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TRIA AND BEYOND

TERRORISM RISK FINANCING IN THE U.S.

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THE WHARTON RISK MANAGEMENT AND DECISION PROCESSES CENTER

Since its creation 17 years ago, the mission of the Wharton Risk Management and Decision Processes Center has been to carry out a program of basic and applied research to promote effective corporate and public policies for low-probability events with potentially catastrophic consequences. The Risk Center has focused on natural and technological hazards through the integration of risk assessment and risk perception with risk management strategies. After 9/11, research activities extended to national security issues (e.g., terrorism risk insurance, protection of critical infrastructure).

Building on the disciplines of economics, decision sciences, finance, insurance, marketing and psychology, the Center's research program has been oriented around descriptive and prescriptive analyses. Descriptive research focuses on how individuals and organizations interact and make decisions regarding the management of risk under existing institutional arrangements. Prescriptive analyses propose ways that individuals and organizations, both private and governmental, can make better decisions regarding risk. The Center supports and undertakes field and experimental studies of risk and uncertainty to better understand the linkage between descriptive and prescriptive approaches under various regulatory and market conditions. Risk Center research investigates the effectiveness of strategies such as risk communication, incentive systems, insurance and regulation.

The Center is also concerned with training decision-makers and promoting a dialogue among industry, government, interest groups and academics through its research and policy publications and through sponsored seminars, roundtables and forums. A regular Newsletter and Snapshots provide an update of Center activities and publications. More information can be found online at <http://opim.wharton.upenn.edu/risk>.

The members of the Wharton Risk Center *TRIA and Beyond* research team are Neil Doherty, Esther Goldsmith, Scott Harrington, Paul Kleindorfer, Howard Kunreuther, Erwann Michel-Kerjan, Mark Pauly, Irv Rosenthal and Peter Schmeidler. Editorial and research assistance: Hannah Chervitz.

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PREFACE

Terrorism risk poses fundamental challenges to our national security that must be seen in a dynamic perspective as the threat is continuously evolving. One of these challenges is associated with terrorism insurance coverage. Careful research and policy development are needed in the current debate on the future of terrorism insurance to assure economic and social continuity in the case of new terrorist attacks in the U.S. Indeed, as illustrated by the events of September 11th 2001 in the U.S, March 11th 2004 in Madrid and the recent attacks in London as well as other alerts, the threat of terrorism is likely to remain an issue for a long time to come.

The goal of this Wharton Risk Center report on *TRIA and Beyond* is to provide policymakers, key industry representatives and other interested parties with an analysis of the question as to what roles the public and private sectors can and should play with respect to terrorism risk coverage in the United States in the post-9/11 world.

This study builds on research undertaken by the Wharton Risk Center over the past 4 years coupled with the 20 years of experience the Center has had in undertaking research on managing and financing low probability-high consequence events. The study also benefited from ongoing work on terrorism insurance programs developed here and abroad as part of the Organization for Economic Cooperation and Development (OECD) Task Force on Terrorism Insurance (30 countries including the U.S.)¹.

During the past year, the Wharton team has had fruitful meetings and discussions with key players on the issues associated with terrorism insurance and its relationship to other strategies for reducing and managing this risk. These parties include:

- industry sectors
- insurers and reinsurers (including brokers)
- international organizations
- media
- modeling firms
- public interest groups
- public sector agencies
- research institutions
- trade associations
- universities

On February 25, 2005 the Wharton Risk Center devoted the annual meeting of its Managing and Financing Extreme Events Project to the topic of “*TRIA and Beyond: What Would Be the Most Effective and Sustainable Way for the Nation to Recover from Mega-Terrorist Attacks?*” Approximately 60 people from 25 organizations (federal government, industry, academic and research institutions) participated in the meeting. This report has

¹ Kunreuther and Michel-Kerjan both served on this Task Force established in 2002 after the OECD was mandated by the ministers from its 30 world highest-income member countries to develop policy analysis and recommendations on the financial management of terrorism risk.

benefited from the fruitful discussions that took place that day and the very helpful interchange with participants and the feedback we received in the weeks following the meeting. In the next two pages we list the organizations participating in the February 25th workshop, the Wharton Risk Center Corporate Associates and the sponsors of this research. Their intellectual and financial support has been greatly appreciated. The conclusions and analyses contained in this report, however, are those of the members of the Wharton Risk Center team and do not necessarily reflect the views of these public and private organizations.

Some findings from this study have been informed by surveys of insurers, reinsurers and real-estate investors undertaken in the spring of 2005. We thank the American Insurance Association, the Insurance Information Institute, the National Association of Real Estate Investment Trusts, the Property Casualty Insurers Association of America and the Reinsurance Association of America for helping us develop the survey instruments and for distributing them to their members on our behalf. Several other organizations have provided us with their own data, which we have used to undertake specific empirical analyses for this report. They include Aon, A.M. Best, Moody's, RAND, Risk Management Solutions, Standard & Poor's, the States of Hawaii and Vermont. We thank them for their willingness to provide us with this information.

A draft report was circulated to a select group of organizations on June 15, 2005 and comments were received from them prior to the issuance of the U.S. Treasury study on TRIA that was released on June 30, 2005. This Wharton Risk Center report on *TRIA and Beyond* reflects the very helpful comments we received from individuals associated with these organizations.

The analysis and preparation of this report has been a team effort. The conclusions of the report by and large reflect a consensus among the team members. Not surprisingly in view of the complexity of the issues, consensus does not necessarily imply unanimity.

Finally, Hannah Chervitz of the Wharton Risk Center deserves special thanks for the time and energy she put into the report. She provided research assistance, organized all the meetings and went through the many preliminary drafts of the report with a fine tooth comb.

Philadelphia, August 2005

**ORGANIZATIONS PARTICIPATING IN WHARTON RISK CENTER FEB. 25TH,
2005 WORKSHOP ON THE “FUTURE OF TERRORISM RISK INSURANCE”:**

ABS Corporate Solutions

ACE INA

AIR Worldwide

AM Best

American International Group (AIG)

American Insurance Association

American Re

American Reinsurance Association

Congressional Budget Office (CBO)

Department of Homeland Security

DuPont Company

EQECAT

Government Accountability Office (GAO)

Insurance Information Institute

Liberty Mutual

Lockheed Martin

Moody's

National Association of Real Estate Investment Trusts (NAREIT)

Property Casualty Insurers Association of America (PCIAA)

Reinsurance Association of America

Risk Management Solutions

Rohm and Haas Company

Standard and Poor's

State Farm

Swiss Re

Wyndham Partners Consulting, Ltd. (An Affiliate of Renaissance Re Holdings, Ltd.)

Zurich Insurance

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PricewaterhouseCoopers

Property Casualty Insurers Association of America (PCIAA)*

Rohm and Haas Company

State Farm Fire and Casualty Company*

Sunoco

Swiss Re*

Tillinghast-Towers Perrin

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EXECUTIVE SUMMARY

Since September 11th, 2001, members of the Wharton Risk Management and Decision Processes Center team have been studying the issue of terrorism insurance as part of a longer range Wharton Risk Center project on *Managing and Financing Extreme Events*. The goal of this report on *TRIA and Beyond* is to provide policymakers, key industry representatives and other interested parties with an analysis of the roles that the public and private sectors can play with respect to terrorism risk coverage in the United States in the post-9/11 world.

This Executive Summary is divided into four parts: *Principal Findings*, *Proposed Solutions*, *Open Issues* and *Next Steps*.

1. Principal Findings

Insurability Issues for Terrorism and Extreme Events

The characteristics of terrorism risks make its insurability by the private sector alone very problematic. Foremost among these characteristics are the significant potential for financial ruin, uncertainty about the probabilities and potential severities of losses, high correlation of risk across entities exposed to loss and interdependencies, such as would arise if a building that had been damaged by a bomb collapsed on another structure that was not a direct target of the terrorists. Moreover, government influences the level of terrorism risk as it fulfills its constitutional role in assuring the security of our nation via foreign policy, counter-terrorism and homeland security.

Insurers, indeed all stakeholders, have difficulty dealing with the tremendous uncertainty of terrorism risk. The likelihood of an attack is highly ambiguous and the attack modality is subject only to the limitations of the terrorist's ingenuity. In other words, terrorism is an intentional act. The limited confidence in the accuracy of likelihood estimates has given rise to insurers' use of deterministic approaches (e.g. a typical scenario is a 2 to 5 ton truck bomb exploding in a major metropolitan area) rather than the usual probability-based approaches for managing insurance risk exposures. These features distinguish terrorism risk from other low probability-high consequence risks, such as hurricanes and other natural catastrophes, resulting in higher charges for risk transfer than if insurers could estimate the likelihood of these events more accurately.

Impediments to a Private Market Solution for Terrorism Insurance

Two major forms of state regulation significantly impede the ability of firms and insurers to manage terrorism risk through the private market alone:

- (1) Mandatory requirements, including compulsory coverage of workers' compensation claims caused by terrorism (including chemical, biological,

radiological and nuclear attacks) in all states. In 18 states fire losses due to a terrorist attack is covered for those purchasing a fire insurance policy. A few states also prohibit terrorism exclusions in their property insurance policies.

- (2) Prior approval and other regulatory controls of rates for property/casualty insurance covering losses caused by terrorism.

A survey of reinsurers as part of the Wharton study suggests that they will not provide additional coverage for catastrophic losses from terrorism if the federal government does not renew TRIA. Similarly, there is no evidence to date that significant numbers of catastrophe bonds for terrorism losses will be issued in the near future as an alternative for covering these potential losses. Moreover, federal tax policy significantly increases the costs to insurers and reinsurers of holding the large amounts of capital (surplus) necessary to insure terrorism and other extreme events.

Demand for Terrorism Coverage

Under TRIA, with its requirement that insurers offer coverage to commercial firms, sufficient insurance coverage for so-called “certified” acts of terrorism is available today at moderate cost for commercial and residential properties in most of the country where the threat of a terrorist attack is not viewed as extremely high, and/or where the resulting damage is not anticipated to be major. The principal problems related to demand remain for large metropolitan areas where insurers must manage their concentrations of risk so as not to expose their firm to a ruinous financial loss.

To date, about 50 percent of commercial enterprises have purchased TRIA-line terrorism insurance. A portion of these firms receive terrorism coverage as part of their standard commercial property insurance without having to pay anything extra for this coverage because they are located in regions that are perceived as being at minimal risk of a terrorist attack. Demand for terrorism insurance varies widely by industry sector, type of firm and region of the country, with the high-risk regions of the country having the greatest interest in coverage. As part of this report, we undertook econometric analyses of data on terrorism and property insurance purchased by large clients of the insurance broker Aon. These analyses confirm that take-up rates and premiums for terrorism coverage vary significantly across regions and industries. Premiums for terrorism coverage as a percentage of property premiums were highest in the Northeast and lowest in the Southeast and West, even after controlling for differences in average insurable values across regions.

The rationale for corporate demand for such insurance depends on a number of factors, including the ability of companies to diversify their assets and undertake mitigation activities. It can also depend on mandatory aspects. For instance, according to the survey of members of the National Association of Real Estate Investment Trusts (NAREIT) undertaken by the Wharton Risk Center as part of this study, most lenders require terrorism coverage for their real estate loans. Alerts last year issued by the federal government on possible new attacks in the U.S. also influenced the demand for coverage. Demand for insurance is weaker in the chemical and retail sectors.

Evidence from the Departments of Insurance of Vermont and Hawaii, the two states with the most domestic captive insurance companies, indicates that many corporations are eligible for TRIA protection by purchasing terrorism insurance through their captives for their operations nationwide. For example, approximately 60 industry captives at the end of the year 2004 provided terrorism coverage on a stand-alone basis (under “separate terrorism policies”) in Vermont, with limits of coverage that totaled approximately \$30 billion.

Several behavioral and institutional features undermine incentives for commercial enterprises to buy adequate insurance and aggressively mitigate risk. They include: the perception by some firms that they are not a potential target of terrorism, the current levels of coverage that might not be adequate for some firms, the price of coverage that might be viewed as too expensive for some, as well as the mandatory inclusion of terrorism coverage in workers’ compensation policies in all states and in standard fire policies in some states, and the expectation that post-event government disaster assistance will be available to non-insured entities that suffer a loss from a terrorist attack. These issues need to be considered in detail when designing any future terrorism insurance program.

Who Bears the Cost of Terrorism Insurance Under TRIA?

Due to the ambiguity in the probabilities of terrorism losses, insurers use a survival constraint to determine the extent of coverage that they are willing to offer. The essence of the survival constraint is to write coverage so that an insurer’s aggregate exposure (E) under an assumed scenario will not exceed a certain percentage of its policyholders’ surplus (S). By specifying a maximum acceptable E/S ratio, one can determine how much any particular insurer will have to pay for claims under TRIA by calculating its deductible/surplus (D/S) ratio.

Using data on the top 451 insurance firms operating in the U.S. property and casualty and workers’ compensation markets, this study determines the evolution of each insurer’s D/S ratio under TRIA between 2003 and 2005. In 2003, 36 insurers had a D/S ratio above 20%; there were 80 such insurers in 2004 and 162 in 2005 (including 8 in the top 30). We also undertake prospective analyses for 2006 and 2007.

Based on their D/S ratios for 2005, when losses are as large as \$25 or \$40 billion under TRIA, most insurers may well bear the entire loss they cover from a terrorist attack because of the relatively high TRIA deductible (i.e. $D=15\%$). We present the result of our analyses for cities in three states: Dallas and Houston (Texas), Los Angeles and San Francisco (California), and New York City (New York). Only when aggregate losses are in the area of \$100 billion does the general taxpayer bear a substantial portion of the loss. Although this report analyzes such a scenario based upon simultaneous 5-ton truck bomb attacks, losses of this magnitude could be caused by chemical, biological, radiological and nuclear (CBRN) devices used by terrorists.

In states such as California and New York, where only a few companies insure the largest portion of the workers compensation market, these insurers are likely to bear the largest portion of the losses as well. Should a large-scale terrorist attack occur and

inflict mass casualties, their loss would then greatly exceed their TRIA deductible. Under the current operation of TRIA, 90 percent of the losses above their deductibles would initially be covered by the federal government and eventually be paid by all policyholders and taxpayers. Since workers' compensation providers are not able to exclude terrorism from their policies, if TRIA is not renewed some of these insurers are likely to become insolvent after a large terrorist attack unless they were able to obtain protection against catastrophic losses from the private sector.

We also show that if TRIA is renewed *indefinitely* and insurers decide to provide terrorism coverage up to a maximum exposure of 10 percent of their surplus, then those insurers with a very low deductible/surplus ratio may want to write considerably more terrorism coverage than they currently do. This creates inequities, since the government recoups 90 percent of the losses they paid out from all commercial policyholders and general taxpayers.

TRIA's design also creates considerable uncertainty as to how much each of the affected parties would be responsible for covering insured losses and the timing of their payments. In particular, the law is far from clear on the recoupment process by the federal government for losses that they cover after a terrorist attack. Given the absence of publicly available information on current insurers' coverage, one can only provide illustrative examples as to who bears the losses following a terrorist attack. In this report we use specific terrorist attack scenarios in selected cities and analyze loss sharing arrangements using available public data on market shares of insurers.

2. Proposed Solutions

The study concludes that there is a role and responsibility for government in collaboration with the private sector to provide protection against terrorism losses. There are several reasons for this public-private partnership:

- Federal government policy and actions significantly influence the risk of terrorism.
- Although insurers' equity capital has increased recently, the private market has limited capacity to provide coverage for extreme losses from terrorism. This is, in part, due to federal tax policy, which significantly increases insurers' and reinsurers' costs of holding the large amounts of capital necessary to back the sale of terrorism and other catastrophe insurance.
- The mandatory coverage of terrorism losses for workers' compensation policies in all states and for any losses from fires that occur following a terrorist attack in approximately one third of the states leaves insurers exposed to possible large losses that could lead to insolvencies for some of them. In addition, state regulatory constraints on terrorism insurance rates impede the private sector's ability to manage this risk.

- The expectation that the federal government will provide considerable assistance to uninsured victims of a terrorist attack distorts incentives for buying insurance and investing in loss reduction measures.
- Federal disaster assistance following a major attack will likely be significantly greater with a commensurately higher cost to taxpayers if there is no predefined public sector role in a terrorism insurance program.
- The creation of a pure government program would exclude the insurers' expertise as well as financial and operational capacity.

In discussing solutions that include a role for the public sector, such as the modification of TRIA, we caution that federal or state involvement in insurance has shortcomings that may impede their ability to improve upon the problems that beset private markets. While public sector insurance programs might seek to enhance economic efficiency, they represent the outcome of a political process in which interest groups lobby for advantage.

Thus, while we cautiously favor a temporary extension of TRIA, subject to increasing the threshold for certification of losses and a clarification of the recoupment process, as described below, we oppose any expansion of the scope of federal protection during this renewal period.

Modification of the Current TRIA Program

The private-public partnership established by TRIA should be modified so it is more equitable and efficient than the current program. We recommend that consideration be given to other arrangements and policies to deal with catastrophic losses in the long-run. These include allowing insurers to established tax-deferred reserves, actions that could stimulate private reinsurance, actions that could facilitate the use of capital market instruments, the possible creation of mutual pools and federal reinsurance with explicit premium charges. The development of a strategy for managing catastrophic losses needs to be based upon careful analyses of these and perhaps other programs in collaboration with key interested parties. In our view this process cannot be completed within the short deadline for determining whether or not TRIA should be renewed. Hence we recommend maintaining the federal backstop provision in its present form but only for a relatively short period of time.

If the federal backstop provision is maintained, we recommend that Congress raise the trigger for providing TRIA coverage from \$5 million to \$500 million.² This means that any event where the aggregate losses are less than \$500 million would be covered entirely by private insurance. This change would reduce the likelihood that captives and other insurers with very low deductible/surplus ratios will pass on their losses after a terrorist attack to all commercial policyholders and/or U.S. taxpayers. An

² We proposed this increase in certification limits in the June 15, 2005 draft report of *TRIA and Beyond* circulated to sponsors and other parties who provided us with data for this study. We were pleased to see the same recommendation made in the U.S. Treasury report on TRIA issued June 30, 2005.

increase in the certification limits should also encourage demand for additional private reinsurance, especially for small firms with relatively low surpluses who otherwise would stand to lose a considerable amount of their capital should a terrorist attack occur with aggregate losses in the \$50 to \$500 million range.

Another short-term modification we recommend is the clarification of the recoupment process to all policyholders whether or not they have purchased terrorism insurance. Indeed, aside from the equity issues associated with this feature of TRIA, the law is unclear as to the loss sharing process between the insurers, all commercial policyholders and taxpayers.

Long-term Options

If a TRIA-like program is renewed for a short period of time, then the following options involving the private and public sectors need to be considered in designing a long-term program. These options are not mutually exclusive and can be seen as playing complementary roles for different risk-sharing arrangements.

Deploy Capital of Potential Target Firms When a firm buys insurance, it is using the insurer's capital to bear that risk rather than its own. This often makes sense because the insurer can diversify the risk. But using the insurer's capital is not always the cheapest way to allocate risk. Indeed, the so-called "market failure" in terrorism insurance (low supply and high prices) is a reflection of the very high capital charge that insurers must incur to write this form of coverage. Modern enterprise risk management has shown that in some instances it makes sense for a commercial firm to use its own capital management strategy to absorb risk rather than insuring. For example, the firm may lower its use of debt finance in relation to equity to be able to tolerate more risk. Other more focused strategies include the use of structured debt (e.g. warrants, convertible and forgivable debt) and more recently the use of contingent capital (financing arrangements, such as catastrophe bonds, that provide capital contingent on specified events).

Thus, we would envision that a large part of terrorism risk is, and will continue to be, absorbed by the commercial firm's own capital, so that it is, in fact, self insured. Moreover, in the case of commercial property, institutions providing long-term debt financing to developers could possibly underwrite potential losses from terrorism and charge higher interest rates to reflect the additional risk. In effect this would spread part of the risk across all of their shareholders.

Reduce Insurers'/Reinsurers' Tax Costs of Holding Capital The private sector's capacity to offer coverage for losses from terrorism would expand if insurers and reinsurers were allowed some form of tax-deferred reserves for terrorism coverage. Such a policy could reduce the costs to insurers and reinsurers of holding the large amounts of capital necessary to provide coverage. This should increase supply and reduce premium rates. These benefits should be weighed carefully against possible drawbacks that include short-term reduction of tax revenues, disadvantages of industry-specific tax rules

and significant tax deferrals unrelated to the program's objectives of expanding the capacity to insure losses from terrorism and possibly other extreme events.

Deploy Capital of Reinsurers There needs to be a more detailed analysis as to the role that private reinsurance could play in providing protection against catastrophic losses from terrorism. One possibility would be a TRIA-like program without individual insurer deductibles that would only provide payments from the government once losses exceeded a large aggregate threshold. This approach would stimulate the demand for reinsurance and avoid some of the distortions associated with individual insurer deductibles and inclusion of captives in the program. Another possibility would be to base any federal reimbursement of terrorism losses on net (i.e., after reinsurance) losses without requiring that reinsurers make terrorism coverage available. Such a change might significantly increase the scope of reinsurance and associated risk spreading. The terms of reinsurance would reflect the federal backstop, i.e., the reinsurers' ability to be reimbursed for losses, so that reinsurance prices would decline. Primary insurers would be free to either buy reinsurance if available at an affordable price or keep the same exposures they now have under the current system.

Facilitate the Use of Terrorism Catastrophe Bonds A catastrophe bond transfers the risk of a large loss from the insurance/reinsurance industry to the financial markets. A significant market for catastrophe bonds to cover losses from terrorist attacks has *not* emerged since 9/11 (only three terrorism-related issuances to date). There are a number of reasons for the limited market for terrorism cat bonds. These include the reluctance of reinsurers to cover this risk, which plausibly gives investors reasons to be cautious, current tax policy and regulatory constraints as well as the inability of the modeling firms to provide credible assessments to investors of the risk. A study needs to be undertaken to determine what are the institutional and regulatory obstacles to the development of a more robust market for terrorism cat bonds and what steps could be taken to modify the current situation.

Mutual Insurance Pools Another alternative would be for insurers to form an insurance pool to deal with specific lines of terrorism coverage, possibly with limited federal backing in the event of a large-scale terrorist attack. Such pools have been developed in several European countries before and after 9/11 and were established in combination with a government backstop. By studying how pools operate in other countries, we should have a clear understanding of their strengths and limitations, and their relevance to the situation in the United States.

Publicly Administered Mutual Insurance If the probability of a terrorist attack is highly uncertain and the maximum possible loss is considered to be large relative to the amount of private reinsurance and catastrophe bonds available to insurers, then another possible solution is to create a publicly administered mutual insurance program. Under one such arrangement, each insurer would choose a level of protection through the

mutual pool and pay an estimated premium. If either no loss or minor losses occurred, any excess premiums above a predefined threshold would be returned to insurers in proportion to their original purchases. In the event of large losses that exceed the plan's accumulated resources, policyholders would be assessed additional amounts to cover claims according to the terms of the arrangement.

Federal Reinsurance with Explicit Premiums A primary motivation for federal reinsurance for large terrorism losses is the limited capacity by private insurers and reinsurers to provide coverage against catastrophic losses. An alternative to a TRIA-like arrangement, where there is no upfront charge to insurers for the federal backstop, would be a federal reinsurance program with explicit premium charges levied *ex ante* by the government. Federal reinsurance would thus reduce the need for *ex post* recoupment against all policyholders. There needs to be a more detailed analysis as to how such a federal reinsurance program could complement private market alternatives for providing financial protection against terrorism risks.

3. Open Issues

There is a set of other issues that the report does not analyze in detail but that need to be considered.

Gaining Knowledge of Terrorism Premiums Collected To date no one has collected and made public the total terrorism premiums levied by insurers for the different TRIA-lines over the three-year operation of the program. This information would be relevant for undertaking a more detailed analysis of the effectiveness and impact of TRIA and possibly alternative programs on insurers and other impacted parties.

Possible Federal Pre-emption of Certain State Regulations and Requirements Consideration should be given to federal pre-emption of state regulation of terrorism insurance rates as part of any long-term federal involvement in terrorism insurance markets. Consideration likewise should be given to federal pre-emption of state requirements that fire insurance policies cover fire losses following terrorism, as there is no economic basis for such selective restrictions. An analysis should also be undertaken as to whether there is a need for mandatory coverage of terrorism losses in workers' compensation insurance and possible alternatives to this requirement.

Including Domestic Terrorism Consideration should be given as to whether it is desirable to also cover losses from domestic terrorism attacks in a global national terrorism insurance program. The analysis should examine whether the economic rationale for government involvement in covering the risk of large losses from domestic terrorism is different from that of international terrorism, the nature of current threats

posed by international and domestic terrorism, and the problems resulting from the arbitrary distinction introduced by TRIA between so-called “foreign” and “domestic” terrorist acts.

Developing Incentive Programs for Mitigation Further analyses are needed to determine whether one can develop incentive programs for encouraging private sector investment in measures for reducing the risks associated with terrorism and providing resiliency following an attack. Some incentives to consider are lowering the price of terrorism risk transfer mechanisms (e.g. insurance, reinsurance, catastrophe bonds) and/or providing more favorable tax treatment to reflect the lower estimated risks due to adoption of mitigation measures.

4. Next Steps

The United States faces an ongoing threat of terrorism. With the passage of TRIA, Congress and the White House recognized a role and responsibility for both the federal government and the private sector in providing adequate protection against terrorism. Although TRIA has provided an important and necessary temporary solution to the problem of how terrorism insurance can be provided to commercial firms, we do not believe it constitutes an equitable and efficient long-term program.

The challenges associated with terrorism risk financing are clearly fundamental, but they will not be solved overnight. This Wharton Risk Center study on *TRIA and Beyond* provides conceptual and empirical evidence that argues for a modified terrorism insurance program. Such a program would enhance the role that the private sector can play in reducing risk and providing funds for recovery after a terrorist attack while utilizing the public sector to provide financial protection against catastrophic losses.

As an important step in developing such a program, we urge that Congress or the White House establish a national commission on terrorism risk coverage before permanent legislation is enacted. The American public deserves such an initiative given the importance of this issue for national security.