

Insurance

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New perspectives on measuring insurance liabilities, risk, and capital

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Insurance company financial reporting and performance measurement are going through a significant transformation. Insurers are beginning to look at their business based on what many refer to as the ‘economic value framework.’ Michael Lockerman, Larry Rubin, Xiaokai Shi, and Randy Tillis show how, under this framework, insurance companies can determine the economic value of the capital invested in their business and the economic value of earnings to derive a risk-adjusted return on capital.

NEW PERSPECTIVES ON MEASURING INSURANCE LIABILITIES, RISK, AND CAPITAL

Management creates economic value if return on capital equals or exceeds the cost of capital.

However, it has always been difficult to quantify the financial health of insurance companies in an accurate and timely fashion. Increasingly, insurers who seek to raise capital or meet solvency requirements are trying to add clarity and certainty in order to reassure investors and regulators. These efforts are resulting in a significant transformation of insurance company performance measurement, especially for risk, capital, and liabilities.

Many insurers are beginning to value their business and make strategic decisions based on what many refer to as an ‘economic valuation framework,’ which focuses on tracing the timing and ‘volume’ of values that is created in various activities, such as sales, servicing, investment, and risk management. Companies’ internal needs to facilitate and justify their decision-making, as well as pressures from regulatory and ratings agencies, are driving the adoption and implementation of this economic valuation framework. Regulators are moving their solvency framework to ‘principle-based’ approaches, and accounting standard setters are proposing ‘fair value’ reporting, which should lead to increased comparability.

This change is revolutionary, and very few insiders doubt that the industry is moving toward a ‘next-generation’ view of its business and financial reporting. However, it is never easy to move away from traditional thinking. The industry needs to resolve many critical issues in its move toward a more understandable and comparable valuation and reporting system.

Economic views and market-consistency are the keys toward the move to the next generation. There are many promising economic and fair value concepts and proposals, and now is the time to connect them.

Issues in next-generation reporting

Among the key issues that have emerged regarding the economic valuation of insurance businesses are the ways in which risk margins are calibrated and the recognition of ‘gain at issue’ or ‘no gain at issue.’ Both issues can be traced back to the original purpose of valuation reporting: to accurately reflect changes in shareholders’ value.

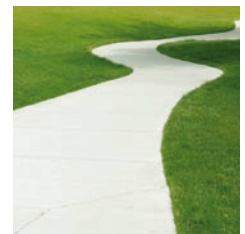
In a world with perfect, readily available information and no transaction costs or liquidity concerns, the risk margin for insurance would compensate investors for bearing risk and be reflected in the equilibrium price of the contracts themselves, as is the

case with any other investment transaction. However, the risk margin can be distorted by regulatory restrictions, significant disparities in information, a variety of frictional costs, and complications arising from economically inefficient decision-making by policyholders.

When accounting for market inefficiencies, analysts generally take one of two positions: either there is a ‘gain at issue’ – in which the company creates value simply through the sale of an insurance contract – or there is ‘no gain at issue.’

Proponents of ‘gain at issue’ contend that insurers should be able to recognize an immediate gain for any premiums expected to be received during the life of a contract that are over and above those implicitly required by the risk margin associated with the business being written.

‘Gain at issue’ advocates assert that economic rent, or amounts that exceed compensation for bearing risk, can be generated through inefficiencies in insurance sales, such as insurers’ market knowledge and experience in pricing and policyholders’ inability to fully value all the options and guarantees in their contracts. The sales process itself can result in policyholders paying a higher price which generates economic rent and, therefore, a gain at issue for the insurer.



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On the other hand, those who believe in ‘no gain at issue’ view the premium received as the primary or even the only indication of the appropriate risk margin required by the market.

Many proponents of ‘no gain at issue’ acknowledge the possibility of economic rent, but question whether it can be reliably measured. They have raised other concerns as well, including whether income from ‘gain at issue’ could be recognized in the absence of a legal obligation on the part of a policyholder to pay future amounts that exceed the costs of providing benefits and services.

‘No gain at issue’ advocates also have a logical argument in their favor: the economic rent which would create ‘gain at issue’ theoretically cannot exist in an efficient market – and fair value accounting assumes, ipso facto, that markets in fact are efficient.

The debate over ‘gain at issue’ versus ‘no gain at issue’ is ongoing. Some insights can be gleaned by revisiting the primary purpose of financial reporting: providing investors with comparable information with which to make decisions.

The emergence of market-consistent reporting

The new generation of valuation or financial reporting for insurance companies addresses two major issues that have affected industry valuations: first, the economic view of value creation (i.e., how, when and how much value is created); and second, market consistency (i.e., the transparency, reliability, and comparability of the financial figures used by investors).

Embedded value has long been used, especially in Europe, to measure the underlying risk and value of insurance liabilities. It is calculated by projecting relevant cash flows using both market and non-market assumptions and then determining the present value of future profits using a discount rate typically based on equity returns plus a risk allowance.

However, conventional calculations of embedded value are often flawed because of inconsistent valuation of options embedded in the underlying insurance products and investment assumptions that are not market-consistent. To address these defects, many insurers employ market-consistent embedded value methodologies. These methodologies value guarantees and options using methods consistent with those used for valuing other financial assets, and use a risk-neutral approach to set investment assumptions and discount rates.

Market-consistent embedded valuation has achieved growing momentum in Europe, where more companies are employing it to calculate their embedded value and many investment analysts view it positively. As part of a shift to market-consistent reporting, it has increased transparency and comparability, reducing the information risks assumed by investors.

Interpreting ‘market-consistent economic capital’

Although a market-consistent approach to quantifying economic levels of capital has

not gained wide acceptance, further development, including disclosure of insurers’ methods of calculating economic capital, can enhance valuation and reporting.

In the past, the capital adequacy framework relied on regulatory or rating agency measures; today, the framework is based on the determination of company-specific risks. Although there are a number of different approaches to modeling economic capital, current practice focuses on ‘fat-tailed events’ to set up capital hedging against ‘low-probability, extreme-loss events.’

While economic capital is defined under Solvency II as an amount that would allow an insurer to absorb all losses within a year with a 99.5% probability, it is still unlikely to represent a true level of economic capital, given market realities that make recapitalization after insolvency unlikely.

Instead, it may be more appropriate to define market-based economic capital as the level of capital needed to absorb the first losses of an insurance portfolio, such that an insurer can go to the capital markets to raise the next dollar to fund further losses without paying an additional equity risk premium.

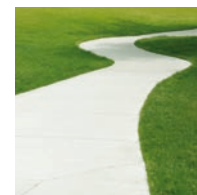
Economic capital commonly is defined as management’s view of the risk of the business. However, similar to the move from embedded value to market-consistent embedded value, in which the market’s view of returns replaced management’s view, economic capital should be based on the market’s view of risk, not management’s.

Considering that economic capital and the cost of capital are both market numbers, the risk margin required to accept insurance risks should be identical between insurers and other market participants wishing to be compensated for taking the same insurance risk. This economic capital model and cost of capital can be used to determine the required return on the liabilities, which indicates the appropriate risk margin demanded by the market.

Any differences between companies would be due to differences that arise in attempting to measure either economic capital or the cost of capital, including information risk; operational risk and frictions; and ‘unknown unknowns.’ Each of these can affect the quality of economic capital modeling.

Information risk stems from limited transparency associated with business complexity and insurers’ unwillingness to fully disclose the information they possess in order to protect their competitive advantage. This lack of transparency is so pervasive that insurers may require a higher risk margin for acquired business than for business they write themselves.

Frictional costs, in which insurers have to operate under higher financial costs and capital requirements, also play a significant role in determining risk margins and valuing insurance liabilities, even though the risk in any purchase price theoretically should compensate the investor only for cash flow uncertainty. Additionally, operational risk – such as potential losses due to fraud, market conduct, rogue traders, failure of operating systems, or physical disruptions – can



NEW PERSPECTIVES ON MEASURING INSURANCE LIABILITIES, RISK, AND CAPITAL continued

contribute to the margins included by the market, even if such risks are difficult to quantify or model.

Finally, few models reflect 'black swan' events, which are rare, high-impact, hard-to-predict events. While difficult to model, such 'unknown unknowns' are the major drivers behind many business failures. As Nassim Nicholas Taleb wrote in *The Black Swan: The Impact of the Highly Improbable*, 'Almost all consequential events in history come from the unexpected.'

While economic capital modeling may effectively portray the carrier's risk, it is uniquely calibrated and not transparent to investors, policyholders, or other stakeholders for reasons ranging from the complex nature of the economic modeling process, the intricate nature and longevity of the products, and additional risks that are difficult or impossible to reflect in the cash-flow models.

Moreover, even industry insiders question the quality of their economic capital analyses. A recent survey of insurers by PricewaterhouseCoopers found that 50% of the respondents

believe their economic capital data lack completeness and quality, while 75% believe their data timeliness needs improvement. Moreover, many analysts believe that insurer internal models lack comparability, consistency, and auditability and are too theoretical and subject to management manipulation. Consequently, any further modifications of value measurement would do well to focus on increasing transparency and addressing analyst concerns.

Ultimately, economic capital, and the cost of capital as contemplated and implemented today, is not sufficiently market-based to measure whether an insurer can expect to earn more than its cost of capital. Economic capital modeling is a valuable and powerful tool to understand the risks and rewards of an insurance enterprise, but it has limits: it is not a way to capture all risks or replace business judgment.

Rethinking the performance measurement approach

Insurers can best reflect the condition of their businesses through the use of a performance

measurement approach that incorporates the market's view of risk and the level of compensation the market demands to accept that risk.

In defining an approach to performance measurement, the first step is to determine the appropriate level of economic capital in a way that maximizes transparency and the use of market information.

Several sources can provide guidance. The most direct of these is the minimum capital to satisfy a target debt rating. Other sources include the capital set-aside in securitization deals or in financial reinsurance transactions and the economic capital created from an internal projection of cash flows, which can be adjusted for risk premiums observed in more liquid markets. Through disclosure of methods and assumptions employed, the market ultimately will reach a consensus on such values.

In addition, any changes in these values from one period to the next need to be transparent. Depending on the underlying products, companies will need to develop stable and understandable

analytics to enable this work. For example, these analytics could split the market and non-market information or could attempt to address each of the relevant risk margins individually.

Measuring the performance, or change in capital adequacy of an insurer, depends on the type, amount, and transparency of information that is provided to investors, regulators, and the public. Just as in the shift from embedded value to market-consistent embedded value – in which market views replaced management views – economic capital based on a market view of risk can be more transparent and comparable across entities.

The insurance industry has many tools available to assist it in providing clearer, cleaner, and more useful information to interested parties. Whether the approach is 'gain at issue' or 'no gain at issue,' more information and disclosure around capital needs and risk returns are necessary. With this information, the move to market-based performance measurement can begin in earnest. □

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