

CRS Report for Congress

Received through the CRS Web

Tax Deductions for Catastrophic Risk Insurance Reserves: Explanation and Economic Analysis

September 2, 2005

David L. Brumbaugh
Specialist in Public Finance
Government and Finance Division

Rawle O. King
Analyst in Industry Economics
Government and Finance Division

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 02 SEP 2005		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Tax Deductions for Catastrophic Risk Insurance Reserves: Explanation and Economic Analysis				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Congressional Research Service The Library of Congress 101 Independence Ave SE Washington, DC 20540-7500				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 17	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Tax Deductions for Catastrophic Risk Insurance Reserves: Explanation and Economic Analysis

Summary

In the wake of Hurricane Katrina that struck several states along the Gulf of Mexico on August 29, 2005, the attention of policymakers in Congress and elsewhere has turned to the subject of insurance for large catastrophic risks, including natural disasters such as hurricanes and earthquakes. The generally perceived increase in the incidence of major catastrophes and their increasingly costly nature has prompted some analysts to question whether the economy's market for catastrophe insurance is sufficient to meet the burdens of major catastrophes: does the market provide a sufficient amount of insurance against major catastrophes, or is there a shortage? And, to the extent that catastrophe insurance exists, are the insuring firms sufficiently capitalized so that widespread insolvencies would not occur? Some have suggested that federal action is advisable to make sure that insurance industry resources are adequate to ensure the availability and affordability of disaster insurance and payment of claims when disasters occur.

One widely-discussed proposal would change the tax treatment of catastrophic risk insurance by permitting insurance companies to establish tax-deductible reserve funds for catastrophes. A version of the proposal was developed by a working group of the National Association of Insurance Commissioners, and a similar plan was introduced as legislation in the 108th Congress (H.R. 4186; Representative Foley) and again in the 109th Congress (H.R. 2668). The proposals' supporters argue that they would enhance the ability of insurance firms to meet the requirements of major disasters without risking insolvency and would increase the availability of catastrophe insurance.

Economic analysis suggests that provision of a tax-deductible insurance reserve for catastrophes would constitute a preferential tax benefit in the form of a deferral or postponement of taxes: tax rules for most other types of activities permit the deduction of losses only when losses actually occur, not when reserves for losses are established. According to theory, tax benefits that favor one type of activity over another ordinarily hamper economic efficiency and reduce economic welfare by diverting resources from their most productive use. In some cases, however, markets may fail and government intervention through taxes or other policies may improve efficiency. The question economic analysis asks of the tax-deferred reserve deduction is thus whether market failures exist in the case of catastrophe insurance. While some economic analysts have identified a number of market failures that might reduce the volume of catastrophe insurance, others are skeptical.

This report will be updated as legislative developments occur.

Contents

The Market for Catastrophe Insurance	2
Development of the Proposal for Tax Deductible Reserves	3
Outline of the Proposal	5
Arguments For and Against Tax-Deductible Catastrophe Reserves	6
Economic Analysis	6
Appendix: Section-by-Section Analysis of the Policyholder Disaster Protection Act of 2005 (H.R. 2668)	11
Section 1: Short Title: The “Policyholder Disaster Protection Act of 2005”	11
Section 2: Findings	11
Section 3: Creation of Policyholder Disaster Protection Funds: Contributions to and Distributions from Funds; Other Rules ...	11

Tax Deductions for Catastrophic Risk Insurance Reserves: Explanation and Economic Analysis

The devastation caused by Hurricane Katrina which struck along the Gulf of Mexico and Atlantic coast on August 29, 2005, highlights the fact that the United States continues to be subject to natural hazard risks, primarily weather-related risks such as hurricanes and windstorms, but also seismic risk (earthquakes, tsunami, volcanic eruptions) and flood hazard risks. Such natural disaster risks result in deaths, property damage, and economic dislocation. Federal outlays for disaster victims have been increasing, and the frequency of weather-related natural disasters is generally perceived to be rising. The combination of economic dislocation from natural disasters and high federal and private costs has generated interest in Congress and elsewhere in proposals designed to change the way individuals and communities evaluate and protect themselves against the risk of natural disasters (i.e., financing risk with insurance). Given the increasing concentration of insured property values and sophisticated computer models that suggest an increased frequency of hurricanes and high probable maximum losses (PML) from catastrophic earthquakes, respectively, there has been some sense of urgency in Congress, state legislatures and the private sector to address the nation's financial exposure to catastrophic risks.

One widely-discussed proposal would change the tax treatment of catastrophic risk insurance by permitting firms to establish tax-deductible reserve funds for catastrophes. A version of the proposal was developed by a working group of the National Association of Insurance Commissioners (NAIC). Along with providing a tax deduction for additions to catastrophe reserves, the plan would make the reserves mandatory and would permit the reserves to be accounted for on the balance sheet of the insurers. A similar plan was introduced as legislation in the 108th Congress (H.R. 4186; Representative Foley) and again in the 109th Congress (H.R. 2668). Unlike the NAIC plan, the legislation's reserves would not be mandatory nor directly change current accounting practices. The proposals' supporters argue that they would enhance the ability of insurance firms to meet the requirements of major disasters without risking insolvency and would increase the availability of catastrophe insurance.

The discussion that follows begins by providing some background on the market for catastrophe insurance. It continues by describing the proposal for tax-deductible reserve accounts as set forth in H.R. 2668 of the 109th Congress, and concludes by providing an economic analysis of the plan. The appendix contains a section-by-section explanation of H.R. 2668, the version of the plan introduced in the current Congress.

The Market for Catastrophe Insurance

In broad terms, catastrophic risk is distinct from other risks simply because of its large size — catastrophes affect a large number of persons and firms simultaneously, imposing huge losses. Traditional examples include natural disasters such as Hurricanes Andrew (1992) and Katrina (2005), the Northridge earthquake (1994), and the Midwest floods (1993). Another example is the risk of loss from the World Trade Center terrorist attacks on September 11, 2001, although this particular type of risk has certain unique characteristics that place it beyond the scope of the analysis here.

In terms of economic analysis, the large size of catastrophes produces a particular result for insurance: it makes the elimination of uncertainty by an individual insurance firm difficult. The market for insurance is based on insurance firms being able to pool risks faced by a large number of policyholders whose risks are not related to each other. When a large number of uncorrelated risks are pooled, insurance firms can predict with relative certainty the average occurrence of a particular insured event (say, an accident) occurring among insured persons, and can provide insurance based on the reduction of that uncertainty. But the ability of pooled risks to reduce uncertainty diminishes when the risks of policyholders are correlated, and in the case of catastrophes, the risk of large numbers of insurance buyers is, indeed, related. (For example, large groups of homeowners may simultaneously incur damage from a hurricane or earthquake.) Thus, to sell catastrophe insurance, insurance firms must pool an exceedingly large group of risks in order to avoid correlated risks and develop marketable insurance.¹

In keeping with this feature of catastrophe insurance, an important characteristic of the market is its reliance on what is known as “reinsurance” in insurance parlance. That is, a particular insurance firm, in writing policies for catastrophic risk, may not be able to find a sufficiently large pool of uncorrelated risks in its own marketing area. For example, a company whose market is limited to a particular coastal area may have difficulty developing a pool of customers whose risk of facing hurricane damage is unrelated. The company may accordingly sell hurricane insurance policies, but may itself purchase insurance (“reinsurance”) against the catastrophe, in effect expanding the pool to unrelated risks beyond its own market.²

Another technique insurance firms have used in recent years to provide catastrophe insurance is “securitization.” Here, insurance firms turn to general capital markets to diversify their risks by marketing securities (for example, “catastrophe bonds,” whose interest rate is contingent on the likelihood of a catastrophe’s occurrence) that are attractive to investors because market risk is not

¹ For a good intuitive explanation of the basic economics of catastrophic risk, see Mario Miranda and Dmitry V. Vedenov, “Innovations in Agricultural and Natural Disaster Insurance,” *American Journal of Agricultural Economics*, Aug. 2001, p. 650.

² For a detailed description of reinsurance and its role in providing catastrophic loss insurance, see: George E. Rejda, *Principles of Risk Management and Insurance*, 8th ed. (Boston: Addison Wesley, 2003), pp. 535-541.

related to catastrophe risk, and the catastrophe securities may thus provide a means of portfolio diversification for investors.³

Notwithstanding these methods of financing catastrophe insurance, concern has been expressed by some analysts and policymakers about the ability of the industry to satisfactorily meet the challenges of a major catastrophe. Concern has focused on two factors that are sometimes termed the industry's "capacity" to face catastrophic risk: whether the insurance industry provides a sufficient level of catastrophe coverage; and whether a catastrophe would result in a large number of insolvencies among insurance firms. Proposals for tax-deductible reserve accounts have been advanced as a means of increasing the industry's capacity.

Development of the Proposal for Tax Deductible Reserves

Current U.S. tax law and accounting systems do not permit deducting reserves for future catastrophe losses. Reportedly, this situation has discouraged insurers from accumulating assets specifically to pay for future catastrophe losses and has limited the industry's ability to increase its capacity to underwrite catastrophe risks.⁴ Instead, payments for catastrophe losses are made from unrestricted policyholders' surplus after the losses are incurred.

Under the current U.S. tax law, property and casualty insurer income in excess of annual expenses is considered profit and is subject to federal income tax. In addition, U.S. accounting principles (both Generally Accepted Accounting Principles and Statutory Accounting Principles) applicable to property and casualty insurers limit the recording of loss reserves to losses that have *already occurred* and require the recognition of catastrophe premiums in periods prior to the period in which catastrophe losses are incurred. Thus, both U.S. tax law and accounting standards discourage insurers from setting aside money for natural disaster events that cause unusually costly damages.

Under §832(b)(5) IRC — "Deduction of Unpaid Property Loss Reserves for Property and Casualty Insurance Companies" — insurers are currently allowed to "deduct the *discounted value of estimated losses* they will be required to pay in the future under insurance policies currently in force, including claims in dispute."⁵ This

³ For a description of how securitization works, See: *Ibid.*, p. 541 and Miranda and Vedenov, "Innovations in Agricultural and Natural Disaster Insurance," p. 651.

⁴ Scott E. Harrington and Greg Niehaus, "Government Insurance, Tax Policy, and the Affordability and Availability of Catastrophe Insurance," *Journal of Insurance Regulation*, Summer 2001, p. 594.

⁵ U.S. Congress, Senate Committee on the Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, report prepared by the Congressional Research Service, 108th Cong., 2d sess., S. Prt. 108-54, (Washington: GPO, 2004), pp. 201-

allows insurers to deduct future expenses from current income, and thereby defer tax liability. This unpaid property loss reserve is comparable to what is known in the insurance industry as “Incurred But Not Reported” (IBNR) losses/reserve. It is an estimate of losses that have been incurred, but not reported. In some cases, insurers know IBNR losses and make preliminary loss estimates. In other cases, however, IBNR losses show up years after the damage first occurs. Insurers will adjust IBNR reserves for such losses as new information becomes available and deduct from current taxes the discounted value of the estimated losses. Reserves set aside for the IBNR losses are different from the reserves that insurers want to deduct for future catastrophic losses in that those losses have not yet been incurred nor reported.

In 1995, the National Association of Insurance Commissioners (NAIC) established a Catastrophe Reserve Subgroup of the Catastrophe Insurance Working Group to work with the insurance industry and actuarial resources groups for the development and implementation of a tax-deductible pre-event catastrophe reserve for property and casualty insurers. By 1997, the NAIC had developed a working model for the reserve which, if it were to receive the support of Congress, would enable insurers to set aside funds earmarked for large catastrophe losses and thus increase their capability to manage catastrophic losses. The model was revised several times in the late 1990s, based on the results of economic evaluation and public comments on the design of the reserve and the statutory accounting changes needed to implement such a reserve.

In 2000, the NAIC’s Catastrophe Insurance Working Group made its proposal to the NAIC Property and Casualty Committee, but the NAIC did not adopt the proposal beyond the working group level.⁶ The NAIC maintains that it will adopt the proposal only if Congress changes the tax law to allow insurers to establish reserves for future catastrophic events on a tax-deductible basis — with no offsetting tax increases to the insurance industry. Insurers also drafted an example of the kind of federal tax legislation that they felt could be used to implement this tax-deductible, pre-event catastrophe reserve proposal.

In 2001, the National Conference of Insurance Legislators (NCOIL) adopted a resolution to support a tax-deductible, pre-event natural disaster reserve fund. The resolution states that NCOIL will work with the NAIC and federal legislators to develop tax-deductible, pre-event catastrophe reserve legislation.

Under the insurance industry’s tax-deductible catastrophe reserve proposal, state insurance regulators would approve catastrophe insurance rates that insurers insist must reflect past experience and projected exposures. During discussions in 2000 before the NAIC’s Catastrophe Insurance Working Group, regulators expressed an understanding about the concerns of insurers regarding the current tax and accounting treatment of catastrophe reserves, and have assured insurers that they would approve

⁵ (...continued)
203.

⁶ For more information on the NAIC proposal see, NAIC Catastrophe Working Group, “Summary of the NAIC Catastrophe Proposal,” *NAIC Research Quarterly* 6, No. 2 (summer 2000).

catastrophe-related rates that reflect both past experience and projected exposures. Insurers had insisted that property insurance rates in regions with significant historical or projected catastrophe exposures should reflect this exposure. Regulators, however, needed assurances by the industry that the portion of approved catastrophe-related premiums set aside in a dedicated reserve account for catastrophe exposures will be earmarked for financing catastrophe losses that are not expected to occur on an annual basis, and that these funds will be used only to meet obligations to policyholders. Both regulators and insurers agree that requiring a catastrophe reserve without tax deductibility would not provide additional assets to finance insured catastrophe claims. Hence, many see congressional action to change federal tax law as a precondition for implementing the NAIC catastrophe reserve proposal.

Outline of the Proposal

The tax-deduction proposal set forth by the NAIC and the approach specified by H.R. 2668 (as well as legislation in prior congresses) are the same in their broad outline; there are, however, some differences. For example, the NAIC plan would make establishment of reserves mandatory, while H.R. 2668 would not. And, the NAIC plan would have a specific dollar target for industry reserves (\$40 billion after a 20-year build up), while H.R. 2668 would not. Each plan, however, would allow insurance firms a tax deduction for amounts contributed to an account designed to provide a reserve for disaster payments; distributions from the accounts would be subject to tax. As discussed below, the result is a tax benefit in the form of a deferral (postponement) of tax.

The plan specified by H.R. 2668 (introduced on May 26, 2005, by Representative Foley) would permit firms to establish “policyholder disaster protection funds” which would consist of assets to be used “solely for the payment of qualified losses.” Contributions to the funds would be tax-deductible as long as they do not exceed the difference between fund-caps specified in the legislation and a fund’s balance. (The latter amount would generally be the cumulative amount of previous contributions, less distributions generally linked to a firm’s catastrophe losses.) In short, contributions would be deductible in a particular year only to the extent there is room between a firm’s cap and its fund balance.

Conversely, distributions from the funds would be included in gross income and subject to tax. While a complex set of rules would determine the amount of distributions in a given year, the amounts would generally be linked to catastrophe losses. Catastrophes, in turn, would generally consist of disasters such as hurricanes, cyclones, tornadoes, earthquakes, winter catastrophes, fires, tsunami, floods, volcanic eruptions, or hail.

Arguments For and Against Tax-Deductible Catastrophe Reserves

Calls for government and industry action in the area of catastrophic risk insurance have stemmed from concerns about the insurance industry's "capacity" in this area — that is, the industry's ability to weather a large catastrophe without a large number of insolvencies or the inability to honor insured losses. Supporters of the tax-deductible reserve proposal have argued that the plan — by encouraging insurers to establish catastrophe reserves — will both help protect against insolvencies and will increase the availability of catastrophe insurance.⁷ It is argued by the plan's proponents that a number of benefits would follow from such outcomes, including:

- enhanced ability of stricken areas to recover from disasters;
- reduced necessity in the long run for other forms of federal assistance;
- reduced flow of U.S. capital to offshore foreign reinsurance firms.

Critics of the plan have pointed out that it would reduce federal tax revenue in an era of large budget deficits. They also question whether the proposal would accomplish what is intended — that is, whether it would increase the availability of catastrophe insurance and the financial soundness of firms providing the insurance. Some analysts, for example, have suggested the tax-favored reserves may simply become substitutes for the purchase of reinsurance, while others have suggested the tax-favored reserves may shield unrelated activities of insurance firms from tax.⁸

Rather than assess these arguments on a point-by-point basis, the next section provides an economic analysis of the proposal.

Economic Analysis

As the "dismal science," economics begins with the recognition that economic resources are fixed. Thus, even if the proposed tax deduction for catastrophe reserves would increase the supply of catastrophe insurance or reduce insolvencies among insurance firms, the added resources that enable these outcomes are necessarily diverted from other uses. Economic theory also holds — in general — that undistorted price signals established in freely operating markets are the most effective means of channeling resources into their most productive uses. Thus, price distortions normally reduce the efficient allocation of resources and accordingly

⁷ See section 2 of H.R. 2668, which proposes to set forth a number of findings regarding catastrophe insurance. See also the arguments described in Emmanue Burstein, I, "Catastrophe Reserve Proposal Depends on Tax Law Changes," *Tax Notes*, April, 13, 1998, pp. 158-160.

⁸ The skepticism of these analysts is cited in U.S. Government Accountability Office, *Catastrophe Risk: U.S. and European Approaches to Insure Natural Catastrophe and Terrorism Risks*, GAO-05-199, pp. 30, 25.

reduce economic welfare. When applied to insurance, this part of economic theory indicates that if insurance markets are operating smoothly, the diversion of resources into catastrophe insurance by means of a tax deduction likely reduces economic efficiency.

Markets do not, however, always function smoothly, and in the presence of what economics terms a “market failure,” government intervention — either by a tax subsidy or other means — may actually improve efficiency by correcting the market failure. In assessing the proposed deduction for catastrophe reserves, economic analysis thus asks the following questions:

- would the provision of a tax-deductible catastrophe insurance reserve constitute preferential tax treatment for catastrophe insurance?
- if the deduction would pose a tax benefit, are there failures in the markets for catastrophe insurance that result in its under-provision without government intervention?
- if there are market failures, would the proposal act to address them?

The analysis here concludes that a tax deduction for reserves is likely a tax benefit. Beyond this, it does not attempt a final answer regarding market failures or the efficacy of the proposal in correcting them. It does, however, suggest caution: there is considerable uncertainty both about whether market failures actually occur and whether the particular tax proposal in question would address them if they do.

Assuming that the proposal that would be implemented would follow the general outlines common to each version of the proposal — that is, a tax deduction for additions to a reserve and taxation of withdrawals — the tax deduction provided by the proposal would constitute a tax benefit in the form of a deferral or postponement of taxes.⁹ In general, the federal income tax applies to income as it is earned and permits business costs and losses to be deducted only when they are actually incurred. Because the proposal would permit additions to reserves to be deducted from taxable income before the losses the reserves finance actually occur, the plan would have the effect of shifting some amount of taxable income towards the future, permitting firms to delay an amount of tax liability equal to the tax savings generated by the deduction. A tax deferral, in turn, confers a tax benefit because a given amount of taxes matters less to a firm the longer its actual payment can be postponed. In the interim, the funds that would otherwise have to be paid in taxes can be invested and earn a return, increasing the insurer’s aftertax profits.

⁹ Depending on how the proposal is specifically drafted, the exact nature of the benefit could vary. For example, for an insurance company with stable premiums, the phased-in proposal in H.R. 2668 appears to provide a 20-year tax deferral for a fraction of premiums collected on catastrophic risk insurance. With a constant growth in premiums, however, the benefit could approximate that of an indefinite deferral (i.e., an exemption) of a fraction of premiums equal to the growth rate.

The proposal would thus confer a tax benefit; but are there one or more market failures? Economic analysts of the insurance industry have identified several theoretical reasons to believe the market failures may exist. First, as described in other parts of this report, catastrophe insurance, by its nature, sometimes leads individual insurance firms to seek reinsurance to adequately cover catastrophe risk; the scope of catastrophes is so broad that, without reinsurance, a single insurance firm may face claims from a large portion of its policyholders at the same time, thus increasing its risk of insolvency if either reinsurance or securitization is not undertaken. Several analysts have argued that the use of reinsurance may, in turn, increase the likelihood of market failures that result from “asymmetrical information” — that is, the insured entity knowing more about the size or probability of risk than the insurer.¹⁰

These information related failures are termed “adverse selection” and “moral hazard.” With adverse selection, reinsurance firms are not as familiar with the risks they insure as are the individual insurance companies who buy reinsurance (the primary insurers).¹¹ With moral hazard, the insured entity increases its risky behavior once it purchases insurance; in the case of catastrophe reinsurance, such risky behavior consists of a primary insurer increasing the volume of risky policies they themselves sell to individuals and firms.¹² In the case of either failure, reinsurance firms must increase their premiums to account for the uncertainty, and the volume of insurance coverage is accordingly lower than it would be without adverse selection or moral hazard. There are some analysts, however, who doubt that either adverse selection or moral hazard play a prominent role in the market for catastrophic insurance,¹³ so the presence of moral hazard or adverse selection cannot be accepted as a given.

A second type of market failure that has been suggested as being present with catastrophe insurance is what is sometimes termed a “principal-agent” problem — that is, where a principal — in this case, a prospective policyholder — lacks information about the entity acting as the principal’s agent (in this case, the insurance firm) and the true value of the risk-sharing instruments sold by the agent. Here, the potential problem is that the prospective purchaser of insurance lacks the knowledge or expertise to adequately gauge the chances of an insurance firm becoming insolvent

¹⁰ Other factors that might contribute to catastrophe insurance market failures may be inefficiencies in the reinsurance market, not discussed here.

¹¹ For a discussion, see David M. Cutler and Richard J. Zeckhauser, *Reinsurance for Catastrophes and Cataclysms*, NBER Working Paper 5913 (Cambridge MA: National Bureau of Economic Research, 1997), pp. 4-5.

¹² For a description of how moral hazard may work in reinsurance markets, see: Kenneth A. Froot, *The Limited Financing of Catastrophe Risk: An Overview*, NBER Working Paper 6025 (Cambridge MA: National Bureau of Economic Research, 1997), p. 13.

¹³ Jaffee and Russell, for example, are skeptical of the existence of asymmetrical information: Dwight M. Jaffee and Thomas Russell, “Catastrophe Insurance, Capital Markets, and Uninsurable Risks,” *Journal of Risk and Insurance*, vol. 64, Jun. 1997, p. 206. Froot believes that the design features of catastrophic insurance — high deductible amounts — mitigate problems of adverse selection and moral hazard. See: Froot, *Limited Finance of Catastrophe Risk*, p. 14.

in the face of a large catastrophe and being incapable of making good on its promises to reimburse policyholders for their losses. In the case of this type of market failure, the value of insurance for the buyer is reduced and demand for insurance declines. As a consequence, less catastrophe insurance is sold in the market than is economically efficient.¹⁴ As with moral hazard and adverse selection, however, some analysts are skeptical of the existence of a substantial principal/agent problem.

Another possible explanation for a low volume of catastrophe insurance is government action in the wake of disasters — specifically, the provision of government disaster assistance at either the state or federal level. Such assistance is considerable; for example during the 1980s and 1990s, federal disaster assistance exceeded the average annual loss borne by reinsurers on catastrophe coverage.¹⁵ The assistance may have the effect of reducing demand for catastrophe insurance and thus reducing its volume: if large numbers of persons believe that disaster assistance will be forthcoming if a catastrophe strikes, their incentive to buy insurance is reduced.

There is some empirical evidence that is at least consistent with the presence of market failures. In 2001, a study by Froot found that the volume of catastrophe insurance is lower and prices are higher than would likely exist in a perfectly functioning market.¹⁶ Here also, however, there is cause for skepticism: the same study pointed out that there are several other possible explanations for the low volume and high prices, including the presence of market power on the part of insurance firms and certain features of capital markets. Froot's analysis favored these explanations over the presence of market failures.

Does the possibility of these market failures warrant provision of a tax benefit, of the type contemplated by the proposed tax deduction for reserves? First, we point out that the presence of market failures is not certain. While evidence may suggest that the volume of catastrophe insurance is low and prices high, there may be alternative explanations other than market failure. For example, costs inherent in capital markets may drive up prices; also, insurance firms may possess market power, which might enable them to increase prices and restrict supply. It is thus uncertain whether there are market failures that can potentially be corrected by the tax benefit.

If there are market failures, would the tax deduction for reserves address the problem? In principle, if market failures reduce production of a commodity, a tax

¹⁴ The principal-agent problem with catastrophe insurance is identified in: David M. Cutler and Richard J. Zeckhauser, *Reinsurance for Catastrophes and Cataclysms*, NBER Working Paper 5913 (Cambridge MA: National Bureau of Economic Research, 1997), p. 3.

¹⁵ Kenneth A. Froot, *The Limited Financing of Catastrophe Risk: An Overview*, NBER Working Paper 6025 (Cambridge MA: National Bureau of Economic Research, 1997), p. 15. See also this paper's general discussion of the impact of government assistance on the volume of insurance.

¹⁶ Kenneth A. Froot, *The Market for Catastrophe Risk: A Clinical Examination* (Cambridge MA: National Bureau of Economic Research, 2001), p. 1. In both this and an earlier study, however, Froot expresses doubt over adverse selection and moral hazard as explanatory factors, preferring capital market factors as being a more likely cause. The capital market factors, however, may not be failures *per se*, but rather higher transactions costs.

benefit could draw resources into the activity, reducing prices and increasing the quantity sold. In the insurance industry, reserves are amounts collected as premiums and held by insurance firms (rather than distributed to stockholders) in order to cover expected losses. In the case of catastrophe insurance, a tax benefit linked to the establishment of reserves could increase the after-tax return on invested reserves and reduce the level of premiums insurers must charge to cover expected losses. Key to the success of such a tax mechanism in increasing supply is whether insurance firms could be expected to pass the added return on reserves to buyers or whether they would instead increase distributions to stockholders or expand operations in other operations not related to catastrophe insurance.

As described above, a firm's deduction under the proposal would be dependent on the volume of premiums collected on catastrophe-related insurance lines of business and would be contingent on creation of catastrophe reserves. Yet even with this language, whether a price reduction and an increase in the availability of insurance would occur is not certain. For example, according to a February, 2005, Government Accountability Office (GAO) report, some analysts have expressed skepticism about whether tax-deductibility would induce firms to increase reserves — and, even if the tax benefit induces firms to increase reserves, “some analysts believe that the reserves would not materially enhance capacity because insurers might substitute reserves for existing reinsurance coverage, the cost of which is tax deductible.”¹⁷

Ultimately, whether the proposal would expand catastrophe insurance depends on market conditions. Generally, the more competitive is the market for catastrophe insurance, the more likely the deduction would expand insurance; on the other hand, if firms have a fair degree of market power, the impact could be small. Or, factors such as the availability of post-disaster government aid could render demand “inelastic,” thereby limiting the impact of price reductions in expanding insurance, even if firms were willing to reduce prices.

An analysis of the market for catastrophe insurance is not undertaken here. Nonetheless, economic analysis indicates there are sufficient theoretical reasons to recommend caution with respect to the provision of a tax benefit for insurance reserves. To reiterate, theory indicates that tax benefits such as that recommended by the reserve proposal improve efficiency only in the presence of insurance market failures, and the presence of such failures is not certain.

¹⁷ U.S. Government Accountability Office, *Catastrophe Risk: U.S. and European Approaches to Insure Natural Catastrophe and Terrorism Risks*, GAO report GAO-05-199 (Washington: Feb. 2005), pp. 30, 25.

Appendix: Section-by-Section Analysis of the Policyholder Disaster Protection Act of 2005 (H.R . 2668)

H.R. 2668 consists of three major sections.

Section 1: Short Title: The “Policyholder Disaster Protection Act of 2005”.

Section 2: Findings . Congress finds that:

(1) the costs of natural disasters are placing an increasing burden on insurers’ ability to pay homeowners’ claims arising from major natural disaster;

(2) present tax laws do not provide incentives for insurers to offer catastrophe insurance because present tax law requires any surplus assets accumulated to cover catastrophe losses are derived from after-tax retained earnings (i.e., are not deductible);

(3) revising tax laws applicable to insurers to permit the accumulation of pre-tax dollars in separate reserve funds devoted solely to the payment of catastrophe-related claims will provide incentives for property and casualty insurers to offer catastrophe insurance, better protect the nation’s homeowners, small businesses, and other insurance consumers, and help ensure the financial solvency of the insurance system; and

(4) implementing tax law changes will reduce the possibility of individual insurer insolvencies in the wake of a major natural disaster, as well as the likelihood of federal budgetary outlays for disaster relief.

Section 3: Creation of Policyholder Disaster Protection Funds: Contributions to and Distributions from Funds; Other Rules.

Contributions to Policyholder Disaster Protection Funds. Amends §832 Internal Revenue Code (IRC) (relating to the taxable income of insurance companies other than life insurance companies) to allow insurers to contribute a proportion of net written premiums (NWP) for each business line into a tax-deferred policyholder disaster protection fund (PDPF).

Distribution from Policyholder Disaster Protection Funds. Amends §832(b) IRC to state the amount of distributions from the PDPF back to the insurer that would be included in the insurer’s gross income.

Definitions and Other Rules Relating to Policyholder Disaster Protection Funds (PDPF). Amends §832 IRC (relating to insurance company taxable income) by adding a new subsection that provide definitions of the rules relating to PDPF.

- *Policyholder Disaster Protection Fund (PDPF)* — The PDPF is defined as any custodial account, trust, or any other arrangement or account that is established to hold money or other assets that are set aside (on a tax-deferred basis) solely for the payment of qualified losses. Deductible contributions to the PDPF would be voluntary, but would be irrevocable once made, except to the extent of “drawdowns” for actual catastrophic loss events, or drawdowns otherwise required by state insurance regulators. Requires the assets in the Fund to be invested by insurers in a manner consistent with how insurers’ are required to invest under state insurance laws. Distributions from the funds will be included as income subject to federal tax liability in the year the funds are withdrawn from the PDPF.
- *Qualified Insurance Company* — A qualified insurance company is any insurer subject to tax under §831(a) IRC.
- *Qualified Contribution* — A limit is placed on the amount of deductible contributions made to the PDPF. This limit is based on the net written premiums in qualified lines of business; it is generally limited to the excess of the fund’s cap for the year and the fund’s balance at the end of the preceding year (see below).
- *Excess Balance Drawdown Amounts* — The excess balance drawdown amount is the fund balance as of the close of the taxable year over the fund cap for the following taxable year.
- *Catastrophe Drawdown Amount* — Specific events, such as earthquakes, wind, hail, or volcanic eruption, could trigger a drawdown from the PDPF, but the President of the United States, the Property Claim Service, or the chief executive official of a state would have to declare that a catastrophe had occurred. (See “Qualified Losses”) The bill establishes certain loss thresholds which, if exceeded, would authorize the insurer to draw down all or a portion of the reserves. The insurer may draw funds from the PDPF to the extent that qualifying losses incurred in the current year exceed the lesser of the insurer’s prior year Fund Cap or 30% of the insurer’s prior year surplus, as reflected in the insurers’ annual statement for the calendar year preceding the taxable year. The threshold for drawing amounts out of the PDPF is lowered if the insurer experiences major catastrophe losses in the prior years. In order to ensure market stability after the major catastrophe, the standard for drawdown is reduced for three calendar years to qualifying losses for the current year exceeding the lesser of one third of the insurer’s prior year reserve cap or 10% of the insurer’s prior year surplus. The PDPF also may be decreased by the order of a state insurance regulator to prevent an insurer insolvency (See “State Required Drawdown Amount”).

- *State Required Drawdown Amount* — The State Required Drawdown Amount is the amount that the insurance department for the insurer's jurisdiction of domicile requires to be distributed from the Fund.
- *Fund Balance* — The fund balance is the sum of all qualified contributions to the fund in all years, less any net investment loss and distributions.
- *Qualified Losses* — Qualified losses are losses and loss adjustment expenses incurred in the qualified lines of business net of reinsurance, as reported in the NAIC annual statement for the taxable year that are attributable to one or more of the qualifying events, including windstorm (hurricane, cyclone, or tornado), earthquake, winter catastrophe, fire, tsunami, flood, volcanic eruption, and hail. The event must be designated as a catastrophe by the Property Claim Service, declared by the President to be an emergency or disaster, or declared to be an emergency or disaster by the chief executive official in the state or jurisdiction in which the event occurred.
- *Fund Cap* — The business cap for each separate line of business is calculated by multiplying the net written premiums by the fund cap multiplier applicable to such qualified line of business. Qualified lines of business and their respective fund cap multipliers are: Fire (0.25); Allied (1.25); Farmowners Multiple Peril (0.25); Homeowners Multiple Peril (0.75); Commercial Multi-peril — non-liability portion — (0.50); Earthquake (13.00); and Inland Marine (0.25). The establishment of the PDPF is phased in gradually at a rate of 5% per year over a period of 20 years. Thus, the maximum deductible contribution for the year 2006 would be an amount equal to 5% of the Fund Cap based on NWP for the year 2005. The maximum deductible contribution to PDPF would be reached in 2026. Decreases in the amount of an insurer's Fund Cap could trigger mandatory "drawdowns" from the PDPF back to the insurer, and the insurer's prior tax deduction would be reversed into gross income to the extent of the amount so distributed.
- *Treatment of Investment Income and Gain or Loss* — The bill provides rules for realization of capital gain, and non-recognition of loss, if an insurer contributes appreciated or depreciated assets other than cash to the PDPF. If property is transferred to the Fund, it shall be treated as a sale or exchange of such property for an amount equal to its fair market value. Similarly, if property is transferred to the insurer, it shall be treated as a sale or exchange or other disposition of such property. Investment income derived from the assets held in the Fund shall be considered items of income, gain, or loss of the insurer.

- *Net Income; Net Investment Loss* — Investment income, gain or loss on the fund balance is taxed in the year earned.
- *Annual Statement* — The annual statement for PDPF is the same as set forth in § 846(f)(3) IRC.
- *Exclusion of Premiums and Losses on Certain Puerto Rican Risks* — The premiums and losses on risks covered by a catastrophe reserve established under this law or regulation of the Commonwealth of Puerto Rico shall not be taken into account when determining the fund cap or the amount of qualified losses.
- *Regulations* — The Secretary of the Treasury is authorized to promulgate regulations to implement the bill.