AMERICAN ACADEMY of ACTUARIES

Subcommittee on Natural Disaster Insurance Legislation
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Actuarial Issues Related to Catastrophe Reserves

Presented by

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The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the public information organization for the profession. The Academy is non-partisan and assists the public policy process through the presentation of clear and objective actuarial analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance. The Academy also develops and upholds actuarial practice standards, qualification requirements, and the Code of Professional Conduct for all actuaries practicing in the United States.

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The American Academy of Actuaries appreciates the opportunity to provide comments to the NCOIL Subcommittee on Catastrophe Reserves. The Academy is the public policy organization for the actuarial profession and assists policymakers through presentation of clear actuarial analyses. The Academy is nonpartisan and does not take positions on issues. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulation, and works closely with state officials on issues related to insurance.

As you are aware, the Pre-Event, Tax Deferred Catastrophe Reserve proposal developed by the NAIC is contingent upon federal tax deduction for the reserve. In the past Congress, the bill introduced to grant that deductibility differed significantly from the NAIC draft, especially with regard to whether the reserve would be mandatory or voluntary. However, the NAIC proposal has very recently moved much closer to the Congressional Bill, H.R. 785, in that both proposals are now voluntary. My presentation will address issues common to both proposals.

The American Academy Catastrophe Management Work Group has provided comment letters to both the NAIC and Congress regarding their respective proposals for voluntary pre-event, tax-deferred catastrophe reserves and introduction of a requirement for demonstrating financial ability to survive a natural catastrophe. My presentation today is based on those comment letters. I've tried to focus on subjects I believe are particularly relevant to your discussions and are actuarial in nature. Copies of the NAIC and congressional comment letters are available if you want them.

In addition, the American Academy Catastrophe Management Work Group recently authored a monograph entitled Insurance Industry Catastrophe Management Practices. This was written at the request of the Coordinating with Federal Regulators Subgroup on Financial Issues of the National Association of Insurance Commissioners. I will draw from that paper as well today. It would appear relevant to your discussions since the NAIC Subgroup plans to meet with Federal Reserve Board staff to present their initial findings in three areas:

- how insurers manage catastrophe risk (coverage, pricing, underwriting, risk aggregation and management, and capital adequacy);
- risk transfer mechanisms for spreading catastrophe risk (reinsurance, catastrophe bonds, and other forms of securitization); and
- regulation of insurance company catastrophe risk management.

The Academy monograph provides technical perspective on:

- definition of catastrophes;
- capital considerations;
- managing catastrophe risk and;
- reinsurance and risk transfer,

which would seem relevant to your discussions. A copy of the monograph is also available to your subcommittee.

In order to comment on the Voluntary Pre-Event, Tax-Deferred Catastrophe Reserve proposals and Demonstration of Financial Responsibility issues, some brief background may be helpful. Generally, the liquidity (or lack of liquidity) of an insurer after a catastrophe does not cause insolvency. Rather, it is the magnitude of the event relative to company surplus. Insurers must strike a balance between the benefits of being prepared for low-probability catastrophes and the cost of pre-event preparations.

There is no single catastrophe risk management procedural template that applies to all insurers. However, the conceptual elements are the same for any property and casualty insurer.

Reinsurance is the traditional method used by insurers to transfer risk, but capital markets are a growing source of alternate capacity. Capital market products developed to date can be grouped into three categories: insurance-linked notes and bonds, exchange-traded products, and other structured products. All such sources may be integrated into an insurer's catastrophe management program.

Insurer catastrophe risk management practices are relevant to certain questions of public policy. Examples include the amount of insurer capital, whether insurer capital needs to be segregated for catastrophe purposes, whether to encourage pre-event funding, the tradeoffs between availability and affordability, the extent of governmental involvement in the market place, and potential over-reliance on guaranty funds.

In considering introduction of a catastrophe reserve within a framework of demonstrating financial responsibility, the NAIC posed two fundamental questions to us:

- Can an individual insurer's Net Probable Maximum Loss Exposure ("Net PMLE")be determined with reasonable accuracy?; and
- Are actuaries professionally qualified to render a Statutory Opinion on the Net PMLE?

Our comments were as follows:

We believe an individual insurer's Net PMLE can be determined with reasonable accuracy. Insurers routinely assess their exposure to catastrophic risk and management relies on these assessments in meeting their fiduciary responsibilities. Assessment of these exposures is necessary for the following reasons: a) management of the accumulation of catastrophe exposures within the company and for setting pricing and underwriting strategies; b) determination of amounts and structure of reinsurance programs or alternative catastrophe management resources, and; c) compilation of information on catastrophe exposures and underwriting considerations for submissions to reinsurers or other providers of catastrophe management resources.

And, second, we believe actuaries are professionally qualified to render a Statutory Opinion on the Net PMLE. An actuary's training in both pricing and reserving is relevant to determining the Net PMLE. The Statement of Principles Regarding Property and Casualty Insurance Rate Making of the Casualty Actuarial Society states that consideration should be given to the impact of catastrophes and that procedures should be developed to include an allowance for the catastrophe exposure in the rate. In this regard, actuaries are trained in: data analysis, including identifying and assessing the quality of historical insurance data; the applicability of such data for an insurer's class, coverage and geographic distributions; adjustments that might be necessary to reflect future conditions; and the use of non-insurance data where historical data does not provide sufficient information to reflect the broad range of catastrophic events that need to be anticipated. The actuary's expertise in pricing is relevant to the PMLE determination as it makes provision for future contingent events.

The actuary's expertise in reserving, is relevant in three important areas: understanding and quantifying an insurer's reinsurance programs or other catastrophe management resources; analyses of data profiling an insurer's book of business; and selection of statistical techniques and interpretation of relevant models, including determination of appropriate parameters. These areas are critical to determining an individual insurer's actual catastrophic risk exposure, net of reinsurance.

We therefore concurred that the NAIC adopt signatory requirements for rendering an Opinion on the Net PMLE similar to the current professional requirements for the Loss and Loss Adjustment Expense (LAE) Reserve Opinions.

You may also want to note that the NAIC Risk Based Capital factors implicitly include a provision for catastrophe risk as a function of the variability of results. If a catastrophe reserve is adopted, consideration will need to be given to the Interaction of the Reserve and RBC to ensure the catastrophe component is not double-counted. This will be more important as the catastrophe reserve increases in the years after implementation.

Another observation regarding a voluntary catastrophe reserve is that the existence of such a reserve may not necessarily increase the policyholder surplus available to pay claims from a catastrophic event. This is because insurers, rating agencies and regulators typically evaluate policyholder surplus in relation to the total risk of the enterprise. Building a catastrophe reserve may well lead to a lower level of required policyholder surplus as insurers, and rating agencies look to total policyholder surplus in relation to total risk assumed.

A voluntary catastrophe reserve without introduction of a requirement to demonstrate financial ability to survive a catastrophe may not best meet the objective of minimizing failures in the private insurance system following a major natural disaster. This concern is addressed by employing the reserve in a regulatory framework in which insurers demonstrate their financial responsibility to deal with major disasters using one or more acceptable approaches (reinsurance, surplus, securitization, contributions to a catastrophe reserve, etc.). Otherwise, financially weaker insurers may not be in a position to build a catastrophe reserve, or arrange sufficient alternative protections, but could still remain active in the insurance market in a catastrophe-prone region, writing policies that might not stand up in the case of a large catastrophe.

In addition, there is a high level of diversity and a significant difference in exposure to catastrophes within the property and casualty insurance industry. Variations in exposure to catastrophic losses among regions are substantial. Catastrophe exposure also varies by market, i.e. homeowners and small business versus large commercial and industrial. Many companies focus on a just a portion of the total market, such as homeowners, or large commercial. This tendency to specialize causes even greater variation in actual insurer experience to a given catastrophe.

However, neither proposal addresses issues surrounding geographic variation. The reserve cap multipliers in both proposals do not vary by region in either of the proposals. Since the multipliers are intended to determine a maximum reserve, the lack of variation is less critical if the multipliers are set at a high enough level. Insurers presumably are free to set their reserves at a level most appropriate for their specific circumstances. Nevertheless, if the multipliers are set too low, some companies may be able to take full advantage of pre-tax reserves, while others would not. The amount of inequity would depend directly on the level of the multipliers (i.e., the higher the multipliers, the less the potential inequity).

Neither proposal includes workers' compensation as a qualified line, though a broad spectrum of commercial risks are included in the scope of both proposals. Because of this, a catastrophe such as an earthquake occurring during business hours could significantly increase the risk of insolvency for commercial lines carriers. To address this concern, you may want to consider including workers' compensation for specific states with a significant earthquake exposure, so as to provide a more comprehensive reserve in the event of a major earthquake.

The return period is a critical parameter that should be established in any legislation in order to ensure consistency and minimum reserve standards among insurers. There are a number of specific issues to consider:

- Should the probable maximum loss cap contemplate a 1 in 100 year, a 1 in 250 year or a 1 in what number of year probability?
- Should the cap reflect exposure from a single event or from annual losses beyond a 1 in 100 year, a 1 in 250 year or 1 in what number of year probability?
- Should the parameters vary based on the relationship between the fund cap, the probable maximum loss and the risk-based capital of the insurer?

Assuming the necessary federal legislation is passed to enable voluntary, pre-event tax-deferred catastrophe reserves, you may want to consider in your legislation authorizing a commission to meet periodically (perhaps every five years) to review the participation by insurers and reinsurers, the experience with the funds, actual catastrophe experience, the continued appropriateness of the multipliers and other aspects of the catastrophe reserve fund structure, and make recommendations the commission deems appropriate. The commission would need members who are experts in risk management and analysis, and should include professional actuaries, defined by membership in the American Academy of Actuaries, as well as others trained in risk assessment.

The Academy would be glad to work with your subcommittee in the future as you consider legislation in this area.