Policy Analysis

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# *The Terrorism Risk Insurance Act*
## *Time to End the Corporate Welfare*

by Robert J. Rhee

## Executive Summary

The terrorist attacks of September 11, 2001, inflicted enormous losses on the insurance industry and businesses. In the wake of the disruptions occurring in the insurance market at the time, the government enacted the Terrorism Risk Insurance Act of 2002 to create a "temporary" federal backstop against catastrophic losses. This program subsidized private risk with public funds through a cost-sharing program for which the government does not receive any compensation.

The compelling need for the program was unclear even in the smoldering aftermath of 9/11. Yet in response to effective lobbying by the insurance industry and business interests, Congress has twice extended the program. The program is now scheduled to sunset at the end of 2014, 12 years after this supposedly temporary program was instituted.

If there was some ambiguity about the program's need before, there is none now. Terrorism risk is not more severe than other insurable risks such as natural catastrophes, and a federal backstop stakes public money to protect the insurance industry, and subsidize the terrorism risk insurance premiums for commercial policyholders. The private market is capable of underwriting this risk. This policy analysis suggests that the program should sunset as scheduled in 2014, thus ending this form of corporate welfare.

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**The insurance market is capable of providing terrorism risk coverage without a federal loss backstop.**

# Introduction

The Terrorism Risk Insurance Act of 2002, as amended and extended by the Terrorism Risk Insurance Act of 2005 and the Terrorism Risk Insurance Program Reauthorization Act of 2007 (together referred to as TRIA), was initiated in the wake of the shocking September 11, 2001, terrorist attacks in New York City and Washington, D.C. TRIA is scheduled to sunset on December 31, 2014. Should the program be reauthorized?

I have previously written that the commercial insurance and reinsurance markets are sophisticated, well resourced, and well capitalized, and that government intrusion into the workings of these markets through TRIA was unwarranted.[1] The insurance industry absorbed the 9/11 losses and recapitalized lost capital, setting the stage for development of a market for terrorism risk and industry growth. In 2013, 12 years after the dislocations of the 9/11 terrorist attacks, insurers and businesses should fully bear the cost of terrorism-related losses instead of externalizing catastrophic loss to the public fisc. The insurance market is capable of providing terrorism risk coverage without a federal loss backstop. Even an event like 9/11, which was extreme and unexpected, did not cause systemic insolvency crisis in the insurance market. Since insurers and private industry can shoulder their own losses, government financial support is an unwarranted subsidy for insurers and commercial policyholders.

### The 9/11 Attacks and Aftermath

The 9/11 terrorist attacks were unprecedented in several ways. The terrorists strategically targeted the world's most important commercial and political centers. They killed 2,976 people, displaced 1,025 businesses employing more than 75,000 people, disrupted another 18,000 businesses employing 563,000 people,[2] and inflicted about $23 billion in insured losses.[3] Along with Hurricane Andrew, the 9/11 attacks stood at the time as the largest insurance loss arising from a single event.

The conventional wisdom in the insurance industry before 9/11 was that terrorism posed a discrete risk of low-intensity, high-visibility violence, such as the 1972 Munich Olympics and the 1988 bombing of Pan Am 103. Losses were measured in millions of dollars at worst, and lives lost in the relatively few. In this respect, the recent 2013 Boston Marathon bombing is consistent with this thesis of terrorism. The actuarial and pricing models for much of the 20th century did not consider terrorism as an extraordinary risk requiring exclusion or additional premium in the vein of nuclear contamination, war loss, or even earthquake loss. Insurers covered terrorism risk in most "all risk" policies, and reinsurers (entities that act as insurers for insurance companies) did not carve out the risk in their treaties. The risk was perceived to be so small that it was covered for "free."[4]

This pricing model continued as terrorism slowly evolved into a major problem over the course of several decades. The 1990s introduced the era of catastrophic terrorism, with the phenomenon first taking root in Europe. The first truly catastrophic terrorist act occurred when the Irish Republican Army bombed London on April 21, 1992, causing $671 million in insurance losses. The industry recognized then that terrorism posed a catastrophic risk. In a prescient assessment, Swiss Re stated in 1993, "A single bomb attack can kill thousands of people, cause several billion dollars of damage, and paralyse entire branches of industry . . . [and] lay entire cities to waste."[5] Although 9/11 was unprecedented as a manifestation of extreme risk, it did not beget a new awareness of the risk. Scholars and policymakers had warned of such risks before, and industry leaders were aware, at least abstractly, of the potentially massive exposure to terrorism long before 9/11.[6]

Before 9/11, losses from terrorism were not on the scale that would threaten a whole economy or pose a systemic danger to the insurance system and business enterprises. But the insurance industry knew that liability could extend into the billions of dollars.

If it had critically analyzed the data, the inevitable conclusion would have been that catastrophic losses would continue and that both frequency and severity *could* substantially increase beyond the linear extrapolations of past experience of low-intensity violence. With 9/11, this theoretical possibility of catastrophic risk metastasized into a paradigm-shifting problem for the industry, national economy, and government.

Importantly, while the losses from 9/11 were extreme, the event did not truly test the solvency of the industry. Whereas Hurricane Andrew in 1992 resulted in the bankruptcies of 12 small insurers,[7] 9/11 did not have the same effect on the industry. Few insurers became troubled as a result of the losses. Reinsurers absorbed a bulk of the losses, and since 9/11 the insurance industry has recapitalized, and the financial health of the sector is now stronger than it was then.

**Immediate Aftereffect on the Insurance Market**

In response to the attacks, insurers announced that they would not invoke the war loss exclusion—which, if successfully invoked, would have relieved them from paying damages on a loss from an act of war—with the caveat that they would dispute ordinary coverage issues. In the same breath, however, they indicated that terrorism risk would be excluded in the future.[8] This was consistent with history. The industry reacts to a shock by withdrawing from the market. The last such shocks were Hurricane Andrew and the Northridge earthquake in 1994, which precipitated a withdrawal from the market by reinsurers. This in turn led to dramatic price increases in the short term.[9] But as the industry recapitalized, the market eventually went into a "soft" price cycle—in which premiums fell and coverage expanded—for much of the 1990s. Then–treasury secretary Paul O'Neill best summarized the situation with 9/11 this way: "Because insurance companies do not know the upper bound of terrorism risk exposure, they will protect themselves by charging enormous premiums, dramatically curtailing coverage, or—as we have already seen with terrorism risk exclusions—simply refusing to offer the coverage."[10]

After an industry shock, the first to exit are reinsurers. Reinsurance provides additional capital to insurers and thus increases insurers' underwriting capacity. Because reinsurers are unregulated, they can enter and exit markets freely. In the case of 9/11, reinsurers bore the brunt of the losses. When a majority of the reinsurance treaties came up for renewal in January 2002, they were not renewed as to terrorism coverage.

Without reinsurance, insurers could not limit the exposure to severe liability and felt compelled to exclude coverage. Their exit from the terrorism insurance market, however, was slowed by regulatory constraints. The new exclusion filed with state regulators broadly defined terrorism and limited coverage to losses of $25 million or less.[11] It placed terrorism risk squarely on the shoulders of business and corporate policyholders and their financiers. In addition to reduced capacity, 9/11 accelerated a "price-hardening" cycle. Post-9/11 prices increased significantly[12] and some insurers cherry-picked underwriting risks at greatly increased prices.[13]

Reduced capacity and increased prices led to an inability to transfer risk. Unless required, for example, by financial covenants in debt instruments or other financial transactions, few policyholders bought terrorism coverage. The new pricing of terrorism coverage and cost-benefit perceptions of policyholders led to perceived adverse selection.[14] Those perceived to be most at risk (e.g., policyholders and financiers of trophy properties) were the most likely to purchase terrorism coverage, if such coverage was available, while lower-risk policyholders chose to forgo it. The greatest risk of terrorism was transferred, albeit selectively, to the industry, which could not sufficiently diversify this risk because of the low "take up" by lower-risk insureds who may have been priced out of the market.

The problem was that the insurance mechanism was unavailable when policy-

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holders sought to transfer some of the risk in the ordinary course of corporate risk management. There was either no coverage or exorbitant prices. Because there was a temporary dislocation of supply and demand, the economy began to suffer. High premiums had trickle-down effects on the rest of the economy. Increases in financing costs led to a higher cost of goods and services, resulting in higher prices and reduced profits. The real estate and financing industries were hit the hardest. The lack of coverage and higher premiums increased the cost of capital and restricted capital flow to the real estate and construction sectors. Commercial mortgage-backed securities saw a decline in overall credit rating and prices, and borrowers faced the possibility of default and loan recalls because of covenants requiring insurance coverage. Lenders were reluctant to finance billions of dollars of construction projects without terrorism coverage.

In short, 9/11 caused substantial short-term economic damage on a national level. The insurance market was perceived to be unstable in the short-term, causing price and capacity dislocation, adverse selection of risk, concentrated risk, economic slowdown, and significant job losses. In the midst of this perceived temporary economic turbulence, the government enacted the original TRIA law.

## TRIA

On November 26, 2002, the original TRIA legislation was signed into law.[15] In enacting TRIA, Congress found that the market could not support "reasonable and predictable prices" because 9/11 hindered the normal risk-spreading function of insurance,[16] and this dysfunction adversely affected economic growth and development. The insurance and financial markets faced "widespread financial market uncertainties," including significant actuarial data and methods to properly allocate risk and loss.[17] The withdrawal of insurance from the market and substantial premium increases could seriously undermine or otherwise suppress economic activity.[18] Congress found that the federal government should provide a temporary cost-sharing scheme while the private market figures out a way to deal with terrorism risk.[19] Based on those findings, Congress enacted TRIA to assure "widespread availability and affordability of property and casualty insurance for terrorism risk," and to "allow for a transitional period for the private markets to stabilize, resume pricing of such insurance, and build capacity to absorb any future losses."[20]

TRIA established a temporary federal reinsurance program—a "backstop" for large losses from terrorism. It is a public-private cost-sharing arrangement. Unlike private reinsurance, the government funds losses per a statutory formula, but it does not collect premiums or develop a reserve prior to the occurrence of an event.

Because TRIA was intended to be a temporary stabilization measure, it was enacted with a sunset date of December 31, 2005. Before that sunset, and in response to lobbying from insurance and business interests, the government extended the program through the Terrorism Risk Insurance Extension Act of 2005,[21] which extended TRIA for two years and modified some of its key terms. Before sunset of the 2005 act, the program was again modified and extended for another seven years under the Terrorism Risk Insurance Program Reauthorization Act of 2007.[22] TRIA now has a sunset date of December 31, 2014.[23]

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### Current Structure of TRIA

The U.S. secretary of the treasury administers the TRIA program, and is vested with the power to issue interim and final rules and procedures for its administration.[24] Coverage begins when the secretary certifies a loss caused by an "act of terrorism." The secretary cannot certify an act if the aggregate insurance losses comprise less than $5 million.[25] TRIA defines an act of terrorism as (1) "a violent act or an act that is dangerous to human life; property; or infrastructure; to have resulted in damage within the

United States, or outside the United States in the case of an air carrier or vessel," and (2) "to have been committed by an individual or individuals, as part of an effort to coerce the civilian population of the United States or to influence the policy or affect the conduct of the United States Government by coercion."[26] The definition of terrorism is rooted in past experience of violent acts typically in the form of bombings, hijackings, killings, and other acts of destruction. The definition covers the damage or destruction to life or property from a physical force.

In the original version of TRIA, a terrorist was defined as a person "acting on behalf of a foreign person or foreign interest." The 2007 act deleted this definitional component. The program now can encompass acts of domestic terrorism conducted by American citizens or residents and does not require that the act be committed "on behalf" of a foreign person or interest. This revised definition may be relevant for cases like the April 15, 2013, Boston Marathon bombing in which there appears, as of the writing of this policy analysis, to be no direct connection to a foreign terror sponsor. This was a broad expansion of the program, which initially sought to address the risk from radical Islamic terrorist organizations. TRIA now provides broad coverage for any violent act in furtherance of civilian coercion or policy influence.

The program has two important mandates. First, insurers covered by TRIA "shall participate in the Program."[27] The program is mandatory as to statutorily defined insurers,[28] primarily commercial property and casualty insurers. Second, TRIA requires insurers to "make available" terrorism coverage to policyholders under terms and premium pricing that do "not differ materially from the terms, amounts, and other coverage limitations" applicable for other risks. [29] While insurers must make coverage available, TRIA does not mandate that the insured must purchase terrorism insurance. The participation and "make available" mandates negate the terrorism exclusions filed and issued in the immediate wake of 9/11. In return, the federal government bears a substantial portion of losses from terrorism in a cost-sharing scheme.

TRIA has a loss trigger. No compensation will be paid by the treasury secretary unless the aggregate industry insured loss from a certified act of terrorism exceeds $100 million.[30] This loss trigger is sufficiently large to exclude from the program most violent acts aimed primarily at human targets, such as suicide bombings or random car bombings. Against commercial targets, however, the $100 million loss trigger is a very low threshold since the value of a single commercial building or asset can readily exceed that amount. September 11 was the first billion-dollar attack, but it was not the first catastrophic terrorist attack. In the recent history of terrorism, there have been a number of events that have exceeded $100 million in losses.[31] The bombing of a single commercial airliner could easily exceed $100 million in losses.

Upon trigger, there is an "insurer deductible," which is "the value of an insurer's direct earned premiums over the calendar year immediately preceding [the] Program Year."[32] TRIA sets forth different deductible amounts for different program years. In years 2013 and 2014, the insurer's deductible is 20 percent of the value of an insurer's direct earned premiums over the calendar year immediately preceeding the program year.[33]

Beyond the insurer's deductible, TRIA provides for a cost-sharing arrangement.[34] In years 2013 and 2014, the federal government's obligation to compensate is 85 percent of "that portion of the amount of such insured losses that exceeds the applicable insurer deductible required to be paid" during the specific program year.[35] The insurer is responsible for the remaining 15 percent of losses exceeding the deductible.

The federal government's obligation to compensate and the insurer's liability for terrorism losses are capped at the aggregate insured losses level of $100 billion.[36] TRIA also caps the loss exposure of insurers, providing that "no insurer that has met [its] insurer deductible shall be liable for payment of any portion of the amount of such losses

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that exceeds [$100 billion]."[37] The treasury secretary determines the pro rata share of insured losses to be paid by each insurer that incurs insured losses, except that "no insurer may be required to make any payment for insured losses in excess of its deductible under [TRIA] section 102(7) combined with its share of insured losses [the 15 percent co-pay set forth in TRIA § 103(e)(1)(A)]."[38] Thus, once the program is triggered by losses of more than $100 million, the insurer's exposure is limited to its deductible plus co-pay.

Once the federal government provides compensation, TRIA requires a mandatory recoupment amount. The mandatory recoupment amount is the difference between (1) the insurance marketplace aggregate retention amount as determined by the statute,[39] and (2) the aggregate amount, for all insurers, of insured losses that the federal government does not compensate because such losses are within the insurer deductible, or the portion of losses of the insurer's co-pay amount.[40] There is no mandatory recoupment if uncompensated losses exceed the aggregate retention.[41]

The treasury secretary must collect repayment of the mandatory recoupment through "terrorism loss risk-spreading premiums in an amount equal to 133 percent of any mandatory recoupment amount for such period."[42] The 133 percent multiplier is intended to neutralize the lost tax revenue when policyholders deduct the surcharges on their corporate taxes.

If the federal government's payment exceeds any mandatory recoupment amount, the treasury secretary may recoup, through terrorism loss risk-spreading premiums, additional amounts based on the following factors:[43]

- TRIA's ultimate cost to taxpayers
- the economic conditions in the commercial marketplace, including factors indicating the financial health of the insurance industry
- the affordability of commercial insurance for small and medium-sized businesses
- other factors that the secretary may deem relevant.

Any recoupment amount is collected as a terrorism loss risk-spreading premium.[44] This surcharge premium is imposed on property and casualty insurance policies in force after the date the surcharge is established and is based on the percentage of premium amount charged under the policy for the property and casualty coverage.[45]

**Purpose of TRIA**

In determining whether TRIA should be reauthorized beyond the 2014 sunset, it is important that policymakers consider the legislation's explicitly stated purpose. It was enacted as a temporary market stabilization measure, with an original sunset date of December 31, 2005:

> The purpose of this title is to establish a temporary Federal program that provides for a transparent system of shared public and private compensation for insured losses resulting from acts of terrorism, in order to (1) protect consumers by addressing market disruptions and ensure the continued widespread availability and affordability of property and casualty insurance for terrorism risk; and (2) allow for a transitional period for the private market to stabilize, resume pricing of such insurance, and build capacity to absorb any future losses, while preserving State insurance regulation and consumer protection.[46]

Based on the above statement of purpose, as of the writing of this policy analysis, the rationale for TRIA has run its course. There are no compelling reasons to provide yet another extension of the program beyond the December 31, 2014, sunset, which is 12 years after TRIA's enactment and 9 years after its original sunset date.

## The Market for Terrorism Risk

Two primary arguments have been made to suggest that terrorism risk is unique and therefore should be a subject to a government compensation program:

- The risk can be extreme.
- The risk is unpredictable in the sense that it is not capable of assessment.

These issues are related. Because the keystone concept in insurance is the law of large numbers, insurance works best when frequency is high and severity is relatively low, e.g., auto, home, and life insurance. When frequency is low and severity is high, as is the case in both man-made and natural catastrophes, assessibility of risk is problematic and insurability is tested. Assessibility considers whether the risk—both frequency and severity—can be quantified, and this factor is perceived by many to be the most significant problem.

Terrorism is similar to natural catastrophes in that it is random and involves low frequency but *potentially* high severity. The key difference is that long-term historical data exist for some kinds of repeating natural catastrophes and their catastrophic patterns are generally localized to specific geographic areas, for example, hurricanes in Florida and earthquakes in California. However, terrorism, while unpredictable to a degree, is also not random. Virtually all terrorist acts in the past have been low-severity events. The 9/11 attack was an outlier, and the possibility of such events recurring in the future, while tangible, has become more remote with the awareness 9/11 brought and the countermeasures that were subsequently implemented. Only a few spectacular acts will cause widespread losses. In this regard, terrorism is very much akin to natural catastrophes in frequency and severity. In the context of the 20th century, 9/11 was a one-in-100-year event. Natural catastrophes on par with 9/11 are equally rare and in some cases equally inaccessible. Yet, no one has suggested that the insurance industry should not cover natural catastrophes or that they are uninsurable.

Information is vital. Without good data and reliable modeling, premiums must incorporate a substantial markup to ensure proper reserving for losses. The study of terrorism and collection of data have become top priorities of government, think tanks, and sophisticated members of the industry. Insurers are continuing to develop risk-factor models and methodologies to better assess terrorism risk. Human motivations and planning of attacks, intended to be unpredictable, are difficult to model with actuarial rigor.[47] However, patterns of terrorism already are evident in the data. Consider, for example, the commonly asserted claim that terrorism risk is different from natural catastrophes because it can strike anywhere as opposed to the geographic limitation of some natural catastrophes. While this may be true, it is an unpersuasive argument in terms of the economic consequences of terrorism. Even the most cursory review of the unrefined data shows that most of the costliest catastrophes struck London, New York, and the airline industry.

High-value economic targets tend to be concentrated in certain geographic areas, whether they be cities, industrial zones, certain industries, or specific assets. An attack in downtown Topeka, while possibly devastating, will have a markedly different impact on the economy than an attack of the same scale in Manhattan, and the same applies for an attack on an Amtrak train as opposed to a commercial airline. The tragedy of 9/11 has many dimensions, of course, but one striking aspect is that high-value economic targets such as New York and the World Trade Center were considered "soft" targets prior to 9/11. With the realization that terrorists have targeted high-value economic assets, security around those assets has increased significantly. Many of those properties are no longer "soft" targets. Major cities, ports of entry, and economic assets like factories, dams, and skyscrapers have increased their

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security. In response to the changes, terrorists have recently shifted their strategy toward other soft target opportunities, a process that confirms the dynamic uncertainty of containing terrorism. Post-9/11 soft target attacks have included the bombings in Bali, Indonesia, and the Madrid train system; the killing of school children in Beslan, Russia; and even the Boston Marathon bombing. These attacks combine random killings and shocking inhumanity. Albeit horrific, they do not pose a catastrophic *economic* problem. To the extent that soft targets are attacked, insurance as a risk management technique can adequately handle the economics of human loss and tragedy.

There will never be a day in which terrorism risk can be calculated to an actuarial certainty like auto or life insurance. Modeling terrorism risk is probably more difficult to do than modeling natural catastrophes because there has not been long-term experience or enormous scientific knowledge accompanying the study of terrorism. Significant uncertainty will always surround terrorism risk. But it is a mistake to believe that uncertainty equates to inaccessibility. In addressing the insurability of mega-catastrophes like the South Asia tsunami, Swiss Re took the following position:

> Even tsunamis or yet more extreme events such as meteorite impacts are insurable, subject to certain reservations. They cannot yet be modeled in such detail as other natural hazards, for instance earthquakes or tropical cyclones, but it is possible to quantify the risks with sufficient accuracy to design expedient insurance cover, and to spread the risk worldwide via the established reinsurance system.[48]

If the devastation from a meteorite strike is insurable, what elevates terrestrial terrorism to that rarified level of uninsurability? Insurance is fundamentally a risk-taking industry, and there is nothing so uniquely compelling about terrorism risk that it becomes categorically uninsurable without the backing of the public fisc.

Terrorism risk can be extreme, but no more so than the risk of many different kinds of natural catastrophes that can strike a major urban or commercial area where there is a concentration of insured interests. The argument that terrorism risk is so fundamentally different and thus uninsurable is self-serving and reflects more a lobbying strategy than actuarial reality. "Terrorism coverage may be quantitatively different, but it is not qualitatively different."[49]

Since 9/11, there has not been another major terrorist attack in the geographic United States. During this time, the insurance industry has recovered much of its losses through the premiums charged to cover terrorism risk. No one knows when the next major terrorist strike will occur, perhaps this year or perhaps 10 years from now, but when it occurs there certainly will have been many years of premium collection and the building up of reserves. Whether that reserve is sufficient to pay the loss is unknown, but this is also a part of the business of insurance—no one ever promised the insurance industry a guaranteed profit or solvency. The fundamental business of insurance is to assume risk.

### Further Perspective on Catastrophic Terrorism Risk

TRIA is based on the premise that terrorism risk is somehow unique among classes of risk because the potential magnitude of the loss is so much greater than other catastrophic risks. Data suggest that this is not true. Terrorism risk can manifest into catastrophic losses in the tens of billions of dollars, but the insurance industry and policyholders are routinely exposed to a multitude of mega-catastrophic risks. The following data on the insurance industry's catastrophic losses were compiled by Swiss Re and published in its research journal *Sigma*.[50] (Note: unless otherwise stated, all figures are reported in dollar values as of the date of the loss and are unadjusted for time.)

With respect to terrorism, U.S. insurance losses after 9/11 have been relatively minimal. The aggregate losses in the years 2003–2012 from *terrorism are $433 million*. In comparison, U.S. insurance losses for "social unrest" during the same time period were almost double the terrorism amount: $837 million. Losses from "accidental man-made disasters" were more than 100 times the terrorism amount: $45,690 million. The losses from natural catastrophe were more than a thousand times the terrorism losses: $463,559 million. (Storms alone were $310,775 million.) Those numbers are detailed in Table 1. Yet insurers have covered nonterrorism losses without a comprehensive federal backstop.

Another comparison that puts terrorism risk in perspective is a list of the top 20 worldwide catastrophic losses incurred by the insurance industry from the years 1970 to 2012. Those numbers are shown in Table 2. Notice that 9/11 is the only man-made event that makes the list of the top 20 insurance losses from catastrophes.

The 9/11 attacks demonstrated that terrorism losses can far exceed the billion-dollar threshold. However, there is little doubt that in the long term terrorism pales in comparison to natural catastrophes in frequency, severity, and aggregate loss. The greatest risk of exogenous shock threatening the solvency of the industry is from a natural mega-catastrophe.[51] With global warming and the resulting increase in the frequency and severity of storms, losses from storms pose far greater expected aggregate losses than terrorism. Note that 10 of the top 20 catastrophic losses in Table 2 are weather-related losses occurring after the year 2000. So what is more likely—an entire city destroyed by a storm or a terrorist attack? Yet, neither storms nor earthquakes are subject to broad coverage benefits provided by the federal government. The magnitude of a single event and the aggregate potential losses do not distinguish terrorism risk from other catastrophic risks. This is not to diminish terrorism risk as a class of catastrophic risk, but neither is it to raise terrorism risk as the supreme specter.

**The magnitude of a single event and the aggregate potential losses do not distinguish terrorism risk from other catastrophic risks.**

**Table 1**
**U.S. Insurance Losses by Category, 2003–2012 ($ millions)**

| Year | Terrorism ($ millions) | Accidental Man-made Disasters ($ millions) | Natural Catastrophes ($ millions) | Storms ($ millions) |
|---|---|---|---|---|
| 2003 | 0 | 2,320 | 16,170 | 8,326 |
| 2004 | 0 | 2,889 | 45,737 | 38,175 |
| 2005 | 52.00 | 5,056 | 78,330 | 73,512 |
| 2006 | 69.00 | 4,043 | 11,838 | 8,265 |
| 2007 | 12.00 | 4,295 | 23,269 | 14,318 |
| 2008 | 300.00 | 7,812 | 44,692 | 39,288 |
| 2009 | 0 | 3,915 | 22,355 | 13,548 |
| 2010 | 0 | 3,606 | 39,869 | 20,126 |
| 2011 | 0 | 5,794 | 110,021 | 41,152 |
| 2012 | 0 | 5,960 | 71,278 | 54,065 |

Source: Swiss Re, *Natural Catastrophes and Man-Made Disasters*, annual surveys, 2003–2012.

**Table 2**
**Top 20 Worldwide Insurance Losses, 1970–2012**
**(Losses in millions of 2012 dollars)**

| | Event | Year | Loss ($ millions) |
|---|---|---|---|
| 1 | Hurricane Katrina | 2005 | 76,254 |
| 2 | Japan earthquake | 2011 | 35,735 |
| 3 | Hurricane Sandy | 2012 | 35,000 |
| 4 | Hurricane Andrew | 1992 | 26,180 |
| 5 | 9/11/2001 attacks | 2001 | 24,349 |
| 6 | Northridge, CA earthquake | 1994 | 21,685 |
| 7 | Hurricane Ike | 2008 | 21,585 |
| 8 | Hurricane Ivan | 2004 | 15,672 |
| 9 | Thailand floods | 2011 | 15,315 |
| 10 | New Zealand earthquake | 2011 | 15,315 |
| 11 | Hurricane Wilma | 2005 | 14,772 |
| 12 | Hurricane Rita | 2005 | 11,869 |
| 13 | U.S. Corn Belt drought | 2012 | 11,000 |
| 14 | Hurricane Charley | 2004 | 9,784 |
| 15 | Typhoon Mireille | 1991 | 9,517 |
| 16 | Hurricane Hugo | 1989 | 8,467 |
| 17 | Chile earthquake | 2010 | 8,421 |
| 18 | Storm Doria | 1990 | 8,205 |
| 19 | Storm Lothar | 1999 | 7,994 |
| 20 | U.S. storms | 2011 | 7,453 |

Source: Swiss Re, *Natural Catastrophes and Man-Made Disasters* (years 2003 to 2012), http://www.swissre. com/sigma/.

**The manifestation of catastrophic terrorism risk was a public crisis that presented an opportunity to argue that this form of risk was somehow different.**

What, then, makes terrorism insurance so special or unique that it requires federal government intervention? My answer, as a point of explanation, is two-fold. First, insurance has traditionally covered fortuitous events such as storms and earthquakes. The suggestion that public funds should protect insurers and commercial policyholders from earthquake risk would be beyond the pale. The insurance industry and business interests cannot plausibly lobby for special protections against risks that insurance has routinely covered in the past. However, the manifestation of catastrophic terrorism risk was a public crisis that presented an opportunity to argue (lobby) effectively that this form of fortuitous catastrophic risk was somehow different—so different that it requires federal government intervention and protection of the insurance market and certain business interests.

Second, the makeup of policyholders suffering losses from storms and earthquakes, as opposed to terrorism, is different. Those exposed to natural catastrophes are diffuse across a broad spectrum of society, from individual persons to multinational businesses. The victims of the typical hurricane or earthquake are largely individuals. Only a portion of policyholders in terms of numbers and potential losses are business enterprises. On the other hand, absent a nuclear, chemical, or biological attack targeted at a major civilian center, catastrophic terrorism risk disproportionately affects commercial policyholders. Although there were heavy human casualties from 9/11, much of the insured losses were losses of tangible assets, such as planes and buildings, and losses from business interruption. TRIA is a mandatory program for commercial property and casualty insurers.[52] Catastrophic terrorism, from an insurance perspective, affects business interests.

These two reasons have little to do with the nature or the insurability of terrorism risk as a fortuitous event, but instead the root of the program is found in the political interest groups seeking to leverage public funds for their benefit.

**Perspective on the Pricing of Terrorism Risk**

According to a recent report by the insurance broker Marsh and McLennan, the take-up rate of terrorism risk coverage has increased over time. In 2003, the rate was 27 percent, and it increased to 61 percent by 2009. Table 3 shows the leading industries in terms of take-up rate in 2009.[53] A vast majority of Marsh's clients purchased terrorism coverage, and the demand for terrorism coverage has been robust.

On pricing, the cost of terrorism insurance has fallen gradually over the years, with a more significant drop in 2009. The median premium rate for terrorism coverage was down from $37 per $1 million in coverage in 2008 to $25 per $1 million in 2009.[54] During 2008, the median terrorism premium was $9,541 for a median total insured value (TIV) of $303 million, which is $0.0000315 of premium for every dollar of TIV. More intuitively, this price level says that $1 of premium in 2008 purchased coverage for $31,758 of property. Compare this median price level for terrorism premium to the median property premium for the same period. The me-

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**Table 3**
**Industry Terrorism Insurance Take-up Rate (2009)**

| Industry | Rate (%) |
|---|---|
| Utilities | 80 |
| Real estate | 76 |
| Health care | 76 |
| Transportation | 75 |
| Financial institutions | 74 |
| Media | 71 |
| Hospitality | 68 |
| Education | 65 |
| Technology | 61 |
| Public entities | 61 |

Source: Marsh and McLennan, *The Marsh Report: Terrorism Risk Insurance, 2010*, pp. 10–11.

**Why should the price for terrorism risk coverage be kept artificially low by government subsidization of risk in the first place instead of being allowed to be controlled by market prices?**

dian property premium was $295,755 for a TIV of $303 million, which is $0.000967 of premium for every dollar of TIV, or $1 of premium purchased coverage for $1,024 of property. This is a ratio of 1:31 between terrorism coverage and property coverage.

These figures show that risks to property from other sources are far greater than the risk of terrorism as implied by insurance prices. The skeptic may argue that the price for terrorism coverage is artificially low because of TRIA, and that if there were no TRIA these premium levels would increase dramatically. There are two problems with this argument. The first is, why should the price for terrorism risk coverage be kept artificially low by government subsidization of risk in the first place instead of being allowed to be controlled by market prices? The response that market prices would be exorbitantly expensive for the private sector cannot be the answer. As a matter of principle, the cost of the lower price is externalized to the public. As a practical matter, even if prices dramatically increase once TRIA sunsets, terrorism coverage relative to property coverage would still be a tiny fraction of the overall cost of obtaining property and casualty coverage for an insurable asset—meaning that policyholders can readily afford much more expensive terrorism coverage. Suppose, for example, terrorism risk coverage quadruples. Based on the above 2008 figures, policyholders are still looking at $1 of premium for every $7,940 of TIV. This is a ratio of 1:8 between terrorism coverage and property coverage.

Lastly, Marsh reported that the standalone market for terrorism risk coverage, including coverage for noncertified risks and international locations (risks that are not covered by TRIA), is significant. As of 2010, the insurance capacity in this market stood at $3.76 billion.[55] The capacity supporting TRIA-covered risk would be much greater. The existence of a robust standalone market for non-TRIA coverage for terrorism is direct evidence that the insurance industry has the capital and thus the capability of providing coverage outside of TRIA. If TRIA is removed from the equation, there would be much more insurance capacity that can be attributed to the coverage of terrorism risk.

Terrorism coverage, without TRIA, would still be a small portion of the property and casualty premium and would still be affordable (capable of purchase) by commercial policyholders. The whole debate on TRIA and the lobbying effort by the insurance industry and certain business interests concerns the desire to reduce the cost of coverage and the risk of a catastrophic loss by externalizing this risk to the public fisc.

## Externalization of Risk and Cost

The 9/11 attacks showed that the old pricing of terrorism risk was wrong. The experience is now engraved in actuarial databanks, and it will be the frame of reference by which terrorism risk is assessed and priced. Without TRIA, market forces would have worked themselves into a new equilibrium: premiums would have risen with reduced coverage, the market would have eventually found a new equilibrium upon a more rational assessment of the risks, and there would have been more concentrated risk on the insurance industry and commercial policyholders. A dire prediction that coverage would disappear would not be based on market reality.

The insurance industry's financial recovery from the losses of 9/11 is noteworthy. In the months after the attacks, insurance stock prices increased as investors sought to capitalize on anticipated hardening prices and higher returns on capital.[56] The industry quickly recapitalized, and in a few short years held more capital than it did before 9/11.[57] Between 2002 and 2006, surplus in the property and casualty industry grew from $302 billion to $508 billion. [58] In the years following the attacks, industry return on equity has exceeded that of the U.S. industry composite.[59] With replenished capital and underwriting opportunity in a new risk, insurers would most likely have been forced to underwrite more coverage even without TRIA, lest the new capital held by insurers not generate returns to shareholders. As the pressure to deploy the new capital builds, the market forces of price, supply, and demand take over, and a gradual decrease in premium pricing is inevitable as the bargaining power between supplier and purchaser shifts. Currently, there is an oversupply of capacity in the reinsurance market for terrorism risk, which will put downward pressure on pricing.[60]

In addition to market stabilization (which has long been achieved), the purpose of TRIA was to allow time for the private market to devise a long-term solution to the problem of catastrophic terrorism risk. However, the government has found "little development or movement among insurers or reinsurers toward developing a private-sector mechanism that could provide capacity, without government involvement, to absorb losses from terrorist events."[61] The industry's long-term solution appears to be lobbying for an extension of TRIA or "a long-term, public-private partnership."[62]

There has always been a significant lobbying effort by groups arguing for such an extension. On the opposite side of the effort, an array of consumer groups, public think tanks, and scholars from the finance, economic, insurance, and legal fields have argued against providing a permanent government subsidy to an insurance industry that is well capitalized and financially healthy.[63] From the insurer's perspective, there is every reason to continue TRIA since the provision of free capital is always a good thing. Lobbying efforts by both the insurance industry and the business community resulted in extensions of the program in 2005 and again in 2007. There is no reason to believe that the same incentives will not come to bear in 2014. Although TRIA was enacted "to allow for a transition period for the private markets to stabilize," the program has gone from a temporary program (originally envisioned for three years) to a long-term, public-private cost-sharing arrangement (12 years). There is nothing to suggest that the insurance industry, now or in the future, will shun free reinsurance coverage for extreme risk.

**Effect of Subsidized Insurance on the Market**

The involvement of the government presents significant questions of fairness and efficiency.[64] The advantages of government involvement are apparent. After the market dislocations in the immediate aftermath of 9/11, the take-up rate of terrorism coverage has gone up.[65] Although the amendments to TRIA imposed a greater share of financial responsibility on insurers and policyholders, the pricing continued to decline. This indicates that "competition has held down premium increases."[66]

Competition for business increases as the industry holds more capital. Insurance is a cyclical business, with price levels ebbing and flowing with the supply of capital. Since 9/11, capital has flowed into the insurance industry. With a greater supply of capital, insurers will feel a need to provide terrorism risk coverage, whether or not there is a government backstop. The Congressional Budget Office (CBO) has concluded, "In the absence of a federal mandate, insurers have a strong incentive to offer terrorism coverage to their commercial customers because to do otherwise risks their losing business on other property and casualty line."[67] They would lose business because there would be a competitor who would provide terrorism coverage to gain another insurer's customer. Thus, there might be a sufficient availability of terrorism coverage even without TRIA.[68]

Because much of the extreme risk is borne by the government under the program, insurers can underwrite terrorism with the knowledge that an act of terrorism will most likely not cause insolvency or otherwise threaten the existence of the firm. Indeed, some scholars have suggested that because TRIA provides cost-free coverage, the insurance industry has been taking on a much higher degree of concentration of terrorism

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risk as compared to other catastrophic risks. If manifested, that terrorism risk would be off-loaded to the public.[69] Given the relative rarity of terrorism on American soil (no less catastrophic terrorism) and the more remote possibility given the added security measures in a post-9/11 world, the provision of terrorism coverage is a highly profitable venture. In years 2002 to 2004 alone, estimates of terrorism risk premiums were $700 million, $2.3 billion, and $2.7 billion, respectively.[70] These premiums do not make up for the losses from 9/11, but over the course of several more years, without further claims, the losses would be recovered. At this point, a dozen years after the attacks, it is a safe guess that the insurance industry has made back, or even exceeded, its losses from 9/11.

In sum, since 9/11, premiums for terrorism coverage have declined and the take-up rate of terrorism coverage has increased. TRIA had a significant effect. The program mandates that insurers "make available" terrorism coverage, and the existence of the federal backstop assures that premiums are no different from that of other coverages. This structure has substantially benefited the insurance industry. Terrorism risk coverage has provided substantial underwriting profit, which would also result in substantial investment profits.

**Problem of Subsidized Risk**

Government subsidized insurance has a net negative effect in terms of fairness and efficiency. The CBO has concluded, "TRIA does not lower the total costs of terrorism risk, but rather shifts more of the burden from commercial property owners and their tenants to taxpayers."[71] The program does not have a cost-reducing effect, which would result in a net benefit for society, but it shifts some of the cost of the activities of well-funded, profitable industries such as insurance, commercial real estate, and finance to the public.

**Government subsidized insurance has a net negative effect in terms of fairness and efficiency.**

The insurance industry and the business community can bear the full cost of terrorism. Although 9/11 was catastrophic, the insurance industry absorbed the losses.[72] As of 2007, the net worth of insurers writing commercial lines covered by TRIA was about $187 billion, sufficient to cover a $100 billion total exposure under the program.[73] A $100 billion hit to capital from a terrorist attack several multiples greater than 9/11 would be devastating, but such an event would not result in a systemic failure of the insurance industry,[74] which should be the benchmark for determining whether governmental intervention is warranted or not.

If the private sector of insurers and commercial policyholders can absorb a multibillion dollar loss, the only justification for government intervention is to shift the cost from businesses and insurers to American taxpayers. This raises problems of fairness and efficiency.

As to fairness, there is no reason why American taxpayers should partially fund the cost of business activity when there is no net social gain from such subsidization. The direct benefits inure to the insurance industry and its policyholders, and any public gain is indirect in the form of a dampened shock to the economy with the ex ante guarantee of federal funds. Subsidization does not reduce the overall level of losses expected from terrorist acts; that is, terrorists would not be deterred because there exists some cost-shifting mechanism; the cost of terrorism must be borne by the insurer, policyholder, or American taxpayer. Given that reality, one must ask why the American taxpayer should subsidize the cost of business activity when the insurers and policyholders are capable of assuming the costs, though the costs could be unpleasant under some scenarios.

As far as efficiency, there is substantial evidence to suggest that TRIA's enactment is not cost neutral, that is, the program affects the total amount of the anticipated cost of terrorism. If an activity does not fully internalize its cost, the externalization of some of the cost results in inefficient behavior. A tangible example can be given: Assume that a commercial developer has a choice of two architectural designs: Design A is a state-of-the-art glass office tower structure, which is highly susceptible to an attack from a truck bomb; Design B is a more generic structure made of concrete and reinforced steel. Or, consider a choice of location: Location A is a highly desirable urban location that is dense with high-value properties; Location B is a suburban location that is low-risk for a terrorism strike. If the cost of procuring terrorism coverage is risk-based and fully incorporates the choice of design, the commercial developer must consider the added cost of insurance associated with Design A and Location A. On the other hand, if some of the insurance cost is subsidized by a third party, then the reduction in cost adversely factors into the developer's choice of architectural design and location. In these everyday choices, businesses can opt to avoid or mitigate risks, though such avoidance or mitigation may result in costs such as loss of aesthetics, convenience, or financial costs. The more risky choice increases the cost of terrorism, and yet a subsidized insurance program may actually incentivize risky behavior, thus increasing overall cost.

These examples illustrate a fundamental problem of government insurance subsidies.[75] More importantly, it is not an abstract hypothetical. There is evidence that the effect described above is taking hold in the market. Again, the CBO has noted that "an abundance of evidence suggests that commercial policyholders as a group are not taking significant steps to avoid or mitigate terrorism risks associated with their existing properties."[76] In addition to a failure to avoid or mitigate risk, there is evidence of undesirable risk taking. The CBO has also noted that "TRIA's subsidies also appear to dampen the inclination of firms to relocate their operations away from high-risk areas," thus reducing the risk of exposure.[77] Compounding this problem is the fact that as a result of subsidized insurance "policyholders generally do not receive explicit discounts on their terrorism insurance premiums for taking specific mitigation steps."[78] There is substantial reason to believe, based on policy analysis and empirical observation, that TRIA ultimately increases the cost of terrorism.[79]

A corporate welfare program like TRIA promotes subsidy-seeking behavior from interest groups. Consider for example this passage written by an insurance company:

> Detractors of the federal government's continued involvement in terrorism insurance are quick to point out that the insurance marketplace has increased surpluses to a level that should be able to deal with future terrorism losses. This argument, however, takes little account of the pressures faced throughout the commercial property and casualty insurance industry as a result of heightened catastrophic losses—such as a number of significant earthquakes in the first half of 2010 and a predicted above-average Atlantic hurricane season for 2010. Such conditions, based on a number of estimates, are likely to continue for the foreseeable future. In fact, after a relatively benign 2009, the first half of 2010 has seen an above average number of significant catastrophic events.[80]

One could respond to the above argument with the quip, "So what?" The argument shows an inappropriate sense of entitlement to profit, and is irrelevant to whether a subsidy should be provided or not. The business of insurance companies is to price the cost of risk transfer and, like all private enterprises, to take risk. If anticipated natural catastrophic risk and losses are high, the industry must respond according to market pressures, which may be to withdraw from the market, raise prices, or pursue some other strategy in the competitive dynamics of an industry. The fact that the industry is exposed to catastrophic losses is simply a statement that insurers are in the business of assuming risk. It is no reason for the federal government to assume the extreme portion of the risk.

**The fact that the industry is exposed to catastrophic losses is simply a statement that insurers are in the business of assuming risk.**

**The public's concern is not the preservation or guarantee of the profits of the insurance industry or its policyholders, but the systemic failure of the economic system.**

Even without TRIA, terrorism coverage would be available in the market. Such insurance may and probably would be more expensive without a federal reinsurance program, but the cost is a matter that would be allocated between the two principal private market actors: the insurer and the policyholder. As between them, the cost is zero-sum: the policyholder would pay more premiums, but eventually the insurer may end up having paid a greater cost. The cost is fully borne by the activity, and if the cost is deemed too high such that the activity is forgone, it is reasonable to conclude that the activity, on the whole, should not be initiated, which would be the result under a fully internalized cost structure. As seen, however, the program provides government subsidy of extreme risk. When an activity does not fully internalize its cost and some cost is externalized, there is an adverse effect. A greater total cost may result, though much of this is dispersed to a greater number of cost bearers (i.e., American taxpayers) in a way that the original risk bearers (i.e., insurers and policyholders) profit from the subsidization. This scheme would then raise substantial issues of fairness.

In 2014 the government will once again have the opportunity to weigh these considerations. One option would be to eliminate TRIA altogether, which is the clearly preferred option in light of the additional information and experience gained since the smoldering, dark days immediately after 9/11. Even without TRIA, the insurance industry is capable of underwriting terrorism risk. After 9/11 the surplus of the property and casualty insurers dropped to an estimated $302 billion.[81] By 2009 the surplus reached $556 billion. As the President's Working Group on Financial Markets (a joint agency group comprised of officials from the Treasury, Federal Reserve, Securities and Exchange Commission, and Commodities Futures Trading Commission) concluded in 2010, "this surplus should facilitate the provision of terrorism coverage."[82] Furthermore, there is now an over-supply of reinsurance capacity for terrorism coverage, which would tend to reduce premiums.

If TRIA is extended again by Congress in response to the insurance lobby, another option for reform of the program could be to incorporate an ex ante premium. The CBO has calculated that premiums for the reinsurance program, if charged, would have had a value of approximately $850 million in 2006 and 2007, respectively.[83] It is odd that the government has chosen not to charge those premiums, which further suggests that TRIA is a corporate welfare program.[84]

Another option, which is not exclusive of the collection of premium, could be to dramatically raise the trigger amount to the level of loss that would in fact cause a systemic failure of the insurance market. Presumably, this trigger would be far greater than the current trigger of $100 million—perhaps by 2014 the trigger amount would be on the order of $50 billion or more. The public's concern is not the preservation or guarantee of the profits of the insurance industry or its policyholders, but the systemic failure of the economic system. The effects, whether positive or negative, of a private contractual arrangement between two sophisticated parties should not concern the American public or the government. If there is a loss or higher cost among them, they should assume that effect as part of doing their business. It is only when their activity affects third parties, who are not parties to the contract and have not or cannot negotiate for the disposition of such effects (as would be the case in a systemic failure of the insurance industry), does the matter rise to one of public concern. Such failure would adversely affect everyone. In this regard, the trigger amount should reflect the level of loss that would endanger an entire industry as opposed to inflicting losses on the industry or endangering a few insurers or policyholders who ex post may have made bad choices. From this perspective, a $100 million trigger is really a small amount. The history of natural catastrophes, particularly in the 1990s and the new millennium, shows that multibillion dollar losses are now quite routine.

# Conclusion

The subsidization of terrorism risk for the insurance industry and commercial policyholders is a form of corporate welfare. It is not needed. After more than a decade since 9/11, the insurance market has had time to amply recover from its losses. After the fears of the unknown have subsided, it can more rationally assess terrorism risk and price it. There may have once been a legitimate reason for a truly "temporary" stabilization measure, but there is no rationale for that measure to become a permanent federal subsidy of the insurance industry. The Terrorism Risk Insurance Act of 2002 should sunset as scheduled at the end of 2014.

# Notes

1. Significant portions of this policy analysis have been adapted from two prior works by the author. See Robert J. Rhee, "Terrorism Risk in a Post-9/11 Economy: The Convergence of Capital Markets, Insurance and Government Action," *Arizona State Law Journal* 37,(2005): 435; Robert J. Rhee, "Insurance for Acts of Terrorism," *Appleman on Insurance 2d* 33 (Matthew Bender, 2008): 363–433.

2. Lloyd Dixon and Rachel Kaganoff Stern, *Compensation for Losses from the 9/11 Attacks* (Santa Monica: RAND Institute for Civil Justice, 2004), p. 103.

3. Lloyd Dixon et al., *The Federal Role in Terrorism Insurance: Evaluating Alternatives in an Uncertain World* (Santa Monica: RAND, 2007), p. xvii. For losses of about $24 billion in 2012 dollars, see Natural Catastrophes and Man-Made Disasters in 2012: A Year of Extreme Weather Events in the US," *Sigma* no. 2/2013 (Zurich: Swiss Re Ltd., 2013), http://media.swissre.com/documents/sigma2_2013_EN.pdf.

4. U.S. General Accounting Office, *Report to the Chairman, Committee on Financial Services, House of Representative: Terrorism Insurance: Implementation of the Terrorism Risk Insurance Act of 2002*, 108th Cong., 2nd sess., 2004, GAO-04-307, p. 5; Congressional Budget Office (CBO), *Federal Reinsurance for Disasters* (2002), p. 11.

5. Swiss Re, *Terrorism and Insurance*, 1993, p. 3 (1993).

6. See The United States Commission on National Security/21st Century, *New World Coming: American Security in the 21st Century*, 1999, p. 4, http://www.fas.org/man/docs/nwc/nwc.htm. ("Americans will likely die on American soil, possibly in large numbers.")

7. Christopher M. Lewis and Peter O. Davis, "Capital Market Instruments for Financing Catastrophe Risk: New Directions?" *Journal of Insurance Regulation* 17 (1998): 110, 113.

8. See, e.g., Christian Brauner, Georges Galey, and Birgit Wachenfeld-Teschner, *Terrorism Risks in Property Insurance and Their Insurability after 11 September 2001*, Swiss Re Ltd., 2003, p. 24 (stating that insurers proposed new exclusions, sought significantly more premium for significantly less risk, and generally sought to limit liability exposure); Auriela Zanetti et al., "Natural Catastrophes and Man-Made Disasters in 2001: Man-Made Losses Take on a New Dimension," Swiss Re, *Sigma* no. 1/2002, p. 18 ("In view of such difficulties, a quick answer—and an understandable instant response by insurers to the shock of 11 September—is to exclude terrorism from insurance policies altogether").

9. See Commercial Mortgage Securities Association, "Terrorism Insurance Roundtable 2002," pp. 39, 42 (quoting Bernard Brown, president, Insurance Advisors LLC, "The history of the insurance industry is that if they perceive a risk to be very dangerous then they're going to run away from it"); Anne Gron and Alan O. Sykes, "Terrorism and Insurance Markets: A Role for the Government as Insurer?" *Indiana Law Review* 36 (2003): 447, 451 (stating that reinsurers withdrew from the market).

10. *Terrorist Risk Insurance*, Testimony of Paul H. O'Neill, Secretary of the Treasury, before the Senate Committee on Banking, Housing, and Urban Affairs, 107th Cong., 1st sess., 2001. See "Insuring Against Terror: Is There a Role for Government Reinsurance?" Cato Institute Policy Forum, 2002. (Quoting Anne Gron: "And what happens is that when the new information comes and when you have less capital after the event, you reevaluate your risk portfolio. And a lot of insurers will realize that they have more risk than they would have preferred, given the level of capital, given the new information about the risk.")

11. See American Academy of Actuaries, *P/C Terrorism Insurance Coverage: Where Do We Go Post-Terrorism Risk Insurance Act?* 2004, 14–15 (quoting the new war and terrorism risk exclusions filed by ISO on behalf of the insurance industry).

12. See ibid., p. 1.

13. See Gron and Sykes, "Terrorism and Insurance Markets: A Role for the Government as Insurer?" *Indiana Law Review* 36 (2003): 447–448 (noting that "a little more than six months after" 9/11, some insurers were willing to insure the airliners with an appropriate premium hike).

14. See American Academy of Actuaries, p. 5. ("A continuous build-up of terrorism exposure of those that think they are high-risk on an insurer's portfolio could become problematic. This type of adverse selection may also have affected the pricing.")

15. Terrorism Risk Insurance Act of 2002, Pub. L. No. 107-297, § 101(a)-(b), 116 Stat. 2322–23 (2002), found in 15 U.S.C. § 6701 (2012) (statutory note including subsequent amendments).

16. Ibid., § 101(a)(1).

17. Ibid., §§ 101(a)(2)-(4).

18. Ibid., §§ 101(a)(5).

19. Ibid., 2002 § 101(a)(6).

20. Ibid., § 101(b).

21. Terrorism Risk Insurance Extension Act of 2005, Pub. L. No. 109-144, 119 Stat. 2660 (2005), found in 15 U.S.C. § 6701.

22. Terrorism Risk Insurance Program Reauthorization Act of 2007, Pub. L. No. 110-160, 121 Stat. 1839 (2007), incorporated into the Terrorism Risk Insurance Act (TRIA) and found in 15 U.S.C. § 6701.

23. TRIA § 108(a).

24. TRIA §§ 103(a)(2), 104.

25. TRIA § 102(1)(B)(ii).

26. TRIA § 102(1)(A).

27. TRIA § 103(a)(3).

28. TRIA § 102(6).

29. TRIA § 103(c).

30. TRIA § 103(e)(1)(B)(ii).

31. See Robert J. Rhee, "Terrorism Risk in a Post-9/11 Economy," pp. 435–534.

32. TRIA § 102(7).

33. TRIA § 102(7)(F).

34. TRIA § 102(7).

35. TRIA § 103(e)(1)(A).

36. TRIA § 103(e)(2)(A)(i).

37. TRIA § 103(e)(2)(A)(ii).

38. TRIA § 103(e)(2)(B).

39. TRIA § 103(e)(6). For years 2013 and 2014, the aggregate retention amount is the lesser of (1) $27.5 billion, or (2) the aggregate amount, for all insurers, of insured losses during the program year.

40. TRIA § 103(e)(7)(A).

41. TRIA § 103(e)(7)(B).

42. TRIA § 103(e)(7)(C).

43. TRIA § 103(e)(7)(D).

44. TRIA § 103(e)(8).

45. TRIA § 103(e)(8)(A). Insurers must collect the surcharge amount from policyholders and remit to the Treasury secretary. TRIA § 103(e)(8)(C).

46. TRIA § 101(b).

47. See, e.g., Brauner, Galey, and Wachenfeld-Teschner, p. 13. ("Even so, terrorism is by no means random, but follows its own, albeit twisted logic. Being able to understand this logic is the first step toward managing terrorism risks better, even if they cannot be eradicated entirely.")

48. Ibid., p. 8.

49. "Insuring Against Terror: Is There A Role for Government Reinsurance?" Cato Institute Policy Forum, September 23, 2002 (comment of Scott Harrington, Wharton School of the University of Pennsylvania).

50. Swiss Re, *Natural Catastrophes and Man-Made Disasters* (years 2003 to 2012), http://www.swissre.com/sigma/.

51. Harry Shuford, "Understanding Cycles and Shocks in the Property and Casualty Insurance Industry," *Business Economics* 39, no. 3 (2004): 38–39.

52. TRIA § 102(6)(B).

53. Tom Walsh, ed., *The Marsh Report: Terrorism Risk Insurance 2010*, Marsh and McLennan, pp. 10–11. Marsh and McLennan is one of the two largest global insurance brokers

54. Ibid., p. 12.

55. Ibid., p. 17.

56. See Oxford Metrica, *Shareholder Value Analysis of the Global (Re)insurance Industry*, 2003, pp. 3–24. (finding that, in the one year after 9/11, the stocks of the top 25 global insurance companies fell 0.73 percent as compared to a loss of 16.8 percent for the S&P 500 Composite and a loss of 16.9 percent for the Dow Jones Euro Stoxx); Morgan Stanley, *Rebroadcast: Update on WTC-Related Issues*, 2001, p. 2 (noting that property and casualty insurance stocks were up 11.1 percent since September 10, 2001).

57. From September 2001 to July 2002, "66 firms had raised $28 billion and another 47 deals worth $47 billion were" in the pipeline. R. Glenn Hubbard and Bruce Deal, "The Economic Effects of Federal Participation in Terrorism," *Risk Management and Insurance Review* 8, no. 2 (2005): 37. At the end of 2000, the U.S. property and casualty sector held $290 billion in surplus, and at the end of the first quarter of 2004 it held capital of $361 billion. Hubbard and Deal, p. 30. Moreover, the capital of U.S. reinsurers more than doubled since 9/11. Hubbard and Deal, p. 39, Figure 17.

58. U.S. Treasury Department et al., *Report of the President's Working Group on Financial Markets: Market Conditions for Terrorism Risk Insurance 2010*, p. 14.

59. Hubbard and Deal, p 36.

60. Guy Carpenter and Company, T*errorism: Terror Market Continues to Provide Abundant Cover*, 2011, pp. 11–12.

61. U.S. Government Accountability Office, *Terrorism Insurance: Implementation of the Terrorism Risk Insurance Act of 2002*, 2004, p. 28.

62. American Insurance Association, "Ensuring Economic Security in the Face of Terrorism: A Public-Private Partnership," *American Terrorism Insurance: Implementation of the Terrorism Risk Insurance Act of 2002*, *Insurance Association Advocate,* March 3, 2005, p. 3.

63. See, e.g., Scott E. Harrington and Randall S. Kroszner, *The Possible Extension of the Terrorism Risk Insurance Act*, AEI Research Statement no. 207 (Washington: American Enterprise Institute, 2004). ("No convincing evidence indicates that extending the program is necessary to avoid serious disruptions in commercial real estate markets in major cities.")

64. Congressional Budget Office, *Federal Reinsurance for Terrorism Risks: Issues in Reauthorization* (Washington: CBO, 2007), p. 1.

65. CBO, *Federal Reinsurance for Terrorism Risks*, p. 15.

66. Ibid., p. 15.

67. Ibid., p. 6.

68. Ibid., p. 5. "Even if risk cannot be priced with great precision, insurance markets may function reasonably well as long as those insurers bearing risks are compensated for the uncertainty that surrounds estimates of the probabilities of their incurring losses."

69. Erwann Michel-Kerjan and Paul A. Raschky, "The Effects of Government Intervention on the Market for Corporate Terrorism Insurance," *European Journal of Political Economy* 27 (2011): S122.

70. CBO, *Federal Reinsurance for Terrorism Risks*, p. 17.

71. Ibid., p. 10.

72. The insurance industry has also absorbed the large losses from Hurricane Katrina without systemic failure.

73. CBO, *Federal Reinsurance for Terrorism Risks,* p. 19.

74. House Committee on Financial Services Subcommittee on Capital Markets, Insurance, and Government Sponsored Activities, *Protecting Policyholders from Terrorism: Private Sector Solutions*, 107th Cong., 1st sess., 2001. Statement of J. David Cummins, Harry J. Loman Professor of Insurance and Risk Management, The Wharton School, University of Pennsylvania: "A study I recently conducted indicates that the insurance industry could survive an event of that magnitude [$100 billion loss] but that markets would be disrupted by numerous insurer insolvencies as well as market price and availability problems.") Since the time of September 11, when Professor Cummins' assessment was made, the insurance industry has gained a stronger balance sheet. Thus, the $100 billon loss scenario is one that the industry can absorb without systemic failure.

75. This problem is well documented in the National Flood Insurance Program. See Robert J. Rhee, "Catastrophic Risks and Governance after Hurricane Katrina: A Postscript to Terrorism Risk in a Post-9/11 Economy," *Arizona State Law Journal* 38 (2006): 581.

76. CBO, *Federal Reinsurance for Terrorism Risks*, p. 20.

77. Ibid., p. 2. "Moreover, by keeping premiums for terrorism insurance artificially low, TRIA may encourage construction in areas at greatest risk of being targeted and thus could increase losses from a terrorist attack."

78. CBO, *Federal Reinsurance for Terrorism Risks*, p. 23.

79. Ibid., p. 20.

80. Tom Walsh, ed. p, 33.

81. U.S. Department of the Treasury et al., p, 14.

82. U.S. Department of the Treasury et al., p. 14.

83. CBO, *Federal Reinsurance for Terrorism Risks*, p. 23.

84. Some scholars have suggested that if there is to be federal reinsurance program, there is an open question of whether the government should charge premiums. Michel-Kerjan and Raschky.



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