

A Brave New World

Risk Measurement and Capital Management in the Insurance Industry

OVER A REMARKABLE THREE-YEAR PERIOD OF WORLD HISTORY, a number of events occurred that, in a variety of ways, have triggered long-term changes in the business risk environment in which the insurance industry operates.

Against a broad geopolitical backdrop of global terrorism, businesses and individuals have had to deal with a protracted economic decline, a bear equities market, and poor credit conditions, all of which put a sharp brake on the world economy. The risk environment was only intensified by the collapse of several highly visible corporations and financial services organizations, triggered by extreme credit risk and lack of disclosure transparency.

These events and their aftermaths have led investors and *Fortune* 1,000 boards of directors to try to measure and understand how much risk companies—and particularly insurance and other financial services companies—are facing today. For insurance organizations, well-accepted paradigms and assumptions about how they quantify and manage risk on their balance sheets are now in question.

The insurance industry has entered a new age—a new world of risk and opportunity. Without question, new kinds and dimensions of risk are now being identified. Old assumptions about risk, cost of risk, and return on capital are being re-examined. Recognized risk management tools and processes, to the extent that they were formally codified at all, are under scrutiny, and many are being either discarded or reworked.

Historically, insurers have done a good job in understanding risk at the level of individual product lines. At this level, they have drawn on their experience and historical performance data within business units. However, organization-wide risk measurement has not been the key driver in capital allocation and performance measurement programs. That is now changing.

Expectations Are Rising

Pressure on insurance companies from analysts, rating agencies, and investors to improve their financial performance will only intensify. It's critical for insurance

companies to implement new risk measurement processes that will support the accurate, understandable, and transparent

public reporting of their risk. Investors will want to understand how they're being rewarded for the risk companies are taking. Equally as critical will be refined and strengthened risk-adjusted return on capital investment strategies at the enterprise, business unit, and product-line levels.

Information technology is another driver of the new world of risk measurement and capital management. The emergence and convergence of transaction systems have not only improved operational efficiency and customer service but also have enabled the accumulation of enormous amounts of data. The abstract concept of "enterprise-level information" is now a reality. However, risk data aggregation is still not a universal practice. One roadblock to completing development of new risk frameworks is data availability. Bridging information silos and making robust use of enterprise-wide data warehousing systems require a behavioral change that will take time.

Beginning the Journey

Ernst & Young Insurance and Actuarial Advisory Services recently conducted a survey among the world's leading insurance companies to determine their current perspectives, perceptions, and approaches to measuring risk and managing capital.

Insurers were asked to describe their status on implementing a holistic risk and capital management framework, and a majority (66 percent) indicated that despite the recognized need to quantify risk and allocate scarce capital resources, they're less than halfway through implementation.

A majority of companies (75 percent) have a formal risk measurement and management framework at the corporate level, but only 15 percent have the capability of aggregating risk across risk elements, product lines, and business units.

Risk measurement frameworks are also relatively recent developments—with only 15 percent of respondents having them for more than three years and a full 60 percent saying their frameworks have been in place for three years or fewer.

While most respondents (90 percent) feel the benefits

FRANK SABATINI is a partner with Ernst & Young's Insurance Actuarial and Advisory Services in Hartford; **THOMAS CONWAY** is a partner with Ernst & Young's Insurance Actuarial and Advisory Services in Chicago.

of a sophisticated risk measurement/capital management system were worth the cost, they acknowledge that implementation is difficult. Some of the most significant challenges cited were automation/streamlining (73 percent), resources (63 percent), data limitations (40 percent), and cultural acceptance and buy-in (43 percent).

Taking Numerous Paths

Just as insurers address the issue of risk accountability and reporting in different ways, they also measure their risk in different ways. Unlike in other sectors of the financial services industry, there are no mandated standards or accepted norms. At a macro-industry level, this current state of affairs makes it impossible to characterize current risk issues with much specificity or to identify best practices.

Sixty percent of the companies surveyed said their risk measurement efforts were driven by three key issues: earnings volatility (29 percent), operational risk (18 percent), and solvency (13 percent).

Predictably, stock companies were most concerned with earnings volatility, while mutual companies were interested in operational risk and solvency. On the other hand, 32 percent of respondents volunteered other issues as of most importance to them—including capital risk, credit risk, and market value volatility.

It's also clear that companies have specific risk metrics they use predominantly. For example, to measure the overall impact of risk factors on their firm, they primarily do not use earnings at risk (EaR) or value at risk (VaR) but rather turn to the impact of risk on statutory surplus (46 percent), GAAP income (41 percent), economic capital/economic value (34 percent), and other internally developed risk measures (34 percent).

We also asked, separately, respondents' views of the usefulness of the statutory surplus measure (risk-based capital and minimum continuing capital and surplus requirements). The strong majority response (90 percent) was that it's valuable but needs modification to be truly useful.

However, it's important to note that only 50 percent of property/casualty companies and 29 percent of multi-line companies selected it. Further, 25 percent of the property/casualty companies said these measures were of no value to them, and an additional 13 percent indicated they were a burdensome requirement. Of the multi-line companies, 57 percent agreed that the statutory surplus measures are a burdensome requirement.

With growing understanding of the particular risks companies measure, we also wanted to learn how they quantify risk sensitivity. From the responses, it's clear that companies use multiple tools to quantify risk—and, perhaps not surprisingly, they range from the traditional to more complex and leading-edge. Of course, while measurement tools are critical, at the end of the day, business judgment, a blend of experience, indus-

try knowledge, and basic intelligence, comes into play—being cited by a strong 68 percent of respondents overall and over 70 percent of life, multi-line, and health insurers.

The next most used are assumption sensitivity testing (63 percent) and multiple scenario testing (56 percent).

A strong minority of companies today are doing some sort of stochastic sensitivity modeling (43 percent), and our experience suggests that stochastic analysis will be increasingly used because companies are recognizing the benefits of how risk elements can work together in different combinations and weightings. To date, however, companies are still more likely to do basic stress testing (75 percent for health, 95 percent for life, 50 percent for property/casualty, and 50 percent for multi-line) or business sensitivity (75 percent for health, 72 percent for life,



Do you like playing with numbers?

Here at Chicago Consulting Actuaries, we have a special regard for numbers: we turn them into ideas for our clients.

CCA is a fast-growing, mid-sized firm that is genuinely different from any other organization you may consider.

We have a number of openings for actuaries, both entry level and experienced, especially in our Boston and San Francisco offices.

The people we seek will have the ability and the desire to perform smart, creative work for our clients, day after day.

If you like playing with numbers and are looking for the place to do your best work, we invite you to contact us.

**CHICAGO
CONSULTING
ACTUARIES**

Where numbers become ideas®

Boston • Chicago • Dallas • Denver • Jacksonville • San Francisco • (312) 454-3222
ChicagoConsultingActuaries.com

50 percent for property/casualty, and 88 percent for multi-line).

Nearly every company selected multiple risk options, so clearly insurers are expecting to be able to measure several different risks simultaneously. Life companies are focused on those risks that drive the profitability of their products—namely, 90 percent expect to measure ALM risk (includes interest rates, equity market exposure, policyholder behavior, etc.), 100 percent expect to measure credit risks (e.g., default risk, migration risk, sector concentration risk, counterparty risk, etc.), and 84 percent expect to measure market risks (shrinking spreads, changing market prices, etc.).

In contrast, property/casualty companies are predominantly focused (77 percent) on managing underwriting risks (mortality, morbidity levels and trends, fluctuations in frequency and severity of claims, specific perils, etc.) and credit risk (63 percent).

While multi-line companies are interested in many of these risks, a significant number of multi-line respondents pointed to additional risks that concern them, including reputation, customer retention, talent retention, headline risk, and catastrophe risk.

Driven to Succeed

Companies also showed significant awareness of the benefits of holistic risk measurement and capital management frame-

works such as increasing the awareness of risk across the organization, adding discipline to the product development/pricing process, communication with rating agencies, operational improvements, strategic asset allocation, and improved hedging techniques.

Already showing a mixture of success in assimilating risk management into their corporate cultures, half of the companies surveyed suggested that they have some integration of risk for the total company. More important, 78 percent of the companies have been able to incorporate risk management for pricing, product design, and reserving. This suggests that at the corporate level companies are making considerable improvements in recognizing and managing pricing and reserving risk.

As insurance companies are increasingly scrutinized, the ability to aggregate risk across the entire organization will be crucial, many companies are looking to streamline the process through frameworks as well as empowering specific individuals to take accountability for company-wide risks.

The recent rise of the chief risk officer (CRO) is one example of how insurance companies are starting to elevate and consolidate accountability for risk measurement and management. A quarter of insurers said they have a full-time CRO, and of that group, nearly 80 percent have

been in the position for less than three years.

In addition to the CRO, insurance companies are establishing formal risk measurement committees focusing on:

- Cross-functional corporate risk (46 percent)
- Board-level risk (22 percent)
- Line of business (34 percent)
- Geographic business unit level (12 percent)

In today's complex environment, integrating risk into operating strategies and bridging risk silos are no longer options but an imperative for competitive advantage and survival. It requires more sophisticated measurement frameworks and tools, as well as new approaches to transparent risk disclosure.

This will take time. Insurance companies, unlike other areas of the financial services industry, have no standard methodology or metrics. Companies are using different tools in different ways to measure and manage risk and apply those results to capital management.

Combining holistic risk measurement and capital management is a new way of thinking for the insurance industry. While major changes can't and won't happen overnight, insurance executives must steer their organizations toward greater transparency. Those who do will be recognized and rewarded, while those who fail to evolve will not be here when the new day dawns. ●

ADVERTISER INDEX

To add your company's name to this list, call Mohanna & Associates at (800) 800-0341 or e-mail info@mohanna.com.

For links to these advertisers' e-mail addresses and websites, visit the *Contingencies* website at www.contingencies.org/linksto_advert.html.

ACTEX Actuarial Recruiting14 800-282-2839 www.actexamdriver.com	Aon15 860-773-6253 www.aon.com/ics/cont	Ernst & Young29 www.ey.com	Pryor Associates/ Pauline Reimer31 516-935-0100 www.pryor.com
Actuarial Careers, Inc. ®5 914-285-5100 www.actuarialcareers.com	Benfield C4 678-297-2629 www.benfieldgroup.com	EWI Re35 972-866-6815 www.ewireinsurance.com	Stewart Search23 888-JOB-OPEN www.stewartsearch.com
AdminServer11 972-715-2028 www.adminserver.com	Canada Life Reinsurance25 416-597-1440 www.canadalife.com/reinsurance	Mid America Search38 800-200-1986 www.midamericasearch.com	Towers Perrin (Classic Solutions) 9,19 904-391-1900 www.towersperrin.com/tillinghast
Aetna37 www.aetna.com	Chicago Consulting Actuaries . . .45 312-454-3222 www.chicagoconsultingactuaries.com	Milliman1,3,13 206-624-7940 www.milliman.com	Winkelvoss21 203-661-0275 www.winkelvoss.com/wintech
Andover Research Ltd.7 212-986-8484 www.andoverresearch.com	D.W. Simpson & Company C2 800-837-8338 www.dwsimpson.com	PolySystems, Inc. C3 312-332-5670 www.polysystems.com	