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Risk Management Policy

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Assessing the Effectiveness of the Terrorism Risk Insurance Act

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Abstract

This study simulates the expected losses from three modes of terrorist attacks and shows how the Terrorism Risk Insurance Act (TRIA) would distribute the resulting losses. It finds that losses vary substantially in size and distribution by insurance line across the scenarios. It further finds that under TRIA, a large share of the losses would be uninsured and that of those losses eligible under TRIA, taxpayers would not pay for any losses from a single attack in any of the scenarios. Based on these findings, the study offers some conclusions and implications.

After the 9/11 attacks and the substantial losses incurred, insurers questioned their ability to pay claims in future attacks and began to exclude terrorism coverage from commercial insurance policies. The fear that a lack of coverage would threaten economic stability and growth, urban development, and jobs led the federal government to adopt the Terrorism Risk Insurance Act (TRIA) of 2002, requiring insurers to make terrorism coverage available to commercial policyholders.

Because TRIA sunsets at the end of 2005, policymakers need to assess how effective TRIA is in responding to the losses from different modes and magnitudes of terrorist attacks. But because no large terrorist attacks have occurred since 9/11, no empirical data on which to base such an assessment exist.

In this study, RAND Corporation researchers respond to that need by simulating the expected losses for three different modes of terrorist attack scenarios—crashing a hijacked aircraft into a major building, releasing anthrax within a major building, and releasing anthrax outdoors in a major urban area—and then assessing the effects of the insurance system and TRIA on how those losses are ultimately distributed.

Estimating Losses from a Large Terrorist Attack

Working with the three scenarios, researchers simulated losses from each mode of terrorist attacks. Losses for the outdoor anthrax scenario dwarf those of the other two scenarios: $172 billion versus $6.7 and $7.9 billion for the aircraft impact and indoor anthrax scenarios, respectively. The distribution of those losses varies substantially. Property losses account for 13, 58, and 67 percent of the total loss in the indoor anthrax, outdoor anthrax, and aircraft impact scenarios, respectively. Workers' compensation shows a complementary variation, accounting for 77, 25, and 23 percent of the losses in the indoor anthrax, outdoor anthrax, and aircraft impact scenarios, respectively. Life and health insurance lines make up 10 percent in the indoor anthrax and aircraft impact scenarios and 16 percent in the outdoor anthrax scenario.

How TRIA Distributes Losses

TRIA applies only to commercial policies—not to life and health lines or personal lines (such as homeowners' insurance)—and covers cumulative attacks over a year. TRIA allows insurers to exclude property losses from chemical, biological, radiological, and nuclear (CBRN) attacks, but insured losses from a CBRN attack are eligible. Finally, workers' compensation losses cannot be excluded.

Some losses following a terrorist attack are "uninsured" because people and businesses do not have terrorism coverage; and some losses, as noted above, are not eligible for TRIA. TRIA distributes eligible losses according to a formula. "Target insurers" who have paid claims on policies that include terrorism coverage and are in eligible lines are

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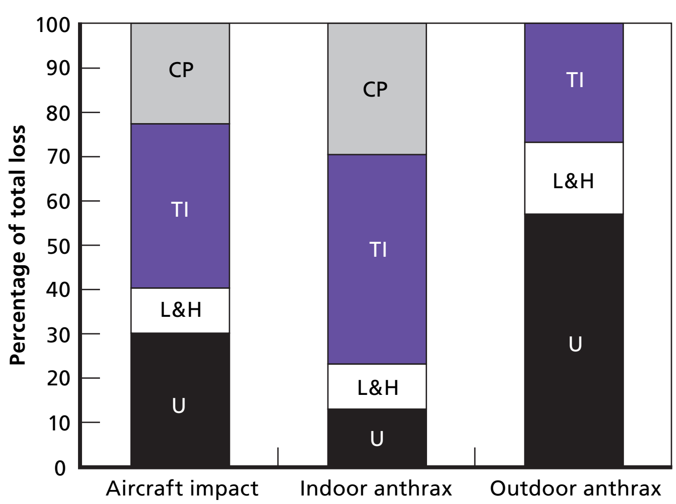
responsible for payouts up to an annual deductible equal to 15 percent (in 2005) of the insurer group's annual direct-earned premium on TRIA-eligible lines in the previous year. They are also responsible for a co-payment of 10 percent of all losses above the deductible. The federal government (i.e., "taxpayers") reimburses target insurers for the remaining 90 percent of losses above the deductible for aggregate annual insured losses in TRIA-eligible lines up to $100 billion. TRIA also requires the federal government to recoup the difference between an "insurance marketplace aggregate retention amount" ($15 billion in 2005) and the sum of insurer deductibles and co-payments for that year. Recoupment is collected through a surcharge of up to 3 percent per year on all U.S. "commercial policyholders."

How TRIA Distributes Losses from the Attacks

The figure shows how TRIA distributes losses in the three scenarios. As shown in the black segments, *a large fraction of the loss is uninsured*: 30 percent, 14 percent, and 57 percent for aircraft impact, indoor anthrax, and outdoor anthrax, respectively.

As the figure also shows, *taxpayers do not pay any of the losses from a single attack in any of the scenarios*. Assuming current terrorism insurance take-up rates, target insurers alone pay in the aircraft impact and indoor anthrax scenarios until TRIA-covered losses reach $5 million, which occurs at $8.5 million for the aircraft impact and $6.5 million for the indoor anthrax scenario.

Distribution of Losses by TRIA for Three Scenarios



NOTE: U = uninsured; L&H = life and health insurers; TI = target insurers; CP = commercial policyholders.

From that point on, commercial policyholders begin to contribute along with target insurers, with the two groups paying until losses reach $25 ($20) billion in the aircraft impact (indoor anthrax) scenario, at which point taxpayers would begin contributing. But since the attack losses are $6.7 ($7.9) billion in the two scenarios, at least three to four very large attacks would need to occur in a year before taxpayers would begin to contribute. In fact, if we assumed that current take-up rates had applied at the time, taxpayers would not have paid in the World Trade Center attacks had TRIA been in place.

In the outdoor anthrax scenario, taxpayers also pay nothing, both because of low take-up rates of CBRN coverage (less than 3 percent) and because losses are spread among so many target insurers that few would meet their deductible. As the figure shows, commercial policyholders also pay nothing. Taxpayers would begin paying only after the target insurers meet their deductible *and* make their co-payment, which is just above the $172 billion in losses from the attack.

Adjusting Who Pays Under TRIA

Adjusting the provisions under TRIA can modify who pays what; however, since TRIA does not reduce losses, any modifications to reduce the burden on one group simply transfer the burden to another group (or groups). For example, one can reduce uninsured losses by extending the "make available" requirement for terrorism insurance to include CBRN coverage and by making terrorism insurance coverage mandatory. The researchers' simulations show that doing so reduces uninsured losses but does so at the expense of target insurers, commercial policyholders, and taxpayers.

Conclusions and Implications

Based on our analysis, the role of taxpayers is expected to be minimal unless there are several large-scale attacks in a single year, which means that TRIA is not primarily a taxpayer bailout of the insurance industry. Thus, modifications or alternatives to TRIA need not focus on protecting taxpayers.

Still, TRIA does influence the terrorism insurance market. Target insurers get substantial subsidies from the surcharge on commercial insurance policyholders, and TRIA makes property insurance for conventional terrorism available to policyholders, thus making terrorism insurance more available and affordable.

Also, even with TRIA, a high fraction of losses would go uninsured under the scenarios analyzed. Given this, reducing uninsured losses should be considered in modifying TRIA or in alternatives to it. ■

This research brief describes work done for the RAND Center for Terrorism Risk Management Policy and documented in *Distribution of Losses from Large Terrorist Attacks Under the Terrorism Risk Insurance Act*, by Stephen J. Carroll, Tom LaTourrette, Brian G. Chow, Gregory S. Jones, and Craig Martin, MG-427-CTRMP (available at http://www.rand.org/publications/MG/MG427/), 2005, 151 pp., $20, ISBN: 0-8330-3865-6. MG-427 is also available from RAND Distribution Services (phone: 310.451.7002; toll free 877.584.8642; or email: order@rand.org). The RAND Center for Terrorism Risk Management Policy is a joint project of RAND Infrastructure, Safety, and Environment; RAND Institute for Civil Justice; and Risk Management Solutions. 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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