3. The Role of the Actuary

Actuaries play many roles in the insurance industry. One of the most complicated tasks an actuary can perform is large-scale corporate modeling in an attempt to shed light on the relationship between value, performance and risk. In specialized situations such as mergers and acquisitions, it may be appropriate to have external actuaries perform the work rather than attempt the task with internal resources.

3.1 Actuarial Appraisal Models

Actuarial appraisal models are the backbone of any valuation exercise. These types of models are more generically known as discounted cash-flow (DCF) models. Current practices typically use the local statutory basis for liabilities and the market value of assets as the starting point in developing a DCF appraisal model for an insurance company. This discontinuity in the treatment of assets and liabilities may be addressed by changes being discussed in future international accounting standards.

A well-constructed appraisal model calculates the emergence of after-tax distributable earnings of a product, line of business or company such that in both early and late projection years and under various assumptions, conditions and levels of granularity the "profit signature" of the business (level and timing of emergence of earnings) is fairly represented. The implicit assumption is that distributable earnings can be repatriated to the home office without restrictions.

Accurate appraisal models can be developed in sophisticated actuarial software, spreadsheets or, more typically, a combination of the two. The decision as to which platform to choose depends on many factors, including the types of questions that need to be answered by the model, the nature of the business, the timeframe to complete the analysis and the budget to complete the task.

An appraisal model is constructed to project the cash flows deriving from an enterprise under a defined set of actuarial assumptions and economic conditions. Models can be run on a policy-by-policy basis (seriatim) or grouped into model cells that map policies into representative products, ages, policy characteristics and issue years. The characteristics of each modeled product are carefully constructed to reproduce the expected cash flows and policyholder values arising from it.

3.1.1 Modeling Questions

Models are created to provide insight into the current and projected financial condition of the enterprise in a reasonable timeframe. As such, the model must be flexible and robust enough to answer a wide range of questions from various interested parties. In the case of an appraisal model, the question is, *"What is a company potentially worth, given a certain set of assumptions?"* A well-constructed appraisal model, originally designed to project the emergence of cash flows, can later be used to answer budgeting questions, questions about the embedded value or questions about the relative risks the company faces associated with fluctuations in actuarial assumptions and/or macro-economic conditions.

3.1.2 Model Validation

The degree of faithfulness or fit of the model is determined by two important tests—a "static" validation and a "dynamic" validation. The static validation confirms that the initial values for reserves, as well as the face and policy, count in the model match company records as of the valuation date. Note that it is important with international transactions to accurately validate riders in addition to base policies, as the percentage contribution of riders to earnings can be significantly greater than in an investor's home market.

A dynamic validation looks at the cash flows produced by the model in the first period(s) of the projection and compares them to historical periods. A dynamic valuation is a far more artful and subjective exercise because it must strike a balance between matching the results of previous periods while taking into account any prospective changes in assumptions, production changes and deviations in recent past experience.

3.2 The Importance of the External Actuary

Actuarial analysis is performed in all M&A transactions involving insurance portfolios. Unlike other types of economic enterprises, the nature of insurance requires a long-term perspective to realize value. Traditional measures used by investment bankers such as price/earnings or price/book do not adequately capture insurance valuations. Internal actuaries generally do not have the experience or perspective to perform an unbiased appraisal that will withstand the scrutiny of an international audience. Because of this, investment bankers typically rely on external actuaries to develop an appraisal report in support of the transaction. This report is often used as the primary indicator of value to both potential investors and the seller. The external actuary's role becomes even more important in international transactions, as potential investors are faced with the daunting task of making sense of a bewildering array of unfamiliar terminology, alien products and unique local accounting practices.

3.3 The Appraisal Report

An appraisal report goes far beyond the development of appraisal values. An actuarial appraisal provides a unique opportunity for a company to understand their operation at far greater depth and, most likely, from a different perspective than they have previously. It provides the seller with the imperative to build modeling tools, collect experience data and perform expense analysis. There is a strong incentive to develop and strengthen communication links inside the organization, increasing the effectiveness of the management team and the chances of a successful sale. Finally, there is the opportunity to determine metrics to measure performance going forward, including embedded value and budget actual to expected.

An actuarial report can be intimidating, particularly to a non-actuary. In an international transaction, the actuarial appraisal may be the only technical document that many individuals are able to read. This places an additional burden on the external actuary to provide added-value insight into the company. Although an appraisal report may appear to try to reduce a company into a series of discounted after-tax earnings, a thorough actuarial report will present the analysis in the context of the market in which the company operates, making reference to how the company prices its products, how it distributes them and how it invests its assets. In the best case, the external actuary partners with the client in a management consultant role, looking at the operations with a critical eye towards maximizing value and managing enterprise risk.