AMERICAN ACADEMY *of* ACTUARIES

October 1, 2009

Ms. Anne Kelly
Chair, Property/Casualty Risk-Based Capital Working Group
Capital Adequacy (E) Task Force

Mr. Alfred W. Gross
Chair, Solvency Modernization Initiative (EX) Task Force

Mr. Michael McRaith and Mr. James J. Wrynn
Co-Chairs, Rating Agency (E) Working Group

National Association of Insurance Commissioners
2301 McGee Street
Suite 800
Kansas City, MO 64108

Re: Property/Casualty Risk-Based Capital and the Current Financial Crisis

Dear Sirs and Madam:

Risk-Based Capital (RBC) provides regulators with an important solvency management tool. The Property-Casualty Risk-Based Capital Committee of the American Academy of Actuaries[1] has often advised the National Association of Insurance Commissioners (NAIC) on meaningful improvements to the RBC methodology.

The current global financial crisis has provided a strong reminder of the role that Risk-Based Capital plays in the property/casualty insurance market. It has also raised the issue of whether the NAIC P/C RBC formula properly incorporates interdependent systemic risks.

The time is ripe to provide a comprehensive review to identify potential improvements to the property/casualty RBC formula.

The attached paper prepared by the Committee outlines some of the areas for further examination, ranging from the analysis of specific interdependent risks affecting the property/casualty insurance industry to the stochastic modeling approaches in solvency regulation. It identifies specific steps that could be taken to ensure that the property/casualty Risk-Based Capital mechanism provides regulators with adequate tools to manage the risk of potential insolvencies.

[1]The American Academy of Actuaries ("Academy") is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

The Committee appreciates the opportunity to share its suggestions with the NAIC. We look forward to your questions and comments.

Sincerely,

Alex Krutov, Chair
P/C Risk-Based Capital Committee
American Academy of Actuaries

AMERICAN ACADEMY *of* ACTUARIES

PROPERTY/CASUALTY RISK-BASED CAPITAL AND THE CURRENT FINANCIAL CRISIS

October 2009

This document was prepared by the Academy's P/C Risk-Based Capital Committee.

Alex Krutov, Chair
Robert Butsic
Nicole Elliott
Sholom Feldblum
James Hurley
Gerald Kirschner
Ramona Lee
Franco Lepera
Sarah McNair-Grove
Christopher Nyce
Tony Philips
Mark Verheyen
Navid Zarinejad

The American Academy of Actuaries is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

1850 M Street NW Suite 300 Washington, DC 20036 Telephone 202 223 8196 Facsimile 202 872 1948 www.actuary.org

Property/Casualty Risk-Based Capital and the Current Financial Crisis

The current global financial crisis has provided a strong reminder of the role that risk-based capital plays in the insurance market. Systemic risk, which tends to affect most firms in the same sector simultaneously, has dealt the banking industry a savage blow. The U.S. property/casualty industry has its own interdependent risks that may lead to a solvency crisis.

The current National Association of Insurance Commissioners (NAIC) Risk-Based Capital (RBC) formula does not fully account for these interlinked risks. Updating the formula to properly reflect these risks would give regulators a better solvency management tool.

In addition to addressing interdependent risks, it is time to provide a comprehensive review of the property/casualty RBC formula to see whether the formula needs to be adjusted and whether RBC determination for insurers could be enhanced in other ways. A growing worldwide body of research and risk management applications provides fertile ground for potential RBC improvements.

The brief discussion below provides the rationale for updating the formula and potential issues that could be addressed.

General Improvements to the RBC Methodology

The main goal of the RBC regulation is to provide regulators with a tool to: (a) identify companies that may be in financial trouble; (b) take corrective action; and (c) limit the exposure of guaranty funds. The RBC framework has been successful in meeting this goal, but it could be improved to capture a more complete picture of risk and give regulators a more powerful solvency management tool.

RBC is intended to serve as a benchmark for minimum capital levels, not for actual levels of capital to be held by insurance companies. RBC is not directly related to financial strength ratings assigned by rating agencies. However, since the RBC formula was first adopted by the NAIC, rating agencies have modified their approaches to capture a more comprehensive picture of risk. In general, rating agencies now require a higher capital level for a company to maintain the same rating. On the other hand, the RBC formula has changed little. One of the perhaps unintended consequences is that companies may pay less attention to NAIC RBC levels, since their own capital levels are largely determined by rating agency requirements and internal insurer models. It may be useful to determine whether the current RBC threshold levels are still appropriate (and rating agencies may have become more conservative) or whether the levels should be changed. It is possible that the current formula has not kept pace with the industry's developing understanding of its risks.

Solvency concerns in other financial sectors have served as a reminder that it is time to carry out a comprehensive review of the property/casualty RBC approach. Without such a review, certain deficiencies may only become evident if the industry experiences severe distress. Under normal circumstances, if a component of the RBC methodology is flawed, limited harm is usually done, and it can be quickly modified to remedy the exposed flaw. However, if a solvency crisis occurs, the damage caused by a flaw in the RBC methodology may be severe. Potential improvements could include recalibrating the factors in the RBC formula, changing the way the factors are calculated, adjusting the way diversification benefits are taken into account, incorporating risk sources that are not being fully considered, and making structural changes to the overall approach.

RBC and Interdependent Risks of the Property/Casualty Insurance Industry

Since a significant percentage of industry capital must be used as protection against the type of large events that have not occurred in the past, it may be helpful to reconsider how the RBC factors are set and how to determine their relative importance. To do this, it is necessary to model events that could cause widespread insolvencies of property/casualty insurance companies. Such modeling may produce significant changes to the RBC factors. For example, if property/casualty company insolvencies are isolated and relatively rare (only a few per year), then non-affiliated reinsurer failures will rarely produce primary insurer insolvencies. However, if a major loss event occurs, prompting many reinsurer defaults, such defaults may trigger further primary insurer insolvencies. Thus, the appropriate RBC for reinsurance credit risk may be different than that of the current calculation.

Generally, as discussed above, routine causes of insolvency, such as random claims fluctuations or mismanagement, result in limited strain on industry capital. Routine causes of insolvency are most often independent events. *Interdependent* events, on the other hand, affect many insurers simultaneously and may require additional capital.

The Academy's Property/Casualty Risk-Based Capital (RBC) Committee has identified the following main sources of industry risk interdependence (not in any order).

1. Natural catastrophes. A major hurricane, fire, or earthquake is likely to affect most insurers, although not uniformly. An especially large event may affect the economy, impairing asset values.

2. Claim values. Conditions like high inflation or an adverse legal climate can increase losses by many insurers simultaneously. Such conditions may be correlated with declines in asset values, compounding the harm.

3. Underwriting cycles. At the down phases of underwriting cycles, high competition leads to downward pressure on the rates charged by insurers. In addition, during these periods, reserves of the property-casualty insurance industry generally weaken, further increasing the likelihood of insolvencies.

4. Asset meltdowns. A financial crisis may simultaneously affect investment portfolios of many insurance companies.

5. Deep recessions. Policyholders may resist premium increases and/or become more likely to drop coverage. Meanwhile, as often happens in a recession, claim levels may increase.

Recommendations

The Property/Casualty RBC Committee of the American Academy of Actuaries has often advised the NAIC on meaningful improvements to the RBC methodology. Accordingly, in light of the above discussion, and prompted by the current financial crisis, the Committee proposes a series of projects to be done in stages. Depending on the level of the NAIC's interest and support, the Committee can provide assistance in carrying out the projects. They are:

1. *Preliminary report.* This paper would develop more detail and background for the topics addressed in the above discussion. It would discuss the economic theory underpinning capital adequacy and the role of regulation. It would cite other solvency studies and provide additional background material, such as historical insolvency data. It would also explore other potential improvements to the RBC analysis, not directly related to interdependent risks of individual companies. Further, it would focus on the lessons learned from the current banking industry crisis and how those lessons affect property/casualty insurance RBC. This paper would provide a general outline of potential improvements to the NAIC property/casualty RBC formula and solvency management process.

2. *Analysis of solvency crisis-triggering events.* This analysis would comprehensively address the idea that a solvency crisis would likely be precipitated by a "perfect storm" emanating from multiple simultaneous sources. It would discuss financial crises that seemed impossible (e.g., October 1987 stock crash, the current credit crisis) until they occurred. It would analyze in detail each precipitating event including natural catastrophes, pricing cycles, retroactive or unanticipated coverage (e.g., environmental), asset crashes, recessions, and others. This analysis would also address how a crisis might occur from a single source, like a prolonged down underwriting cycle.

3. *Analysis of guaranty funds.* The combination of the RBC mechanism and the guaranty fund system is designed to manage the risk of insurance insolvencies and their negative impact on society. Since part of the analysis includes the study of mass insolvency events, it is important to understand the process by which one large event could overwhelm the guaranty fund system and leave policyholders with unpaid claim costs. This analysis would describe the sequence of events following insurer insolvencies, and estimate the ability of the funds to provide payment under conditions of severe crises.

4. *Review of the stochastic modeling approaches to solvency regulation*. This review would provide an overview of stochastic modeling approaches and the ways they can be used in solvency regulation of property/casualty insurance companies. It would examine whether and how such approaches could be used within or in addition to the existing property/casualty RBC framework in the U.S. Such a review would analyze advantages and disadvantages of stochastic modeling in the solvency regulation of property/casualty insurance companies.

5. *Examination of the role of reinsurance*. This examination would analyze reinsurance in an insurance solvency crisis. It would add considerable background and detail to the ideas described above. It would discuss the complexity of reinsurance contracts and compare them to the credit derivative market. Using highly-summarized data from actual primary and reinsurance companies, it would quantify the potential effect of reinsurer failures on primary insolvencies. It would also provide recommendations to improve the annual statement accounting data to facilitate a stronger estimate of RBC.

6. *Evaluation of potential improvements to the NAIC property/casualty RBC methodology, including a determination of RBC for interdependent risk*. This is potentially a vast undertaking, especially if we apply methods to all U.S. insurers. The most accurate method may be to simulate macro events, like recessions or natural catastrophes, and then, for each simulation, determine the individual insurer losses. This would provide a basis for RBC factors to be identified by risk category. Another method would be to develop a small set of scenarios, and allocate the results of each scenario to the insurers.

Conclusion

The current financial crisis has provided a reminder that it is risky to rely solely on historical results in setting standards for risk-based capital.

In addition to properly reflecting interdependent risks in the RBC formula, the current general approach would benefit from incorporating new data and ideas that may better capture the total risk in analyzing a property/casualty insurance company. The property/casualty RBC mechanism should provide regulators with adequate tools to manage the risk of potential insolvencies.

To put the urgency of this topic in perspective, the property/casualty insurance industry is currently experiencing two critical risk-interdependent phases: a downward pressure on asset values and an underwriting cycle downturn for many lines of business. Additionally, climate change could be dramatically affecting natural disaster frequency and severity. These and other factors, taken together, could mean that the chance of an insurance solvency crisis is the greatest it has ever been.