Natural Disasters and the Supply of Home Insurance*

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TABLE OF CONTENTS

Executive Summary	ii
I. Introduction	1
II. The Catastrophe Risk Problem	4
A. Increasing Losses and Greater Threats	4
B. Catastrophe Risk and Insurability	6
C. Industry Capacity to Absorb Catastrophe Losses	11
1. Industry Capacity	11
2. The Role of Securitization	13
3. Ability of the Industry to Rebound From Large Loss Shocks	20
D. The Significance of the Potential Frequency and Severity of Losses	22
E. Competition and Cross-Subsidization	27
III. The Cost and Availability of Home Insurance	31
A. General Cost Trends	31
B. Conditions in Selected State Insurance Markets	35
1. California	36
2. Florida	56
3. North Carolina	77
4. Puerto Rico	90
5. U.S. Virgin Islands	101
C. Summary	105
IV. Catastrophe Risk and Policy Options	107
A. Principles for Analyzing Policy Options	107
1. General Principles	107
2. Catastrophe Risk and Market Failures	108
3. Market Failures and Public Policy	115
B. Alternative Public Policy Proposals	121
1. State Insurance Funds	122
2. National Disaster Insurance Corporation	127
3. Government Reinsurance	128
4. Tax-Deferred Reserves	130
5. Expansion of Capital Market Instruments to Finance Insurance Risk	133
6. Earthquake Mitigation Incentive Programs	137
C. Conclusions Regarding Governmental Policies	139
V. Summary and Conclusions	143
References	148
Appendix	153

NATURAL DISASTERS AND THE SUPPLY OF HOME INSURANCE
EXECUTIVE SUMMARY

Purpose of Paper

The purpose of this briefing paper is to assess the implications of natural disasters for the supply of home insurance. We focus on the risk of hurricanes and earthquakes. Our analysis begins with a review of the challenges that catastrophes pose for the insurance mechanism and how insurers seek to overcome these challenges. We then examine insurance market conditions in selected jurisdictions in the U.S. and identify problems and areas of concern. Five jurisdictions were selected: California, Florida, North Carolina, Puerto Rico, and the U.S. Virgin Islands. In each jurisdiction, we examine the cost and availability of home insurance, hazard mitigation efforts, regulatory actions, and state government insurance mechanisms. We conclude with an evaluation of policy options to increase the supply of insurance and better manage catastrophe risk. These options and their pros and cons are summarized in Box E.1.

The Catastrophe Risk Problem

Increasing property losses from natural disasters have compelled insurers to reassess and respond to greater catastrophe risk. Catastrophes are difficult to insure because the huge losses exceed insurers' capital. Hence, insurers must use various devices to diversify catastrophe risk, such as reinsurance, but these devices are costly and subject to certain constraints.

It appears that insurers have increased their capacity to handle catastrophes but the ability of individual insurance companies to handle mega-disasters is unknown. Market pressures and economic realities may limit the extent to which insurers can insulate their balance sheets against catastrophe losses. Securitization offers promise for diversifying the risk of severe catastrophe losses but the amount of risk transferred to date has been relatively small. Insurers' vulnerability to a severe disaster is the most serious potential problem, yet it is obscured to the public and their representatives. It warrants thorough and careful assessment by appropriate experts and government officials.

Other problems may afflict insurance markets threatened by natural disasters. Lack of information and uncertainty can discourage insurers from underwriting certain risks. Externalities can cause homeowners to under-invest in insurance and hazard mitigation. Misguided regulatory policies distort price signals on the cost of risk and diminish the availability of insurance.

Insurance Market Conditions

Cost of Insurance

The cost of home insurance has increased significantly in areas subject to hurricanes and earthquakes. Premiums have doubled or more in the areas most prone to catastrophes. Southeast Florida, Puerto Rico and the U.S. Virgin Islands have experienced the greatest rate hikes. Rate hikes have been lower but still significant in California for earthquake insurance and in coastal North Carolina for homeowners insurance. However, insurers

still perceive rates to be inadequate in the highest-risk areas due to regulatory constraints. This has a negative effect on the supply and availability of insurance.

Availability and Adequacy of Insurance

The availability and adequacy of insurance coverage appear to be significant problems in all high-risk areas. Less than 15 percent of California homes have earthquake insurance as consumers have rejected the limited coverage offered by a state insurance mechanism. A large proportion of homes in the coastal areas of Florida and North Carolina are insured through state-sponsored residual market facilities because of the lack of coverage available in the voluntary market. The U.S. Virgin Islands is facing a crisis as insurers are declining to write new policies because of an impasse with regulators over rate increases. Low-income homeowners appear to be the most vulnerable as they have limited funds to absorb un-insured losses or invest in hazard mitigation.

Hazard Mitigation

There appears to be high homeowner demand for hazard mitigation, even though it is perceived that insurers offer little in the way of financial incentives. Regulatory caps on rates discourage insurers from offering significant premium discounts for mitigation. Still, real estate professionals in California and Florida report that mitigation investments can be recovered in the resale price of a home. Household income appears to be the primary constraint on mitigation expenditures – low-income homeowners cannot afford to retrofit their homes.

Evaluation of Public Policy Options

Need for Regulatory Reforms

Regulatory constraints on insurers' rates and underwriting practices are counterproductive and worsen market problems. Rate restrictions decrease the supply of insurance and distort market signals on the underlying cost of risk. Underwriting restrictions hamper insurers' management of their exposures and discourage the entry of new insurers and broader diversification of catastrophe risk. Insurance markets will continue to be dysfunctional and other policy measures compromised until regulatory constraints are eased.

State Government Insurance Mechanisms Have Limitations

State government insurance/reinsurance funds in California and Florida helped to fill temporary gaps in the supply of reinsurance. It is not clear that it is necessary to maintain these mechanisms on a permanent basis. Government insurers tend to be inefficient and subject to political manipulation. Also, there are limits to the capacity of state mechanisms that would be exhausted in the event of severe catastrophe losses. The primary concern is that they tend to displace the investment of private capital to diversify catastrophe risk and expose taxpayers to un-funded liabilities. Hence, they seem best suited to serve as partial, temporary sources of insurance and reinsurance (if needed) that are designed to be replaced by private capital.

Tax Changes Deserve Serious Consideration
Current federal tax laws penalize insurers for setting aside funds to cover future catastrophes. This decreases the supply and increases the cost of insurance. Changing the tax laws to permit insurers to defer taxes on reserves for future catastrophe losses could enhance the supply and lower the cost of insurance and may especially increase capacity for mid-layer, moderate catastrophe losses. Additionally, more efficient securitization of high-layer catastrophe risk could be facilitated by pass-through tax treatment of Special Purpose Reinsurance Vehicles.

Federal Government Insurance Mechanisms Should Be a Last Resort
The case for establishing federal government-sponsored catastrophe insurance and/or reinsurance funds is debatable. Such programs are subject to the same problems that afflict state government insurers summarized above, except that federal government insurers can achieve broader pooling than state government insurers. Like state insurance mechanisms, they should be viewed as a temporary last resort if other measures fail to ensure an adequate supply of insurance.

Promote Hazard Mitigation
Private and public mitigation efforts should be evaluated and possibly enhanced. Making home more resistant to the forces of nature could be an effective means to lower risk and the cost of insurance, as well as ameliorate the insurability problem. Mitigation may offer an efficient long-term solution to help manage catastrophe risk. At the same time, the economics of mitigation and the costs and benefits of various measures need to be considered. Some form of government assistance for mitigation for low-income homeowners may be desirable.

Box E.1
Policy Options for Natural Disasters and Home Insurance

Policy Option	Pros	Cons
State Windstorm Pools & FAIR Plans	Provide insurance to high-risk insureds unable to obtain coverage in voluntary market. Work best when there are a small number of insureds in state mechanisms.	Taxes homeowners in low-risk areas through assessments on voluntary market. Not designed to cover large shortfall in supply of private insurance.
Government Insurers		
State Government Primary Insurers	Provides source of insurance interstate pooling.[1] Can accumulate reserves tax-free.	Inefficient, displace private capital, limited capacity, expose taxpayers to un-funded liabilities.
State Government Reinsurers	Provides source of reinsurance if private reinsurance is not available. Can accumulate reserves tax-free.	Inefficient, displace private capital, limited capacity, exposes taxpayers to un-funded liabilities.
National Disaster Insurance Corporation (HR 1856 and S. 1043, 104th Congress)	Would write primary and reinsurance coverage. Could expand supply of catastrophe insurance if private markets were inadequate. Broader pooling than state government insurers. Advantage in inter-temporal risk pooling.[2]	Displacement of private market as reinsurance triggers were lower than the amount of damage from modest sized storms. Inefficiency and political manipulation. Problem of creeping federalization of insurance regulation. (Note: some do not view this as a problem.) Taxpayers become risk bearers.

[1] Intrastate pooling refers to pooling of exposures (i.e., premiums and losses) within a state among multiple insurers or geographic areas.
[2] Inter-temporal pooling refers to pooling of exposures over multiple years.

Policy Option	Pros	Cons
Federal Reinsurance (HR 21 106th Congress)	High-level coverage would reduce need for costly reserves. Treasury's liability is limited to $25 billion. Can use power to borrow and tax to fund losses. Uses auctions to sell reinsurance to private insurers. Cross subsidization reduced by multiple regions.	Program's trigger is too low at $2 billion. Industry can likely absorb a loss in the $50 billion range, so federal reinsurance will displace private capital. Government plans subject to political manipulation. Taxpayers exposed to un-funded liabilities.
Tax-Deferred Reserves	By deferring taxes on reserves, insurers can accumulate capital faster. Lowers cost of capital, increasing supply and lowering price of insurance. Avoids problems of government programs.	Revenue loss from the treasury from tax deferral. Pressure will develop for other industries to get their reserves treated on a tax-preferred basis.
Pass-Through Tax Treatment of Special Purpose Reinsurance Vehicles (SPRVs)	Will facilitate securitization of catastrophe risk using vehicles under U.S. jurisdiction. Will lower cost of diversifying high-layer catastrophe risk.	Opponents argue that SPRVs will get unfair tax preference over conventional reinsurers. How much these vehicles will be used and magnitude of impact on supply of insurance unknown.
Government Assistance for Hazard Mitigation	Could be most effective long-term strategy to lower catastrophe risk and insurance costs. Could be especially helpful to low-income households.	Cost of programs in terms of government expenditures or tax revenue losses. Limits to cost-effectiveness of hazard mitigation. Equity issues with respect to who receives assistance and criteria.

I. Introduction

Economic and human losses from natural disasters began increasing in the late 1980s, but Hurricane Andrew (1992) and the Northridge, California Earthquake (1994) caused a "sea change" in the assessment and management of catastrophe risk. Insurers sought to increase their rates for related coverages (homeowners and earthquake insurance were the lines most severely affected) and decrease their exposure to catastrophe losses. Market pressures were particularly strong in high-risk areas – the Southeastern Atlantic coast, the Gulf coast, the Caribbean, and certain parts of California. Areas with more moderate risk experienced less severe market pressures. Insurance regulators constrained insurers' adjustments, but allowed rates to rise gradually along with shifts in insurers' exposures. Homeowners in the highest-risk areas have seen their insurance premiums double or more and many have been forced to obtain coverage through state-sponsored residual market facilities. The events of September 11, 2001 may have some additional repercussions because of their effects on the supply of reinsurance, an important element in insuring catastrophe risk.

The availability of insurance improved in many jurisdictions as rates increased, but some problems persist and there are several areas of concern, notwithstanding the rippling effects of September 11. Most homeowners in California do not have earthquake insurance and the U.S. Virgin Islands is approaching a home insurance crisis. The availability and quality of coverage remains an issue in all high-risk areas. Finally, there are potential weaknesses in the financial viability of private and government insurance mechanisms that could result in market disruptions and burdens on taxpayers in the event of moderate or severe disasters.

The purpose of this briefing paper is to examine insurance market conditions in selected jurisdictions in the U.S., identify problems and areas of concern, and evaluate policy options. Five jurisdictions were selected: California, Florida, North Carolina, Puerto Rico, and the U.S. Virgin Islands. California faces a significant risk of earthquakes and the other jurisdictions are wrestling with the threat of hurricanes. In each jurisdiction, we examine the cost and availability of home insurance, hazard mitigation efforts, regulatory actions, and state government insurance mechanisms. We also comment on developments in reinsurance and financial markets to diversify catastrophe risk. Finally, we consider several potential government policy measures, including regulatory reforms, government insurance and reinsurance programs, changes in tax law, and efforts to facilitate hazard mitigation.

There is no simple solution or magic bullet that will fix the problems in home insurance markets subject to natural disasters. As there are multiple causes of these problems, only a multi-faceted, integrated strategy will substantially improve market conditions. Furthermore, a successful strategy will necessarily involve some bitter medicine. Rates will probably need to increase further in high-risk areas to support healthy insurance markets. With rate adequacy, the availability and quality of insurance coverage will improve and other measures to help manage catastrophe risk become viable. Policies that would allow insurers to establish tax-deferred catastrophe reserves and promote greater hazard mitigation show the most promise. Establishing a federal government insurance or reinsurance program for catastrophe risk would be a more radical step that should be viewed as a last resort.

The paper begins with an overview of the catastrophe risk problem and its implications for home insurance markets. This is followed by a detailed review of market conditions in each of the selected jurisdictions. Section IV presents principles for analyzing policy options and discusses the ideas that have garnered the most attention or deserve some consideration. We summarize our opinions in a concluding section. An appendix describes home insurance coverages relevant to the paper.