TERRORISM, INSURANCE AND THE UNITED STATES GOVERNMENT

Introduction

The terrorist attack of September 11, 2001 produced insured losses estimated at $32.5 billion, making it by far the most expensive natural or man-made catastrophe ever (Exhibit 1). That some 2,976 lives were lost and 2,250 people injured is now a well-known tragic part of history (Exhibit 2). Less well known is the fact that insurance, rather than government or philanthropy, was by far the single largest source of recovery aid for the tens of thousands of victims, survivors and businesses whose lives and livelihoods were destroyed or damaged in the attack. The many billions of dollars paid by nearly 200 insurance companies worldwide in the weeks and months after September 11 substantially mitigated the overall economic impact of the attack—estimated at $83 billion dollars in New York City alone—but not without creating a profound, unparalleled and enduring change in the global insurance industry.1

The economic toll on buyers of insurance in the wake of the September 11 attack has been enormous—extending well beyond the introduction of terrorism exclusions in the immediate aftermath of the event. The cost of managing risk for businesses in the United States rose by 85 percent from 2000 through 2002,2 available limits on many types of coverage were slashed and terms and conditions in insurance contracts were narrowed as swift and severe underwriting and pricing responses to the attack rippled through insurance markets worldwide. Global insurance and reinsurance capacity fell by 15 to 25 percent. The unprecedented deterioration in market conditions was finally arrested in late 2002 when President Bush signed the Terrorist Risk Insurance Act (TRIA) into law on November 26.

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1 New York City Partnership. The Milken Institute estimates that the economic cost of the 9/11 attack in metropolitan areas of the United States totaled $191 billion.
The Terrorism Risk Insurance Act of 2002 was adopted by Congress to provide a temporary federal shared loss program or “backstop” for incurred losses resulting from certain acts of terrorism, to protect American businesses by minimizing market disruptions and to ensure the widespread availability and affordability of property and casualty insurance for terrorism risk.

By all accounts TRIA has been a success. Each of the six million businesses operating in the United States today has been offered, at least twice, the opportunity to purchase terrorism coverage, usually at reasonable cost. Take-up rates for the coverage have been climbing steadily, from 23.5 percent of businesses in early 2003 to 46.2 percent during the second quarter of 2004 (Exhibit 3).³

In the case of workers compensation, a compulsory coverage for virtually all businesses, the take-up rate is effectively 100 percent. According to the Government Accountability Office (GAO), “TRIA has improved the availability of terrorism insurance…” and “…ensure[d] that business activity did not materially suffer from a lack of terrorism insurance.”⁴

The pending expiration of TRIA on December 31, 2005, however, threatens to abruptly end the widespread availability of affordable terrorism coverage. Indeed, uncertainty has already crept back into commercial insurance markets. Although TRIA’s expiration date may appear to non-professionals as far off, insurers are already being called upon to make decisions about insurance coverage affecting policies that will be in-force during the post-TRIA period (January 1, 2006 and beyond).

Specifically, annual commercial policy renewals with effective dates after January 1, 2005 must consider the possibility of there being no federal backstop for terrorism losses occurring in 2006. For this reason, insurers are already seeking—and have obtained in many states—regulatory approval to reinstitute exclusionary language for terrorism losses occurring after December 31, 2005.

Regulators in most states are likely to support changes in contract language limiting insurer liability for attacks occurring after the expiration of TRIA in order to avoid serious solvency and ratings concerns throughout much of the commercial property-casualty insurance industry. As of late September 2004, exclusions had already been approved in 48 jurisdictions. Following the September 11 attack, regulators in 45 states, the District of Columbia and Puerto Rico approved such limits.

In short, without renewal of TRIA, acute shortages of terrorism coverage will likely develop, affecting policies that will be in force as soon as January 2005, the terms of which will be negotiated beginning in September 2004.

Fundamentally the current debate over whether or not TRIA should be extended reduces to a small number of arguments:

- Is terrorism a fully insurable risk?
- Is the property-casualty insurance industry set up to be capable of paying losses from large scale terrorist attacks or sequences of attacks?
- Is it right for the state to share in the economic as well as the security consequences of declaring a “war on terrorism”?

This paper contains a discussion and analysis of each of these three questions. Some readers may be surprised to find that many aspects of these questions are not new to the world of insurance—but have been asked and answered many times. In fact, the findings of this study are based largely on long-standing and elementary principles of insurance, particularly as they apply to the modern threat of large-scale terrorist attacks.

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5 As of this writing approvals were pending in Florida, Georgia, New York, Maryland, Massachusetts and Puerto Rico. Collectively these states accounted for 21 percent of direct premiums written in the United States in 2002.

6 The five states withholding approval were California, Florida, Georgia, New York, and Texas.
I. Is Terrorism an Insurance Risk?

The fact that the Terrorism Risk Insurance Act was enacted in 2002 as a temporary program, intended to last little more than three years, suggests that the US Congress at the time believed the insurance industry would not only quickly recover from the trauma of September 11, but would find a way to make terrorism risk coverage widely available and affordable to millions of businesses in all 50 states. In other words, the expectation appears to have been that the risk of terrorist attack would become completely insurable in a manner little different from any other risk after a brief adjustment period. This assumption, like many assumptions associated with the war on terrorism, has turned out to be almost entirely incorrect. In retrospect it even seems somewhat naïve.

Insuring against acts of terrorism has proven to be an extraordinarily complex endeavor that remains fraught with uncertainty and the omni-present potential for ruinous losses. Current indications are that efforts to privatize the market for terrorism risk have been only partially successful. Today, large segments of the economy and millions of workers are exposed to significant terrorism risk, and they will have little or no access to terrorism insurance in the event TRIA is not extended.

It has been well known since insurance was developed that not all types of risk are fully insurable. There are four basic criteria that must be satisfied before a particular type of risk is deemed completely, or even substantially, insurable:

- estimable frequency;
- estimable severity;
- ability to spread/diversify loss, and
- fortuitous/random nature of the loss.

Terrorism, to varying degrees, violates all four of these traditional requirements. Table 1 displays these four requirements, the rationale supporting them and violations of these principles presented by terrorism risk.
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Violations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>• Insurance requires large number of observations to develop predictive rate-making models (an actuarial concept known as credibility)</td>
<td>• Very few data points&lt;br&gt;• Terror modeling still in infancy, untested&lt;br&gt;• US national intelligence infrastructure seriously flawed</td>
</tr>
<tr>
<td>Severity</td>
<td>• Maximum possible/probable loss must be at least estimable in order to minimize “risk of ruin” (insurer cannot run an unreasonable risk of insolvency though assumption of the risk)</td>
<td>• Potential loss is virtually unbounded&lt;br&gt;• Losses can easily exceed insurer capital resources for paying claims&lt;br&gt;• Extreme risk in workers compensation because statutes forbid exclusions for any reason</td>
</tr>
<tr>
<td>Diversifiable Risk</td>
<td>• Must be able to spread/distribute risk across large number of risks&lt;br&gt;• “Law of Large Numbers” helps makes losses manageable and less volatile</td>
<td>• Losses likely highly concentrated geographically or by industry (e.g., WTC, power plants)&lt;br&gt;• Lower take-up rate outside most at-risk zones/industries leads to adverse selection problem</td>
</tr>
<tr>
<td>Fortuitous Nature of the Risk/Random Loss Distribution</td>
<td>• Probability of loss occurring must be purely random and fortuitous&lt;br&gt;• Events are individually unpredictable in terms of time, location and magnitude</td>
<td>• Terrorism attacks are planned and coordinated acts of destruction&lt;br&gt;• Dynamic target shifting from “hardened targets” to “soft targets” as terrorists adjust tactics to circumvent new security measures&lt;br&gt;• Terrorists change nature of attacks to make them less predictable&lt;br&gt;• Actions of US and foreign governments may affect likelihood, nature and timing of attack</td>
</tr>
</tbody>
</table>

Sources: Insurance Information Institute with some material adapted from “Terrorism, TRIA, and a Timeline to Turmoil,” John Macdonald, ACE USA, presentation before the Real Estate Roundtable, April 22, 2004.
In addition to the four traditional requirements of insurability outlined in Table 1, other issues must be addressed. Though not strictly ‘requirements’ of insurability, these factors can limit or preclude the existence of insurance. With respect to large scale-terrorist attacks, these include:

- risk of financial impairment, and
- tax treatment of reserves

Both of these issues will be taken-up in Section II of this paper, which focuses on the insurance industry’s capital constraints and claims-paying resources.

**Frequency**

The frequency of future terrorist attacks in the United States is, of course, unknown and, for the foreseeable future, unknowable. Recent investigations by the September 11 Commission and the United States Senate Intelligence Committee have revealed serious shortcomings in the nation’s intelligence infrastructure that not only contributed to the failure to detect and prevent the September 11, 2001 attack but continue to limit the government’s ability to detect and prevent future attacks. These problems will take years, if not decades, to fix and the measures taken will inevitably be imperfect.

It should be obvious that if the federal government doesn’t know when, where or by what means a future attack might occur, insurers don’t know either. There are also too few historical data points for insurers to build a data set that would produce credible (statistically useful) inferences about the specifics of future attacks. Table 2 shows the insured losses associated with the only significant terrorism events on US soil in recent history. Even a casual inspection of this list confirms that the historical record is essentially useless from a ratemaking perspective.7

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7 The top five costliest terrorist attacks in terms of insured losses globally are displayed in Exhibit 4.
Table 2. Previous Terrorist Attacks in the United States ($2001)

<table>
<thead>
<tr>
<th>Event</th>
<th>Type of Attack</th>
<th>Date</th>
<th>Insured Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Trade Center</td>
<td>Truck bomb</td>
<td>February 26, 1992</td>
<td>$725 million</td>
</tr>
<tr>
<td>Bombing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oklahoma City</td>
<td>Truck Bomb</td>
<td>April 19, 1995</td>
<td>$145 million</td>
</tr>
<tr>
<td>Bombing of Murrah</td>
<td></td>
<td></td>
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<tr>
<td>Federal Building*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World Trade Center/</td>
<td>Hijacked aircraft used as</td>
<td>September 11, 2001</td>
<td>$32.5 billion (est.)</td>
</tr>
<tr>
<td>Pentagon Attack</td>
<td>missiles</td>
<td></td>
<td></td>
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</tbody>
</table>

*Act of domestic terrorism.


Estimating the incidence of acts of terrorism is fundamentally different and vastly more difficult than forecasting natural catastrophes, where insurers can learn much about the frequency (and severity) of events through historical claim data, meteorological and geological records and greatly improved science.

**Severity**

Whereas the limited historical record precludes making any statistically credible estimates concerning the frequency of terrorist attacks, estimating the severity of terrorist attacks is a relatively straightforward application of engineering principles, physics and medical/epidemiological science.

For any given method and location of terrorist attack, be it a conventional explosive device, dispersal of a chemical or biological agent, use of an aircraft as a missile or detonation of a dirty nuclear weapon, insurers can estimate losses through the use of state-of-the-art terrorism models.

Insurers, reinsurers and ratings organizations have used terrorism models to simulate millions of loss scenarios. A wide range of different disaster scenarios has been developed. The results of these analyses are sobering and vividly illustrate why large-scale terrorist attacks are at best only partially insurable.

The huge variability in outcomes calculated by these models underscores the degree of uncertainty associated with potential terrorist attacks.
An April 2004 report by Towers Perrin\(^8\), for example, includes the following examples of catastrophic workers compensation terrorism losses from the RMS event library (see also Exhibit 5):

- **Sears Tower Airplane Attack**: A 747 is hijacked and flown into the Sears Tower, Chicago, during a peak working hour (2 p.m. weekday), causing the tower to collapse but not immediately. An estimated 1,300 would be killed and thousands of others injured – up to $0.9 billion WC loss.

- **El Paso Energy Truck Bomb**: A two-ton bomb is detonated at the headquarters of El Paso Energy in Houston, Texas, during peak working hours. An estimated 1,000 would be killed, with hundreds of severe injuries and thousands of minor injuries – up to $1.1 billion WC loss.

- **Rockefeller Center Truck Bomb**: A ten-ton bomb at the GE Building in New York City causes massive explosion during peak working hour. An estimated 12,300 fatalities and as many as 52,300 other non-fatal (ranging from medical only to permanent total disability) injuries – up to $7.4 billion WC loss.

- **Nuclear Power Plant Sabotage**: Indian Point Nuclear Power plant, 25 miles north of Manhattan, is sabotaged by terrorists resulting in the release of a large amount of radioactive material. Facilitated by a southern-blowing wind, radioactive material is dispersed throughout the area and into New York City. Of the estimated 350,000 people directly affected, most would require only minor medical treatment. Few deaths, but thousands could suffer severe and permanent effects – up to $15.4 billion WC loss.

- **New York City Anthrax Release**: Large anthrax attack in downtown New York City in peak working hour. Anthrax is weaponized and dispersed in aerosol form, resulting in inhalation of anthrax by a large number of people, aided by wind dispersion. Of the more than one million people affected, most would require only minor medical attention, but an estimated 173,000 fatalities – up to $91 billion WC loss.

Towers Perrin also notes that terrorism experts have developed plausible scenarios in which the estimated total insured losses from a single event could exceed $250 billion. By way of preview, this amount is more than double the claims-paying capacity of the entire U.S. commercial property-casualty insurance industry.

While insurers have adequate capital available to pay losses associated with small-to-modest size events, larger scale attacks (or a sequence of medium-size attacks) could quite conceivably destabilize the global commercial property-casualty insurance industry and lead to the insolvency of major insurers. Taking the wide variety of potential scenarios into account, it is clear that the property-casualty insurance industry cannot be the sole bearer of financial risk associated with terrorist attacks.

Severity Issue for the Future: Liability Losses from Terrorist Attacks

Although seldom discussed, another distinguishing feature of terrorist attacks is their ability to generate enormous liability losses. This is distinct from major natural disaster losses in the United States, which generate few, if any, liability claims—in large part because death and injury counts are typically low and because of the generally accepted doctrine that natural disasters are random “acts of god,” with no fault being ascribed to a third party. In contrast, in the immediate aftermath of the 9/11 attacks it became clear that thousands of victims and their families were prepared to litigate to recover economic and non-economic (e.g., pain and suffering, emotional distress, etc.) damages. The current $4.0 billion estimate for other liability losses in Exhibit 6, originally estimated at as much as $20 billion, was reduced only through the existence and successful administration of the Victim Compensation Fund (VCF)—a fact that must be considered when estimating the potential severity of future attacks. The VCF was established by Congress in the days following the 9/11 attack in order to shield the airlines and other likely litigants from potentially ruinous lawsuits. The VCF was an unmitigated success in this respect. Over 98 percent of eligible families who lost a loved one voluntarily

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9 Major natural disasters in the United States rarely produce large numbers of deaths or injuries. Hurricane Andrew, the most expensive disaster in world history in terms of insured losses until the September 11 attack, resulted in 61 deaths while causing $15.5 billion in insured losses ($20.3 billion in 2003 dollars).
decided to participate and submitted claims with the VCF. By the time the VCF ceased operations on June 15, 2004 it had processed nearly 7,400 claims for death and physical injury and awarded approximately $7 billion in taxpayer funds to victims and their families—money that otherwise would have been paid by the airlines and other defendants and their insurers. Although the VCF accomplished its mission, averting tens of thousands of lawsuits against potentially hundreds of defendants, the mandate of the VCF extended only to the 9/11 attacks. There is no standing authority from Congress to implement a similar program in the event of future attacks. Consequently, future attacks—even attacks that are more limited in scope—could ultimately result in more claims and overall larger defendant and insurance payouts as individual, mass tort and class action lawsuits wind their way through the U.S. tort system over a period that could span decades. And even with the VCF, a substantial number of lawsuits were filed just in time to meet the deadline of September 11, 2004.

While legislation such as the Support Anti-Terrorism by Fostering Effective Technologies Act (SAFETY Act), part of the Homeland Security Act of 2002, caps the liability exposure of companies developing and selling qualified anti-terrorism products and technologies to an amount of required insurance, the vast majority of potential defendants remain wide open to virtually unlimited liability. Were an attack similar to the March 11, 2004 train bombings in Madrid, which killed 190 people and injured hundreds of others to occur in the United States, the ensuing lawsuits could result in billions of dollars in claims against a multitude of defendants. Likewise, the near simultaneous downing of two jets by terrorists in Russia on August 24, 2004, resulting in the deaths of all 90 people aboard, would have ignited in the U.S. a chain of litigation whereby damages sought would easily surpass $1 billion.

10 U.S. Department of Justice, September 11th Victim Compensation Fund, Closing Statement from the Special Master, Mr. Kenneth R. Feinberg, on the Shutdown of the September 11th Victim Compensation Fund.

11 It is interesting to note that at least one US commercial insurer is now offering product liability and professional liability insurance coverage for companies certified under the Act, against claims arising when a product or technology is deployed to defend against, respond to or recover from a terrorist attack. Up to $25 million in limits are available under the coverage (JTW News, April 2004, Issue 84). However, it is not difficult to see how quickly that limit could be exhausted in the case of thousands of casualties.
The absence of a permanent mechanism for handling liability claims arising from terrorist attacks further reduces the insurability of terrorism risk because severity is increased without bound, while the requirement of diversification is violated as large subsets of the insured population become exposed as potential litigants. An explanation of the VCF is included in the sidebar.

*Sidebar: The September 11th Victim Compensation Fund*

The September 11th Victim Compensation Fund (VCF) was established by Congress as part of an airline aid package and is administered by the US Department of Justice. The purpose of the Fund was to provide compensation for economic and noneconomic loss to individuals or relatives of deceased individuals who were killed or physically injured as a result of the four terrorism-related aircraft hijackings and crashes of September 11. The program was designed to provide a no-fault alternative to tort litigation for these individuals or relatives and provided compensation for losses due to personal physical injuries or death. In exchange for waiving their right to sue the airlines, government agencies or other entities, families would receive a payment of $250,000 for each deceased victim, plus additional amounts depending on income, benefits and other compensation. The existence and successful resolution of the vast majority of claims through the fund are the principal reasons why insurer estimates of liability losses arising from the 9/11 attack have been adjusted downward to $4 billion today from as much as $20 billion in the months following the attack.

Despite some criticism that the fund made the application process overly onerous and payouts have been ungenerous, over 98 percent of eligible families voluntarily decided to participate in the VCF and submitted claims by the December 22, 2003 filing deadline.12 The VCF ceased operations on June 15, 2004 and by July 27 had processed all 7,397 claims for death and physical injury. Seventy-five percent or 5,558 of those claims resulted in the issuance of an award letter by the VCF. The remaining 1,839 claims were

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12 U.S. Department of Justice, September 11th Victim Compensation Fund, *Closing Statement from the Special Master, Mr. Kenneth R. Feinberg, on the Shutdown of the September 11th Victim Compensation Fund.*
denied, denied on appeal, voluntarily withdrawn or deemed to be inactive. Altogether, the VCF awarded $7 billion in taxpayer funds to victims and their families.

As of July 27, 2004, the fund had issued awards for 2,679 personal injury claims that have ranged from a low of $500 to a high of $8.6 million after offsets. The average injury claim paid per family was $1.8 million (the median award was $1.7 million). The average award after offsets is reported at $2.1 million, while the range of awards is from $250,000 to $7.1 million. It therefore appears that the fund has achieved its goals, avoiding excessive litigation and ultimately paying out billions of dollars in compensation to the families of the victims and those injured on September 11, 2001.

Post-Terror Event Liability Costs

In addition to the direct liability costs associated with terrorist attacks, ailments and illnesses contracted by workers involved in post-attack rescue and clean-up activities can increase costs significantly. Recent reports have pointed to escalating health problems possibly stemming from the 9/11 attack. More than 1,700 police officers and firefighters are reported to have filed lawsuits against New York City claiming they were sickened while working at Ground Zero or the Fresh Kills landfill on Staten Island, where much of the debris from the attack was disposed of. These suits could ultimately add hundreds of millions to the final cost of the 9/11 tragedy. These costs are not included in the $32.5 billion insured loss estimate for the September 11 attack nor are they compensable under the Victim Compensation Fund. The city, state and federal entities involved in the clean-up are largely self-insured, but private workers if found to be impaired would be covered under their employers’ workers compensation policies and may also seek compensation through the tort system.

Diversification (Spread) of Risk

Achieving adequate spread of risk is another prerequisite for insurability. From an insurance perspective, a diversifiable risk is one that affects only a subset of businesses,

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individuals or groups. It also means that losses (or gains) within a particular portfolio of insurance exposures tend to occur randomly (i.e., independently) relative to one another.\textsuperscript{14} This allows the losses from any given event to be diversified or spread in the same way that losses on a single stock are muted when held within a well-diversified stock portfolio.

Large scale terrorist attacks are not diversifiable risks. Far from affecting only individual or small groups of policyholders, terrorist attacks can easily produce massive numbers of claims simultaneously. The September 11 attacks produced more than 60,000 claims.\textsuperscript{15} The estimated $32.5 billion in insured losses associated with these claims was sufficient to destabilize the global property-casualty insurance market.

A second demonstration of the non-diversifiable nature of large-scale terrorist attacks is evident in Exhibit 6, which shows substantial losses in many different lines of insurance. This indicates that losses are not only correlated across large segments of the insured population but also across coverage types. Such losses are referred to as \textit{clash coverages} by insurers and are very difficult for insurers to manage as they are (i) very hard to predict, and (ii) likely to cause severe aggregation of losses. Major natural disasters typically produce significant property-related losses as well as some corresponding business interruption losses but generally little else. The September 11 attacks, however, in addition to the record $20.6 billion in property and business interruption losses, produced additional losses totaling nearly $12 billion, including the first-ever huge disaster losses for workers compensation insurers ($1.8 billion), life insurers ($1.0 billion) and a worst-ever loss for aviation insurers, estimated at $4.0 billion. In addition, other liability-related losses are presently estimated at $4.0 billion.

Diversification of terrorism risk is also made a practical impossibility because of the absence of adequate reinsurance capacity. Reinsurers—most of whom operate on a global scale and are no longer strangers to acts of terrorism—have generally come to the


\textsuperscript{15} The Insurance Services Office (ISO) estimated that 51,000 property and business interruption claims would ultimately be filed in New York and Virginia. In addition, the New York State Disaster Insurance Coalition recorded that 5,660 workers compensation claims were filed in New York alone as of their final report dated October 15, 2003. The report does not include all types of claims (e.g., life, aviation, liability) nor is it a complete accounting of claims filed in New York (though insurers representing 90 percent of the business written in New York County did participate in the Coalition) or claims filed in other states.
conclusion that terrorism is largely a non-insurable risk, at least as far as they are concerned. It is worth noting that in Europe, where much of the world’s reinsurance capacity originates, nations such as the United Kingdom, Spain, Austria, France, and Germany have developed federal programs to insure/reinsure terrorism risk. The Austrian, French and German programs were all established post-9/11 (as was Australia’s program), but in contrast with TRIA, these were made permanent, reflecting a clearly different perception regarding the insurability of terrorism risk. The question of whether this is also a consequence of their conclusion that the state has a necessary role in the market for terrorism insurance is taken up in Section III.

Role of Reinsurance in the Diversification and Spread of Risk

Reinsurance—essentially insurance for insurance companies—plays a vital role in the global syndication of risk, a role that was put to the test following the September 11 attack. At least three reinsurers had losses exceeding $2.25 billion each. One major insurer had reinsurance recoverables approaching $6 billion. On net, the world’s reinsurers paid an estimated 55 percent of the September 11 losses. It can safely be said that without reinsurance some large insurers would have been driven into bankruptcy as a direct result of the September 11 attack.

In the wake of the September 11 attack the reinsurance market for terrorism virtually disappeared. Today there is still only a very limited market for private terrorism reinsurance. While some respected theoreticians believe that TRIA itself is responsible for allegedly “crowding out” private reinsurance, there is no actual evidence of this. Even when it comes to the $15 billion in losses for which under TRIA insurers are responsible in 2005, there remains great reluctance on the part of reinsurers to commit significant capital resources to underwrite terrorism risk. Today, just 30 to 40 percent of property reinsurance layers include coverage for terrorism.16 Indeed, many reinsurers believe large-scale terrorist attacks to be fundamentally uninsurable for the reasons identical to those outlined in Table 1. Moreover, reinsurers worldwide remain capital-constrained. US reinsurers’ claims-paying capital at the end of 2003 is virtually

16 Including both certified and non-certified events.
unchanged from its 1998 levels, after having fallen by 20 percent between 2001 and 2002. This weakened capital position was a contributing factor in the downgrade(s) of virtually every reinsurer worldwide over the past several years. Despite improved financial performance in the reinsurance segment in 2003 and 2004, most of those downgrades remain in place. Further improvement in reinsurers’ capital base will be required before higher ratings can be reinstated. It is also important to note that reinsurers are not eligible to participate in the Terrorism Risk Insurance Act of 2002.

*Lack of Diversification and Adverse Selection*

For most causes of loss (e.g., fire, wind or water damage) insurers can use actual historical claims data to help determine a fair and appropriate premium based on the risk presented by each class of policyholder. In the case of terrorism, however, the lack of historical information, the inability of even the most sophisticated models to forecast future losses and the shifting nature of the threat prevent insurers from determining risk-appropriate premiums across all potential buyers. Insurers in many cases have been forced to price insurance on what amounts to an average cost basis across broad categories of risks for want of specific rating information. Consequently, the price of insurance will tend to be too low for the most at-risk insureds and too high for lower-risk insureds. For insurers this creates a well-known problem called *adverse selection*, whereby the portfolio of policies they underwrite is overly concentrated with high-risk insureds, who will tend to buy the coverage in proportions higher than they would were the insurer able to accurately determine the price.

Adverse selection creates an economically untenable situation for the insurer because it leads to a portfolio of risks that consists primarily of those policyholders who are the most likely to file claims. This situation forces insurers, given the limited capital available, to severely restrict the amount of their total coverage capacity they are able to allocate to terrorism risk.

Since businesses perceived to be at high risk from terrorist attack are likely to exhibit greater interest in terrorism insurance than businesses who believe they are low-risk targets, the actual take-up rate for terror coverage is naturally expected to be higher for
businesses in at-risk industries and regions than for businesses in lower-risk industries or locales. In 2003, the first full year in which TRIA was in effect, evidence of adverse selection was immediately apparent. Take-up rates were highest in the target-rich Northeast and in industries with significant infrastructure investments such as energy and communications (Exhibits 7 and 8).

The principal correction for this problem involves government participation in the insurance market. Thus TRIA expands availability (supply) and the resulting lower price of coverage encourages the purchase of insurance by groups with more moderate risk profiles and/or those who previously believed the coverage to be too expensive. The effect is to spread the exposure over a wider range of policyholders with varying degrees of risk. The expanded appeal of the coverage is also consistent with the public policy goal of increasing the nation’s economic security at a time of great uncertainty. The steadily increasing take-up rate for terrorism coverage since early 2003 (Exhibit 3) suggests that the problem of adverse selection in terrorism insurance is diminishing under TRIA, but would quickly return in its absence.

**Fortuity/Random Probability of Loss**

Insurability requires fortuity. Fortuity implies that individual insurable events are random in nature. Although acts that are random and independent of one another are by definition unpredictable on an individual basis, they tend to occur with frequencies and severities that can be observed over time, allowing insurers to build loss distributions that are the foundation of their ability to determine the appropriate price of coverage.

Terrorism is anything but a random event. Acts of terror are intentional and malicious acts of destruction. Deliberate acts of destruction (such as crime or war) have never been held to be insurable. Damage and destruction associated with acts of war have always been excluded from virtually all commercial property-liability insurance policies for more than a century. President Bush and members of his administration have on countless occasions characterized the September 11 attack as an “act of war” and the current state of affairs as a “war on terrorism.”
Terrorism Exclusions: What Happens if TRIA Expires?

If TRIA expires at the end of 2005, one of the first casualties arising from its loss will be the current standard definition of terrorism. Terrorism exclusions were virtually nonexistent in commercial insurance contracts sold in the United States before September 11, 2001. Following the attack, insurers quickly drafted exclusions and inserted them into policies upon renewal. Insurers’ lack of experience with terrorism risk and the need to implement exclusions quickly revealed that there was no standard definition of terrorism. By the time the Terrorism Risk Insurance Act became law some 14 months later, dozens of different definitions were in use. TRIA solved this problem by formulating a standard definition of terrorism and a process by which an event must be “certified” as a terrorist act by the Secretary of the Treasury before TRIA coverage applies.17 If TRIA is allowed to expire, the definitions used by insurers (and/or approved by state regulators) will drift away from TRIA’s standard definition, as each insurer seeks to control its own risks. The consequence of this definitional drift would be more uncertainty and ambiguity as to what is and is not covered in the event of future attacks.

Emergence of the War Exclusion Issue

Another immediate consequence of the expiration of TRIA is the possibility that certain destructive acts will be interpreted by insurers as “acts of war” rather than acts of terrorism. President Bush, his staff and members of Congress have repeatedly characterized the September 11 attack as an act of “war” and the current actions of the United States at home and abroad are described as part of the “war on terror.” The very term “war on terror,” implies a blurring of the distinction between “acts of war” and “acts of terror.” Such ambiguities are dangerous in insurance markets, often leading to protracted and expensive coverage disputes. In the absence of a standard definition and certification process for terrorist acts, insurers could interpret some attack scenarios as acts of war, opening the door for the historical war exclusion to apply, particularly in solvency-threatening situations.18

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17 Acts are also subject to a minimum damage threshold of $5 million.
18 TRIA itself excludes coverage for acts of war.
War risk exclusions are found in virtually all nonlife insurance contracts (with the notable exception of workers compensation policies) and have been in existence since the 19th century. The exclusion reflects the realization that damage resulting from acts of war is fundamentally uninsurable for the reasons discussed above. It is important to recognize that no formal declaration of war by Congress is required for the war risk exclusion to apply. Indeed, while the United States Congress has not issued a formal declaration of war and is very unlikely to do so (the last time Congress declared was more than 60 years ago following the attack on Pearl Harbor), the country has taken many warlike actions, most notably attacking, invading and occupying two sovereign states (Iraq and Afghanistan).

Three years after the September 11 attack, the United States is on an ever more war-like footing, replete with warnings from the highest levels of government that additional attacks are imminent and heightened security is visible at government buildings, borders, ports and airports. Legislation in 2002 created the massive Office of Homeland Security (second in size only to the Department of Defense) and the country is considering an overhaul of the entire intelligence infrastructure.

The fact that no formal declaration of war is required for the war risk exclusion is made clear in the war risk exclusion clause included in standard property and business income (i.e., business interruption) policies promulgated by the Insurance Services Office (ISO) [emphasis added]:

**War and Military Action**

1. **War**, including undeclared or civil war;
2. **Warlike action** by a military force, including action hindering or defending against an actual or expected attack, by any government, sovereign or other authority using military personnel or other agents; or
3. Insurrection, rebellion, revolution, usurped power or action taken by governmental authority in hindering or defending against any of these.

While the language in the war risk exclusion appears sufficiently broad to apply in the event of future attacks orchestrated by al Qaeda or other groups sympathetic to their cause, it is likely that insurers invoking such exclusions would face litigation—in part
because of the difficulty in discerning war risk from the risk of terrorism and the very limited case law in this area.\textsuperscript{19} In the wake of the September 11 attack, insurers responded to this potential ambiguity by introducing terrorism exclusions—and are prepared to do so again in the event TRIA is not extended.

\textit{Information Filtering, Bias and the Politicization of Terrorism Risk}

Insurance is a business based on information. To the extent possible, that information must be complete, accurate, accessible and unbiased. In the case of natural disaster risk, these criteria are largely satisfied. Governments, universities and other organizations compile and maintain vast historical archives of information related to natural disaster risk and produce objective, state-of-the art research, almost all of which is in the public domain. In contrast, detailed information related to terrorism is scant and access is highly restricted. The government decides what information to collect, what subset of that information to release, when (if ever) to release it and how it should be interpreted—potentially introducing biases every step along the way.

Accusations have also been made that the timing and nature of threat alerts are influenced by politics as are decisions about how and where anti-terror funds are allocated. Politicking over the prosecution of the United States’ anti-terror effort is unavoidable, given the dollars involved and the contentious 2004 presidential election. According to the 9/11 Commission, spending on national security and counterterrorism efforts rose by more than 50 percent from $354 billion in fiscal year 2001 to about $547 billion in fiscal year 2004—the largest percentage increase since the Korean War.

Information that is sketchy, filtered, possibly tainted by politics, or substantially incorrect to begin with, is qualitatively and quantitatively distinct from the type of statistically sound, credible information that form the basis of insurance company pricing and capital allocation decisions. In such an environment, insurers cannot reasonably be expected to fully insure all six million American businesses and their 130 million-plus employees.

II. Capital, Claims-Paying Capacity and the Financial Vulnerability of the Property-Casualty Insurance Industry to Terrorist Attacks

Introduction

The amount and nature of terrorism risk that an individual insurer can assume is based on many factors, including the availability and cost of capital, the magnitude of potential losses arising from its current book of business, the adequacy of its reserves, and concern over the impact that any exposure to terrorism risk will have on the insurer’s crucial financial strength ratings from firms such as Standard & Poor’s and A.M. Best.

The objective of this section is to estimate the true claims paying ability of the insurance industry in the event of another major terrorist attack. This is followed by a discussion on the likely impact that poor financial performance can have on the industry’s ability to retain and attract capital. The section will conclude with a discussion of financial vulnerability from the perspective of ratings agencies and the financial strength ratings they assign.

What is the True Claims-Paying Capacity of the Insurance Industry?

Critical to understanding the public purpose of a federal backstop is an appreciation for the true claims paying resources of the insurance industry, which is much less than commonly assumed for several reasons:

- **Property-Casualty Focus:** Any analysis of insurance industry’s claims-paying ability must be focused on the property-casualty segment. Property-casualty insurers paid an estimated 97 percent of the September 11 losses, compared to 3 percent for life insurers. Life insurers—who hold three-fourths of the $5 trillion in industry assets—are not eligible to participate under the Terrorism Risk Insurance Act of 2002, nor are they likely to be included in any proposal for extension of TRIA beyond 2005.
• **Assets are Not a Measure of Claims-Paying Ability:** Some media and regulators have incorrectly described the insurance industry’s claims paying resources in terms of *assets.* While it is true that the assets of the U.S. property-casualty insurance industry as of December 31, 2003 totaled some $1.2 trillion, this figure has little bearing on the industry’s ability to pay claims. The vast majority of assets on insurer balance sheets are offset by liabilities, which are effectively financial obligations or debts that a company owes to another entity. An insurer’s largest liabilities are loss reserves and unearned premium reserves. Loss reserves belong to the beneficiaries of *past* insured events. Unearned premium reserves belong to policyholders for premiums paid in advance for future coverage.

• **There’s No Such Thing as Terrorism Reserves for Future Attacks:** United States tax law does not recognize for the purposes of tax deductibility pre-funding (setting aside reserves) for events that have yet to occur. Consequently, insurers hold no reserves in anticipation of future terrorist attacks. All of the industry’s $425 billion in loss reserves are committed for the payment of events that occurred in the past.\(^20\)

• **Policyholder Surplus is the Only Appropriate Measure of Claims-Paying Resources:** Policyholder surplus is a term unique to insurance but is analogous to “owners’ equity” or “net worth” in most other industries, and reflects the fact that such funds are held as a cushion against unforeseen losses (such as the terrorist attack of 9/11). As of December 31, 2003, policyholder surplus in the property-casualty insurance industry totaled $347 billion. But this, as discussed below, is an illusory number as far as terrorism risk is concerned, since the majority of those funds are in lines which are not affected by TRIA.

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\(^{20}\) As of December 31, 2003 (Insurance Services Office). Figure includes $71.5 billion in loss adjustment expenses. Examples of major reserve categories include asbestos and environment, workers compensation, products liability and medical malpractice.
The Distribution of Claims-Paying Resources

At any given point in time the capital resources available to insurers to pay claims is obviously finite. A limited pool of capital backs not only potential losses arising from future terrorist events but also dozens of other lines of insurance written across hundreds of millions of commercial and personal lines policies.

As established above, policyholder surplus is the only valid metric for assessing the claims-paying resources of the property-casualty insurance industry, totaling some $347 billion as of December 31, 2003. Although a record, this policyholder surplus figure grossly overstates the funds available to pay claims from future terrorist attacks, even though it has become the most widely cited number when the issue of claims-paying capacity is discussed in the media and in legislative debates.

Exhibit 9 shows why the $347 billion figure is illusory. Personal lines writers (insurers of autos and homes) account for $146 billion or 42 percent of the industry’s total policyholder surplus, but are not eligible to participate in TRIA. State Farm, for example, is the largest insurer of homes and cars in the United States, yet none of its $40.3 billion in surplus in 2003 is available to pay commercial terrorism claims. The surplus amounts which back lines of coverage excluded under TRIA (such as medical malpractice) and reinsurance account for an additional $58 billion. The industry’s aggregate reserve deficiency (effectively a claim-funding deficit on past claims but which must be paid for out of current and future resources) further reduces claims-paying capacity by as much as $30 billion. After these adjustments, the surplus associated with “target commercial” lines of coverage was just $114 billion as of December 31, 2003—amounting to just 33 percent of the industry total policy-holder surplus and about 10 percent of its assets. This sum is little different from the $100 billion in surplus held by the comparable group of insurers before September 11, 2001, which fell to as little as $80 billion after the attack.

The $347 billion in policyholder surplus held by the property-casualty insurance industry as of year-end 2003 must also be put into historical context. Although a new record, the

21 Personal lines losses associated with the September 11 attack accounted for just 1 to 2 percent of total losses.
The recovery in policyholder surplus comes on the heels of unprecedented multi-year erosion in the industry’s claims-paying resources totaling more than 15 percent or $54 billion by year-end 2002 (Exhibit 10). Underwriting losses (the amount by which losses and associated expenses exceed premium income) reached $142 billion—a record for any five year period in the industry’s history. In 2001 alone, the industry paid out a record $52 billion more than earned in premiums (Exhibit 11). Over the same period, the US economy grew by 23 percent and unprecedented demands were put upon the industry’s claims-paying capital.

Factors Affecting the Claims-Paying Ability of the P/C Insurance Industry

The industry’s capital base today is stretched much more thinly than it was in the late 1990s. In real (inflation adjusted) terms, the industry’s policyholder surplus base at the end of 2003 was in fact 9.4 percent smaller than it was in mid-1999. In addition, a wide variety of new risks have emerged, including terrorism, all relying on this same, limited pool of capital. Traditional threats from natural disasters also tap into this pool. The four hurricanes that struck Florida during August and September of 2004, produced insured losses likely to exceed $20 billion, becoming the most expensive sequence of natural disaster losses in history.

The combination of economic growth, a poor investment environment and greater demand for insurance along with new, emerging and existing risks indicate that the industry’s policyholder surplus is fully committed. Increasing the size of that pool is necessary in order to finance the insurance needs of a growing U.S. economy as well as claims arising from a virtually unlimited array of new and existing risks. In the sections that follow we discuss some of the key factors affecting the ability of the insurance industry to supply terrorism coverage.
Reinsurance: A Principal Determinant of Capacity

As discussed in Section I, reinsurers are the principal conduit through which risk is spread worldwide. Reinsurers paid an estimated 55 percent of September 11 losses. Combined with the 9/11 attack, large underwriting losses from other operations and the poor investment environment in 2001 and 2002 coalesced to produce enormous declines in reinsurer capital resources. United States reinsurers reported a decline of $11.2 billion or 20 percent in policyholder surplus at year-end 2001 compared with year-end 2000. Even after a recovery in 2003, U.S. reinsurer policyholder surplus at the end of 2003 is virtually unchanged from its 1998 levels. Foreign reinsurers, who write most of the reinsurance in the United States, suffered similar declines on a global scale. The unprecedented reduction in reinsurer claim-paying ability resulted in ratings downgrades for virtually every reinsurer in the world, most of which remain in place.

As noted previously, reinsurers are not eligible for participation under TRIA and in the current market are providing coverage for terrorism in only very limited amounts. In the event that TRIA is not extended, demand for private reinsurance will soar far beyond the ability of the global reinsurance industry to supply it, given constraints on the size of the global reinsurance industry’s capital base. Moreover, the same fundamental concerns raised by primary insurers over the insurability of terrorism in Section I apply to reinsurers. The concerns—which focus on the indeterminate nature of claim frequency, virtually unbounded claim severity, a lack of diversification, excessive aggregation of losses across lines and the lack of fortuity evident in the non-random nature of attacks—render the full and complete privatization of terrorism insurance risk a practical impossibility.

Some have cited the partial return of capital and the formation of new insurers as evidence that terrorism risk can be handled by the private sector alone. Unfortunately, this ignores the facts that: i) even with the new capital there is still less capital backing terrorism risk today than before 9/11, and ii) little of the new capital seems interested in terrorism risk.

It understandably troubles and frustrates analysts committed to classical market principles that so little of the trillions of dollars in global capital today have not been attracted to
terrorism risk through private market mechanisms. Talented professionals have struggled with great ingenuity, but global capital sufficient to make a difference refuses to be drawn in.

Perhaps the problem is that very few are willing to expose very much capital to the strong possibility of a 100 percent loss. Or perhaps the obstacle is that the returns which would have to be promised to the potential providers of capital for terrorism risk are far higher than the purchasers would or could offer. Most likely it is a combination.

But the fact is that in the here and now global capital markets are not showing much interest in losing money on terrorism attacks. In reality the capital markets seem to have come to the conclusion that terrorism risk under current conditions is as potentially unprofitable as insurers now know it to be uninsurable beyond certain limits.

**Securitization of Terrorism Risk**

Despite initial forecasts that capital markets might provide a significant alternative source of funding for terrorism risks in the wake of the September 11 attack, use of the capital markets to support terrorism risks has been quite limited. In fact, just two securitizations of catastrophe terrorism risk are in place as of August 2004 today and only one of them covers property-casualty risk while the other is a securitization of catastrophic mortality risk. Moreover, neither represents a transfer of pure terrorism risk to investors. Both are described briefly here.

In the property-casualty case the world football (soccer) federation FIFA worked with Credit Suisse First Boston and other banks to develop and issue $260 million in cancellation bonds in August 2003 covering the 2006 World Cup in Germany. The arrangement covers FIFA’s losses in the event the World Cup competition cannot be completed (or rescheduled) due to a variety of events, including terrorism. It is the first time that terror risk has been transferred to public investors. In reality, loss of principle on the issued bonds requires a multiple event trigger. If any event were to occur in 2006 (related to terrorism or not) sufficient to prevent tournament completion during the scheduled year, then payout is triggered if the event cannot be rescheduled for 2007.
In the life insurance example, Vita Capital, the first securitization related to life insurance terrorism risk, recently undertaken by Swiss Re. Under this transaction, Swiss Re entered into an arrangement with Vita Capital Ltd. to provide up to $400 million of payments to Swiss Re in certain extreme mortality risk scenarios. The securitization covers catastrophic increases in mortality rates in the U.S., U.K., France, Switzerland and Italy from any source, including epidemics, natural disasters, war, or terrorist attacks.

That the only property-casualty securitization of terrorism risk is for an event outside the United States indicates the complexity of developing catastrophe securities to cover domestic terrorism risks. Even in much better understood underwriting environments, for example natural catastrophe risk, the issue of catastrophe-linked securities has fallen well below what was anticipated in the wake of Hurricane Andrew. A General Accounting Office (GAO) study published in September 2003\textsuperscript{22}, notes that only a small proportion of catastrophe risk has been transferred to the capital markets, with one firm estimating the bonds represent just 2.5 to 3 percent of the worldwide catastrophe reinsurance market. GAO states that some insurers consider the bonds too costly to develop compared to other forms of risk transfer, while some investors consider the bonds too risky or too costly, or both. The study says that the general consensus of experts is that terrorism bonds would not be practical at this time due in part to the challenges of predicting the frequency and severity of terrorist attacks. It notes that while the terrorism models developed to-date have provided useful information on the potential severity of attacks, representatives from reinsurers contacted by GAO say the models are not reliable in predicting frequency. According to the study, the general view of insurance industry officials and financial market participants is that the development of a bond market covering terrorism risks in the U.S. would be challenging at this time. Further, investors’ lack of complete information about issuer underwriting practices and concerns about strategic behavior by terrorists, may make insurers’ costs of issuing bonds covering terrorism prohibitive.

In a recent study published by the Organization for Economic Cooperation and Development (OECD), several factors are listed that may be impeding the securitization of terrorism risk, including:\(^{23}\)

- aversion to ambiguous risks
- a myopic view of risk
- a need to educate the investment community (and potential sellers) about a new security type
- fear of instant and complete loss of principal with no warning, and
- understanding of terrorism risk is too incomplete, modeling still its infancy.

*Correlated Risks: Investment Environment & Terrorism Risk*

An insurer’s overall financial health, its policyholder surplus and hence its claims-paying ability are also linked to the performance of its investment portfolio. All else being equal, policyholder surplus generally rises when investment conditions are favorable and falls when conditions are poor. Because terrorist attacks can occur at any time, including in the midst of a bear market, TRIA helps to ensure that insurers will have adequate resources to pay claims and to continue to write new coverage regardless of market conditions.

It is important to note that unlike natural disasters, a major terrorist attack in the United States will likely produce a rapid and severe reduction in asset values as investor perceptions turn negative. In other words, investment risk and terrorism risk are highly correlated, whereas investment risk and the underwriting risk associated with natural disasters is not. The experience of September 11 illustrates this point. Following the September 11 attacks, markets were closed for three days. When trading resumed on Monday, September 17, stock markets crashed with the Standard & Poor’s 500 index posting a 4.9 percent decline for the day. By the end of that week, the index was down

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11.6 percent. The decline resulted in a loss of $1.1 trillion dollars in market capitalization in the span of just ten days.

The deepening of the bear market following the September 11 attack also impacted insurers. During the third quarter of 2001, the claims-paying capacity of the property-casualty insurance industry as measured by policyholder surplus fell by $16.3 billion or 5.5 percent. For all of 2001 the decline was $27.7 billion or 8.7 percent, even after accounting for inflows of $3.7 billion in new capital.

**Insurance Cycle**

The property-casualty insurance industry is highly cyclical, alternating between “soft” and “hard” markets over a span of years. During “soft” markets, growth in policyholder surplus tends to slow or turn negative (at least in real terms) as poor underwriting results (possibly compounded by a weak investment environment) take their toll. Conversely, during “hard” markets, policyholder surplus growth accelerates as profits and investment gains surge. Consequently, the industry’s ability to absorb large-scale losses varies over time.

Again, because terrorist attacks can occur at anytime, the existence of TRIA adds stability to insurance markets throughout the course of the insurance cycle, but especially in the event a major attack occurs in the midst of a soft market, when insurer claims-paying resources are strained.

**Capital Inflows**

It has been noted by some analysts that capacity figures for the period from 2000 through 2002 include $36 billion of new capital that was raised, the vast majority of it following the 9/11 attack. However, even with this influx of capital, the industry’s capacity still decreased substantially during that time, which underscores the scale of the impact of 9/11 and the industry’s weakened financial position. Also this paper points out that very little of this modest inflow can be allocated to terrorism. Indeed the capital-raising is small compared to the dramatic depletion in the global non-life industry’s capital base.
that has occurred over the last several years. Swiss Re\textsuperscript{24} estimates that between 2000 and 2002 as much as $200 billion in industry capital was lost as the soft market and equity market declines took their toll. Fluctuations in the global context are particularly relevant because foreign capital is so critical to the US insurance and reinsurance markets.

Still, the appearance of even a little capital combined with the easing of some prices in the property sector (all happening with TRIA in place) seems to encourage some experts to remain steadfast in their belief that markets can overcome all of the fundamental obstacles to insurability, as well as the financial facts discussed above. In reality however, such admirable conviction about the infallibility of the market does not meet the public’s need to protect itself against the enormous economic dangers of terrorism, and seems a risky bet partly in order to uphold the theoretical purity of an almost faith-based economics.

\textit{Rate of Return and Cost of Capital}

The financial fallout from 9/11 is clearly demonstrated by the U.S. property-casualty insurance industry’s 2001 results when it suffered its first ever full-year net loss (-$6.97 billion) and record underwriting losses of $52.6 billion. The gap between the industry’s cost of capital and its rate of return reached a record high, as did the gap with returns generated by the \textit{Fortune} 500 (Exhibits 12 and 13). Economic and financial theory suggests that when an industry falls well short of its cost of capital, capital will exit that industry in favor of other industries where the balance between risk and reward is more favorable to investors.\textsuperscript{25} This describes precisely what happened in the property-casualty insurance and reinsurance industry in 2001 and 2002.

The looming expiration of TRIA threatens the property-casualty insurance industry’s ability to raise and retain capital following a major terrorist attack. As discussed previously, the ability of insurers to raise capital following an event is critical because U.S. tax law does not recognize pre-funding (setting aside of reserves) before the occurrence of disasters. The emergence of a large gap between the resources required to

\textsuperscript{24} Global Non-Life Insurance in a Time of Capacity Shortage, Swiss Re, \textit{Sigma} report No.4/2002.

\textsuperscript{25} The \textit{cost of capital} is that rate of return required in order to maintain and attract capital.
pay a claim and the resources available to insurers would lead to instability and insolvencies among major insurers and reinsurers worldwide. Consequently, both will necessarily seek to substantially limit their exposure to terrorism risk in the event TRIA is not extended.

Because the losses from a terrorist attack or sequence of attacks are potentially unlimited, no amount of policyholder surplus is sufficient to cover the full range of attack scenarios. Even the federal government, with theoretically unlimited resources, caps its own liability under TRIA at $100 billion. Insurers, with far more limited resources than Washington, and no ability to meaningfully reinsure terrorism risk, will in many cases have no choice but to walk away from policyholders in the event TRIA is not reauthorized.

Critical to understanding the need for a federal backstop is an appreciation of the true claims paying ability of the insurance industry, which is much less than commonly assumed for several reasons.

*Ratings and Financial Strength*

From a ratings perspective, terrorism significantly increases the risk profile of the commercial property-casualty insurance industry. Even with TRIA in place, it is clear that insurers could suffer substantial terrorism losses given the high deductibles that apply before any government participation is triggered, the mandated formulas for cost-sharing with the government, and the possibility for forced repayment. A March 2004 report by Morgan Stanley noted that even after accounting for cost-sharing arrangements under TRIA, individual US insurer exposures could be very large. In fact, many insurers have deductibles under TRIA that run well above their net World Trade Center losses and most have not purchased (or cannot purchase) reinsurance to cover their retained exposure. That is largely why many analysts believe that the biggest single risk facing the US property-casualty insurance industry is the non-renewal of TRIA. The Morgan Stanley report concludes: “Without a federal backstop, potential losses could aggregate for individual companies and the industry to significant levels that might lead to insolvencies. Experts have noted that losses from potential future acts could run above those levels suffered from the World Trade Center attack.”
Consequences of Financial Stress of the Property-Casualty Insurance Industry

The financial stress on the property-casualty insurance industry due to the confluence of the September 11 terrorist attack and many other events was unprecedented. The industry’s insolvency rate increased six-fold from 0.23 percent in 1999 to 1.33 percent in 2002 (Exhibit 14). The financial stress was not limited to only those insurers who failed during this period. Across the insurance industry, the ratio of downgrades to upgrades approached 2 to 1 in 2001 and 4 to 1 in 2002, its highest reading since 1985 (Exhibit 15). Virtually every insurer and reinsurer was downgraded at least once during this period.

The unmet obligations of failed insurers in the United States come under the auspices of state guarantee funds. When these funds’ resources are exhausted they replenish their capital through assessments on remaining insurers (often including insurers writing unrelated coverages). In recent years, an increasing number of insurer insolvencies have produced record payouts and therefore record assessments by the funds, totaling some $1.2 billion in 2002 alone. Furthermore, commercial claimants are frequently not fully reimbursed as fund settlements are usually capped, most commonly at $300,000 per claim.

Extension of TRIA can help prevent a much feared “death spiral” scenario whereby a major terrorist attack bankrupts several large insurers, and the ones remaining are drained by having to take on the liabilities of those that failed through guarantee-fund assessments. Such a scenario would result in not only the non-payment (or partial payment) of tens of thousands of claims arising from the terrorist event filed with the insolvent insurers, but thousands of unrelated claims from all other lines of insurance, such as workers compensation, also filed with those same insurers.
III. Terrorism Insurance: The Role of the State

The issues which arise from debate around the public good of having the U.S. government serve as a last-resort reinsurer for the huge levels of economic risk that can result from terrorism involve not only basic principles of insurance and practical realities of finance, but whether such a role is right and proper in a free economy disposed to view private market mechanisms as far preferable to public interventions.

Indeed, for most, public policy rationales for government participation in any aspect of the political economy must not rest solely on the financial conditions of firms or industries, however important. For example, the likelihood that Chrysler could not continue to make cars in the U.S. or the possibility that US Airways may not be able to fly are not regarded by many as sufficient reasons for public funds to be deployed.

What if anything, makes involvement of the U.S. government in terrorism reinsurance not just financially helpful but an essential consequence of its responsibility to deal with the new realities of terrorism as the primary institution through which society legitimizes, organizes, and conducts its efforts at self protection?

The historic starting point for any such question must be the Constitution, which describes the principle purposes of government as providing for the ‘common defense’ and ‘general welfare’ of the people. It is worth remembering this responsibility is not confined to the President of the United States, but is shared by the Congress. As noted earlier, from almost the very moment of the 9/11 attacks, the President, Vice President, Secretary of Defense and virtually all of Congress have described the U.S. as being at war. Even the courts in seeking to define the evolving scope of government authority have accepted the context of a nation at war. The rhetoric, ideas, and symbols of war are used hourly at all levels of government. Functions such as airline luggage screening are now funded by taxpayers, not ticket buyers, implying that security costs are a collective public expense, not one to be borne by users making market choices about whether or not to fly based on the cost of paying for screening.
The national command authorities, from the President through the Department of Homeland Security to local police announce almost daily that the threats are real, they are growing, they are widening, they are diversifying, and -- most important -- that they cannot all be stopped. Simply put, the public sector warns the private sector explicitly that it cannot ensure civilians will be protected from attack. How then, can the government turn to the private sector and say, “You and the free market must insure against all the economic consequences of threats we warn of but cannot define, predict or prevent?”

In the wake of the September 11 attack, insurers naturally responded to this calamitous ambiguity by introducing terrorism exclusions. Most state insurance departments, recognizing the threats to solvency of these unknown risks, upheld the exclusions. This was one of the leading drivers behind the passage of TRIA, which remains the only way by which the offering of terrorism coverage can be made mandatory.

Some will object that the state does not cause earthquakes and hurricanes either. True, and in fact, various government-related entities are the largest insurers against those threats. However, the essential point is that there are fundamental differences between even the most severe natural catastrophes and human attacks. In addition to the factors described previously in relation to insurance principles such as lack of randomness and fortuity, terrorist actions are inextricably related to the actions of the state. Only the most literal deist could regard this September’s hurricanes and earthquakes as directly connected to the policies and activities of the U.S. government. Not even the most paranoid believe that the U.S. Government causes earthquakes.

However, unlike natural disasters, the U.S. government controls virtually all of the intelligence about terrorist threats, the physical means of attacking them, and the main defenses against them. Additionally, objectives which the U.S. government pursues may influence the likelihood and intensity of terrorist threats. For example, while the elimination of the Taliban regime and the destruction of al Qaeda bases were widely seen as reducing at least for a time the capability of many terrorists, the strongest supporters of
the Iraq war do not contend that the result so far has been to diminish the threat of terrorist activities in the near term. The U.S. is obviously in a higher state of alert now than in 2002. Again, since the public sector controls virtually all of the ways and means of influencing deterring, and destroying terrorists, how is it consistent to turn then to the private sector and demand protection from the financial consequences of its own actions - - whether wise, successful, or not?

This stark inconsistency was reflected in the insurance market’s swift reaction to the impossible conditions imposed by the new, enormous and unique dilemma of terrorism risk—it simply disappeared. The lack of insurance against terrorism without public participation did not represent solely a failure of the private insurance markets to provide coverage, but awareness of the state’s acknowledged inability to provide protection against the threat as well.

It is not at all difficult to understand and agree with the experience and conclusions of many policy analysts and practitioners that government intervention in markets usually works less well than expected. Yet in this case it is impossible to argue that TRIA has not worked. And an essential, if little recognized, reason for that effectiveness is that TRIA bridges -- however imperfectly -- the divide between the inescapable responsibilities of the state and the historic incapability of private insurance when it comes to dealing with the risks of war. In other words, there are very good reasons why war has been excluded from insurance policies for so long – and modern terrorism is a form of war. From society’s point of view, the great plus of TRIA is that it makes the offering of terrorism risk coverage not only possible but requires it. If the government refuses to participate in the sharing of risk in this area of its highest responsibility, insurers will certainly respond by excluding it as well.

Finally, there is nothing unprecedented in the concept of TRIA. As has been noted, public/private partnerships are the preferred -- indeed the only -- approach to terrorism risk adopted by societies around the globe. Here at home, there is no “war on earthquakes” -- but there is the public/private California Earthquake Authority. There is
no “war on hurricanes” -- but there is the public/private Florida Hurricane Catastrophe Fund Citizens Property Insurance Corporation, the largest single insurer of homes in the state. Federal crop insurance and federal flood insurance will cover much of the damage from Hurricanes Charley, Frances, Ivan and Jeanne. Each of these programs has its shortcomings, and their extent and effects are debatable. Interestingly, these vehicles are much more likely to be criticized when nothing has happened than when huge catastrophes occur, as Florida is demonstrating this year. Nonetheless, the principle of public participation pre-dates TRIA.

In sum, nothing in U.S. political or economic principles or experience precludes a cooperative public/private approach to insuring its people against the economic effects of a war in which both sectors have such stakes, involvement, and responsibilities. Equally important, and improbable as it may seem to the understandably dubious, TRIA is serving the political economy of the nation very well. Indeed, if the official and widely accepted characterization of the current threats to the U.S. as “war” is historically correct, then to hold its consequences to be fully “insurable” would be without precedent in the history of war or insurance.
EXHIBIT 1.

EXHIBIT 2.
Deaths Toll from
September 11, 2001 Terrorist Attack

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DEATHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTC victims (workers &amp; visitors)*</td>
<td>2,605</td>
</tr>
<tr>
<td>WTC hijacked jets (incl. 10 hijackers)</td>
<td>157</td>
</tr>
<tr>
<td>Pentagon victims on the ground</td>
<td>125</td>
</tr>
<tr>
<td>Pentagon hijacked jet (incl. 5 hijackers)</td>
<td>64</td>
</tr>
<tr>
<td>Pennsylvania jet crash (incl. 4 hijackers)</td>
<td>44</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,995</strong></td>
</tr>
</tbody>
</table>

Source: *New York City Medical Examiner estimate of 2,752 (as of 29 Oct. 2003), less 147 killed on hijacked jets.
EXHIBIT 3.
Terrorism Coverage Take-Up Rates:
2003:II through 2004:II

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003:II</td>
<td>23.5%</td>
</tr>
<tr>
<td>2003:III</td>
<td>26.0%</td>
</tr>
<tr>
<td>2003:IV</td>
<td>32.7%</td>
</tr>
<tr>
<td>2004:I</td>
<td>44.2%</td>
</tr>
<tr>
<td>2004:II</td>
<td>46.2%</td>
</tr>
</tbody>
</table>

EXHIBIT 4. Top 5 Costliest Terrorist Attacks (by insured property loss*)

$ Millions, Adjusted to 2001 Price Level

9/11/01 Terrorist Attacks
- 3,132 Killed
- 2,250 Injured

9/11/01

Bomb Near NatWest Tower in London

4/24/93
- 1 Killed
- 54 Injured

1993

IRA Car Bomb Near Manchester Mall

6/15/96
- 0 Killed
- 228 Injured

1996

Bomb in WTC Garage

2/26/93
- 6 Killed
- 725 Injured

1993

Bomb in London Financial District

4/10/92
- 3 Killed
- 91 Injured

1992

Oklahoma City bombing in 1995 cost insurers $125 million

*Includes property, business interruption and aviation hull losses.
Source: Swiss Re; Insurance Information Institute.
Exhibit 5.
Estimated Workers Comp Insured Losses & Deaths for Terrorist Events

Fatalities

WC Losses ($ Billions)

$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0

1,300
1,000

$0.9
$1.1
$1.8
$7.4
$15.4

Sears Tower Airplane Attack
El Paso Energy Truck Bomb
9/11 Attack
Rockefeller Ctr. Truck Bomb
Nuclear Power Plant Sabotage
New York City Anthrax Release

173,000

Source: Eqecat, NCCI.
EXHIBIT 6.
Loss Distribution by Type of Insurance from September 11 Terrorist Attack ($ Billions)

- Life: $1.0 (3.1%)
- Aviation Liability: $3.5 (10.8%)
- Other Liability: $4.0 (12.3%)
- Event Cancellation: $1.0 (3.1%)
- Aviation Hull: $0.5 (1.5%)
- Workers Comp: $1.8 (5.8%)
- Property - WTC 1 & 2: $3.6 (11.1%)
- Property - Other: $6.0 (19.5%)
- Biz Interruption: $11.0 (33.8%)

Current Insured Losses Estimate: $32.5B

Source: Insurance Information Institute
EXHIBIT 7.
Terrorism Coverage: Take-Up Rates by Region (2003)

Terrorism take-up rate is highest in the Northeast

30.3% Northeat
26.2% Midwest
21.8% South
18.6% West

EXHIBIT 8.
Terrorism Coverage: Take-Up Rates by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>% Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>40.5%</td>
</tr>
<tr>
<td>Media</td>
<td>35.3%</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>34.7%</td>
</tr>
<tr>
<td>Habitational/Hospitality</td>
<td>31.5%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>31.0%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>30.2%</td>
</tr>
<tr>
<td>Transportation</td>
<td>29.5%</td>
</tr>
<tr>
<td>Utility</td>
<td>27.1%</td>
</tr>
<tr>
<td>Financial Institution</td>
<td>26.8%</td>
</tr>
<tr>
<td>Public Entity</td>
<td>25.9%</td>
</tr>
<tr>
<td>Tech/Telecom</td>
<td>22.1%</td>
</tr>
<tr>
<td>Education</td>
<td>21.6%</td>
</tr>
<tr>
<td>Retail</td>
<td>20.0%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>18.2%</td>
</tr>
<tr>
<td>Construction</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

EXHIBIT 9.
Distribution of US Property/Casualty Insurer Policyholder Surplus

"Target" Commercial* $114 billion 33%
Personal $146 billion 42%

Total PHS = $298.2 B as of 6/30/01
= $291.1 B as of 12/31/02
= $347.0 B as of 12/31/03

Commercial Reserve Deficiency $30 billion (est.) 9%
Other Commercial $58 billion 17%

Only 33% of surplus backs “target” lines net of reserve deficiency

*"Target" Commercial includes: Comm property, liability and workers comp; Surplus must also back-up on non-terrorist related property/liability and WC claims
Source: Insurance Information Institute estimates based on A.M. Best Q.A.R Data.
EXHIBIT 10.
U.S. Policyholder Surplus: 1975-2003

Surplus (capacity) peaked at $339.3 Billion in mid-1999 and fell by 15.9% ($53.9 billion) to $285.4 billion at year-end 2002.

Capacity at year end 2003 was just 2.3% above its mid-1999 peak.

“Surplus” is a measure of underwriting capacity. It is analogous to “Owners Equity” or “Net Worth” in non-insurance organizations.

Source: A.M. Best, ISO, Insurance Information Institute
EXHIBIT 11.
Underwriting Gain (Loss)
1975-2003

In 2001 insurers paid out $52 billion more in loss and associated expenses than they earned in premiums.

Source: A.M. Best, Insurance Information Institute
EXHIBIT 12.

US P/C insurers missed their cost of capital by an average 6.4 points from 1991 to 2003

Source: The Geneva Association, Insurance Information Institute
EXHIBIT 13.

ROE: P/C vs. All Industries: 1987–2003

2001 was the property-casualty insurance industry’s worst year ever

Source: Insurance Information Institute; *Fortune*
EXHIBIT 14.
P/C Company Insolvency Rates: 1993 to 2002

Source: A.M. Best; Insurance Information Institute
EXHIBIT 15.
Insurer Downgrade/Upgrade Ratio*

*U.S. property/casualty and life/health insurers