TERRORISM RISK BRIEFING

MAY 2013

May 2013 Overview of Terrorism Risk: Boston Bombing Renews Fears Of Homegrown Terror Threat

Recommended Risk Outlook for use in RMS U.S. Terrorism Risk Model: RMS Standard Risk (2013)

TRIPRA – PERSPECTIVES ON THE UPCOMING EXPIRATION AND PROPOSED RENEWAL

$100 billion

	FEDERAL PARTICIPATION	INDIVIDUAL INSURER RETENTION (% PREMIUM)	TRIGGER (MINIMUM LOSS)
2002	90%	7%	$5M
2006	90%	17.5%	$50M
2007	85%	20%	$100M
2008 – 2013	85%	20%	$100M

INSURER PARTICIPATION

Figure 1. Evolution of TRIA coverage, 2002 – 2013.
Source: Congressional Budget Office.

The proposed renewal of the Terrorism Risk Insurance Program Reauthorization Act (TRIPRA), expiring on December 31, 2014, will be debated in a much-changed political environment. The availability and affordability of terrorism insurance coverage in the U.S. hinges upon the outcome.

The legislation, first enacted in 2002 and renewed twice, provides a federally financed backstop for insured losses arising from terrorist attacks. It provides majority participation in a $100 billion layer to finance terrorism losses, subject to deductibles, a minimum loss threshold, and official certification by the U.S. Treasury. Its renewal has been proposed three times in congress this year, most recently by Peter King (R-NY) and Mike Capuano (D-MA) in a bill with 19 co-sponsors entitled *The Terrorism Risk Insurance Program Reauthorization Act of 2013*. The bill proposes an extension of ten years.

In exchange for a reinsurance guarantee, TRIPRA compels insurers, via a "make available" provision, to offer terrorism coverage to their policyholders. Take-up rates are strong, averaging over 60% nationwide every year since 2009. In the Northeast United States, where demand is high, take-up is almost 80%. The legislation also contains a recoupment provision, whereby the U.S. Treasury may reclaim its loss payout by applying surcharges to future policy premiums according to several factors, including the

RANKING	CITY	TIER
1	New York	1
2	Washington, DC	1
3	Chicago	2
4	San Francisco	2
5	Los Angeles	2
6	Boston	3
7	Philadelphia	3
8	Houston	3
9	Las Vegas	3
10	Miami	3

Figure 2. RMS City Ranking by Tier.

size of the total loss, the amount of reimbursement, and the amount of loss retained by insurers.

Though the act's expiration is more than 18 months away, the debate over a third renewal is well underway. Opponents of the act label it as an insurance company subsidy, and question the federal government's involvement in the P&C insurance market. Supporters' arguments fall along three lines: first, that terrorism is an inherently uninsurable peril due to its severity; 9/11 produced insured losses greater than $40 billion with a footprint measured in single square blocks. Second, that insurers are required to provide full terrorism coverage—without limitation—in workers compensation due to statutory requirements, something they would not otherwise do. Third, many adjacent markets such as real estate, construction and banking rely on the availability of terrorism coverage and would be adversely affected by the removal of the federal backstop.

Regardless of the debate, a non-renewal of the U.S. federal backstop would affect both pricing and market capacity of terrorism coverage, because the federal government does not currently charge insurers for the guarantee it provides. Whether these impacts could be absorbed by the private sector is likely to be the focus of an upcoming national dialogue. In particular, the impacts would be disproportionally visited upon high-risk urban areas. RMS classifies Tier 1 and 2 cities—those most attractive as terrorist targets—as New York, Washington, Chicago, San Francisco, and Los Angeles. Businesses in these cities with lease agreements, loan covenants, or other contractual obligations containing provisions that require continuous terrorism coverage would be most impacted by any modification, or non-renewal of the legislation. Though the price of terrorism coverage has steadily dropped since 2001, it still accounts for as much as 7% of overall property premiums.

TRIPRA is only one of many existing terrorism insurance schemes worldwide. Many countries with significant terrorism risk operate pools to stimulate capacity for affordable coverage. These pools vary in size and structure, but typically involve an explicit government coverage guarantee in excess of certain loss thresholds, private reinsurance participation at lower layers, and a certification requirement by the sponsoring government in order to classify an incident as a terrorist act. In the absence of such legislation, the United States would stand out as the only country with high insurable values and no form of terrorism coverage pooling or backstop.

Any negotiation of TRIPRA's renewal will involve discussions of the key provisions of the program's coverage. As shown in Figure 1, many of these provisions have been adjusted at prior renewals, and will be subject to further scrutiny in 2014. They include:

- The overall program limit. Since 2002, this has remained static at $100 billion.
- The level of federal participation. In 2007 this was reduced from 90% to 85%.
- Coverage trigger. TRIPRA currently does not cover losses under $100 million. This was raised from $5 million with the act's first writing in 2002.
- Individual insurer retention. The footprint of a terrorist attack is small enough that any change to retention levels would disproportionately affect only a few insurers.
- Insured perils. TRIPRA does not specifically include or exclude coverage for chemical, biological, radiological, or nuclear attacks—it simply covers "insured losses." Since market capacity for CBRN is limited, so too is TRIPRA coverage for CBRN attacks.

The political dialogue that ultimately determines lawmakers' votes on the Fostering Resilience to Terrorism Act of 2013, Rep. Thompson's proposal to extend TRIPRA through 2024, will be different than in previous legislative sessions. Nearly half the members of the House Financial Committee came to Congress after the most recent renewal of TRIPRA in 2007. Many of these new members were elected in the wake of a national backlash against the 2008 Emergency Economic Stabilization Act and other similar economic measures. The constituent ire that propelled their victory is likely to play out during negotiations. These negotiations promise new perspectives on critical issues surrounding terrorism insurance. The market insurability of terrorism, the role of federal government as a reinsurer, and the public benefit of TRIPRIA coverage are likely to elicit many hours of spirited debate on Capitol Hill.

RMS encourages the creation of a long-term solution to provide affordable capacity for terrorism coverage in the U.S., and believes that such solution should address conventional attacks as well as those involving chemical, biological, nuclear, and radiological devices. According to RMS analysis, CBRN attacks in longer return periods cannot be absorbed by the private insurance market alone.
The financial model integrated into the RMS terrorism suite provides a comprehensive basis for assessing terrorism exposure under various reinsurance scenarios including TRIPRA.

BOSTON MARATHON BOMBINGS RAISE SPECTER OF HOMEGROWN TERRORISM

> The bombings at the Boston Marathon that killed 3 people and injured more than 178 are a strong reminder of the homegrown terrorism threat in the United States.

As widely reported, the U.S. authorities have identified the two men suspected to be behind the Boston Marathon twin bombings as Tamerlan Tsarnaev and his younger brother, Dzhokhar. While both individuals are of Chechen descent, the two brothers have been in the U.S. for almost a decade and follow the pattern of homegrown jihadi terrorism.

In recent years, attacks perpetuated by homegrown jihadi groups in the U.S. have become more common. According to our research, more than half of the macro terrorism plots perpetuated in the U.S could be considered homegrown terror plots. "Homegrown terrorism" is the term that describes terrorist plots perpetrated within the United States by American citizens or legal permanent residents. Homegrown groups in the West represent the broadest layer of the jihadi network and tend to be radicalized segments of migrant and diaspora communities.

The Tsarnaev brothers conform to the model of decentralized homegrown jihadi groups. This concept is defined by key Al-Qaeda strategist Mustafa Al-Suri's doctrine of nizam la tanzim (system, not organization). In Suri's view, the future of jihad consists of small autonomous groups having decentralized organizational structures with no official links to Al-Qaeda leadership, so that even if the senior hierarchy was dismantled, the threat from Al-Qaeda would persist.

The attacks in Boston have undermined the widespread assumption that American Muslims, unlike their European counterparts, are immune to radicalization. Many

counterterrorism experts have argued that the homegrown jihadi terrorism threat in Europe is due to the lack of integration among the immigrant Muslim population and that radicalization is the subsequent byproduct of the failed integration. In contrast, Muslim immigrants in the U.S. have more successfully integrated, which reduces the likelihood of radicalization. The wave of homegrown U.S. jihadist arrests in the last few years, including the Boston attack, seem to demonstrate, however, that radicalization has affected a small minority of American Muslims.

Just like the Tsarnaev brothers, homegrown "self-starters" are often inspired by Al-Qaeda or its affiliates, but may have little or no actual connection to these militant groups. Instead, many of these "self-starters" leverage the Internet as well as social networking tools to function and operate effectively. Digital resources such as the "Inspire" magazine, an online publication drafted by members of Al-Qaeda in the Arabian Peninsula (AQAP), have become important resources for the fledging homegrown jihadist. Designed to radicalize Muslims in the English-speaking world, their message is meant to "inspire" and initiate independent terror attacks.

The U.S. terrorist threat will increasingly come from such homegrown extremists. Due to the decentralized structure of such "groups," they are difficult to identify and apprehend. This problem is further compounded if the homegrown operative is a "lone wolf" who does not seek any type of external assistance. Their proficiency in the English language, the ability to understand Western culture, society, and context allows them to execute and plan their terrorism plot without raising much suspicion.

As the terrorism threat will mostly come from homegrown operatives, their technical expertise will be limited. Thus, simple improvised explosive devices (IEDs) such as the pressure cooker bombs used by the Tsarnaev brothers will remain the preferred weapon of choice. While such weapons have limited range, they potentially can cause significant property damage and inflict numerous casualties. Such attacks will occur in densely populated areas, at a time of day selected to cause the most damage and fatalities. As witnessed in the Boston bombing, by refining their targeting and timing, terrorists have become more efficient, making major impacts with lesser-yield bombs. As a result, smaller, but still deadly bombs that can circumvent security measures are the more likely terrorism attack scenarios.

To a terrorist, sporting events such as the Boston Marathon present an ideal opportunity to orchestrate a terrorist operation. They have large numbers of participants and spectators, garner worldwide publicity, and are inherently vulnerable because large crowds provide cover for any terrorist group to operate and strike.

In the past few years, several homegrown plots against the U.S. have been orchestrated by individuals acting independent of Al-Qaeda's leadership. Most of these plots have been amateurish at best, as the perpetrators lacked the basic tradecraft and were unable to mount a successful attack. However, as the Boston Marathon bombing attests, this is not always the case. The Tsarnaev brothers were able to execute an attack within their capabilities and resources. RMS assesses that such attacks by similar radicalized individuals cannot be discounted in the future.

TENSIONS GROW OVER SYRIA'S CHEMICAL WEAPONS

> The possibility that sarin gas was used in Syria has again raised the concerns that such chemical agents could fall into the hands of a terrorist group.

In the last decade, there have been no successful major terrorist chemical attacks reported anywhere in the world. However, there have been a number of disrupted attacks worldwide and indications that many terrorist groups such as Al-Qaeda and its affiliates are exploring the development and use of such agents in preparation for possible mass casualty attacks.

Terrorist groups such as Al-Qaeda and its affiliates have long shown interest in using chemical agents. Many of these groups have attempted to acquire such chemical weapons as part of their chemical, biological, nuclear, and radiological (CBRN) arsenal. Apart from the statements these groups have made about their intention to use such weapons, there is also enough credible information in the last decade to show that Al-Qaeda and its affiliates have tried to build their own CBRN development program. Evidence of Al-Qaeda research into chemical agents includes videotapes of tests of nerve gases on dogs and formulae for sarin gas recovered in Afghanistan. Fortunately, most of their research and development effort were lost when the U.S. military forces destroyed Al-Qaeda's Afghanistan headquarters and training camps in late 2001.

Chemical weapons appeal more to religious terrorist organizations such as Al-Qaeda than to other types of terrorist groups. The logic behind this is that while more "secular" terrorist groups might hesitate to execute a mass casualty attack for fear of alienating their support network, religious terrorist organizations regard such violence as not only morally justified but as expedient to their goals.

The effectiveness of chemical weapons lies in their ability to cause major terror and disruption. A likely chemical attack would involve the use of a chemical agent such as sarin gas against a major metropolitan area such as a central business district (CBD) or places with high population density such as a subway system, sports area, or airport. As opposed to biological agents, a chemical attack is more identifiable and immediate steps can be taken to limit the exposure to the agent and mitigate its consequence.

The most successful chemical attack to date by a non-state actor was the Tokyo subway sarin attack perpetuated by the Japanese doomsday cult, Aum Shinrikyo on March 20, 1995. The members of Aum Shinrikyo carried six packages of sarin gas on to the Tokyo subway trains and punctured the packages with umbrella tips. The attack killed 12 people and injured more than 5,500, many of whom were first responders that had arrive on the scene to assist the injured.

Sarin is a colorless and odorless nerve agent that disrupts the nervous system by over-stimulating muscles and vital organs. It is a potent, highly toxic chemical agent. Sarin can be inhaled as a gas or absorbed through the skin. In large doses, sarin gas suffocates its victims by paralyzing the muscles around their lungs; it is most lethal in a closed environment where exposure is the highest. It is estimated that less than one hundred milligrams of sarin can kill a person in a few minutes if not given an antidote. Sarin dissipates fairly rapidly, so minimal decontamination is needed, but some of the chemical agent can be absorbed by the surrounding materials and may require a nominal cleanup of the affected area.

While the prospect of a large sarin gas attack is harrowing, the risk of a major chemical agent attack by a terrorist group is rather small. The technological hurdles required in perpetrating such an attack are significant and cannot be discounted. To put this into context, Aum Shinrikyo spent more than $10 million dollars and had a large number of scientists working in research facilities

full-time on their CBRN capabilities. Given the strong counterterrorism environment, it is unlikely that any terrorist group today would have access to such resources to develop the deadly material. Moreover, not only is it difficult to develop the chemical agent, ensuring its effective deployment and distribution in targeted areas would be a significant challenge for any terrorist group to handle without being detected by the authorities.

Although CBRN attack threats receive widespread publicity, in reality, few large-scale terrorist attacks using CBRN agents have been successful. Current evidence suggests that groups such as Al-Qaeda and its affiliates are still far from such capabilities, and at best can only produce crude CBRN agents suited for smaller attacks. RMS currently models four scenarios of sarin release to reflect indoor release as well as different magnitudes of outdoor releases.

CANADA TRAIN TERROR PLOT

> Tracking interdicted terrorist plots, such as the arrest of two men in Canada planning to derail a passenger train, improves the understanding and quantification of the frequency of successful terrorist attacks.

On April 22, 2013, Chiheb Esseghaier and Raed Jaser appeared in court in Toronto, Canada for attempting to derail a passenger train traveling between Toronto and New York. According to the Canadian authorities, the plot involved the use of explosives to bring down a rail bridge used by a passenger train on Canada's VIA rail system on the Canadian side of the border.

For many years terrorist groups have operated effectively in Canada by taking advantage of the country's liberal immigration as well as its political asylum policies, and the porous Canadian-American border. Terrorist-related activities in Canada include lobbying through front organizations, providing support for terrorist operations in Canada or abroad, procuring weapons, manipulating immigrant communities, and other illegal activities. However, the arrest of Esseghaier and Jaser indicates that Canada, rather than a logistical hub, has become a target of radical Islamic militant groups.

Al-Qaeda's senior leadership has identified Canada as an important U.S. ally and deemed the country a legitimate target. Since 2002, at least three Al-Qaeda propaganda videos have explicitly threatened Canada, and warned that the country should expect attacks similar to those experienced in New York, Madrid, London, and other cities. A June 2007 Al-Qaeda training camp graduation ceremony video included footage of a senior Taliban leader encouraging suicide attacks against Canadian interests. The film showed Al-Qaeda training camp graduates being divided into groups of suicide bombers who would be dispatched to carry out such attacks. Additionally, Al-Qaeda has identified Canada's oil industry as a target, and Canada's military role in Afghanistan has continued to raise its profile with groups such as Al-Qaeda and their affiliates.

While Esseghaier and Jaser's plot falls under the class of homegrown terrorism, it may have an international dimension as well. Both Esseghaier and Jaser were guided by members of Al-Qaeda in Iran. Western security agencies have stated that Al-Qaeda operatives based in the southeast Iranian city of Zahedan, near the borders of both Pakistan and Afghanistan, were involved in this terrorist operation. This plot has once again raised questions about the extent of Shiite-led Iran's relationship with Al-Qaeda, a predominantly Sunni terrorist group. Shiite and Sunni fall on different sides of the Muslim world's sectarian divide. Both groups consider each other heretics, yet there are indications that the groups are working together. While the enmity between Iran and Al-Qaeda may preclude heavy state involvement, it is likely that operatives linked to Al-Qaeda or similar-minded groups may be exploiting weak centralized government control in remote border areas to orchestrate and coordinate attacks.

The plot in Canada has also turned the focus to rail transport vulnerability. The raid on Osama bin

Laden's compound in Abbottabad, Pakistan uncovered notes about a plot to derail trains, prompting an examination of the threat of a railway attack. Railways are a challenge to secure for security practitioners, as the threat is multifaceted. By their basic nature, they must stay open, making it difficult to exclude those with hostile intentions. In addition, thousands of miles of track, bridges, and tunnels present a major challenge for security agencies to monitor. Terrorists can direct their focus on bombing passenger trains or may also attempt other attack strategies such as destroying major bridges and sections of a train track to cause derailment or targeting hazardous material containers.

The RMS® Probabilistic Terrorism Model provides a comprehensive analysis of terrorism risk in major cities in Canada. The risk patterns and preferences of terrorist groups in each country are reflected in the relative likelihood of attack scenarios and attack frequency, as is the potential for multiple synchronous attacks. The Probabilistic Terrorism Model also includes some of the latest modeling methodologies, allowing detailed location analysis, and country-specific vulnerability modeling.

OTHER DEVELOPMENTS

Egyptian security forces arrested three militants with links to Al-Qaeda who were planning terrorist attacks on the U.S. embassy in Cairo (May 11, 2013). According to the Egyptian authorities, the three militants had contacted with senior Al-Qaeda figures in Pakistan and one of the men had had traveled to Iran and Pakistan to receive military training. Egyptian security forces raided the homes of the suspected militants and found 22 pounds of aluminum nitrate (a substance found in many fertilizers that can be used in explosives), bomb-making instructions, information on intelligence gathering, and materials published by Al-Qaeda in the Islamic Maghreb, the network's North African affiliate. This represents the third terrorist plot in the last 18 months focusing on U.S. embassies in the Middle East.

Three individuals were convicted of plotting a bombing campaign across the United Kingdom (April 26, 2013). According to the British authorities, Irfan Naseer, Irfan Khalid, and Ashik Ali, all from the city of Birmingham, planned to simultaneously detonate seven rucksack bombs in crowded places such as shopping centers and railway stations across several U.K. cities. Fortunately, the terrorist cell was infiltrated by MI5, who kept the cell members under surveillance for several months, and watched as the trio experimented with homemade explosives and chemicals. There was also some intercepted discussion of the use of assault rifles to kill more people, as in the attack in Mumbai in 2008. Security analysts asses that the plot is the most significant to be uncovered in the U.K. since the 2006 Transatlantic aircraft plot, where plotters attempted to detonate liquid explosives in at least 10 airliners.

Militants orchestrated a complex simultaneous assault on the Iraqi Justice Ministry in Baghdad (March 14, 2013). The attack started with two explosions in front of the Justice Ministry. Six gunmen wearing suicide vests then entered the ministry, where a firefight commenced. After approximately one hour, security forces stormed the building and some of the militants detonated their explosive vests. Thirty people were killed from this attack, including the attackers. Iraqi authorities believe that the militants belong to the Al-Qaeda linked group, Islamic State of Iraq.

RMS TERRORISM SOLUTIONS

Key features of the RMS® Probabilistic Terrorism Model 3.1.2, released in July 2012, include:

- **Updated analysis of terrorism risk from terrorist organizations**
- **Conventional and CBRN attack modes**
- **Multiple risk outlooks for the U.S. terrorism threat environment in 2013: expected as well as increased and decreased risk perspectives**
- **Coverage for all U.S. cities as well as ten major commercial centers across the globe: London (U.K.); Toronto and Montreal (Canada); Milan, Vatican, and Rome (Italy); Copenhagen (Denmark); Ankara and Istanbul (Turkey); and Dublin (Ireland).**

RiskLink® and RiskBrowser® 11.0, released in February 2011, include worldwide capability for exposure and accumulation management and modeling terrorism scenarios, with geocoding available for over 150 countries.

ABOUT RMS

RMS is the world's leading provider of products, services, and expertise for the quantification and management of catastrophe risk. More than 400 leading insurers, reinsurers, trading companies, and other financial institutions rely on RMS models to quantify, manage, and transfer risk. As an established provider of risk modeling to companies across all market segments, RMS provides solutions that can be trusted as reliable benchmarks for strategic pricing, risk management, and risk transfer decisions.

Risk Management Solutions, Inc.
7575 Gateway Blvd.
Newark, CA 94560, USA

RMS Ltd.
Peninsular House
30 Monument Street
London EC3R 8NB UK

Website: www.rms.com

Email: info@rms.com