



SOCIETY OF ACTUARIES

Article from:

Risk Management

March 2008 – Issue 12

Performance Measurement within an Economic Capital Framework

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Introduction

With the increasing number of insurers around the world implementing economic capital (EC), improved performance measurement is often cited as a key expected benefit from such implementations. This article discusses how this improvement in performance measurement can be achieved through the use of a framework that explicitly links risk, capital and value.

The article begins by describing the framework in broad terms. A brief discussion about how measures based on shareholder value are more useful than other commonly used measures when looking at insurance company performance follows. Next, there is a more detailed review of how the economic balance sheet and related measures of EC and economic value can be used to target and measure performance. Some implications for the U.S. insurance market are then discussed. Finally, a high level overview is given of an EC implementation approach that uses the economic balance sheet and that can be executed relatively quickly.

While the focus of the article is on publicly listed life insurance companies, the concepts can equally be applied to property-casualty insurers and non-listed insurers such as mutuals.

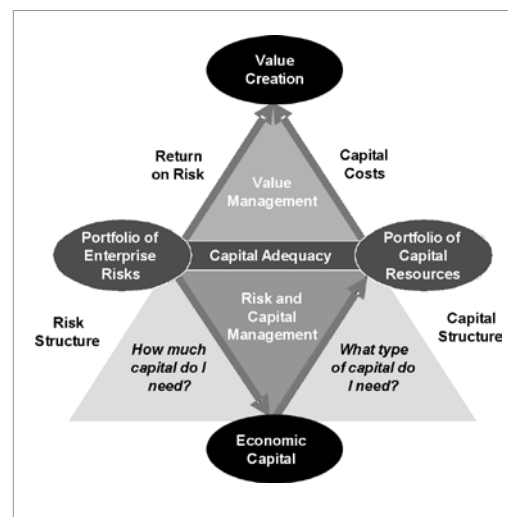
The Risk-Capital-Value Framework

Among the many reasons given by companies for wanting to calculate EC, most relate to management wanting to make better informed decisions. Improved performance measurement through the use of EC is an important tool in this decision making process. However, by itself, EC does not give any real measure of business performance, but rather gives a measure of the

risk in the business. Thus, in order to use EC to measure performance, some related measure of return is also required.

The Risk-Capital-Value (RCV) framework provides the required link between economic capital and performance measurement. This framework—which shows that risk, capital and value are inextricably linked—can be used to set targets and measure performance in a manner that is aligned with management’s primary objective of creating shareholder value. Figure 1 shows a graphical representation of the RCV framework.

FIGURE 1: THE RISK-CAPITAL-VALUE FRAMEWORK



The RCV framework begins with the understanding that a company’s management must focus on two fundamental “portfolios” when striving for value creation, namely its portfolio of businesses and related risks and its portfolio of capital used to finance its businesses. EC is a true measure of the risk in the company (i.e., one that is not distorted by accounting or



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regulatory regimes) – this tells management how much capital they need. A next step, not explored further in this article, is to decide on what type of capital is needed. Management expects to earn a return relative to the risk it has retained—this drives shareholder value creation. However, holding capital against those risks has costs associated with it costs that which reduce value creation. Using this framework, management can aim to maximize shareholder value by relating decisions about the risks it takes to decisions on the capital it uses.

Value-Based Performance Measures

The RCV framework focuses on value-based metrics for measuring performance. Historically, value-based metrics, such as embedded value (EV), have not been as widely used in the United States compared to many other countries. GAAP Return on Equity (ROE) continues to be the most popular measure used in pricing and performance measurement in the United States. The 2006 Tillinghast Pricing Methodology Survey (which examines the pricing practices of U.S. life insurers) indicates that less than 30 percent of life insurers in the United States use EV measures in pricing. This percentage would be even lower if adjusted for companies that have a European parent and are required to calculate EV. The continued dominance of GAAP ROE is somewhat surprising given its widely recognized shortcomings in measuring the performance of life insurers.

For many industries, ROE is a good indicator of shareholder value created or destroyed over the period. However, for life insurers, GAAP reserving and reporting requirements result in GAAP equity being a poor representation of the value of the business attributable to sharehold-

ers. Similarly, GAAP earnings are often a poor measure of shareholder value created or destroyed over the period. Some specific aspects of GAAP reporting that result in ROE often misrepresenting the performance of insurance companies include:

- Under GAAP reporting, life insurers are required to include prudent margins in the calculation of their liabilities. This results in GAAP equity no longer representing the true value of shareholder interest in the company.
- Asymmetry in rules around how and when assumptions can be changed is another aspect of GAAP reporting that makes GAAP ROE a weak performance measure. In the event of a loss, assumptions are “unlocked” and all expected future losses recognized immediately. But in the event of higher than expected profits emerging, assumptions are not adjusted accordingly and the increase in value is not reflected immediately, but continues to emerge over time.
- In an attempt to report normalized earnings, GAAP reporting requirements can lead to economically similar items being treated differently. For example, some items are capitalized and amortized over time, while others flow through earnings in that period. Similarly, some items are reported “below the line” and impact equity with no direct impact on earnings. While there may be logic to these allocation rules from the perspective of normalizing earnings, they can be distorting from the perspective of measuring the true performance of shareholder interest over the period resulting in GAAP ROE being a poor indicator of increases or decreases in shareholder value.

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- GAAP reporting—and hence GAAP ROE—makes no explicit allowance for the risks inherent in the business. This makes setting ROE targets for different products (or businesses) and comparing actual performance for these products (or businesses) challenging.

In isolation, some of these distortions can be easily identified and allowed for, but in practice, with insurers selling multiple products across different markets and geographies and the level and mix of business constantly changing, it can be virtually impossible to monitor and adjust for all the distortions.

Now let us look briefly at EV. EV is broadly defined as the net worth (NW) plus the value of in force (VIF) less a cost of capital (COC). In practice, the EV is driven off the regulatory balance sheet, with the VIF representing the shareholder value contained within the assets backing the regulatory liabilities. It is valued on a free cash flow basis, using best-estimate assumptions, and allows explicitly for the risks within the cash flows. The exact manner in which risk is allowed for depends on the EV approach used (e.g., “traditional” EV or market-consistent EV). The COC recognizes the costs of holding risk capital, and similarly, the manner in which this is calculated and interpreted depends on the EV approach used.

By focusing on the economic fundamentals and “looking through” distortions related to regulatory accounting requirements, EV effectively gives us a better measure of the true shareholder value of the business. The change in EV over time (commonly referred to as EV earnings) represents the change in shareholder value over time. As such, EV and related measures are superior measures of shareholder value creation than the more commonly used GAAP ROE.

Irrespective of the exact methodology used, it is important that this value-based approach make proper allowance for the risk in the business. Shareholder value is only created when the return on EV exceeds the return required by shareholders, consistent with their degree of risk aversion (which in a market-consistent world, is assumed to be the market’s view of risk). In practice, the use of market-consistent EV (MCEV) has increased considerably over recent years, with insurance companies looking to target and measure performance using a framework that measures risk in a manner consistent with that implied by the market. This is the basis for the economic balance sheet approach discussed in the next section.

Note also that the EV of an insurance company represents the “book value” attributable to shareholders, calculated on an economic basis. As such it excludes any consideration of franchise value associated with expected future new business. In practice, shareholders are interested in the total return on their investment (i.e., the change in the value of the company plus any dividends received) and so franchise value also needs to be considered when targeting performance. This is considered further in the next section.

Economic Balance Sheet Approach

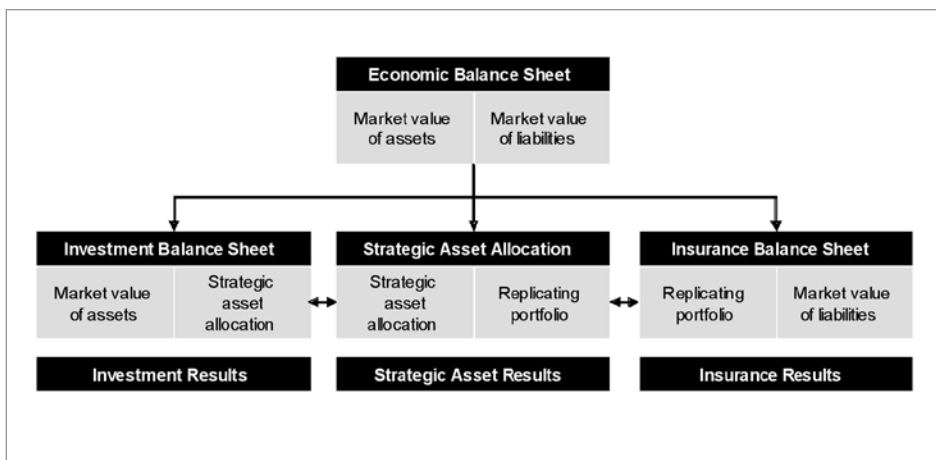
Expanding on the above, let us examine at a high level the type of framework being used by a number of insurers to manage their businesses. This will provide insight into how the concepts and relationships embodied by the RCV framework are being applied in practice. An increasing number of insurers, particularly in Europe, are using frameworks based on an economic (i.e., market-consistent) view of the balance sheet with assets and liabilities

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sults. Investment results can be further analyzed between those decisions related to strategic asset allocation decisions and tactical investment decisions. This type of analysis, illustrated in Figure 3, is analogous to that used frequently in the evaluation and attribution of asset management results. See Figure 3.

FIGURE 3: ANALYSIS OF IN FORCE PERFORMANCE UNDER AN ECONOMIC BALANCE SHEET APPROACH



New business performance targets need to be linked to franchise value. Franchise value reflects shareholders' expectation of new business profitability. So to the extent new business value generated is lower than expected, franchise value (and hence shareholder value) will be destroyed. Since policyholders are risk averse, they will not be expected to invest their money with a business that does not hold sufficient capital. We can again see the connection between risk, capital and value: a company needs to hold sufficient capital to maintain its franchise value, but holding more capital increases frictional costs and hence reduces value. In practice, back-solving for implied shareholder expectations for future new business value from the franchise value requires considerable judgment, but the results can provide valuable insight to management.

Implications for the United States

The framework described in this article is increasingly being adopted by European insurers. This is related to the fact that the above framework is consistent with the new capital requirements being introduced by a number of regulators. It also relates to with the direction in which Solvency II requirements are heading as well.

In the United States, an increasing number of companies are implementing EC frameworks. Unlike Europe, the main external driving force in the United States so far appears to have been the rating agencies, which have been paying much more attention to EC when reviewing an insurer's overall risk management process. The introduction of risk-based principles into U. S. insurance regulations has also had an impact. In the United States, there does not yet appear to be one particular EC calculation approach that is dominating others. A number of U.S. companies are using approaches that begin with the statutory balance sheet and project the portfolio until runoff, while others are using approaches that are based off the economic balance sheet over a one-year time horizon (along the lines described in this article).

Historically, economic value measures, such as EV, have not been that widely used in the United States, with the main exception being the U.S. subsidiaries of European multinationals. With companies moving towards using EC frameworks as part of the risk and capital management process, we will likely see an increased use of value-based measures, irrespective of the specific approach to EC chosen. Companies that aim to use EC for managing risk and capital, but continue to use GAAP ROE or similar measures to target and measure performance, may struggle to optimize decision making in the face of conflicting measures.

It is unlikely that U.S. insurance companies and their shareholders will suddenly stop being interested in GAAP ROE, but we may see ROE targets being adjusted to attempt to allow for aspects of risk captured by the EC calculations. Use of several measures simultaneously is also a feasible approach. Another practical issue is that developing an RCV framework is not an overnight exercise. It should only be used as the main driver of business decisions and performance measurement once it is stable and has been rigorously tested. Additionally, a move to managing the business using this risk-based approach can be a politically sensitive and culturally challenging exercise. Buy-in at all levels of the organization is important for it to succeed. Communication with external stakeholders is another critical success factor.

Fast Track EC Implementation

One of the reasons for the popularity of the economic balance sheet approach in the United States is that usually it can be implemented relatively quickly. By following a few key steps focused on producing fast and efficient results companies can produce robust EC results in a short period of time. These results can facilitate substantive discussion with external parties such as rating agencies and regulators. In addition, they provide a strong platform from which longer term, more sophisticated EC implementation can be developed. The four major steps of this approach are:

- Develop the economic balance sheet itself, which companies are usually able to do without the need for further construction and implementation of complex models.
- Identify the key risks to be tested and determine appropriate stress test(s) for each of those risks.
- Run each of the stress tests and recalculate the economic balance sheet, giving the required EC for that particular risk.

- Aggregate the results from the different stress tests using a correlation matrix to give the total company EC.

Conclusion

This article has shown that an RCV framework—combining consistent measures of EC and EV—can be used to set performance targets and measure actual performance of insurance companies in a manner that is consistent with management's primary objective of shareholder value creation.

In particular, the economic balance sheet approach provides a framework with capital and value being measured using a market-consistent approach. This approach is increasingly being used by insurers in Europe and the United States to calculate EC and manage their business. The relatively short implementation times that can be achieved with this approach contribute to its popularity, especially with companies that operate under time constraints. ♦