

# Assessing Policy Options for Renewing the Terrorism Risk Insurance Act

## Interim Results

Following the 9/11 attacks, Congress passed the Terrorism Risk Insurance Act (TRIA) of 2002, which established a temporary federal terrorism risk insurance program that provides a system of shared public and private payments for insured commercial property and casualty losses from acts of terrorism. Congress amended TRIA in 2005, but TRIA will sunset at the end of 2007 unless Congress takes further action.

Determining what action to take is difficult, because trying to determine the federal government's appropriate role in providing terrorism insurance is fraught with many difficult-to-estimate uncertainties. For example, there are uncertainties about the frequency and type of attack—conventional or chemical, biological, radiological, or nuclear (CBRN). There are also uncertainties about the rate at which businesses would “take up” insurance coverage for property losses from terrorist attacks under different government interventions in the terrorism insurance market, about whether policyholders would be compensated for losses above the \$100 billion TRIA program cap, and about the source of any such payments. And there is uncertainty about whether and how much the government will compensate businesses that fail to purchase terrorism insurance.

Under such conditions, strategies that perform reasonably well compared to alternatives over a wide range of plausible futures are desirable. RAND Corporation researchers are assessing policy options for renewing TRIA with a quantitative tool that uses computer simulation to assess the performance of policy options over a large number of plausible futures in terms of a series of output measures. This research brief highlights some interim research findings.

### Abstract

RAND researchers assessed three TRIA-related policy interventions over a large number of plausible futures. Interim results show that, for conventional attacks, TRIA performs better on the outcome measures examined than does letting the program expire but does not effectively address the risks CBRN attacks present to either businesses or taxpayers. The research also shows that a simple extension to TRIA that requires insurers to offer CBRN coverage along with coverage for conventional attacks has little upside in addressing CBRN attacks and adds some significant unintended consequences in dealing with conventional ones.

### How Is the Analysis Set Up?

The analysis has examined the performance of three interventions: TRIA, no government terrorism insurance program (equivalent to letting TRIA expire), and a simple extension to TRIA that leaves the structure of TRIA unchanged but seeks to improve the availability of insurance coverage for CBRN attacks by requiring insurers to offer coverage for both conventional and CBRN attacks. (Now, insurers must offer terrorism coverage only for conventional attacks.)

In assessing the three interventions, the analysis uses six nominal attack scenarios drawn from an attack loss model developed by Risk Management Solutions (RMS): two conventional attacks (1- and 10-ton truck bombs) and four CBRN attacks (a 5-kiloton nuclear bomb, an outdoor anthrax attack, an attack using a radiological device [a dirty bomb], and an indoor sarin attack). Also, the magnitude of each attack (in terms of

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property losses and workplace injuries and deaths) is scaled up and down to provide data for a wide range of conceivable attack scenarios.

RAND's approach scans thousands of combinations of parameter values related to attack type, insurance industry uncertainties (e.g., the take-up rate for terrorism insurance), and postattack government compensation uncertainties (e.g., the percentage of uninsured business losses the government compensates). The end result is thousands of plausible scenarios for each intervention.

Performance is assessed using four outcome measures: (1) fraction of losses for which victims receive no compensation either from insurers or from the government, (2) cost to taxpayers, (3) fraction of the industry's net worth (also referred to as industry surplus) used, and (4) costs to future policyholders. Each outcome measure serves both as a direct measure of how the intervention performs and as proxy for a broader social welfare concern. The first two broadly represent social outcome measures, while the second two focus on the postattack health of the insurance marketplace.

### **For Conventional Attacks, TRIA Has Positive Effects on the Terrorism Insurance Market**

Figure 1 shows the results of comparing TRIA outcomes with those under no government program for conventional attacks. The two charts plot all the scenarios for each intervention for both conventional attacks in terms of three of the four outcome measures: (1) fraction of losses uncompensated (the vertical axis), (2) cost to taxpayers (the horizontal axis), and (3) fraction of surplus used (the color of each point, or scenario, plotted). In most of the cases considered so far, the cost to future policyholders is relatively small compared to the other costs reported here. The vertical and horizontal lines in each chart define quadrants used to compare the performance of the two interventions. Outcomes further to the right on the horizontal axis reflect increasing risks to taxpayers, while outcomes further up the vertical axis reflect increasing risks to victims and the viability of businesses hit by the attack. Outcomes in the lower left quadrant reflect the least risk along both dimensions.

When TRIA is allowed to expire (right), the distribution of scenarios shifts into the upper left quadrant—low cost to taxpayers but a higher fraction of uncompensated claims—with the entire shift coming from the two bottom quadrants and most of that shift from the bottom left quadrant. Also, as shown by the colors of the points, letting TRIA expire leads to a small decline in the number of scenarios using more than 10 percent of industry surplus, but the effect is not great.

What drives these results? If TRIA expires, commercial insurers will pay a larger fraction of insured terrorism losses, which will increase their costs and cause the price of terror-

ism insurance to rise. This price increase will reduce the number of businesses purchasing terrorism insurance for property loss, causing the take-up rate to fall and the fraction of losses uncompensated to increase. The change in taxpayer costs depends both on the change in government outlays through the program and on the change in government compensation for uninsured losses. Without TRIA, the government no longer pays a portion of insured losses, but government compensation for uninsured losses rises because of the increase in uninsured losses. Our results show that TRIA *does* increase the net cost to taxpayers in scenarios involving the *largest* conventional attacks. However, the expected cost to taxpayers over *all* conventional attacks is actually lower with TRIA than without TRIA under a wide range of assumptions anchored around existing estimates of the probability of a large attack relative to a smaller attack.

### **For CBRN Attacks, TRIA Comes Up Short**

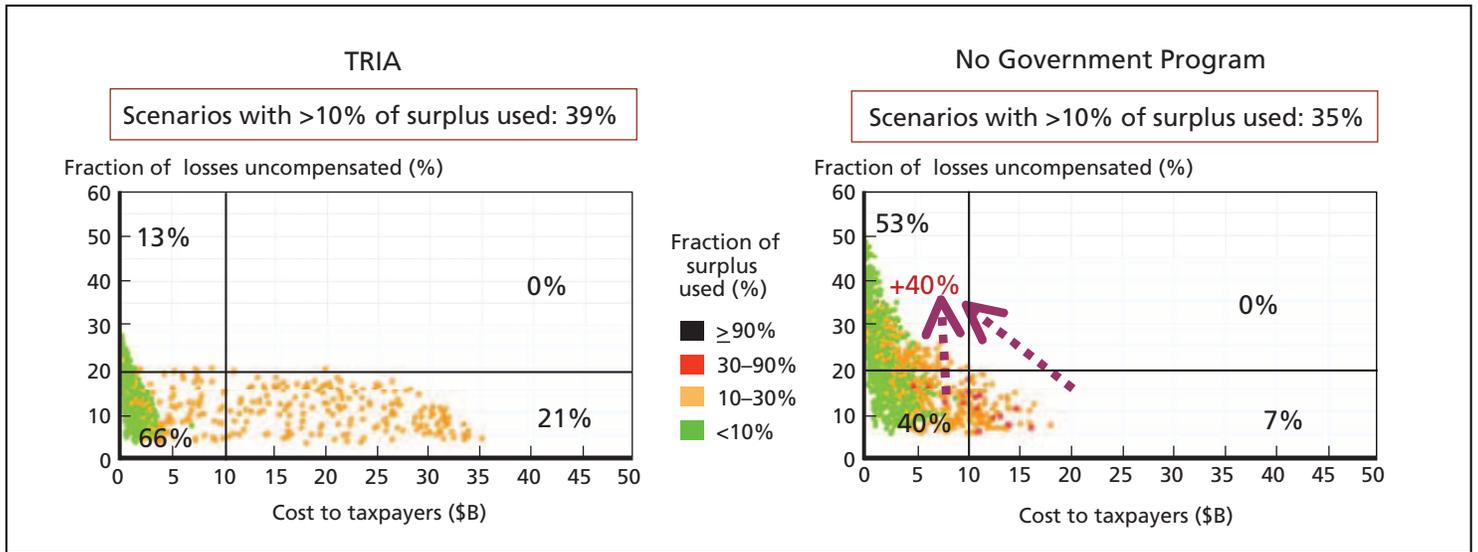
Figure 2 shows the CBRN counterpart to Figure 1. The horizontal axis ranges beyond \$1.4 trillion to reflect the greater potential impact on taxpayer cost from CBRN attacks, and the vertical axis goes up to 100 percent to reflect a greater potential share of losses that go uncompensated. Also, the colors of the dots, reflecting the fraction of surplus used, shift toward the higher end of the range.

As shown, CBRN attacks have substantial impacts on taxpayers, insurers, and the uninsured. But, because take-up rates for CBRN coverage are very similar with TRIA to rates without TRIA (workers' compensation policies apply regardless of the cause of loss, and the take-up rate on property policies for CBRN attacks is low with or without TRIA), the two interventions are similar in terms of the impacts on victims and taxpayers. However, having TRIA does reduce impacts on insurers, reducing the number of scenarios in which more than 30 percent of the industry surplus is used and the fraction of scenarios in which more than 90 percent of industry surplus is used.

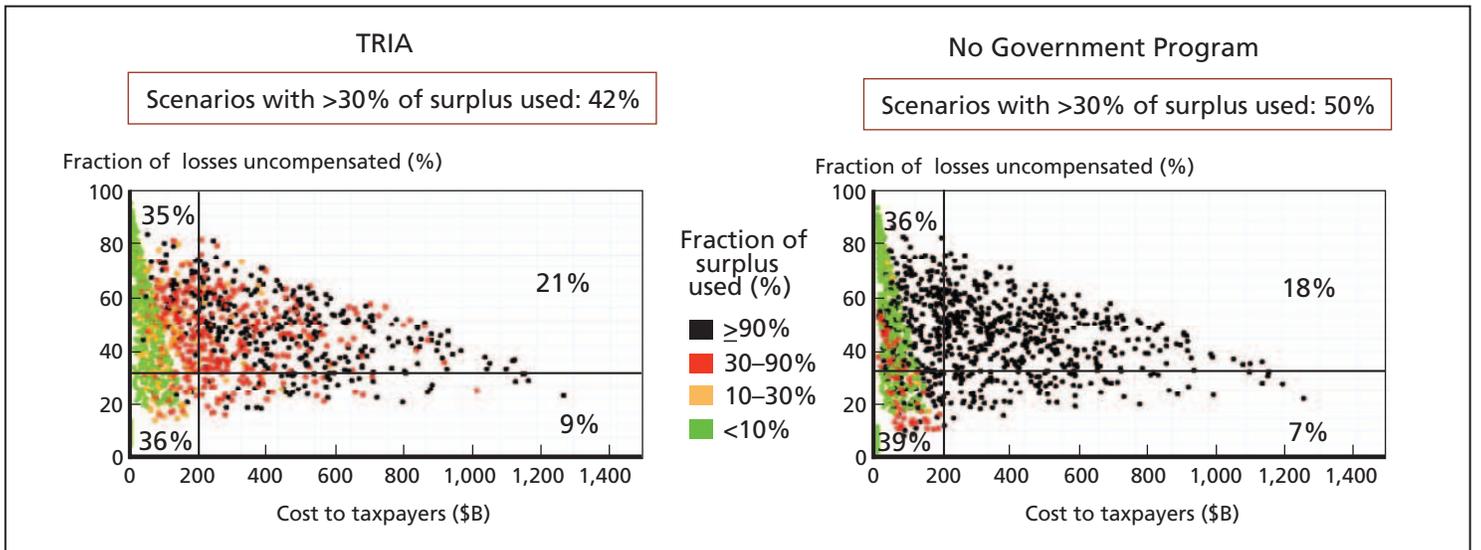
### **Requiring CBRN Coverage Without Other Program Changes Has Little Upside and Some Unintended Consequences**

Given TRIA's positive performance for conventional attacks but mixed performance for CBRN ones, we considered a simple enhancement of TRIA that requires insurers to offer coverage for both conventional and CBRN attacks but does not change other program features, such as the insurer deductible and copayment. Our analysis suggests, however, that such an enhancement may not change the take-up rate for CBRN coverage a great deal and, thus, fails to improve outcomes for victims or taxpayers much compared with outcomes for the current TRIA program (not shown).

**Figure 1**  
**TRIA Versus No Government Program: Conventional Attacks**



**Figure 2**  
**TRIA Versus No Government Program: CBRN Attacks**



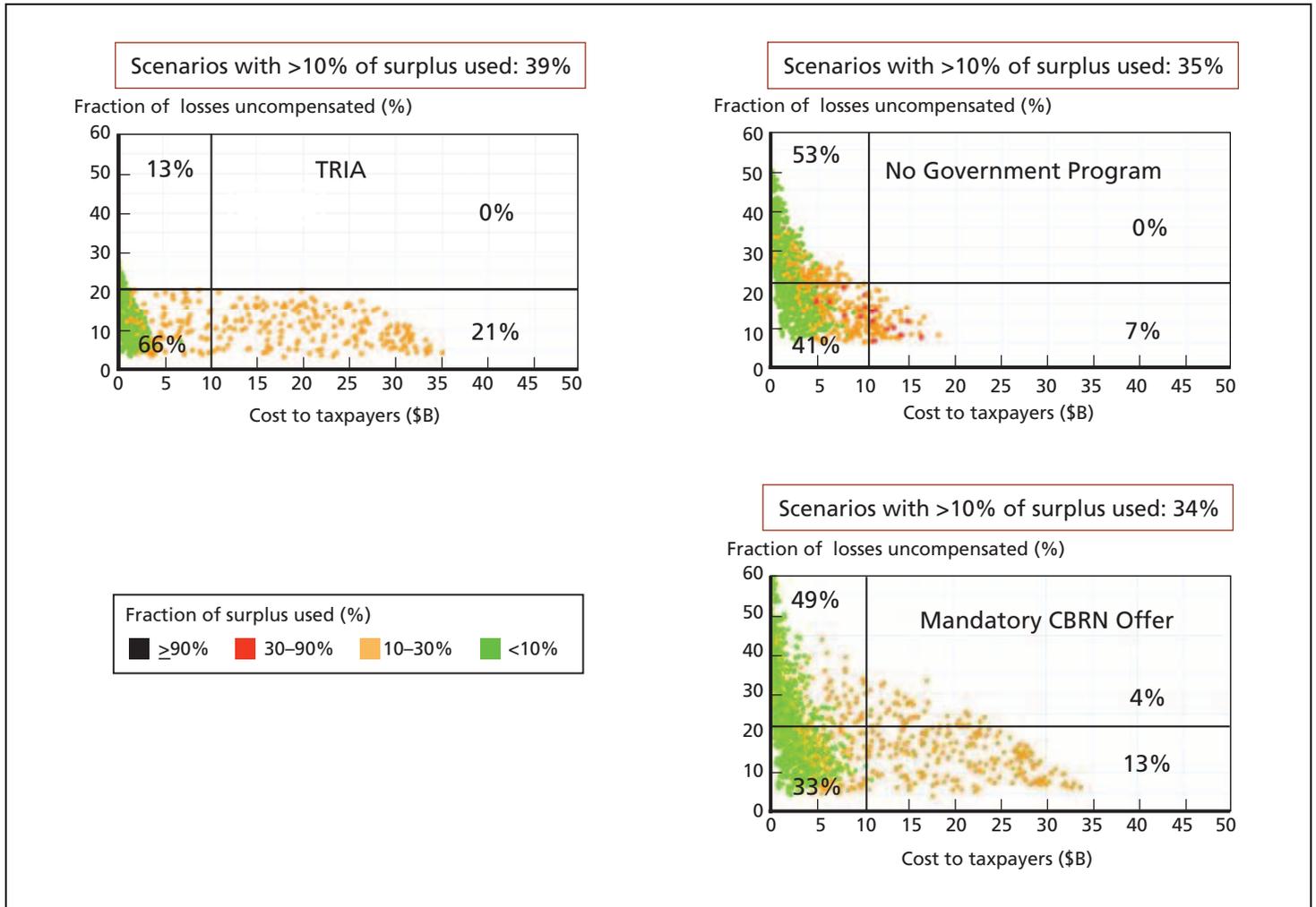
However, the mandatory CBRN coverage offer intervention can produce unintended and undesirable consequences for conventional attacks. As shown in Figure 3, the distribution of losses for the mandatory CBRN coverage offer intervention is similar to that when TRIA is simply allowed to expire. In fact, it is worse, because it has a “longer tail,” which means it produces outcomes that are more costly to taxpayers than outcomes would be if TRIA were to expire. These results follow because the high cost of CBRN coverage can cause the take-up rate for conventional attacks to fall even below the level that would occur if TRIA simply

expired. A lower take-up rate exposes taxpayers to higher payments for uninsured losses.

**Implications**

Several implications flow from our work to date. First, TRIA has important positive effects on the market for terrorism insurance, at least for conventional attacks: The fraction of losses uncompensated declines in a substantial number of the scenarios examined, as do expected taxpayer payments. Second, for CBRN attacks, which have severe consequences for all stakeholders, TRIA does not perform much better for

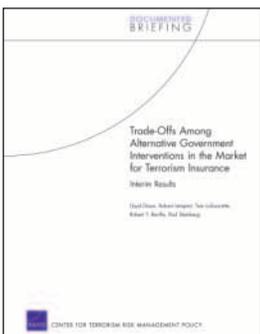
**Figure 3**  
**Three Interventions: Conventional Attacks**



businesses subject to attack or for taxpayers than does letting TRIA expire. Third, in choosing an extension to TRIA to better address CBRN attacks, policymakers must be careful to choose an intervention that achieves the desired goals and avoids unintended consequences.

One of the research products is a modeling framework that can assess a wide range of policy options. While research-

ers are continuing to analyze modifications to TRIA that may better address CBRN attacks and the partial take-up of terrorism insurance that occurs even with TRIA, the framework can also be useful to stakeholders in the reauthorization debate by allowing them to rapidly evaluate program configurations of interest. ■



This research brief describes work done for the RAND Center for Terrorism Risk Management Policy, which is housed within the RAND Corporation and combines expertise of the RAND Institute for Civil Justice; RAND Infrastructure, Safety, and Environment; and Risk Management Solutions. The work is documented in *Trade-Offs Among Alternative Government Interventions in the Market for Terrorism Insurance: Interim Results*, by Lloyd Dixon, Robert Lempert, Tom LaTourrette, Robert T. Reville, and Paul Steinberg, DB-525-CTRMP (available at [http://www.rand.org/pubs/documented\\_briefings/DB525/](http://www.rand.org/pubs/documented_briefings/DB525/)), 2007, 132 pp., \$48, ISBN: 978-0-8330-4186-9. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.



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