TRIA at Ten Years:
The Future of the Terrorism Risk Insurance Program

House Financial Services Subcommittee on Insurance, Housing and Community Opportunity

Testimony of

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Thank you, Representative Biggert, Ranking Member Gutierrez and members of the Committee.

Good morning. My name is Robert Hartwig and I am President and Economist for the Insurance Information Institute, an international property/casualty insurance trade association based in New York City.[1] I am also a Chartered Property Casualty Underwriter (CPCU) and have worked on a wide variety of insurance issues during my 19 years in the property/casualty insurance and reinsurance industries, including many related to the industry's exposure to catastrophic loss, including acts or terrorism. The Institute's members account for nearly 70 percent of all property/casualty insurance premiums written in the United States. Its primary mission is to improve understanding of the insurance industry and the key role it plays in the global economy.

I have been asked by the Committee to provide testimony on the status of the market for terrorism insurance in the United States. For the purposes of my testimony, I will divide my testimony into the following major sections:

(i) Review of the impacts of the September 11, 2001 attacks on the insurance industry;

(ii) A brief summary of changes in the terrorism threat landscape since the enact of the original TRIA legislation in 2002;

(iii) A discussion of why most terrorism risk remains fundamentally uninsurable in the private insurance and reinsurance markets;

(iv) The impact of the Terrorism Risk Insurance Program in maintaining market stability;

(v) Obstacles to insuring and reinsuring losses arising from acts of terrorism;

(vi) The success of the Terrorism Risk Insurance Program and the current state of the market for terrorism coverage, and;

(vii) Possible options for expanding private sector terrorism coverage.

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Summary of Impacts on the September 11, 2001 Terrorist Attack on Insurers and Insurance Markets

The terrorist attacks of September 11, 2001, produced insured losses larger than any natural or man-made event in history. Claims paid by insurers to their policyholders eventually totaled some $32.5 billion dollars--$40.0 billion in 2011 dollars **(Exhibit 1)** and to this day remain the second most costly insurance event in United States history **(Exhibit 2)**.[2] The losses sustained by the insurance industry that fateful day were unprecedented in virtually every respect, producing catastrophic losses not only in property coverages, but also for the first time in life insurance, disability and workers compensation lines. Aviation insurers also suffered their worst-ever losses stemming from a single event. The sheer enormity of the loss—coming from an entirely unforeseen peril for which no premium had been collected—combined with the possibility of future attacks and uncertainty arising from the United States' rapid military response to the threat, produced financial shockwaves that shook insurance markets worldwide and provoked an extraordinarily swift and severe underwriting and pricing reaction by insurers and reinsurers.

Terrorism Exclusions and Price Shocks in the Wake of the 9/11 Attack

The shock of the September 11 attack led insurers and reinsurers to exclude coverage arising from acts of terrorism from virtually all commercial property and liability policies. Before 9/11 terrorism exclusions were virtually nonexistent in commercial insurance contracts sold in the United States. The economic consequences of such exclusions were quick to manifest themselves. Major commercial property construction projects around the country, unable to secure coverage against the now very real risk of terrorist attack, were in jeopardy of being tabled, hurting job growth at a time of rapidly rising unemployment and when much of the country was in recession. Banks, in turn, threatened to choke off lending to businesses if borrowers failed to secure coverage against terrorist acts. The problem was not confined to high profile "trophy" properties located in major metropolitan areas. Shopping malls, office complexes, factories, sports

[2] The loss totals do not include the March 2010 settlement of up to $657.5 million announced by New York City officials and plaintiffs' lawyers to compensate about 10,000 workers whose health was damaged during the rescue and cleanup at the World Trade Center.

stadiums, hotels, utilities, airports, port facilities and other critical infrastructure all across the United States were impacted.

Even as exclusions proliferated, prices soared. The average rate increase for a business seeking to renew coverage in the fourth quarter of 2001 was nearly 30 percent. Reinsurance prices rose sharply as well. Very little private sector coverage for terrorism entered the market as a general consensus emerged that terrorism risk is fundamentally not insurable. Insurers, who are regulated by the states, therefore took the unprecedented step of seeking financial protection from the federal government in the event of future attacks. Only when the Terrorism Risk Insurance Act (TRIA) was enacted by Congress in November 2002—fourteen months after the attack—did stability finally return to the market and coverage for terrorist attacks resume.

Changes in the Terrorism Threat Landscape and Impacts on Terrorism Insurance Markets

In the immediate aftermath of 9/11 the ability of commercial policyholders to purchase adequate limits of terrorism coverage at affordable prices was severely constrained. Commercial property owners and businesses were faced with substantially reduced protection for terrorism-related risks, in addition to higher property/casualty rates overall. As a result, many were forced to go without coverage or only partly insure their assets.

Today, reports of property owners having problems securing terrorism coverage due to a lack of capacity in the market are no longer making headline news. Indeed, it is therefore tempting to conclude that in the ten years since TRIA was first implemented that insurance markets have fully adjusted to the post-9/11 environment and that insurers and reinsurers have concluded that terrorism is a fully insurance risk.

The reality is quite different. The fact of the matter is that terrorism risk today is almost every bit as uninsurable as it was a decade ago. Recent major successes in the war on terror, including the killing of al-Qaida leader Osama bin Laden in 2011, do not alter this conclusion. This is because the current stability in the terrorism insurance market in the United States is due almost entirely to two factors:

(i) There has been no successful terrorist attack on U.S. soil since 2001, and

(ii) TRIA remains in place.

The influence of both of these factors is discussed in the sections that follow.

Absence of Successful Attacks Does Not Imply Terrorism Risk is Inconsequential

The fact that there has been no successful terrorist attack in the United States in eleven years is a remarkable achievement. It is a testimony to the hard work and dedication of this nation's counterterrorism agencies and the bravery of the men and women in uniform who fought and continue to fight battles abroad to keep us safe here at home.

Unfortunately, the threat from terrorist attack in the United States is both real and substantial and will remain as such for the foreseeable future. Indeed, the U.S. State Department warned in a recent report that despite the death of bin Laden and other key al-Qaida figures, the terrorist network's affiliates and adherents remain adaptable and resilient, and constitute "an enduring and serious threat to our national security."[3]

Table 1 below shows that interest in attacking targets within the United States remains undiminished. Indeed, it is clear from Table 1 that in addition to an ongoing threat from foreign terrorist networks, the United States also faces homegrown (domestic) terrorist threats from radical individuals, who may be inspired by al-Qaida and others, but may have little or no actual connection to militant groups.

Catastrophe modeler Risk Management Solutions (RMS) points to an increase in the number of homegrown plots in the U.S. in recent years.[4] Many of these have been thwarted, such as the attempt by Najibullah Zazi to bomb the New York subway system and Mohamed Osman Mohamud who targeted a Portland, Oregon, Christmas tree lighting ceremony. Also among the more notable unsuccessful attacks was a 2010 attempted car bomb attack in New York City's Times Square. Other thwarted attacks

[3] *Country Reports on Terrorism 2011*, U.S. Department of State, July 31, 2012.
[4] RMS Terrorism Risk Briefing, July 2012.

against passenger and cargo aircraft, including the Christmas Day 2009 attempt to blow-up a jet over Detroit, are indicative of an ongoing risk to aviation infrastructure.

Table 1

RECENT TERRORIST ATTACK ATTEMPTS IN THE U.S.

Date	Location	Event
August, 2012	Ludowici, GA	Four U.S. soldiers charged in connection with murder and illegal gang activity, linked to foiled plot to commit domestic acts of terrorism, including overthrowing the government and assassinating the President
May, 2012	TBD	Foiled underwear bomb plot to bring down U.S.-bound commercial airliner around the anniversary of bin Laden's death
July 27, 2011	Fort Hood, TX	U.S. Army Pfc Naser Jason Abdo arrested and charged with plotting bomb attack on fellow soldiers at Fort Hood, TX
June 22, 2011	Seattle, WA	Two men arrested in plot to attack military recruiting station in Seattle
May 11, 2011	New York City, NY	Ahmed Ferhani and Mohamed Mamdouh arrested in plot to attack Manhattan synagogue
February 23, 2011	Lubbock, TX	Foiled plot to bomb military and political targets, including former President George W. Bush in New York, Colorado and California
December 8, 2010	Baltimore, MD	Attempted bombing of Armed Forces recruiting center by U.S. citizen Antonio Martinez, aka Muhammad Hussain
November 26, 2010	Portland, OR	Attempted bombing at Christmas tree lighting ceremony in downtown Portland by naturalized U.S. citizen Mohamed Osman Mohamud
October, 2010	Washington D.C.	Attempted plot to bomb D.C.-area metro stations
May 1, 2010	New York City, NY	Attempted SUV bombing in Times Square, New York City, by naturalized U.S. citizen Faisal Shahzad
December 25, 2009	Over Detroit, MI	Attempted bombing of Northwest Airlines passenger jet over Detroit by underwear bomber Umar Farouk Abdulmutallab
September, 2009	New York City, NY	U.S. resident Najibullah Zazi and others charged with conspiracy to use weapons of mass destruction in New York City
September, 2009	Springfield, IL	Attempted plot to detonate a vehicle bomb at the federal building in Springfield, IL
September, 2009	Dallas, TX	Attempted bombing of skyscraper in Dallas, TX
May, 2009	New York City, NY	Foiled plot to bomb Jewish synagogue and shoot down military planes in New York City
May, 2009	Various U.S. targets	Conviction of Liberty City six for conspiring to plan attacks on U.S. targets, including Sears Tower, Chicago.

Source: Federal Bureau of Investigation (FBI); various news reports; Insurance Information Institute.

Table 1 also demonstrates that the threat of terrorism is not confined to the country's largest cities such as New York and Washington. Recent attempted attacks have occurred in medium and small metropolitan areas including Portland, Oregon, in Lubbock, Texas and Springfield, Illinois.

Another evolving threat is cyber-terrorism. Recent high profile attacks, such as the sabotaging of Iran's nuclear program via the Stuxnet computer worm and malicious infiltration attempts here in the U.S. by foreign entities, underscore the growing threat to both national security and the economy.

All these factors suggest that terrorism risk will be a constant and evolving threat for the foreseeable future.

The Federal Role: Impact of TRIA in Maintaining Insurance Market Stability

Without question, TRIA and its successors are the principal reason for the continued stability in the insurance and reinsurance market for terrorism insurance today. As discussed previously, TRIA is credited with restoring terrorism coverage in commercial insurance policies upon its enactment in late 2002.

It is worth noting that in 2004, more than a year before the original Act's expiration at year-end 2005, terrorism exclusions once again emerged for policies with exposure extending into 2006. This was an unmistakable indication that insurance and reinsurance markets felt that terrorism risk, at least for larger scale attacks, remained uninsurable in the private sector. After Congress agreed to extend the program for another two years under the Terrorism Risk Insurance Extension Act of 2005 (TRIEA), terrorism coverage remained available and affordable in the market. However, with TRIEA's looming expiration in year-end 2006, terrorism exclusions once again appeared in the market, signaling the market's assessment that terrorism risk remained fundamentally uninsurable. These exclusions largely disappeared following passage of a 7-year extension of the program under the Terrorism Risk Insurance Program Reauthorization Act of 2007 (TRIPRA). With TRIPRA's expiration now a little more than two years away (year-end 2014), it is virtually certain that terrorism exclusions will reappear in the market in 2013. Indeed, insurance broker Aon estimates that at least 80 percent of the commercial property market will be impacted by these exclusions and other restrictions.

Studies by various organizations, including the University of Pennsylvania's Wharton School Risk Center, the RAND Corporation and the Organization for Economic Co-operation and Development (OECD), have supported the idea of a substantive federal role in terrorism insurance. In particular, the Wharton School found that TRIA has had a positive effect on availability of terrorism coverage and also has significantly contributed to reducing insurance premiums.[5] The OECD notes, however, that the financial (capital) markets have thus far shown little appetite for terrorism risk.

Evidence from Other Countries: Terrorism Risk Insurance Programs Abroad

Additional evidence that terrorism risk is fundamentally uninsurable comes from abroad. A number of countries have established their own terrorism risk insurance programs and these have operated successfully, often for many years. Australia, Austria, Belgium, France, Germany, the Netherlands, Spain, Switzerland and the United Kingdom have all created programs to cover terrorism in the event of an attack on their own soil.[6]

This begs the question as to why—eleven years after the 9/11 attack and a decade after the initial terrorism risk insurance program legislation was enacted—terrorism risk, particularly for large-scale attacks, is still viewed as uninsurable? The answer is surprisingly simple and explains why even the absence of a successful major attack on U.S. soil since 2001 does not alter this assessment.

Obstacles to Insuring Losses Arising from Acts of Terrorism

Simply put, acts of terror violate all four of the basic requirements traditionally associated with insurability of a risk. In situations where these requirements cannot be met, it is difficult or impossible to ascertain the premium to be charged and/or difficult or impossible to achieve the necessary spread of risk to avoid excessive exposure to

[5] *Evaluating the Effectiveness of Terrorism Risk Financing Solutions*, Howard C. Kunreuther and Erwann O. Michel-Kerjan, September 2007, National Bureau of Economic Research.

[6] In 1993, the British government formed a mutual reinsurance pool for terrorist coverage following acts of terrorism by the Irish Republican Army. Insurance companies pay premiums at rates set by the pool. The primary insurer pays the entire claim for terrorist damage but is reimbursed by the pool for losses in excess of a certain amount per event and per year based on its share of the total market. Following 9/11, coverage was extended to cover all risks, except war, including nuclear and biological contamination, aircraft impact and flooding, if caused by terrorist attacks. The British government acts as the reinsurer of last resort, guaranteeing payments above the industry retention.

catastrophic loss, thereby threatening the insurer's solvency. Consequently, such a risk would generally be deemed to be commercially *not* viable (i.e., insurable) in whole or in part.

The four basic requirements for insurability of a risk are detailed below (as well in Exhibits 3A and 3B), with a description of how terrorism risk violates each requirement:

1. **Estimable Frequency:** Insurers require a large number of observations to develop predictive, statistically sound rate-making models (an actuarial concept known as "credibility"). For example, insurers handle millions of auto, home, workers compensation and business property claims every year, providing them with vast amounts of data from which they can reliably estimate the frequency of such claims. For major catastrophic risks such as hurricanes and earthquakes that occur less frequently insurers still maintain databases with hundreds or even thousands of these events, supplemented by sophisticated catastrophe models, that help provide statistically reliable estimates of frequency. Terrorism risk is clearly different in this respect.

   Obstacle: There are very few data points on which to base frequency estimates for acts of terror in the United States, thus estimates lack any true actuarial credibility. The opinions of experts on the likelihood of terrorist attacks, which might be viewed by some as substitutes for actuarially credible data, are also highly subjective. At any given time, there is a wide range of viewpoints among national security experts on the likelihood, location and/or attack modality. Moreover, insurers have no access to data used internally by counterterrorism agencies. Given the paucity of historical data and diversity and shifting nature of expert opinions, catastrophe models used to estimate terrorism risk are relatively undeveloped compared to those used to assess natural hazard risks. The bottom line is that estimating the frequency of terror attacks with any degree of accuracy (credibility) is extraordinarily challenging, if not impossible in many circumstances.

2. **Estimable Severity:** Insurability requires that the maximum possible/probable loss be estimable in order to calculate the insurer's exposure (in dollar terms) and minimize its "probability of ruin." No insurer can expose itself to losses of a magnitude that present an unreasonable risk of insolvency.

   Obstacle: Potential losses arising from terrorist attacks are virtually unbounded. In this sense terrorism risk is akin to war risk, which is almost universally excluded from commercial insurance policies worldwide. Consequently, losses arising from acts of terror can easily exceed an insurer's claims paying capital resources. Workers compensation coverage, which does not permit any exclusions or limitation if injuries or deaths arise from terrorist acts, can lead to extreme losses that on their own could potentially bankrupt an insurer under some attack scenarios. In addition, when it comes to estimating losses from potential terrorist attacks there also appears to be significant variability in outcomes (i.e., disagreement on estimated severity impacts), underscoring the degree of uncertainty associated with potential terrorist attacks.

3. **Diversifiable Risk:** Insurability requires that the losses can be spread across a large number of risks. This is an application of the "Law of Large Numbers" and helps makes losses more manageable and less volatile. Failure to achieve an adequate spread of risk increases the risk of insolvency in the same way that an undiversified portfolio of stocks (or any asset) is riskier than a well-diversified portfolio.

   Obstacle: Terrorism attacks are likely to be highly concentrated geographically (e.g., World Trade Center site), concentrated within an industry (e.g., power plants, airports) or within a certain span of time (e.g., coordinated attack).

4. **Random Loss Distribution/Fortuity:** Insurability requires that the probability of a loss occurring be random or fortuitous. This implies that individual events must be unpredictable in terms of timing, location and magnitude.

> **Obstacle:** Terrorism attacks are planned, coordinated and deliberate acts of destruction. Again, they are likely to be highly concentrated geographically (e.g., World Trade Center site) or concentrated within an industry (e.g., power plants). Terrorists engage in "dynamic target shifting" whereby terrorists shift from "hardened targets" to "soft targets" which implies that losses are not random or fortuitous in nature.

The Success of the Terrorism Risk Insurance Program

The Terrorism Risk Insurance Program, by all objective measures, is a success. The program not only succeeded in restoring stability to the country's vital insurance and reinsurance markets in the wake of the unprecedented market dislocations associated with the September 11, 2001 terrorist attack, but it continues to deliver substantive, direct benefits to businesses, workers, consumers and the economy overall—all at little or no cost to taxpayers.

Availability and Affordability

One measure of success is the "take-up rate" (i.e., share or businesses purchasing coverage) of insurance coverage among. Insurance brokers Marsh and Aon both estimate that take-up rates for terrorism coverage are in the 60% to 65% range over the past several years (ranging as high as 80% in some industries), up from approximately 27% in 2003—the first full year under TRIA. This suggests that coverage is widely available, is affordable and is routinely purchased in the market. It is important to note, however, that the take-up rate for workers compensation coverage is effectively 100%. This is because workers compensation is a compulsory (all employers must purchase coverage) combined with the fact that states do not allow exclusions for terrorism losses in workers compensation programs.

Affordable pricing is another measure of the program's success. While pricing varies across industries, reflecting differences in risk, the average commercial terrorism premium is equivalent to approximately 0.5% of a company's total insured value, according to brokers. Prices can also be stated as a share of the cost of the insured's total insurance program, in which case annual premiums account for approximately 5% to 6% of total costs, again varying by industry.

Capacity

One primary goal of TRIA and it successors has been to encourage private sector capacity to enter (and remain) in the marketplace so that an increasing share of losses from future terrorist attacks could be borne in the private sector.

Evidence of the program's success in this respect has been documented by a number of government entities and other organizations. In its latest report on terrorism risk insurance market conditions, the President's Working Group on Financial Markets noted that the program provides an incentive to property/casualty insurers and reinsurers who might not otherwise provide terrorism insurance at current capacity levels or prices.[7] The U.S. Government Accountability Office (GAO), commenting on the availability and affordability of terrorism coverage in large metropolitan areas, reported that with a few exceptions, commercial property terrorism insurance appears to be available nationwide at rates policyholders believe is reasonable, suggesting ample capacity.[8]

Note that this statement is very different from an assessment that such capacity would exist in the absence of a terrorism backstop. Again, it is important to emphasize that the majority of the coverage that exists in the market today exists because of the continued existence of the Terrorism Risk Insurance Program. As noted earlier, insurance broker Aon estimates that 70% to 80% of the market would encounter terrorism exclusions if the program were discontinued. Thus capacity in the market is largely contingent upon the continuation of the program.

The so-called market for "standalone" terrorism coverage also provides evidence that in the absence of a Terrorism Risk Insurance Program, coverage capacity (supply) will fall well short of demand. Insurance brokers Marsh and Aon both report that the "theoretical"

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[7] *Market Conditions for Terrorism Risk Insurance 2010*, Report of the President's Working Group on Financial Markets.

[8] *Initial Results on Availability of Terrorism Insurance in Specific Geographic Markets*, GAO-08-919R, July 2008.

maximum amount of coverage available per risk in the "standalone" market is approximately $2 billion with larger sums available under some circumstances. This is in contrast with limits of just $150 million or less available in early 2002 before TRIA was enacted. At the time, such coverage also was subject to high deductibles equal to 7 to 10 percent of the stated value of the coverage.[9] While the sums available in the market today may seem large, especially in comparison to 2002, there are many risks for which the coverage is inadequate. Consider, for example, that back in 2001 (prior to the introduction of terrorism exclusions) the twin towers at the World Trade Center site were insured for $3.55 billion—more than what is generally available in the market today. Multibillion dollars risks are now quite common in the United States, from office and shopping complexes to large manufacturing facilities, sports stadiums, transportation hubs and energy infrastructure not to mention infrastructure such as bridges, tunnels and dams.

Reinsurance capacity, which was extremely limited in the aftermath of 9/11, is up as well. A 2011 report from reinsurance broker Guy Carpenter noted that there is between $6 billion and $8 billion of terrorism reinsurance capacity available in the U.S. market, but cautions that the market remains vulnerable to a major terrorism loss. This caution is appropriate. Indeed, many modeled loss scenarios result in insured losses in the tens or even hundreds of billions of dollars—some even exceeding the claims paying capital of the entire industry. As noted previously, much of the capacity in the market today is predicated on the existence of the Terrorism Risk Insurance Program. In the absence of the program, reinsurance capacity would be greatly reduced.

Factors that Could Influence Greater Private Sector Participation in the Terrorism Insurance Marketplace

As discussed previously, the primary factor influencing private sector participation in the market for terrorism insurance, apart from the absence of a successful attack on U.S. soil since 2001, is the continued existence of the Terrorism Risk Insurance Program.

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[9] *September 11, 2001: One Hundred Minutes of Terror that Changed the Global Insurance Industry Forever,* Robert P. Hartwig, John Liner Review, January 2002.

The program's success to date has stabilized insurance and reinsurance markets, enhanced availability and affordability of coverage and encouraged private sector capacity to enter the market, thereby helping businesses invest, grow and create jobs.

What follows are several options, based on international experience and U.S. experience to date, that could potentially further increase private sector participation in the markets for terrorism insurance and reinsurance.

Long-Term Extension or Permanence of a Terrorism Risk Insurance Program

The positive experience of other countries, some of which have had programs in place much longer than the United States, combined with favorable recent U.S. experience under the current 7-year extension of the program under TRIPRA, suggests that a long-term extension—or a decision to make the program permanent—could be an effective means to achieve increased private sector participation in the program. If insurers and reinsurers are assured that the program will be in place for the indefinite future, uncertainty is reduced. From an economic perspective, the reduction in uncertainty would likely be conducive for investment under the program.

Pooling Proposal

As Congress begins to explore alternatives to enhance private sector participation in the market for terrorism risk, it is instructive to recall that insurers began their effort to create a federal "backstop" very shortly after the September 11 attacks. By late September 2001, insurers had already drafted an outline describing their plan for a federal backstop and legislation was drafted in early October. Dubbed the "Insurance Stabilization and Availability Act of 2001," the bill proposed the establishment of a privately run and financed terrorism reinsurance pool, organized as a federally-chartered mutual insurance company, that would reinsure the terrorism risks of U.S. licensed insurers and reinsurers and purchase reinsurance from the federal government in exchange for a premium. The organizational structure of the pool would have been similar to that of Pool Reinsurance Company Ltd. (often referred to as "Pool Re"), a mutual insurer established in Great Britain in 1993 after several bombings attributed to the Irish Republican Army (IRA) made insurers reluctant to offer coverage for terrorist acts (Pool Re now provides coverage against a broad range of terrorism risks). While no doubt adjustments would need to be made given the passage of more than a decade since the industry's initial pooling proposal, the concept of a pool has worked successfully in the U.K. for 20 years.

Summary

In the eleven years since the tragedy of the September 11, 2001 terrorist attack on the United States, much has been learned about the nature of terrorism risk and its insurability. There is no question that the Terrorism Risk Insurance Act and its successors brought much needed stability to the market in the aftermath of the most costly insurance loss in global history. In the decade since, private sector insurers, reinsurers and the federal government have successfully partnered with one another in order to maintain that stability, providing tangible benefits for businesses large and small—and their employees—all across America.

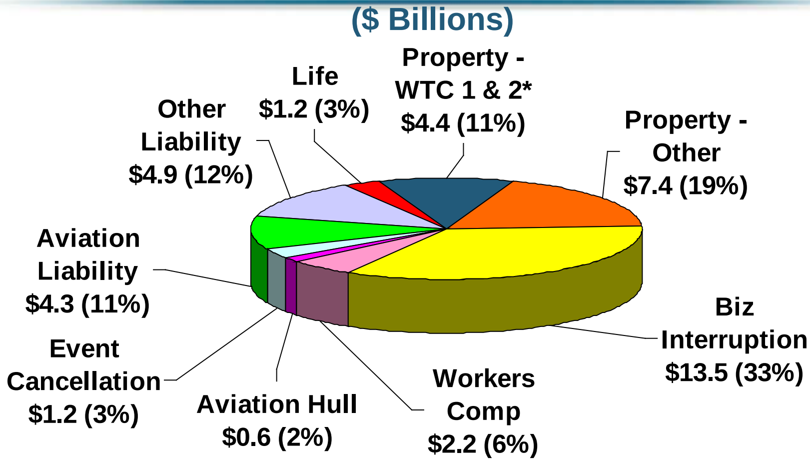
The looming expiration of the TRIPRA at the end of 2014 brings to a head the question of whether terrorism risk is now, or ever will be, a risk that can be managed entirely within the private sector. The evidence, both in the United States and from similar programs abroad, is that market stability in terms of both pricing and availability of terrorism coverage, as well as the ability to maintain adequate and expanding levels of capacity over time, are contingent on the continued existence of the Terrorism Risk Insurance Program.

Thank you for you for the opportunity to testify before the Committee today. I would be happy to respond to any questions you may have.

Exhibit 1

Loss Distribution by Type of Insurance from Sept. 11 Terrorist Attack ($ 2011)

INSURANCE INFORMATION INSTITUTE



Total Insured Losses Estimate: $40.0B**

*Loss total does not include March 2010 New York City settlement of up to $657.5 million to compensate approximately 10,000 Ground Zero workers or any subsequent settlements.

**$32.5 billion in 2001 dollars.

Source: Insurance Information Institute.

Exhibit 2

Top 14 Most Costly Disasters in U.S. History

INSURANCE INFORMATION INSTITUTE

(Insured Losses, 2011 Dollars, $ Billions)

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Note: Property losses only except in the case of 9/11, which includes all impacted lines. 9/11 property losses totaled $23.5 billion.

Sources: PCS; Insurance Information Institute inflation adjustments.

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Exhibit 3A

Terrorism Violates Traditional Requirements for Insurability

Requirement	Definition	Violation
Estimable Frequency	•Insurance requires large number of observations to develop predictive rate-making models (an actuarial concept known as credibility)	•Very few data points •Terror modeling still in infancy, untested. •Inconsistent assessment of threat
Estimable Severity	•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)	•Potential loss is virtually unbounded. •Losses can easily exceed insurer capital resources for paying claims. •Extreme risk in workers compensation and statute forbids exclusions.

Source: Insurance Information Institute

Exhibit 3B

Terrorism Violates Traditional Requirements for Insurability (cont'd)

Requirement	Definition	Violation
Diversifiable Risk	•Must be able to spread/distribute risk across large number of risks •"Law of Large Numbers" helps makes losses manageable and less volatile	•Losses likely highly concentrated geographically or by industry (e.g., WTC, power plants)
Random Loss Distribution/ Fortuity Source: Insurance Information Institute	•Probability of loss occurring must be purely random and fortuitous •Events are individually unpredictable in terms of time, location and magnitude	•Terrorism attacks are planned, coordinated and deliberate acts of destruction •Dynamic target shifting from "hardened targets" to "soft targets" •Terrorist adjust tactics to circumvent new security measures •Actions of US and foreign govts. may affect likelihood, nature and timing of attack