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**ABSTRACT**

The terrorist attacks of September 11, 2001 represented a loss for commercial property & casualty insurers that was both unprecedented and unanticipated. After sustaining this record capital loss, the availability of adequate private insurance coverage against future terrorist attacks came into question. Concern over the potential adverse consequences of the lack of availability of insurance against terrorist incidents led to calls for federal intervention in insurance markets. This paper discusses the economic rationale for and against federal intervention in the market, and concludes that the benefits from establishing a temporary transition program, during which the private sector can build capacity and adapt to a dramatically changed environment for terrorism risk, may provide benefits to the economy that exceed the direct and indirect costs.

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## **1. Introduction**

For commercial property/casualty insurers, the terrorist attacks of September 11 represented a loss of a magnitude, now estimated at approximately \$40 billion, which was both unprecedented and unanticipated. The costliest disaster in U.S. history had previously been Hurricane Andrew, with \$19.6 billion (in 2001 dollars) in associated insured losses. Following the attacks, insurers pledged to pay all of the insured claims arising from the attacks; they are currently in the process of doing so (Hartwig, 2002). After sustaining this record capital loss, however, the availability of adequate insurance coverage against future terrorist attacks came into question. Aviation insurers virtually eliminated third-party war coverage, and reinsurers imposed terrorism exclusions. As of May 2002, 45 states, as well as Puerto Rico and the District of Columbia, have approved standard language for terrorism exclusions in primary property/casualty insurance policies (General Accounting Office, 2002).

Concern over the potential adverse consequences of the lack of availability of insurance against terrorist incidents has led policymakers to consider whether there is an appropriate government role in establishing a “bridge” program to allow the private sector a transition period during which it could build capacity and adapt to a dramatically changed environment for terrorism risk. While well-functioning private insurance markets are preferable to a government insurance program in the long run, a temporary and limited government role in this market may provide benefits to the economy that exceed its direct and indirect costs. This paper discusses the economic rationale for such a government role.

This paper proceeds as follows. Section 2 outlines the effect of 9/11 on the insurance industry. Section 3 discusses the role of government in markets for terrorism insurance. Section

4 discusses policy design issues and the Bush Administration's proposal for a federal terrorism risk insurance program. Section 5 concludes.

## **2. Insurance Markets After 9/11**

One important unknown in the weeks and months following September 11 was whether the commercial property/casualty industry's difficulties in supplying terrorism insurance represented a temporary issue or a permanent problem. In the past, following large unexpected disasters, the insurance industry had managed to replenish capital rather quickly. Even after Hurricane Andrew caused almost \$20 billion in insured losses in 1992, the property/casualty industry's policyholder surplus grew in real terms by 9 percent between 1992 and 1993 due to growth in total premiums (A.M. Best Co., 2002). Moreover, although the losses resulting from Hurricane Andrew were unprecedented at the time (previously, insurers had assumed a probable maximum loss of \$8 billion) and many insurers quickly deemed hurricane risk "uninsurable," insurers subsequently learned to price more accurately the risk of such catastrophes and make such insurance available (Froot, 1997; Jaffee and Russell, 1997). Sophisticated computer modeling techniques were developed to assess the risk of losses from natural disasters. Models have also been developed for other events with which insurers had very little prior experience, including the pricing the risk of losing a satellite at launch and at subsequent stages of its scheduled life.

The question arises as to whether terrorism risk is fundamentally different from other catastrophic risks for which private insurance markets have developed. While there are circumstances associated with terrorism risk that merit consideration of a temporary government program, it is likely that markets will eventually be able to adapt to changed information

regarding that risk. The private sector may require time to gather data and build new models before it is able to extend terrorism risk coverage to all parties seeking it. Already, innovative modeling of terrorism risk has begun to develop (e.g., Woo, 2002). Thus, while there are great challenges to estimating the probability distribution of terrorism losses, insurers will likely develop that capability with time.

Until such a time, a key concern on the part of the federal government is that the temporary lack of availability of property/casualty insurance and reinsurance for terrorism risk has potentially significant implications for many segments of the economy. In the absence of efficient mechanisms for risk sharing, an economic agent exposed to terrorism risk may be forced to retain a higher than optimal amount of that risk given the agent's preferences over various combinations of risk and return. At the same time, there may be another agent who, given a portfolio of assets and some preferences over risk and return, would be willing to accept the risk of losses from terrorism in exchange for a certain level of compensation. Thus, an efficient risk-sharing mechanism -- one that, for a price, transferred risk from those exposed to a higher-than-desired level of risk to those who are willing to accept more risk -- would benefit both agents.

Insurance markets are the institutional mechanisms by which this risk-sharing typically takes place. When an insurance company is able to pool a large number of small, independent risks across a cross-section of the population, the company may choose to retain all of the risks within the company itself. A prime example of such a market is that for auto insurance; in this case, the potential exposure of an insurer in any given time period is limited due to the relatively small amount insured and the small likelihood of a unusually large number of claims. When a single insurance company has many correlated risks or even a few very large ones, that company

will seek to reduce their concentration of exposure by spreading the risk among a variety of different agents through the use of reinsurance markets. Thus, reinsurance companies play an important role in the private insurance industry.

Traditionally, however, a relatively small percentage of catastrophe risk held by insurers is covered by reinsurance (particularly for higher coverage layers), in part due to a relatively small level of capital and surplus in the reinsurance industry (Froot, 1997). Capital in the global reinsurance market, which currently stands at about \$125 billion, is insufficient to provide adequate coverage of low-probability, high-loss risks (Reinsurance Association of America, 2002). Insurance companies have often retained large exposures to catastrophic events, though in recent years have sought to spread these risks to capital markets (Froot, 1997; Grace, Klein, and Phillips 2001). Spreading these risks to capital markets has much appeal as a means for agents to diversify risk holdings because the potential losses are large relative to insurance industry capital, but much smaller relative to total investment capital.

The insurance industry has some experience with the securitization of catastrophe risk in the context of natural disasters. Catastrophe bonds, first introduced in 1994, pay a specified rate but are subject to loss of principal triggered by a catastrophe. There are also catastrophe call option spreads, which are exchange-traded contracts settled on established industry loss indices. For numerous reasons including unfavorable statutory accounting rules, the options are not currently being traded, though catastrophe bonds have been traded more. With only \$7 billion in catastrophe bond transactions between 1994 and 2000, however, the market for such bonds is not yet sufficiently developed to be confident in its ability to finance a substantial portion of the terrorism risk facing the U.S. (Grace, Klein, and Phillips, 2001).

In a situation where traditional risk-spreading mechanisms are not fully functional, many parties may be saddled with undiversified risk, or may be affected in other ways by a lack of terrorism insurance. Of course, primary insurers with exposure to terrorism risk but without access to reinsurance for spreading that risk could suffer debilitating losses in the event of another major terrorism event. Cities, counties, non-profit and philanthropic organizations, real estate owners, and private businesses have faced substantial difficulties obtaining adequate coverage of terrorism risk, leaving these groups burdened by terrorism risk as well. As a result of diminished coverage capacity, a wide range of business activity has been put on hold or cancelled as potential providers of financing declare themselves unwilling to expose their capital to terrorism risk (Joint Economic Committee, 2002). The possible short-run lack of efficient risk sharing provides an important reason to think that there may be an appropriate temporary role for the federal government in supporting private efforts to make terrorism risk insurance widely and reasonably available.

### **3. A Federal Role in Insurance Markets?**

There are numerous economic reasons to suggest that, as a general principle, private insurance markets should be allowed to operate without federal participation. Markets naturally provide private and social benefits that can be easily frustrated when the government becomes an active player in a market. In insurance markets, these benefits include incentives for efficient investment in risk mitigation measures, careful claims adjustment, and the development of capacity sufficient to satisfy demand.

Nevertheless, a pair of shocks has led to a temporary, but serious, disruption in the normal functioning of markets for property/casualty insurance. First, the terrorist attacks of

September 11, 2001 delivered a large capital shock to the property/casualty insurance market, adversely affecting the industry's capacity to insure future terrorism risk. Second, coincident with that capital shock, the industry suffered an informational shock that has forced insurers to abandon their prior beliefs about the likelihood of and probable losses from terrorism and required them to think anew about modeling such risks. Below we assess the costs and benefits of government involvement in this arena.

### **3.1 The Efficiency of Markets**

#### *3.1.1 Risk Mitigation Incentives*

One of the virtues of unfettered markets is the incentives they generally provide for market actors to invest and behave in a socially optimal fashion. Perhaps the most serious cause for restraint with regard to government action in private markets is the potential for distortion of prices, which under normal circumstances provide important signals to firms and consumers about how to allocate resources in the most efficient manner. In the case of federally backed terrorism risk insurance, one concern is that distorted prices could lead firms to make sub-optimal decisions about investment in risk mitigation. Given limited resources, a firm exposed to terrorism risk has, broadly speaking, two alternatives for addressing the threat that risk poses to its business: the firm can insure against losses resulting from that risk, and it can invest in measures that will reduce the probability and/or probable loss associated with an attempted terrorist attack. A profit-maximizing firm will invest in risk mitigation up to the point where the marginal cost of additional mitigation is equal to the marginal cost of insuring against that risk.

Practically speaking, incentives for risk mitigation provided by insurance markets can be separated into two categories. There are incentives to invest in measures to make existing



buildings safer, and there are incentives that would affect the development future buildings and projects. The first type of risk mitigation incentives, those applying to existing buildings, might include an enhanced security presence that could deter or prevent an attack, or possibly retrofitting of a structure (e.g. shatter-proof windows, better air vents) that would help limit damage were an attack to occur. The second type of incentive for risk mitigation might influence a developer's decision regarding the location, size, design, and nature of future projects and buildings. Normal insurance mechanisms would, for example, appropriately discourage the construction of a high-profile building that would present an attractive target to a terrorist. The key to both types of risk mitigation is that even if an individual company may not be able to control whether a terrorist decides to attack the U.S., the company can control the amount of damage that occurs and may be able to influence a terrorist's ability to carry out an attack.

### *3.1.2 Claims Adjustment Incentives*

In normally functioning insurance markets, an insurer will devote considerable care to evaluating the merits of a claim made under a policy it wrote since that claim will be paid in large part out of the insurer's pocket. Under most proposals for a terrorism risk insurance backstop, property/casualty insurers would continue to write and execute insurance policies. Thus, private insurers would continue to do claims adjustment on policies they write, even though the government or the industry as a whole may eventually pay a large portion of claims arising from terrorist attacks. In this situation, insurers do not necessarily face the proper incentives to engage in careful claims adjustment. In fact, insurers could find it in their best interest to earn the good will of their clients by treating claimants generously at the expense of the government. Though primary insurers may engage in reinsurance agreements with private

reinsurers under normal circumstances, the moral hazard in that situation is mitigated by the repeated interaction of insurer and reinsurer, making the problem one that is particular to the case of a federal backstop. This problem can be partially alleviated through cost-sharing provisions that keep an insurer's "skin in the game," i.e., continue to expose the private insurer to some fraction of losses throughout the loss distribution.

### *3.1.3 Crowding-out Effects*

When the federal government provides a product or service typically offered by the private sector, there is also the risk that private firms may be "crowded out." Government dominance of insurance markets could eliminate the incentives of private insurers and reinsurers to develop additional capacity, or to invest in capabilities for estimating the distribution of terrorism risk. In the short run, there is likely to be little such crowding out, as private insurers and reinsurers have in large part withdrawn from the terrorism risk insurance market. In the longer run, however, a continuing government role in the terrorism risk insurance market could hinder the development of private capacity to cover terrorism risk. The key is for the government to act as a bridge while the private sector builds the capacity and expertise necessary to fulfill the demand for terrorism insurance.

An important reason why long-run government displacement of private insurers is fundamentally undesirable is that there are real costs associated with providing terrorism insurance. A direct cost is that taxpayers assume the risk of losses from terrorism. In the event of a terrorist attack with a federal terrorism risk insurance regime in place, taxpayers will ultimately bear the burden of repaying the losses. Were the government responsible for insured losses from terrorism, its only revenue options for paying terrorism claims are to raise taxes,

which entails associated deadweight losses, or reduce other government spending. There are also less direct costs associated with a situation in which the government displaces the private sector. In providing products or services, the government, unlike the private sector, is not typically subject to the competitive pressures of the marketplace. Consequently, there is a persistent concern that long-term government dominance of a particular market will mean a loss of the efficiency and innovation fostered by competition within the private sector.

### **3.2 Rationale for Government Intervention**

Although there are important reasons markets should, as a general principle, be allowed to operate without interference, there are also important reasons that a temporary and limited government program may be desirable in the short-run. Insurers suffered a large blow to their capital reserves on September 11, substantially reducing their capacity to insure normal risks, much less the large new risks associated with terrorism. Also, they were forced to abandon their prior expectations of the likelihood of future terrorist attacks and the probable maximum loss associated with such attacks, making pricing terrorism risk a complicated task. Finally, the so-called Samaritan's Dilemma calls for the government to credibly pre-commit itself to a certain course of action following any future terrorist events.

#### *3.2.1 Inadequate Capacity*

Perhaps the most obvious problem insurance markets face following September 11 is insufficient capacity for covering the newly revealed risk of terrorism. The capital reserves of the commercial property/casualty industry suffered a substantial blow, temporarily reducing their ability to extend coverage of all types of risk. It has been estimated that the insured losses

resulting from those attacks amounted to about \$40 billion, a significant portion of the approximately \$150 billion of commercial property/casualty reserves that had been set aside pre-9/11 for covering losses not related to terrorism (Hartwig, 2002). This reduction in capacity coincided with the revelation that potential losses from terrorism are vastly larger and more likely than had previously been suspected. The demand for terrorism coverage had suddenly and sharply increased while the capacity to provide such coverage had shrunk. This deficiency has been cited as one justification for a temporary government intervention that would provide a bridge while the private sector overcomes transaction costs to rebuild capacity (e.g., Harrington and Niehaus, forthcoming).

### *3.2.2 Obstacles to Pricing*

In addition to capacity issues, the insurance industry is also hindered in its ability to offer terrorism risk insurance by difficulties pricing terrorism risk. The magnitude of the terrorist attacks forced insurance underwriters to abandon previously held beliefs about the likelihood and probable maximum loss from terrorism. In this sense, the world changed dramatically on September 11, 2001. Now, without a ratemaking history on which to determine the expected loss distribution, and especially the probable maximum loss (PML) resulting from a terrorist attack underwriters have a limited actuarial basis on which to price the risk of future attacks (Kleindorfer and Kunreuther, 1999 ; Meszaros, 1997; Stone, 1973). The task of predicting future attacks was substantially complicated immediately after 9/11 by the fact that there was no model available to predict how or when a potential terrorist might act. A temporary government loss-sharing program, together with litigation reforms that limit liability in the case of a terrorist

attack, is advantageous in that it would give insurers a period of time during which insurers can develop ratemaking experience without being exposed to massive losses.

### *3.2.3 Samaritan's Dilemma*

In the absence of any formal government policy toward terrorism losses, it is quite likely that, in the event of another major terrorist attack, the government will step-in in order to provide aid and assistance to the victims of the attack. Moreover, after an incident, it is politically quite difficult for the government to offer differential compensation to victims based on how much they had worked to mitigate the risk of attack before hand. In other words, the government is likely to be as generous to an individual or organization that took no precautionary steps, as it is to an individual or organization that invested heavily in preventative measures. Knowing that this free, implicit insurance exists, the concern is that private entities will not have appropriate incentives to engage in risk mitigation. This form of moral hazard is the crux of the so-called "Samaritan's Dilemma" (Buchanan, 1975). The advantage of having a clearly defined policy in place prior to a terrorist event is that such a policy can be formulated in a manner that fosters economic incentives for firms and individuals to take efficient preventative measures, sharing the responsibility for preparedness. Moreover, a predefined policy ensures that participants and victims of different attacks are comparably treated. An existing structure can also help to speed compensation to victims. The key here is for the government to credibly establish its course of action prior to a terrorist event. In this respect, there is a parallel to the case of implicit vs. explicit deposit insurance programs. It has been argued that explicit deposit insurance programs limit a government's commitment to depositors and provide fewer incentive problems than an

implicit insurance scheme in which guarantees are provided *ex post*<sup>1</sup>. As we describe below, establishing an explicitly temporary federal backstop that gradually increases the burden on the private sector before the government exits completely is one way to clearly and credibly pre-define the government's position with regard to disaster relief and mitigate the Samaritan's Dilemma (Kunreuther and Heal, 2000).

#### **4. Administration Terrorism Risk Insurance Proposal**

President Bush announced his terrorism risk insurance proposal on October 16, 2001 with the goal of creating a bridge that would allow the private sector to build sufficient capacity and expertise to provide needed terrorism coverage. At the same time, the Administration sought to address concerns about distortions of incentives for risk mitigation and efficient claims adjustment, as well as crowding-out effects of its presence in insurance markets. These aims were addressed through consideration of elements of policy design, including deductibles, co-payments, caps on exposure, litigation reforms, and sunset provisions.

##### **4.1 Risk Sharing Provisions**

Under the Administration's proposal, which would extend through 2004, the federal government would share claims costs with private insurers, subject to a deductible and co-payment that increase over time, as indicated in Table 1.<sup>2</sup> If the United States were victim to a terrorist attack before the end of 2002, the federal government would pay 80 percent of the first \$20 billion of insured losses, and 90 percent of insured losses in excess of this amount. The

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<sup>1</sup> On the political economy of financial regulation, see Kroszner (1998) and Demirgüç-Kunt, and Kane (2001).

<sup>2</sup> Under the Administration proposal, "insured loss" means any loss in the United States covered by any type of property/casualty insurance policy or endorsement for commercial property, commercial liability, commercial automobile, workers' compensation, financial guarantee, private passenger automobile, and homeowners insurance.

private industry would pay for the remaining insured losses. (Implicitly, there is no deductible in the first year of the program; insurers' payment of costs related to the September 11 attacks is considered the deductible for the first year.)

In the year 2003, the industry would be responsible for the first \$10 billion in insured losses, and 50 percent of insured losses between \$10 billion and \$20 billion. Above \$20 billion, the federal government would continue to pay 90 percent of all losses.

In the year 2004, the industry would be responsible for the first \$20 billion in insured losses, and 50 percent of insured losses between \$20 billion and \$40 billion. Above \$40 billion, the federal government would continue to pay 90 percent of all losses.

**Table 1**  
**Cost-sharing Provisions of Administration Terrorism Risk Insurance Proposal**

<b>2002</b>	<b>2003</b>	<b>2004</b>
<i>\$0-20 billion layer:</i> Government pays 80 percent of insured losses.	<i>\$0-10 billion layer:</i> Government does not pay.	<i>\$0-20 billion layer:</i> Government does not pay.
<i>\$20-\$100 billion layer:</i> Government pays 90 percent of insured losses.	<i>\$10-20 billion layer:</i> Government pays 50 percent of insured losses.	<i>\$20-40 billion layer:</i> Government pays 50 percent of insured losses.
	<i>\$20-100 billion layer:</i> Government pays 90 percent of insured losses.	<i>\$40-100 billion layer:</i> Government pays 90 percent of insured losses.

In the event that total insured losses exceed \$100 billion in any calendar year, Congress would determine the procedures for and source of any such payments.<sup>3</sup> Importantly, insurers

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<sup>3</sup> An aggregate limitation has two important effects. First, by providing an upper bound on private sector insurance liabilities, it provides the market with a high degree of certainty about its maximum probable loss. Second, if there is a truly catastrophic event, this preserves flexibility in determining how society's resources should be allocated in its aftermath.

would not be liable for losses above that level. In fact, in the first year of this arrangement, the insurance industry would be exposed to only \$12 billion for a terrorist event that resulted in \$100 billion in insured losses. In the second year, the industry would still only be exposed to \$23 billion in losses, and in 2004, the last year of the arrangement, the insurers would be required exposed to \$36 billion in losses. These upper bounds on the probable maximum loss from terrorism will enable insurers to gain experience pricing terrorism risk.

This risk-sharing arrangement, composed of a deductible and a co-payment schedule, is designed to encourage development of private capacity and minimize the distortion of incentives for risk mitigation and careful claims adjustment. A deductible serves a number of functions. One important function is to make the primary insurer retain a portion of risk, thereby encouraging careful writing of policies and adjustment of claims. The primary insurer may also structure a policy so as to expose the insured to a portion of risk, thus encouraging investment in appropriate risk prevention activities. A deductible also limits the federal government's active involvement in insurance markets. Were the government to set too low a deductible for its terrorism risk insurance backstop, it could end up in a situation of frequently paying small claims from acts of terrorism – events that could easily be handled by the private sector.<sup>4</sup>

Sharing risk in higher layers of coverage with primary insurers through a co-payment mechanism requires insurers to develop capacity and learn to price coverage for in those high layers. Moreover, co-payments reduce moral hazard associated with private insurers adjusting claims while paying those claims with government funds. When insurers determine how much

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<sup>4</sup> Insurers would be charged no premium for the federal backstop. If a premium were charged, new and potentially costly bureaucracies would have to be created to collect insurance premiums. For a temporary program, the fixed cost of establishing such collection mechanisms could be unreasonably high. In addition, for pricing to provide optimal incentives, prices should be risk-adjusted, an activity that the federal government is in a poor position to implement. Ultimately, the private market – not the government – is in the best position to determine insurance prices.



claimants are owed under the insurance policies they wrote, those insurers will have to pay a fraction of each marginal dollar owed to claimants as long as the federal cost-sharing arrangement has a co-payment provision such as that in the Administration proposal.

A key feature of the Administration's terrorism risk insurance program is a clearly defined exit strategy for the government. By legislating an end to government involvement beyond 2004, the proposal reinforces the government's commitment to a clearly defined exit strategy from its reinsurance role. A steadily increasing share of risk borne by the insurance industry aims to encourage development of new capacity and smooth the transition of the government out of that role. This feature of the plan should prevent the government from remaining in insurance markets too long, thus crowding out potential private capacity at the expense of the taxpayer.

#### **4.2 New Litigation Procedures**

Under the Administration proposal, a number of new litigation procedures would be permanently put in place for claims associated with a terrorist event. The proposed strategy includes three components: provision for consolidation of terrorism-related claims in a single federal court, elimination of punitive damages for such claims, and limits on non-economic damages.

A major terrorist event that causes widespread damage or destruction of property and lives has the potential to spawn an extraordinary number of tort cases, inducing severe strains on existing litigation procedures. To ensure a unified standard is applied to all civil claims arising from a terrorist attack and to prevent an overwhelming of the court system, the Administration has proposed that terrorism-related cases be consolidated in a single federal court. In this way,

the legal system would not be swamped by multiple cases in multiple states – with similar claims in multiple forums decided under widely varying standards for liability, causation, defenses, and damages. Consolidation in federal court will also further reduce the uncertainty insurers face from civil liability cases while promoting the equitable resolution of claims from terrorism.

The largest piece of terrorism risk insurers face is likely the liability component of property and casualty insurance. Exposure to losses from civil liability cases represents a major source of uncertainty for insurers trying to assess their risk exposure and price insurance policies covering terrorism risk. For this reason, among others, there is need for limitations on punitive awards that are entirely unrelated to the plaintiff's injuries. A business defendant who engages in the kind of wrongdoing that would trigger punitive damages will face a variety of federal and state criminal and administrative investigations and sanctions. Consequently, the Administration's proposed policy would eliminate punitive damages and require proportional fault for recovery of other non-economic damages for terrorism-related claims. This policy, notably, would neither eliminate non-economic damages, nor require that economic damages depend on demonstration of a defendant's fault.

Restrictions on damage awards, besides removing an obstacle to private provision of terrorism coverage and promoting basic fairness, represent an important protection for victims of terrorism. In mass tort cases with large numbers of claimants, only a limited pool of resources will be available to plaintiffs who prove liability. All claimants who suffered economic harm can be appropriately compensated only if the limited resource pool is preserved through limitations on non-economic damages.

## 5. Conclusion

The terrorist attacks of September 11 were a significant shock to insurers who had not anticipated a risk of the nature or magnitude witnessed that day. While insurers had sufficient reserves to pay claims arising from those attacks, the loss of capital combined with the not easily quantified prospect of future attacks of an even greater magnitude impelled the withdrawal of reinsurers, and subsequently primary property/casualty insurers, from the market for terrorism risk coverage. This temporary disruption of markets for risk-sharing spurred calls for a government-backed terrorism risk insurance program that would allow the private sector breathing room to increase capacity and improve pricing ability following the new information about terrorism risk revealed on September 11, 2001. It also led to calls for a more efficient and equitable approach to civil liability law and procedures for claims arising from terrorism.

Several rationales have been put forth to explain why private markets alone are not yet capable of fully addressing this disruption and why, consequently, there is a benefit for the federal government to act as a reinsurer of policies covering terrorism risk while markets adapt. Even though some temporary government role may be desirable on net, however, there are important reasons to strictly limit federal intervention in private insurance markets. An efficient federal program will, to the maximum extent possible, preserve normal market incentives for both insurers and the insured to act in the most socially efficient manner. The Administration's terrorism insurance proposal, reflecting concerns about moral hazard and crowding out of private capacity, includes a steadily increasing share of risk borne by private insurers and a clearly defined exit strategy in order to minimize crowding out private capacity. By circumscribing the government role in insurance markets, this plan would help build private sector capacity while minimizing the problems typically associated with government intervention in private markets.

## References

- A. M. Best Co. "Best's Aggregates and Averages—Property/Casualty." 2001.
- Buchanan, James M. "The Samaritan's Dilemma." In *Altruism, Morality and Economic Theory*, edited by E.S. Phelps, 71-85. New York: Russell Sage Foundation, 1975.
- Cummins, J. David. *Deregulating Property-Liability Insurance: Restoring Competition and Increasing market Efficiency*. Washington, D.C.: AEI-Brookings Joint Center for Regulatory Services, 2002.
- Demirgüç-Kunt, Ash and Edward J. Kane. "Deposit Insurance Around the Globe: Where Does it Work?" NBER Working Paper No. 8493. Cambridge, MA: National Bureau of Economic Research, 2001.
- Froot, Kenneth A. "The Limited Financing of Catastrophic Risk: An Overview." NBER Working Paper No. 6025. Cambridge, MA: National Bureau of Economic Research, 1997.
- Froot, Kenneth A. "Evolving Market for Catastrophic Event Risk." NBER Working Paper No. 7287. Cambridge, MA: National Bureau of Economic Research, 1999.
- General Accounting Office. "Terrorism Insurance: Rising Uninsured Exposure to Attacks Heightens Potential Economic Vulnerabilities." 2002.
- Grace, Martin F., Robert W. Klein, and Richard D. Phillips. "Regulating Onshore Special Purpose Reinsurance Vehicles." Center for Risk Management and Insurance Research, Georgia State University, 2001.
- Harrington, Scott and Gregory R. Niehaus. "Government Insurance, Tax Policy, and the Affordability and Availability of Catastrophe Insurance." *Journal of Insurance Regulation* (forthcoming).
- Hartwig, Robert P. "The Long Shadow of September 11: Terrorism and Its Impacts on Insurance and Reinsurance Markets." Insurance Information Institute, 2002.
- Jaffee, Dwight M. and Thomas Russell. "Catastrophe Insurance, Capital Markets, and Uninsurable Risks." *Journal of Risk and Insurance* 64 No.2 (June, 1997): 205-230.
- Joint Economic Committee of the United States Congress. "Economic Perspectives on Terrorism Insurance." 2002.
- Kleindorfer, Paul R. and Howard C. Kunreuther. "Challenges Facing the Insurance Industry in Managing Catastrophic Risks." In *The Financing of Catastrophic Risk*, edited by Kenneth A. Froot, 149-194. Chicago: University of Chicago Press, 1999.

- Kroszner, Randall S. "The Political Economy of Banking and Financial Regulatory Reform in Emerging Markets." *Research in Financial Service* 10 (1998): 33-51.
- Kunreuther, Howard and Geoffrey Heal. "Interdependent Security: The Case of Identical Agents." NBER Working Paper No. 8871. Cambridge MA: National Bureau of Economic Research, 2002.
- Meszaros, Jacqueline R. "The Cognition of Catastrophe: Preliminary Examination of an Industry in Transition." Wharton Center for Risk Management and Decision Processes, Working Paper No. 97-02-01, University of Pennsylvania, 1997.
- Reinsurance Association of America. "The Reinsurance Market: The Impact of the September 11<sup>th</sup> Terrorism Catastrophe." [www.raanet.org/policyupdate/terrorism\\_reinsurance.html](http://www.raanet.org/policyupdate/terrorism_reinsurance.html), access date, April 12, 2002
- Stone, James. "A Theory of Capacity and the Insurance of Catastrophe Risks." *Journal of Risk and Insurance* 40 ( June, 1973): 231-43.
- Woo, Gordon. "Quantifying Insurance Terrorism Risk." NBER Working Paper. Cambridge, MA: National Bureau of Economic Research, February 1, 2002.