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MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

Terrorism - Reinsurers Standing By

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Executive Summary

As we approach the ninth anniversary of the September 11, 2001 attacks, the threat from terrorism continues to pose a risk to the (re)insurance industry. The nature of the threat has changed since 2001, but terrorism remains a constant and serious risk with global recorded terror incidents at historic highs. Terrorist organizations operating in unstable countries present a danger to the world, and the recent flurry of terrorist activity serves as a reminder that individuals and groups remain a serious threat.

Improved counter-terrorism measures and pressure on al-Qaeda has seen a reduced threat of large-scale attacks. The shift to softer targets such as transport networks and hotels saw lethal and costly attacks in Madrid, London and Mumbai. This is not to say al-Qaeda groups do not continue to pursue spectacular attacks. President Barack Obama recently said the biggest threat to security in the United States is the possibility of a terrorist group obtaining a nuclear weapon.

As the terrorism threat has evolved, the (re)insurance industry has reacted and adapted. Certainly, the terror reinsurance market has changed significantly since 2001. Activity and pricing levels have generally fallen since the peak that occurred following the attacks of September 11, 2001 due to the absence of a major loss and supply/demand imbalances. Regional differences exist, however, with activity in the United States clearly down while other markets have remained steady.

A recent Guy Carpenter & Company, LLC survey of reinsurance underwriters improved our understanding of the terrorism reinsurance market. The findings were consistent with our beliefs and offered additional insights that are significant and encouraging:

- More than 80 percent of reinsurers are actively seeking new or expanded terror insurance transactions, emphasizing the imbalance between supply/demand in the marketplace
- Purchases of standalone terrorism covers have decreased over time largely due to pricing disconnects and lower perception of product need
- Reinsurers prefer geographically discrete opportunities
- Two-thirds of markets are offering cover for nuclear, biological, chemical or radiological events, demonstrating a true evolution in underwriting appetite from the period following the September 11, 2001 attacks.

Governmental pools play an important role in the terror reinsurance market by providing insurers with a safety net for their exposures. The proposed cut in federal support for the Terrorism Risk Insurance Act of 2002 (TRIA)/Terrorism Risk Insurance Reauthorization and Extension Act of 2007 (TRIPRA) advocated by the Obama Administration in the United States threatens this safety net and has therefore been vigorously opposed by the insurance industry. Such a development, or a successful major terror attack, has the potential to shift the global landscape towards a tighter market. However, the terror reinsurance market remains well placed to respond to the changing conditions.

The dynamic nature of terrorism requires a different underwriting approach, and Guy Carpenter will continue to offer advice and solutions to help insurers manage their terrorism exposure.

1

Terrorism

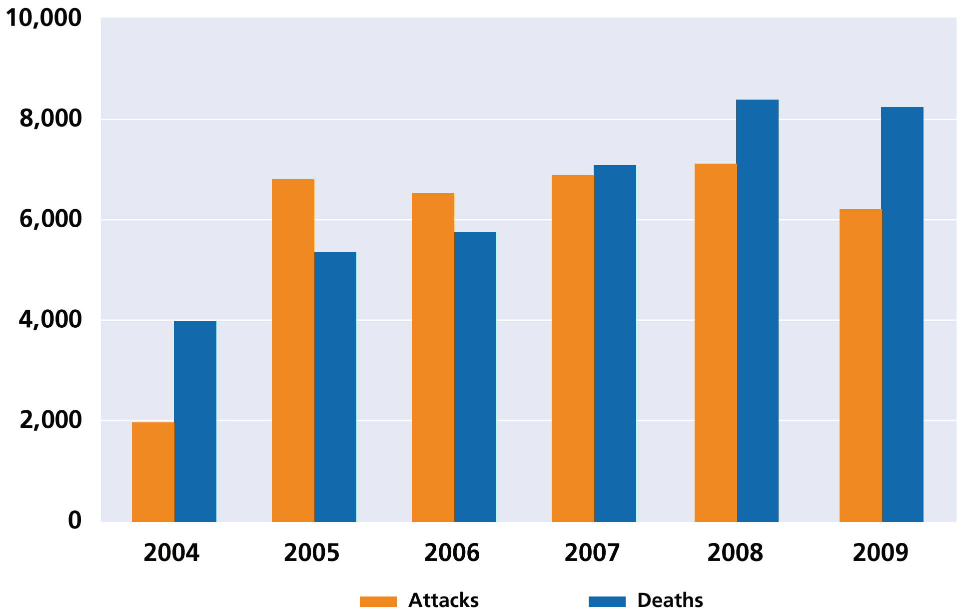
The threat posed by terrorism has changed significantly since the catastrophic events of September 11, 2001, but it remains a constant and serious risk with global recorded terror incidents at historic highs. The nature of the risk is wide-ranging, with many countries threatened by international groups and domestic terrorism. Certainly, the threat posed by fundamentalist Islamic terrorists has changed a great deal since 2001. For insurers with terrorism risk on their books, it is important to understand how the terrorism threat has evolved, the varying risks in different regions and what developments are likely in 2010 and beyond.

Changing Threat

Global terrorist activity soared following Allied military operations in Afghanistan and Iraq. Attacks increased dramatically in both these counties following the deployment of coalition combat troops. In Afghanistan, attacks jumped from 150 in 2004 to more than 1,100 in 2007, according to the National Counterterrorism Center (NCTC). In Iraq, meanwhile, the number of attacks increased from 930 in 2004 to more than 6,600 in 2006 before subsequently falling to around 2,450 in 2009.

Other countries also witnessed a big jump in terrorist activity between 2004 and 2005 and the number of deaths doubled from 2004 to 2008 (see Figure 1). Pakistan in particular saw an increase in terrorist activity as al-Qaeda supporters moved across the Afghan border into the country. Attacks in Pakistan quadrupled between 2006 and 2008 (from 372 to 1,838). The core al-Qaeda group based in and around the Federally Administered Tribal Areas (FATA) of Pakistan remains one of the most significant security threats to the Western world.

Figure 1: Global Terrorist Attacks 2004-2009 (Excluding Afghanistan and Iraq)



Source: National Counterterrorism Center

However, developed countries have suffered relatively few major terrorist attacks since the events of September 11, 2001 as counter-terrorism measures implemented across the world meant international groups, such as al-Qaeda, were less capable of orchestrating large-scale attacks.

Before the attacks of September 11, 2001, transnational groups, and al-Qaeda groups particularly, had a well organized and centralized leadership that enabled them to plan large-scale and spectacular attacks. Since then, military operations in Afghanistan, increased security and a shortage of funds and safe havens in which to train have hit al-Qaeda's ability to plan attacks centrally. Events over the last few years indicate the threat has become more localised with attacks focusing on softer targets such as transport networks and hotels, a development that has implications for the (re)insurance industry.

Nevertheless, the threat remains, with individuals or autonomous groups aligned to the aims of al-Qaeda continually planning attacks. Around 60 major plots have been foiled in the United States and Western Europe since the attacks of September 11, 2001. While al-Qaeda is the focus of the media's attention, the more recent plots and attacks in developed countries have involved other radical Islamist groups and individuals. Many of these cells and individuals may share al-Qaeda's belief, or may have been galvanized by the movement's sentiments, but their activity has not been financed or directed by the group.

Post September 11, 2001 Attacks

Despite the improved security in the developed world, some terrorist attacks have been successfully executed since 2001. Governments' crack down on the finances, training and capabilities of terrorist groups has seen a shift to softer targets. For insurers, the most significant attacks following the events of September 11, 2001 include the Madrid bombings of 2004, the London attacks of 2005 and the Mumbai shootings of 2008.

The Madrid attack saw 191 people killed and 1,800 injured after ten bombs exploded on four separate commuter trains during rush hour. Estimates at the time of the incident said the cost of the attacks would be around EUR93 million (USD125 million)[1]. A similar attack took place in London in 2005 when four co-ordinated explosions hit the city's transport network on July 7 during the morning rush hour. Fifty-two people were killed in these attacks while another 770 were injured and the economic cost was estimated at GBP1 billion (USD1.5 billion)[2].

In the Mumbai attacks, more than 170 people were killed and at least 300 injured when a team of militants armed with explosives and guns caused extensive damage to several tourist sites in the city. Ten highly trained militants carried out the attacks, targeting sites that included three hotels (Taj Mahal Hotel, Oberoi Hotel and Trident Hotel), a popular café (Leopold Café), a major railway station (Chattrapati Shivaji), a hospital (Cama) and a Jewish center (Nariman House). The General Insurance Corporation of India said insurance claims from the three hotels alone would likely reach USD110 million. Security officials in India said the attacks were carried out by the Pakistan-based Islamic militant group, Lashkar-e-Taiba, and they warn the organisation continues to pose a threat to the country.

1 *Swiss Re Sigma Report: Natural Catastrophes and Man-Made Disasters 2004*
2 *Swiss Re Sigma Report: Natural Catastrophes and Man-Made Disasters 2005*

Terrorism insurance pools existed in all three countries at the time of the bombings, and each respective pool paid some of the claims from the attacks. Although this helped limit the impact on the private market, the attacks well illustrated the threat posed by terrorists and the potential costs involved. Although the attacks in Madrid, London and Mumbai hit softer targets, they highlighted the risk to (re)insurers, especially if larger assets were targeted or if weapons of mass destruction (WMDs) were used.

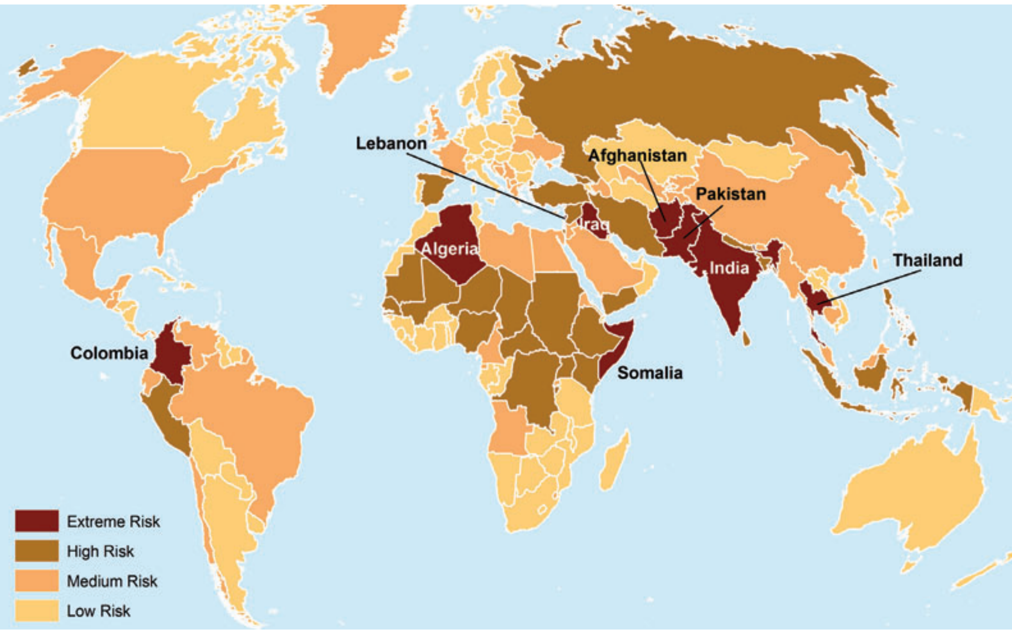
Terrorism Risks

Unlike some other perils, (re)insurers struggle to quantify the risk posed by terrorism due to its unpredictable nature. The human element means the nature of the threat is forever changing as groups relocate and adapt their tactics in response to counter-terrorism measures. However, there are some steps (re)insurers can take to improve their risk awareness.

Monitoring world events and the location and number of foiled attacks can help (re)insurers understand the risk. Recognizing how counter-terrorism effectiveness varies from country to country is also relevant. Region is another important factor in determining the risk. The threat level is different in each country, and some countries even have regional differences. In Spain, for instance, the domestic terrorist risk is concentrated in north-eastern regions as the Basque separatist movement, ETA, concentrates its attacks on government assets in that region. Therefore, (re)insurers are increasingly using services and expert advice to monitor global developments.

Maplecroft, an organization that assesses global risks for companies and investors, released a Terrorism Risk Index (TRI) in February 2010 that revealed the countries most at risk from terrorist attacks. The index measures not only the risks of an attack, but also the probability of mass casualties occurring. The results are shown in Figure 2[3].

Figure 2: Maplecroft Terrorism Risk Index



Source: Maplecroft – please contact Maplecroft at info@maplecroft.com for the full Terrorism Risk Index

3 *Maplecroft has also developed the Localised Terrorism Intensity Risk Index which, maps all reported terrorist attacks down to 100 meters to provide a sub-national picture of terrorism risk in 196 countries*

To provide a comprehensive picture of worldwide terrorism risk, Maplecroft analyzes terrorist incidents for their frequency, intensity and number of victims, plus the proportion of attacks that were 'mass-casualty' in each nation. A country's historical experience of terrorism is also factored in along with threats made against it by groups such as al-Qaeda.

According to the TRI, even though the terrorist situation in Iraq has improved, the frequency, scale and human impact of attacks still makes it the most extreme risk country for terrorism, with nearly 4,500 civilians killed in 2009. Afghanistan (2), Pakistan (3), Somalia (4) and Lebanon (5) top the ranking of 196 countries and are rated as extreme risk nations, along with India (6), Algeria (7), Colombia (8) and Thailand (9).

The Philippines (10), Turkey (14), Russia (15), Israel (17), Yemen (22), Nigeria (24) and Spain (34) are all rated as high risk countries, while the United Kingdom (41), China (43), United States (46), France (56), Greece (57) and Saudi Arabia (61) are considered medium risk. Countries rated at low risk include South Africa (80), Germany (81), Japan (88), Italy (101), Canada (116) and Australia (120).

Ungoverned Territories

It is interesting to note that Maplecroft's TRI has both Somalia and Yemen showing an increasing trend of terrorist activity. Both countries are deeply unstable and the rise of insurgents in such ungoverned territories is becoming increasingly perilous. The growth of ungoverned areas such as these and the FATA has heightened the level of global terrorism as it allows groups to function in relative security.

Somalia has been without an effective government since 1991 and the military has long been fighting insurgent groups for control of the country. The most prominent insurgent group in Somalia is al-Shabab, which has declared allegiance to al-Qaeda. As al-Shabab continues its fight to win control of Somalia, concerns are growing over its ability to execute its threats to attack neighboring countries and further destabilize the region. The long-standing absence of authority in Somalia has also led to Somali pirates becoming a major threat to international shipping in the region.

Yemen entered the news earlier this year following the attempted bombing of a Northwest Airlines passenger plane over Detroit on December 25, 2009. Officials said Yemen-based al-Qaeda in the Arabian Peninsula (AQAP) had armed and trained the accused bomber, highlighting the danger terrorist groups in unstable countries pose. AQAP has vowed to attack oil facilities, foreigners and security forces as it seeks to topple the Yemeni government and the neighboring Saudi monarchy. The group has carried out attacks in Yemen and Saudi Arabia, including an attempt to assassinate the Saudi Arabian Security Minister in August of 2009. Its overt call to attack transport networks in the West also poses a serious danger, prompting the international community to pressure Yemen's government to take action against the group. The Yemeni government has significantly increased its counter-terrorism operations but security experts say AQAP remains a threat. The attempted assassination of the British ambassador to Yemen in April of 2010 fueled concerns that the country is becoming an al-Qaeda haven.

Insured Exposure

Terrorism risk therefore varies considerably by country. This is also true when considering exposure accumulations that exist within many countries. Demand for terror (re)insurance cover in major metropolitan areas is much higher than remote towns simply because there is a greater concentration of exposures.

Terrorists attack targets of opportunity. Although it is certainly possible that an attack could occur anywhere, as the attempted bombing of a restaurant in the small English city of Exeter in 2008 demonstrated, the vast majority of attacks have been in large urban areas. Terrorists aim for widespread destruction and media coverage when planning their attacks, so it is fair to assume large cities such as New York, San Francisco, Washington D.C. and London are likely to top their target list.

The location of exposure can also influence (re)insurers' decision making. For example, insurers offering terror cover in a low risk area may decide to retain much of the risk while an insurer placing business in high-risk areas is more likely to seek reinsurance. However, events can quickly change, with security levels constantly shifting in various locations and industries.

The (re)insurance industry, therefore, needs to monitor and react quickly to the changing global geopolitical climate. Threats can arise quickly, as recently demonstrated when Singapore issued a terror alert in March of 2010 for oil tankers operating in the Malacca Strait. Security analysts say oil facilities are prime targets for terrorists as they seek to achieve widespread publicity.

Weapons of Mass Destruction Threat

The aim of achieving maximum publicity and destruction inevitably leads to the threat posed by WMDs or a nuclear, biological, chemical or radiological (NBCR) attack. While these sorts of attacks are more difficult to achieve, terrorists undoubtedly pursue them. Indeed, US government officials warn that al-Qaeda, and groups aligned to it, have been seeking material for a nuclear bomb for more than 15 years.

At a nuclear security summit in Washington D.C. in April of 2010, President Barack Obama said the biggest threat to US security is the possibility of a terrorist group obtaining a nuclear weapon. He said groups like al-Qaeda would not hesitate to use nuclear devices and the effect would be devastating if successfully executed.

A US Senate report published in 2005 by Senator Richard Lugar[4] said the possibility of a terrorist WMD or NBCR attack is high and increasing over time. Experts interviewed for the report estimated that the possibility of a nuclear attack within ten years (2005 – 2015) was about 20 percent. Similar probability estimates for the risks of a biological or chemical terrorist attack were given while the report saw the risk of a radiological terrorist attack as significantly higher, at 40 percent over the ten year period.

4 *The Lugar Survey On Proliferation Threats and Responses*

The threat of a NBCR attack by international terrorist groups is further heightened by the concern over the security and whereabouts of existing weapons and material, particularly in the former Soviet Union. A report by the UK government in March of 2010 concluded that the threat of a terrorist attack using nuclear or chemical weapons is rising, and "the United Kingdom does face nuclear threats now."[5] The document said the threat of a NBCR attack is increasing because there has been a significant increase in the trafficking of material that can be used in radiological and, conceivably, explosive nuclear weapons. The International Atomic Energy Authority (IAEA) recorded 1,562 thefts and losses of potentially lethal material world-wide between 1993 and 2008, mostly in the former Soviet Union, and two out of three have never been recovered[6].

(Re)insurers have responded to this threat by offering a number of standalone NBCR insurance solutions. Historically, insurance cover for NBCR attacks was limited and expensive. However, an increasing number of (re)insurers have entered the market over the last few years, offering new solutions for various large-scale risks such as airports, industrial plants, sports stadiums and shopping centers. Businesses in all industries are now considering NBCR cover and the costs vary depending on a number of factors, including the geographical spread of risk, the location and type of exposure, proximity to other risks and the program's structure (e.g. limit and deductibles).

Significant Developments in 2009

Governments around the world continue to confront terrorism and recent events underscore the importance of their efforts. 2009 saw an increase in attempted attacks in the United States, with five publicly documented alleged plots. In continental Europe, there was an attempted attack in Italy and hundreds of arrests were made for a range of terrorist offenses in several other countries, notably Spain and France. In the United Kingdom, more than 200 arrests were made in the 12 months to September 30, 2009, leading to charges being brought against 66 people.

Not all attacks were foiled. The unsuccessful bombing of a Northwest Airlines passenger plane over Detroit in December of 2009 occurred when Umar Farouk Abdulmutallab allegedly attempted to detonate explosives strapped to his body as the aircraft made its landing approach over the city. In an effort to avoid detection, intelligence officials said Abdulmutallab spent less than half an hour at Lagos Airport in Nigeria, where he boarded the flight to Detroit, via Amsterdam. He also used explosives that were not detected as he passed through airport security in Lagos and Amsterdam.

Domestic Terrorism Risks

While international terrorism will continue to be the focus of (re)insurers' attention through the 2010s, domestic terrorist attacks should also be monitored. There have been several high-profile domestic attacks recently, with bombings in Russia, Northern Ireland and Spain, while the military defeat of the Tamil Tigers in Sri Lanka in 2009 was an important development.

5 *The United Kingdom's Strategy for Countering Chemical, Biological, Radiological and Nuclear Terrorism*
6 *http://www-ns.iaea.org/downloads/security/itdb-fact-sheet-2009.pdf*

The co-ordinated suicide bombings on Moscow's Metro system in March of 2010 killed 40 people and injured more than 60 others. Security officials blamed the bombings on Islamist rebels fighting for independence from Russia in Chechnya. Security experts warn more attacks could come, with shopping centers, public transport and assets in Moscow and St. Petersburg likely targets.

In Northern Ireland, the Real IRA detonated a car bomb outside MI5's headquarters in County Down in April of 2010. The attack came after a spate of small-scale dissident Republican bombings and was timed to coincide with the transfer of policing powers from London to Belfast. Senior police officers said they now considered the risk from dissident Republicans to be at its highest since the Belfast Agreement was signed in 1998.

Spain, meanwhile, continues to confront ETA separatists fighting for a sovereign Basque state. Attacks against judicial and military targets have continued over the last few years and show no sign of abating. However, increased co-operation between Spanish and French police have disrupted ETA's leadership and structure and attacks have gradually fallen over the last decade.

Overall, the threat from terrorism, both transnational and domestic, is likely to continue for the foreseeable future. Events over the last 10 years have shown that terrorism poses a risk to the (re)insurance industry as groups continue to plan and execute attacks in developed countries. The (re)insurance market, therefore, needs to ensure that it continues to manage and adapt to the changing terrorism landscape.

2

Terror Reinsurance Market

Terror reinsurance markets have generally trended downward in activity and overall pricing since peaking during market conditions following the attacks of September 11, 2001 in 2002-2004. The dynamic being played out in the terrorism reinsurance market is not unlike other low-frequency, high-severity lines where a combination of the passage of time, the lack of further market defining loss events and constrained reinsurance budgets converge to allow the market to drift gently downward from supply/demand imbalances. On the surface, it would seem that lower pricing over time would increase activity levels, but interestingly we see simultaneous lower prices and lower activity levels.

While the trend is moderately down, differences in market conditions and activity levels certainly exist amongst global terror reinsurance markets. In the large US market, where the insured values and risk push the upper end of the spectrum and where interest in purchasing specific terrorism reinsurance peaked immediately after the attacks of September 11, 2001, overall activity levels are clearly down. In other major global markets, including some in Europe and Asia, activity levels are for the most part steady. That said, any of a number of factors can cause severity-driven markets to turn around very quickly, and elements are in place for a healthy global terror reinsurance market that will be prepared to respond as conditions evolve.

Wherever possible, insurers across the globe continue to seek to share with or transfer to the myriad of local governmental terror pools as much terror risk as possible. The government terrorism pools are where most insured terror risk currently resides[7]. Accordingly, the reinsurances that protect these pools are by far the largest terror reinsurance transactions in the marketplace today. In the opinion of many reinsurers, they also happen to be the preferred vehicle for reinsurers to isolate and assume terror risk into their portfolios, as explained below.

Terror Reinsurance Pricing

Terror reinsurance pricing methodologies are comparatively less technical than methodologies used for pricing treaties exposed to natural perils only. One reason for this is that probabilistic commercial terror models lack sufficient credibility to strongly dictate a technical price for terror risk.

Nevertheless, reinsurers are using models to price terror more frequently now as they find their own comfort level with balancing technical and non-technical price drivers. Other factors that drive terror reinsurance pricing include:

- Relativities to other terror programs
- Perceived prevailing terror risk levels
- What the market will bear

7 *For more information on these governmental terror pools, please see Guy Carpenter's Global Terror Update 2009 at http://www.guycarp.com/portal/extranet/insights/reportsPDF/2009/Global_terror_2009.pdf*

One factor that could impact demand, and therefore pricing, is the more detailed questions asked by rating agencies regarding capital adequacy, taking fully into account various terrorism loss scenarios and their impact on capital after reinsurance.

In the United States, TRIPRA[8] is a commercial lines program, and personal lines policies of insurers are fully exposed to both TRIPRA-certified and noncertified acts of terrorism. In general, insurers have addressed these risks by having full terrorism – certified and noncertified – included in their property/catastrophe reinsurance programs for personal lines, typically excluding NBCR losses. This protection is frequently provided with no explicit cost breakout.

Market Survey

In September of 2009, Guy Carpenter administered an informal survey of treaty reinsurance underwriters to secure first hand observations on the broad terrorism reinsurance market. What we learned was largely consistent with our beliefs, yet also encouraging in terms of overall market outlook. The findings below elaborate on some key trends:

Key Survey Finding #1: Standalone terror deal flow has decreased over time.

Possible drivers:

- Buyer/seller disconnects on price
- Other priorities for reinsurance budget or target spend
- Passage of time since last major terror strike
- More terror coverage moved to core reinsurance programs

GC Perspective: Neither the overall conclusion nor the suggested potential drivers were a surprise as they generally align with our perspective. However, we believe this perspective emanates more from the US market than the global market.

Key Survey Finding #2: 83 percent of responding reinsurers are actively seeking new or expanded terror reinsurance transactions.

GC Perspective: It is pleasing to see the strong market appetite for more terrorism business, but at the same time it emphasizes the current supply/demand imbalance. It is understandable that reinsurers would like to commit more capital to a diversified severity peril, but selling more standalone terrorism reinsurance still appears to require more attractive pricing for potential cedents.

Key Survey Finding #3: Reinsurers prefer geographically discrete opportunities.

GC Perspective: As with all catastrophic perils, we are not surprised at reinsurers' stated preference to write a portfolio comprised of contracts from distinctly discrete geographies. Where we saw some discrepancy was around the definition of 'discrete.' For example, some reinsurers

8 *TRIPRA was signed into law in 2007 and kept in place the basic framework of the Terrorism Risk Insurance Act (TRIA)*

viewed country-specific governmental terror pools as an ideal example of a discrete capacity deployment and therefore a preferred risk, while others considered entire countries to be much too broad to be attractive, preferring instead to focus on insurers that only operate in one region of a given country.

Key Survey Finding #4: NBCR coverage is available through about two-thirds of markets and roughly one-third of reinsurers will consider pandemic covers.

GC Perspective: Both of these findings were somewhat surprising. In the robust terror market immediately following the attacks of September 11, 2001, it was uncommon for reinsurers to write NBCR coverage. Instead, many reinsurers preferred to take a clear underwriting position to avoid that sub-category of the terror peril. The fact that two-thirds of reinsurers will write the coverage today shows a true evolution in underwriting appetite, but ultimately the question of securing NBCR capacity hinges not just on the availability of capacity but also a question of price.

In terms of pandemic, the survey was administered in the midst of the H1N1 threat and we were surprised that roughly a third of reinsurers would provide pandemic coverage. Although the pandemic threat of H1N1 is not terrorism, per se, conceptually one form of terrorism could involve deadly disease spread on a mass basis through a biological attack.

Capacity

As mentioned earlier, the largest terrorism reinsurance placements in the world are behind governmental pools in countries such as Australia, Belgium and France. These transactions are as large as USD2 billion of limit, which confirms that many reinsurers consider this to be the ideal platform to deploy capacity to terrorism. At USD2 billion, these terrorism placements are on par with the largest global reinsurance transactions for natural perils.

In countries like the United States, where companies individually manage their significant retentions under TRIA, we believe that the per program capacity for terrorism placements that include property is in the range of USD700 million, with that estimated figure fluctuating widely with the location and severity of the original insured policies. With other programs where the subject business is workers compensation, it may be feasible to secure more than USD1 billion of capacity for an individual program. Of course, as with all reinsurance transactions, the accessibility of capacity will expand or contract based on price, type and location of risk covered and overall market conditions, but at present it appears that supply is not an issue.

Future Capacity

Many would argue that today we are at or near a peak in terms of hypothetical capacity availability due to a convergence of a variety of underwriting and economic factors in 2009. If that is so, it may also be true that we are just one market-changing event away from a major shift in the supply/demand balance.

Reinsurers typically allocate a fixed amount of capital to terrorism, and they tend not to leverage that capital as aggressively as they do with capital that is committed to natural perils. Because of this, a sudden shock event such as a major terror strike, a significant decrease in coverage from or outright repeal of TRIA, or even the mere threat that either of these events are imminent, could cause a scenario that rapidly depletes available terror capacity. Should that occur, insurers that have already begun to explore terror risk transfer options with reinsurers may be better positioned to secure coverage in a fast-moving, tightening marketplace.

TRIA (TRIPRA) Update

In May of 2009, and again in February of 2010, President Obama proposed scaling back federal support for TRIA (TRIPRA) in the next fiscal budget process. The stated goal is to save more than USD250 million during the 2011-2014 timeframe to be accomplished via:

- Elimination of domestic terrorism coverage
- Increase in insurer deductible and co-insurance levels (amount to be determined)
- Increase in loss amount that triggers TRIA coverage (amount to be determined)

Commercial insurers remain strongly supportive of TRIPRA, as it provides them an ultimate safety net for their terrorism exposures. As expected, the cuts have been vigorously opposed by the insurance industry, and after passing the TRIA (TRIPRA) extension in 2007, Congress may be under-motivated to again take up the debate prior to the scheduled expiration date of 2014.

A significant reduction in TRIA without a commensurate change to the requirement to offer terrorism coverage could indeed be the type of event that shifts the global landscape toward a tighter terrorism market, but with the Obama Administration continuing to be focused on other agenda items we have our doubts as to whether the administration will be successful in cutting TRIA.

3

Terrorism Analytics and Rating Agency Requirements

To support the process of managing and underwriting the terrorism peril, (re)insurers are increasingly using tools to analyze the risk. The dynamic nature of terrorism, and the uncertainty in identifying the targets and frequency of attacks, requires a different approach to manage the risk.

Terrorism Solutions

Guy Carpenter offers a comprehensive suite of tools to help clients assess their terror exposures by lines of business. i-aXs®, Guy Carpenter's web-based data management platform, allows insurers to quantify their exposure to a potential terrorist attack and highlight concentrated areas in their portfolio. The tools in i-aXs are built upon a powerful integrated report and mapping platform. Guy Carpenter also licenses AIR Worldwide Corporation's (AIR) and Risk Management Solutions' (RMS) terrorism models to help clients explore the possibilities of terror loss.

i-aXs

Guy Carpenter's i-aXs platform comprises a full suite of web-enabled tools that provide more efficient management of exposure and loss data as well as data mining, analytics and real-time catastrophe information. Managing exposure to terrorism loss is an integral function within i-aXs, with several different tools on offer to help insurers assess their largest levels of accumulation.

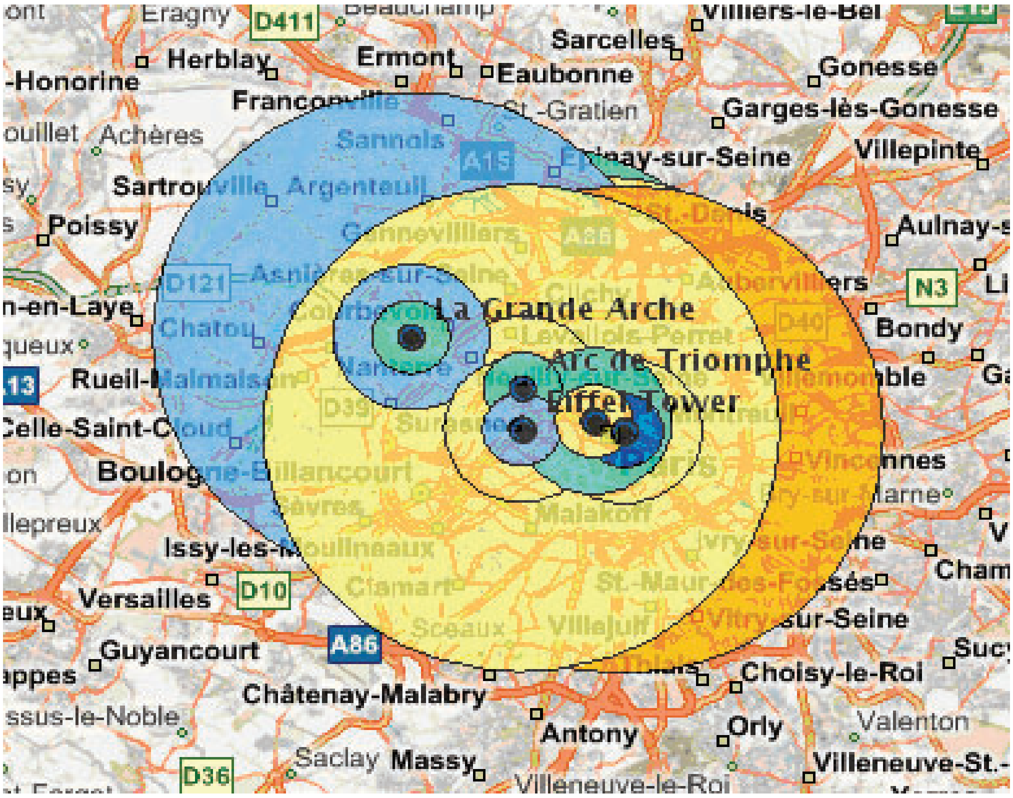
The following global proprietary terrorism exposure reports are available within i-aXs:

- *Cluster Accumulation* (clusters of total insured value (TIV) within grid points spaced at various grid sizes)
- *Portfolio Accumulation* (top portfolio accumulations for 1, 0.5, and 0.25 mile radiuses)
- *Terror Accumulation* (portfolio terror for all targets by total TIV and zone)
- *Terror Target by Zone Accumulation* (terror accumulation for global portfolios using terror target lists)

Hazard layers embedded within the system allow users to calculate their exposure in relation to several terror target lists provided by Exclusive Analysis, RMS, the Seveso Industrial target list and custom terror target databases built by Guy Carpenter.

The i-aXs Accumulator^{iX} tool assists insurers in managing their aggregate concentrations to terror loss. By calculating risk concentrations around defined terror targets, insurers can effectively manage their insurance portfolio. Unlike other accumulation tools, output is produced instantly in both map and grid formats. Thematically shaded maps and satellite imagery along with easy-to-understand reports provide detailed accumulation information within a user-defined geographic range.

Figure 3: i-aXs Map showing Exposure to Terror Targets in Paris



i-aXs allows companies to measure parameters such as TIV, exposed limits, risk count, deductibles and premiums. Users can also drill down to individual policy details within terror accumulations such as construction type or line of business.

Other tools are available in i-aXs. Risk Profiler^{iX} assesses new locations and combines them with existing portfolios to determine proximity to terror targets and risks already in a portfolio. The tool also allows an overlay of infrastructure maps such as highways, railways and airports, while it geocodes the risk and accesses a satellite image. RealCat^{iX}, meanwhile, enables companies to begin evaluating loss potential from the very onset of an event and deliver insight and guidance all the way through the claims management process. Such an event would include a major terrorist attack impacting a significant geographic area (e.g. large-scale bomb blast).

Commercial Models Licensed by Guy Carpenter

Guy Carpenter also licenses the following terrorism models from external vendors:

- *RMS Probabilistic Terrorism Model (PTM) Exceedance Probability (EP) Analysis* (for EP results and variable resolution grid (VRG) deterministic losses for certain weapon/target combinations)
- *RMS RiskLink Deterministic Analysis* (for spider accumulations, specific area accumulations, target accumulations, spider simple footprint analyses, simple footprint analyses around any or all targets and Supplemental Rating Questionnaires)
- *AIR Clasic(2) EP Analysis* (for EP results and VRG deterministic losses for certain weapon/ target combinations)

Recent Updates

Neither AIR nor RMS implemented major changes to their terrorism models in 2009. AIR last updated its model in 2007 while an upgrade to the RMS model was implemented in 2008, with a number of changes to its PTM.

AIR US Terrorism Model

In September of 2007, AIR updated its damage functions to include the impact of reflected pressure waves following a conventional bomb blast. Earlier models had only taken account of incident pressure waves. Reflected pressure blast waves are up to 13 times greater than initial blast waves, and this change generally led to an increase in projected property losses by city.

The update to blast building damage functions is also reflected in enhanced injury severity distributions in AIR's workers compensation model. AIR examined research data from the medical community on the issue of trauma arising from terrorist bomb blasts. The updated model has a mixed effect on loss estimates by city, producing significant to moderate decreases or slight increases in others.

RMS US Probabilistic Terrorism Model

In 2008, RMS updated its US PTM model with changes to terror targets, footprints, attack likelihoods and building vulnerability. The target database was updated to include 98 new targets, including chemical plants, government buildings and convention and entertainment centers. To account for the added targets, the number of potential attacks also increased and some existing attack footprints were repositioned.

The combined effect of all the changes incorporated into the RMS model resulted in an increased average annual loss (AAL) for property. For workers compensation, increased fatality rates from certain attack types lowered losses across all return periods. However, updates to the by state cost severities reduced the effects of the model changes and the AAL was ultimately flat to slightly increased.

There were no significant changes to RMS model methodology in 2009. Although an update to benefit levels increased permanent partial-minor injury costs, these were offset somewhat by a decrease in temporary total and fatality benefits.

2010 Forthcoming Releases

AIR is updating its terrorism model in 2010 to reflect the current threat levels and target environment. RMS is also planning a significant terror model update in 2010. To improve the management of terrorism risk outside the United States, the RMS RiskLink Deterministic Model has been expanded to include detailed terrorism modeling for North America, Europe and Asia. US model enhancements include updates to the US terrorism target list, stochastic event sets, hazard footprint and refinements to some vulnerability curves.

In addition to the terrorism model updates, the RMS International PTM will assess terrorism risk in nine major commercial centers worldwide: Ankara, Copenhagen, Dublin, Istanbul, London, Milan, Montreal, Rome, Toronto and the Vatican.

Terrorism and Rating Agencies

i-aXs and the commercial models licensed by Guy Carpenter can help (re)insurers perform a wide range of terrorism risk and accumulation analyses, including those required by legislation and the rating agencies. Rating agencies, including AM Best and Standard and Poor's (S&P), ask (re)insurers to report their largest levels of accumulation and their modeled losses for specific terrorism scenarios.

Following the attacks of September 11, 2001, AM Best asked (re)insurers to respond to a questionnaire about their concentrations of risk across lines of business, and their ability to calculate those accumulations at the location level of detail, as well as in aggregate. As data quality and modeling capabilities improved, the survey became part of the Supplemental Rating Questionnaire (SRQ). The main purpose of the terrorism SRQ was to identify (re)insurers with large exposures to terrorism risk, especially when TRIA expired. For 2008, AM Best introduced a new Terror Probable Maximum Loss (PML) capital charge for the Best's Capital Adequacy Ratio (BCAR), a core component of AM Best's rating methodology. The Terror PML is calculated from data gathered in the SRQ and is applied to the BCAR in place of the Natural Catastrophe PML if it is the larger of the two.

Today, AM Best's key concerns include (re)insurers' ability to assess their aggregate exposure to terrorism, the number of insured locations, the geographic concentration of insured exposures and the impact on capitalization. AM Best has also expressed concern about the long-term future of TRIA and the impact its expiration would have on (re)insurers' portfolios, particularly after the Obama Administration's proposal to reduce the fund from 2011.

Another issue highlighted by AM Best is the possibility of an attack occurring without any federal reimbursement to insurers following the decision to increase TRIPRA's trigger point from a USD5 million industry loss to a USD100 million industry loss. This increase could leave small insurers in particular vulnerable if they provide coverage to remote businesses in locations situated far enough away from other structures. Under this scenario, an insurer could end up covering the entire loss if it is ultimately less than the USD100 million trigger.

AM Best also stresses that (re)insurers need to ensure they understand their exposure to a NBCR attack. The agency says the prospect of a NBCR attack should be contemplated as part of the enterprise risk management (ERM) process, with a risk catalog of potential losses. A method of accumulating the risks and having a risk mitigation plan in place that adequately reduces exposure to an acceptable level is also required.

S&P has a two-pronged approach to assessing (re)insurers' risk management of terrorism. Like AM Best, S&P asks (re)insurers to complete a questionnaire in order to evaluate their exposures and management of terrorism risk. S&P gathers data to make an evaluation of gross and net terrorism exposure (by line of business), with specific questions regarding potential terrorist attacks and the location of insured risks. S&P released a new terrorism questionnaire in June of 2006, but there were no changes to its capital model risk charges used to measure the Capital Adequacy Ratio (CAR). Capital charges arising from terrorism exposure, if any, are applied on a discretionary basis.

S&P also assesses (re)insurers' ability to manage terrorism by adopting an ERM approach. Operational risk management (ORM) is an important component of ERM, and S&P says it is fundamental to effective terrorism risk management. S&P expects companies' ORM strategy to have a sound business continuity plan and systems in place that continually monitor and assess terrorism risk. S&P recognizes the challenge terrorism poses in quantifying the impact of potential attacks and, therefore, insists on closely examining the tools and procedures (re)insurers' use to manage their exposure for various terrorism scenarios. S&P also assesses the quantitative and qualitative risk indicators that are used, and how the results are monitored.

4

Conclusion

This report has shown that terrorism remains a constant and real risk. Although more effective counter-terrorism measures have frustrated al-Qaeda's ability to plan large-scale attacks since the events of September 11, 2001, global recorded terror incidents are at historic highs. The emergence of individuals or autonomous groups aligned to the aims of al-Qaeda continues to threaten the developed world, especially as insurgents are able to operate in unstable countries such as Pakistan and Yemen.

However, the (re)insurance industry has responded to the threat. Insurers and reinsurers are increasingly using expert advice to monitor the political climate and the industry plays a central role ensuring economies will be sustained in the event of a major terrorist attack. As shown by the Guy Carpenter survey, reinsurers are keen to place more terrorism business. However, it seems supply/demand imbalances currently exist, resulting in lower prices and reduced terror market activity.

Yet, insurers are very aware that the outlook could suddenly change if a major terrorist attack were to take place or if TRIA (TRIPRA) were to no longer provide the federal backstop it currently does. The terror reinsurance market is well placed to respond as conditions change and Guy Carpenter remains committed to assist clients in managing their terrorism risks.

About Guy Carpenter

Guy Carpenter & Company, LLC is the world's leading risk and reinsurance specialist and a part of the Marsh & McLennan Companies. With 50 offices worldwide, Guy Carpenter creates and executes reinsurance solutions and makes available capital market solutions* for clients across the globe. The firm's full breadth of services includes line of business expertise in Agriculture; Aviation; Casualty Clash; Construction All Risk and Engineering All Risk; Excess and Umbrella; Life, Accident and Health; Marine; Medical; Political Risk and Trade Credit; Professional Liability; Property; Retrocessional; Surety; Terrorism and Workers Compensation. GCFac®, our dedicated global facultative reinsurance unit, provides the placement strategies, information and timely market access that are critical to obtaining strategic facultative reinsurance. In addition, Guy Carpenter's Instrat® unit utilizes industry-leading quantitative skills and modeling tools that optimize the reinsurance decision-making process and help make the firm's clients more successful. Guy Carpenter's website address is www.guycarp.com.

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