdom.) The report covered insurance liability valuation systems, the actuary's role in the valuation process, and the nature of the local economic, insurance, and regulatory environment. Approximately 82 percent of worldwide premiums are accounted for by these 14 countries and the United States.

Gathering information proved to be a time-consuming and overwhelming process. Contact people identified in the United States and the surveyed countries assisted the working group in collecting information on such topics as financial market indicators (such as gross domestic product per capita, saving rates, etc.); insurance market significance, as part of the country's economy and relative to the world; types of products offered, product trends, nonforfeiture requirements, etc.; investments made and allowed to support product offerings; the insurance regulatory environment; taxation, from both a policyholder and life insurance company perspective; liability valuation systems (e.g., gross premium valuation, net premium valuation, and how they relate to asset valuation); the minimum surplus requirements, including flat dollar amount, solvency requirements, and capital adequacy requirements; the number and types of external reporting systems and disclosures; and the role of actuaries in valuation.

Although the focus is on each country's type of insurance liability valuation and the actuary's role in this process, we analyzed some of the other related information above to provide the task force with perspectives on why a particular valuation system is in place.

One interesting comparison shows that insurance premiums per capita range from over $4,000 a year in Japan; $2,000 in Germany and the Netherlands; $800 to $1,000 in Australia, Singapore, and the United Kingdom; $500 for Canada and Hong Kong; $250 in Italy and Spain; and under $100 for Brazil, Chile, and Mexico. The comparable measure in the United States is $1,000.

On the product side, dominant product types seem to be correlated with the region. South American countries primarily sell group and social insurance related products. The Asian markets are relatively traditional with whole life, term, and some variable life business.

The European markets vary considerably. Spain and Italy are very savings oriented, with primarily annuity and endowment products (single-pay is very popular). The Netherlands offers mostly traditional products, with a large pension business. Similarly, Germany mainly sells traditional coverage but with a growing emphasis on indexed and equity participation products. The U.K. market has been moving toward investment-oriented products such as variable and index-linked products for some time now, with a more recent shift toward single premium products. In Europe (especially Italy, Spain, and the United Kingdom), the

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distribution of life insurance by banks (called "bancassurance") is growing quickly.

The investments allowed to support these products, the general capital market conditions, and the related valuation requirements vary. For example, equity investments are more popular in Brazil (due to its high inflation), South Africa, and the United Kingdom than in the United States. Most countries have explicit restrictions on asset allocation (e.g., maximum percentages for various asset categories), while Canada has "reasonable and prudent" policies.

The above background information provides some perspective on the subjects we're most interested in: liability valuation, surplus valuation, reporting systems, and the role of the actuary. The following section discusses what we learned on these subjects and how they may relate to the task force's effort.

Three Objectives

The Valuation Task Force has concluded that valuation should be approached from a broad and integrated standpoint, not solely as a reserve calculation. In other words, a consistent framework under which all risks are covered (but not necessarily at a 100 percent confidence level) should be used. The allocation of a valuation's results between reserves and surplus may depend on the objectives of the income statement. Similar principles are in place in the valuation system in Mexico.

The task force also came up with three objectives in designing the new valuation framework:

- Evaluation of a company's ability to execute various business alternatives;
- Evaluation of the adequacy of reserves relative to obligations; and
- Measurement of changes in reserves relative to obligations.

Let's review the three objectives and the degree to which the valuation framework in the surveyed countries relates to these objectives.

Evaluation of the ability of a company to execute various business alternatives. This objective will promote a capital adequacy framework such as the dynamic condition analysis. Australia and Canada have these capital adequacy requirements with projections including 3 and 5 years of new business, respectively Singapore also requires capital adequacy testing. The information is given to the regulators but is kept confidential. In contrast, the United States does not have these requirements.

Evaluation of the adequacy of reserves relative to obligations. This objective may involve a reserve adequacy framework such as asset adequacy testing. It is interesting that the United States is the only country with dual requirements of statutory formula reserves and explicit asset adequacy analysis for these formula reserves.

The reserve requirements in the countries studied can be categorized in three groups:

- Brazil, Chile, Germany, Italy, Japan, Mexico, and Spain require statutory formula reserves only.
- Hong Kong, the Netherlands, the United Kingdom, Singapore, and South Africa all use a broader net premium reserve system where all guaranteed benefits must be included. Most allow the actuaries some flexibility in choosing the assumptions underlying the reserve calculation. None, however, requires explicit asset adequacy testing except some justification for the valuation interest rates or some demonstration of a prudent and satisfactory relationship between assets and liabilities.
- Australia and Canada use gross premium reserves and rely on the actuarial profession to define best-estimate assumptions. A provision for adverse deviation is required in Canada but not in Australia.

Although half the countries have formula reserves, there is a trend toward allowing the actuary more flexibility and discretion in valuing the inherent risks.

In addition to reserve requirements, solvency requirements are becoming the norm where most countries in the study have some form of the risk-based capital (RBC) framework, similar to that in the United States.

Measurement of changes in reserves relative to obligations. This objective is related to the income statement. The change in resources can be more volatile under the Canadian system since it allows profits to be front-ended. In Australia, earnings are allowed to flow in relation to the key driver(s) of risk underlying the business.

For all countries examined (except the United Kingdom), statutory and Generally Accepted Accounting Procedures reporting systems are essentially the same. For most countries, the tax system is materially the same as statutory or uses statutory data without revision. In contrast, the United States has at least three reporting systems.

As shown above, the valuation systems in Australia, Canada, and Singapore incorporate requirements that meet all three objectives. In particular, the Australian system is most holistic in that all three parts of the valuation requirements use the same underlying framework and methodology but not necessarily the same assumptions. Australia's solvency requirements in particular are not formula driven and therefore can be more reflective of the individual company's risk profile.

Other Findings

Other interesting findings, which do not necessarily directly address the above three objectives, include:

- Assets and liabilities should be valued consistently South American countries, for example, combat high inflation by indexing both assets and liabilities. Under South Africa's financial solvency valuation, this is an explicit requirement.
- Regulations need to provide flexibility if they are to adapt to changes in the marketplace. Australia, Canada, Germany, Japan, Mexico, Spain, South Africa, the Netherlands, and the United Kingdom all have undergone changes to their key insurance legislation in this decade to reflect new needs in the marketplace.
- A good working relationship between actuaries and accountants is essential. In Canada, for example, this has allowed the appointed actuary to take on more responsibility.
- Insurance is regulated solely by the federal government in all countries included in the study, except in Canada where the provinces exert some regulatory authority In most countries, the same regulatory body also regulates other financial institutions. European countries are also subject to the European Community requirements. These tend to be non- specific in terms of liability valuation.
- The appointed actuary concept is established primarily in countries where strict formula reserves are not required (Australia, Canada, Hong Kong, the Netherlands, the United Kingdom, Singapore, and South Africa). Appointed actuaries are required to report to a company's board of directors as well as to regulators.

The Role of the Actuary

As actuaries, the members of the working group were very interested in the role our actuarial counterparts play in the valuation process elsewhere.

Qualification standards: More than half the countries require actuaries to go through an examination process similar to that in the United States in addition to being members of an actuarial organization and having some work experience. Brazil, Chile, Germany Italy Mexico, and Spain, however, do not have such an examination system. Instead, they require college education and work experience.

Appointed actuary requirements: Australia, Canada, Germany, Hong Kong, Singapore, South Africa, and the United Kingdom have appointed actuary requirements that may subject an appointed actuary to higher standards than other actuaries. In Mexico, an external actuary is required for a company's reserve opinion. In the Netherlands, the appointed actuary is an independent person who cannot be on the company's board.

Duties: The range of valuation duties varies widely and may cover one or more of the following functions:

- formula reserve compliance;
- reserve adequacy (providing some analysis or an opinion that is more than formula reserve compliance but less than asset adequacy analysis as defined in the United States);
- solvency (some form of RBC framework); and
- capital adequacy (some form of dynamic solvency analysis).

Brazil, Chile, Germany, Italy, and Spain require compliance with the formula reserve provisions of their regulations. Some countries, however, require that technical notes addressing company experience be filed at the time products are priced.

Japan, Mexico, the Netherlands, and South Africa require actuaries to provide a reserve adequacy opinion/ certification. Mexico requires that an external actuary provide such an opinion. Japan requires certification that policy reserves are suitable, including at least 5 years of projections.

Hong Kong, Singapore, and the United Kingdom also require that appointed actuaries provide a reserve adequacy report. A report on minimum solvency margins is also required for these countries. The appointed actuary in Singapore is further responsible for performing capital adequacy analysis.

Australia and Canada require annual valuation reports to demonstrate reserve adequacy solvency, and capital adequacy. None of the countries in the study require asset adequacy analysis for reserves only.

Reporting relationship (internal and external): For those countries where the appointed actuary concept is used, appointed actuaries must be appointed by the board of directors and need to report back to the board on their findings. In Australia, for example, the appointed actuary must provide a private and confidential report on the financial conditions to the board. The report must include liability valuation and an assessment of the company's compliance with solvency and capital adequacy requirements. A copy of the report is also submitted to the regulators on a confidential basis.

In most of these countries, the appointed actuary is also required to provide reports to the regulators. Even in countries where the appointed actuary system is not in place (Italy, for example) the actuary is required to report any ongoing problematic situations to the appropriate authorities.

This research illustrates many things we may learn from other actuaries around the world in designing a valuation framework, things we can do as well as things we want to avoid. We hope this research has helped to make the world a touch smaller. It's also very informative to see how the U.S. valuation system stacks up against the 14 countries under study I'd give our current system an "above average" rating in this comparison. The challenge for our actuarial profession is to move our system toward "world class."

Members of the American Academy of Actuaries Valuation Work Group included Bill Bugg, Larry Gorski, Scott McClester, Debra Miller, Bruce Moore, Meredith Ratajczak, Ed Robbins, Mani Sabapathi, Marc Slutzky, Dan Kunesh (Vice Chair), and Shirley Shao (Chair).