MARSH

Research Report

Marketwatch: Terrorism Insurance 2006

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Table of Contents

Marketwatch: Terrorism Insurance 2006

1 Introduction

Despite uncertainties over what terrorism insurance markets will look like in the not-too-distant future, businesses from every industry sector continue to purchase an ever-increasing amount of coverage. For now—and at least through 2007—U.S. insurers are backed by the commitment of the United States government to provide reinsurance relief to help them manage the ongoing risk of terrorism. Beyond 2007, the situation is unclear.

In December 2005, President Bush signed the Terrorism Risk Insurance Extension Act of 2005 (TRIA)[1], extending the original Terrorism Risk Insurance Act of 2002. That legislation was a direct response to the events of September 11, 2001, and part of a concerted effort to keep the American economy strong.

Like the original legislation, the extension is a short-term solution. Congress passed the extension bill in part because the insurance industry has not amassed enough capital to insure catastrophic terrorism losses without a federal backstop. The two-year extension provides an opportunity for the insurance industry and the federal government to find a permanent solution.

Terrorism insurance and associated risk management strategies are dynamic and complex issues, with many interdependent factors contributing to managing the risk. Foreign relations, the effectiveness of homeland defense, and the ambiguous nature of the risk make terrorism losses extremely challenging to predict and quantify. It is difficult for insurers to effectively price and to reserve capacity for their potential exposure to catastrophic terrorism losses.

Although TRIA provides federal reinsurance through 2007, companies should be planning strategies for managing terrorism risk post-TRIA. This publication, Marsh's third annual *Marketwatch* focused on terrorism, is designed to help clients address terrorism risk issues despite the uncertainties. It is part of Marsh's ongoing effort to inform clients of notable developments in the terrorism insurance marketplace—including the cost of, demand for, and gaps in insurance coverage. The report looks at:

- key issues under TRIA, focusing on new provisions under the extension;
- property terrorism insurance purchasing in 2005;
- the standalone property terrorism insurance market;
- terrorism issues in workers compensation and liability insurance;
- TRIA's impact on the insurance and reinsurance markets;
- insurance for terrorism exposures placed with captives; and
- terrorism risk management.

Through benchmarking and by staying aware of important developments, risk managers and other key executives can help their companies prepare strategies to manage the ever-shifting realities of terrorism risk. Marsh remains committed to helping our clients develop robust, comprehensive strategies to manage this risk.

1. This report refers to both the Terrorism Risk Insurance Act of 2002 and its successor, the Terrorism Risk Insurance Extension Act of 2005, as "TRIA." In instances where it is necessary to distinguish between the two, the accompanying text will do so.

2 Executive Summary

This report provides a snapshot of the major issues surrounding terrorism insurance at the beginning of the second quarter of 2006. Key issues and findings include:

An Overview of the Terrorism Risk Insurance Extension Act of 2005—TRIA

- The TRIA extension signed into law on December 22, 2005, expires at midnight on December 31, 2007.
- Although the Act retains a certification level of $5 million, a program trigger was introduced—$50 million in aggregate losses in 2006 and $100 million in 2007.
- Automobile, burglary, surety, professional liability —except directors and officers liability (D&O)— and farmowners multiple peril insurance have been excluded.
- An increase in insurers' required deductibles and a decrease in the federal reinsurance quota share places more financial responsibility on insurers in the event of a terrorist act.

Findings and Analysis: Property Terrorism Insurance Purchasing in 2005

- The cost of property terrorism insurance decreased significantly in 2005. The median rate in 2005 was 25 percent lower than the 2004 rate.
- Nearly 60 percent of Marsh's risk management and middle-market clients purchased property terrorism insurance in 2005, a dramatic increase from the 2003 average of 27 percent and up from 50 percent in 2004.
- The purchase of property terrorism coverage in 2005 varied considerably, depending on a company's total insured values (TIV). Smaller companies (less than $100 million TIV) were less likely to purchase this coverage.
- Financial institutions, real-estate firms, and health care facilities had the highest take-up rates—the percentage of companies buying the coverage—with each exceeding 75 percent.
- Take-up rates varied considerably among regions. The take-up rates increased most dramatically in the West—from 34 percent to 53 percent—and in the Northeast, from 53 percent to 67 percent.

The Standalone Insurance Market

- With the extension of TRIA until December 31, 2007, the standalone insurance market is expected to continue to satisfy customers' needs. However, if TRIA is not renewed or if there is no permanent solution in place, the standalone insurance market is unlikely to have sufficient capacity to meet demand.
- Capacity in the standalone property terrorism insurance marketplace is relatively stable, though limited. The amount available for a specific risk can vary significantly, depending on the risk's location, an insurer's accumulated exposure, and the concentration of exposures in a given area.
- For companies that do not have sizable exposures in high-risk locations, the typical maximum standalone capacity available is approximately $500 million to $600 million.
- In major metropolitan areas with high levels of concentrated risk, Marsh estimates terrorism insurance-market capacity is approximately $150 million to $300 million. Capacity above $500 million may be available at higher pricing levels.

Workers Compensation and Liability Coverages

- Because workers compensation provides lifetime medical care for on-the-job injuries, some experts project the worst-case cost of a terrorism incident could exceed $90 billion.

- Although TRIA was extended, some insurers declined to renew certain workers compensation policies because of a lack of reinsurance capacity and due to concentration issues revealed by their terrorism risk modeling.
- Seventy-eight percent of companies purchased TRIA coverage in their primary general liability (GL) programs in 2005, a decline from 81 percent in 2004.
- The actual rate charged as a percentage of premiums for the overall coverage in GL held steady at about 1 percent, implying that the reduction in the take-up rate was driven not by the cost of the coverage, but by the perceived risk.
- The standalone market for casualty terrorism insurance, absent TRIA, is virtually nonexistent.

TRIA's Impact on the Insurance and Reinsurance Markets

- Commercial insurers continue to avoid accumulating high-profile urban exposures, in part due to the relatively high cost of reinsurance.
- Insurers' responses to the pending expiration of TRIA at the end of 2007 vary considerably. Some are unwilling to provide any coverage post-TRIA.
- TRIA's design results in a number of gaps in reinsurance protection, including personal lines insurance; domestic terrorism for commercial lines insurance; the deductible and co-pay share of TRIA-certified events; and nuclear, biological, chemical, and radiological (NBCR), depending on primary policy coverage.
- Reinsurers put limited capital at risk to terrorism exposures, given their lack of confidence in how to underwrite, model, or price for this peril.

TRIA, Captives, and International Terrorism Pools

- U.S. captives are subject to TRIA and have been used in a number of ways to address both certified and noncertified terrorism risk.
- Captives provide their owners with a viable means to directly access reinsurance markets and potentially realize cost, capacity, and breadth-of-coverage benefits.
- Captives accessing TRIA are arguably the only means of securing protection in meaningful quantity for nuclear, biological, chemical, and radiological exposures.
- A consequence of the extension's introduction of a program trigger at a higher level than the certification level is that captives will be responsible for their share of all losses under $50 million in 2006 and $100 million in 2007. Once industry-wide losses exceed these trigger levels, coverage applies excess the captive deductible.

Terrorism Risk Management

- When it comes to terrorism risk management, one size does *not* fit all. Every company requires a different plan that will need to be continuously updated relative to changing global security conditions.
- A primary security goal of any potential terrorist target is to deter an attack by aggressively influencing the terrorists' target research and risk/reward assessment.

Since its enactment in November 2002, TRIA has helped stabilize the terrorism insurance market, making coverage for this risk more available and affordable. Although TRIA was extended for two years in December 2005, its future remains uncertain. If TRIA is allowed to expire at the end of 2007, the terrorism insurance market is likely to once again become unstable, with potentially harmful affects on the economy. Marsh supports a cooperative effort between the federal and state governments, the insurance industry, as well as policyholders and other stakeholders, to develop a long-term solution for the availability of commercially viable terrorism coverage.

3 An Overview of the Terrorism Risk Insurance Extension Act of 2005—TRIA

The Terrorism Risk Insurance Extension Act of 2005, signed into law by President Bush on December 22, 2005, is set to expire at midnight on December 31, 2007. The Act extends—with modifications—the Terrorism Risk Insurance Act of 2002 and essentially follows the original in both its objectives and its structure. The major modifications under the extension include the introduction of a program trigger, increased deductibles and quota share participation for insurers, and the exclusion of automobile liability and professional liability (see table on page 6).

Like the original legislation, the extension is a short-term solution designed to provide a federal backstop for the insurance industry in the event of a "certified" act of terrorism. The extension continues the original Act's mandatory make-available provision, which means insurers—including captives licensed in the United States and surplus lines insurers approved as nonadmitted insurers in any state—must continue to make TRIA terrorism insurance coverage available to their clients. TRIA's extension ensures that U.S. businesses will be able to purchase terrorism insurance for most of their major exposures through 2007. Although it is mandatory for insurers to offer terrorism coverage, it is not mandatory for insureds to purchase the coverage. The following are some key issues under TRIA:

Certification: For an act of terrorism to be covered under TRIA, it must be certified by the Secretary of State, the Secretary of the Treasury, and the Attorney General. The event must result in aggregate losses of at least $5 million and must involve violence or be dangerous to human life, property, or the nation's infrastructure. Only those events that are committed on behalf of a foreign person or interest and occurring within the U.S. borders (including a U.S. mission, air carrier, or vessel) are covered by TRIA. Attacks by U.S. groups on U.S. soil are not covered. No act may be certified if it is committed in the course of a war declared by Congress, with the exception of coverage related to workers compensation.

Program trigger: Effective March 31, 2006, the government is prohibited from making an outlay of federal funds unless an event's losses exceed $50 million in 2006 and $100 million in 2007. Therefore, while an event causing aggregate losses between $5 million and $50 million ($5 million and $100 million in 2007) may be deemed certified, insurers would not receive any federal reinsurance.

Domestic terrorism: An act of domestic terrorism—one that takes place in the United States and is perpetrated by a U.S. group—would not qualify for reinsurance under TRIA. Insurers are not obligated to offer coverage for such acts.

Cost of coverage: The Act does not provide specific guidance on pricing; however, insurers may charge an additional premium for coverage provided under TRIA. TRIA preempts state regulations for prior approval of rates. Still, the Act retains a state's right to invalidate a rate as excessive, inadequate, or unfairly discriminatory.

Terms and conditions: Insurers are required to make coverage for "certified acts" available to their policyholders on terms and conditions that do not materially differ from the policy's other property and/or casualty coverages. Insurers are also required to offer the coverage at each renewal, even if the insured declined coverage previously. TRIA does not prescribe specific terms and conditions for required coverages.

Adequate disclosure: TRIA requires insurers to provide their policyholders with "clear and conspicuous disclosure" of both the premium being charged for TRIA coverage and the share of reinsurance provided by the federal government. If the insured rejects an offer to purchase terrorism coverage, the insurer may reinstate a terrorism exclusion.

Government participation: In 2006, the federal government will cover 90 percent of certified losses once an insurer's deductible is reached; the other 10 percent is the insurer's responsibility. The federal share of compensation for insured losses will decrease to 85 percent in 2007.

An individual insurer's deductible is a percentage of its direct earned premium (DEP) for the prior year for the commercial lines of coverage subject to TRIA. This percentage is set at 17.5 percent for 2006 and will increase to 20 percent for 2007.

TRIA caps the total liability of the program and of the insurers—including the insurers' participation and deductibles—at $100 billion in any one program year. If insured losses exceed $100 billion, then the allocation of loss compensation to insurers within the $100 billion cap will be determined by Congress. Insurers would not be liable for certified losses in excess of this amount unless Congress were to pass legislation increasing the limit.

Government recoupment: The Act includes provisions for both mandatory and discretionary recoupment if the government makes payments following a TRIA-certified loss. The Act *mandates* that the government recoup payments if the insurance market's aggregate retention—comprising the insurers' deductibles and participation in excess of the deductible—is less than $25 billion in 2006 and $27.5 billion in 2007, as set forth in the TRIA extension.

The legislation also gives the Secretary of the Treasury the *discretion* to require additional recoupment. To accomplish this, all commercial property and casualty policyholders would be assessed a surcharge as a percentage of their premiums that are subject to TRIA, regardless of whether the policyholders purchased terrorism coverage. The assessment percentage is limited to 3 percent per year, but may continue until full recovery of all government payments is accomplished.

Noncertified Acts of Terrorism

- TRIA states that the government will act as a reinsurer should there be a certified act of terrorism.
- An act of terrorism that does not meet the requirements for certification is called a "noncertified act." Acts of domestic terrorism are such acts.
- Competitively priced insurance for noncertified acts of terrorism is available. Marsh's data indicate that more than 75 percent of companies that purchased property terrorism insurance in 2005 bought a combination of TRIA and noncertified coverage.

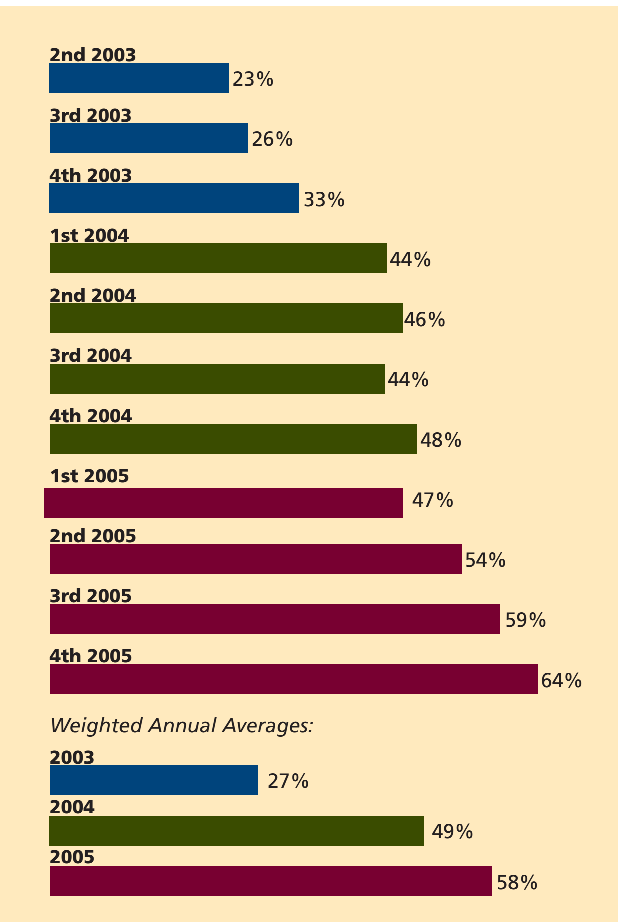
Comparing TRIA and the TRIA Extension

	Original TRIA (2002)	TRIA Extension (2005)
Terminates	December 31, 2005	December 31, 2007
Make available	Must make available coverage for certified "acts of terrorism" on same terms and conditions as for other covered risks	No change
Covered acts	Foreign terrorism in United States (including war for workers compensation)	No change
Certification level	$5 million	$5 million
Program trigger	$5 million	$50 million in 2006 $100 million in 2007
Covered insurance	Commercial property and casualty	Commercial property and casualty, excluding auto, burglary, surety, professional liability, farmowners multiple peril
Deductibles (percent of direct earned premium)	15 percent in 2005	17.5 percent in 2006 20 percent in 2007
Federal reinsurance quota share	90 percent in 2005	90 percent in 2006 85 percent in 2007
Industry retention for mandatory recoupment	$15 billion in 2005	$25 billion in 2006 $27.5 billion in 2007
Cap on liability	$100 billion	$100 billion
Special advisory bodies	None	The President's Working Group on Financial Markets
Required studies	Market conditions study	Group life Nuclear, biological, chemical, and radiological (NBCR)

4 Findings and Analysis: Property Terrorism Insurance Purchasing in 2005

There has been an almost continuous increase in the take-up rate—the percentage of companies buying the coverage—over the 11 quarters that Marsh has been tracking the purchase of property terrorism insurance by our clients. The take-up rate in the fourth quarter of 2005 was nearly triple the rate in the second quarter of 2003, the quarter Marsh's analysis began. Additionally, 2005's annual take-up rate of 58 percent was an 18 percent increase over that of 2004 (see Chart 1).

Chart 1: Terrorism Take-Up Rates by Quarter

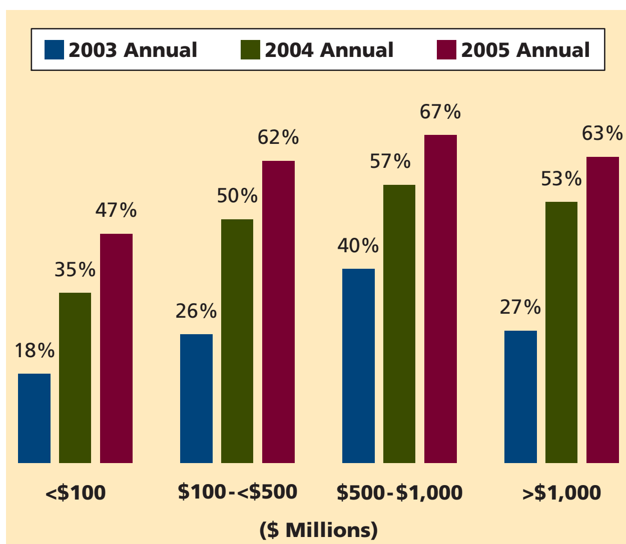


Take-up Rates by Company Size

Marsh's analysis established four categories of total insured value (TIV) as the measure of company size:

- Companies with TIV in excess of $1 billion are major accounts for insurers, paying large premiums due to size alone. They typically work with several insurers. Many of these companies used their existing captives or established new captive insurers to provide TRIA coverage.
- Companies with TIV between $500 million and $1 billion are large organizations that typically work with multiple insurers and have layered programs.
- Companies with TIV between $100 million and $500 million tend to have no more than three insurers involved in their insurance programs.
- Companies with TIV less than $100 million generally entail a smaller spread of risk, have lower overall premiums, and work with a single insurer.

Chart 2: Terrorism Take-up Rates by TIV



Methodology

This chapter relies on data drawn from Marsh's offices across the United States. It focuses on Marsh's risk management and middle-market clients that buy property terrorism insurance and how much they are paying for it. Purchasing patterns are examined in the aggregate as well as on the basis of client characteristics such as size, industry, and region.

The 2005 data come from property insurance placements incepting during calendar year 2005. To account for skews within the regional and total insured values (TIV) data sets, the national annual figures were weighted to allow the findings to be extrapolated to the overall population. The study population does not include placements in the United States for foreign-based multinationals or for small-firm placements made through package policies.

The 2005 study was based on a sample 1,623 firms with the following characteristics:

	Minimum	**Median**	**Maximum**
TIV	$50,000	$300 million	$175 billion
Property Premium	$1,000	$315,000	$80 million
Terrorism Premium	$1	$14,700	$5.5 million

Unless otherwise noted, the calculations include TRIA policies, noncertified policies, standalone policies, and placements made through captives.

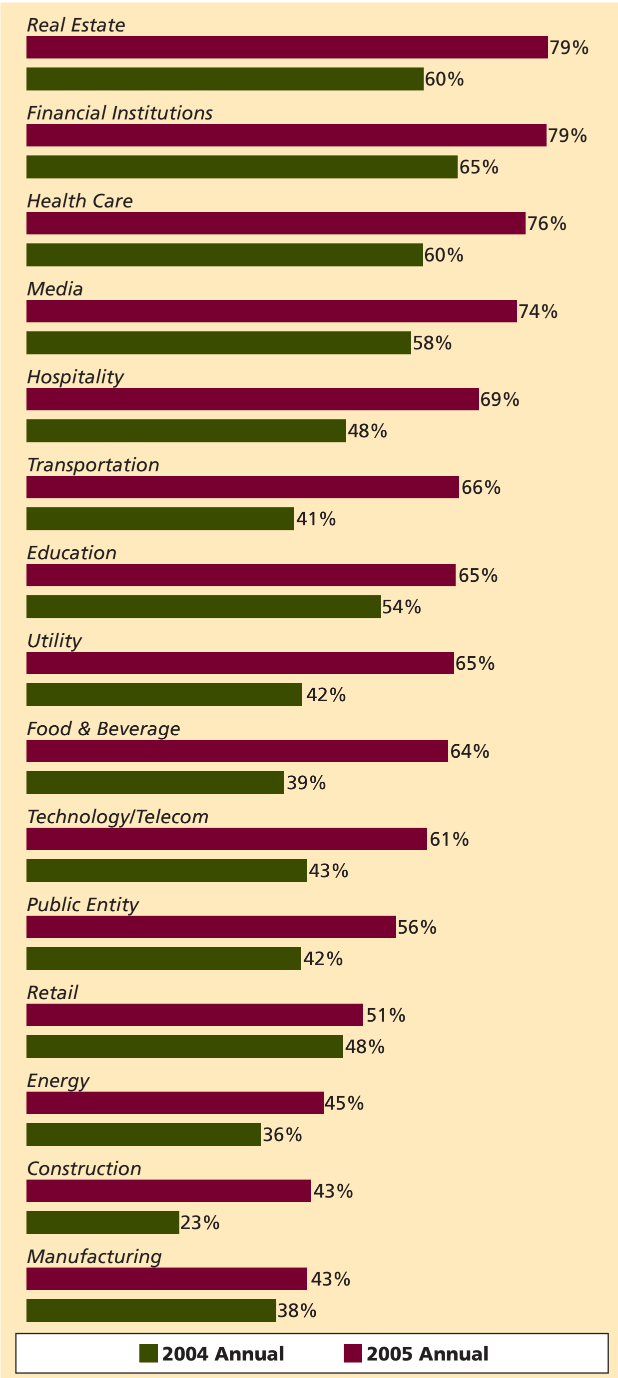
For comparison purposes, the 2003 figures do not include the first quarter of 2003, which had unique circumstances.

For a few companies, insurers quoted only a nominal terrorism premium of $1. These $1 premiums were omitted from the calculations of the median terrorism premium rates. In respect to the calculation of terrorism premium as a percentage of property premiums, standalone terrorism premiums were omitted.

Companies were assigned to regions based on the locations of the Marsh offices that serviced them. Generally, this was the Marsh office most closely located to a company's headquarters. Many of our clients have multiple facilities across the country and around the world, meaning the potential risk for a terrorist attack may not be fully represented by where a company is headquartered. Having said that, the decision as to whether to purchase terrorism insurance is typically made at headquarters.

In 2005, take-up rates within all TIV ranges increased 10 to 12 percentage points from those of 2004 (see Chart 2). There was a distinct difference in take-up rates at the $100 million TIV breakpoint—62 percent of companies with TIV greater than $100 million purchased terrorism coverage; 47 percent of companies with TIV less than $100 million did so.

Chart 3: Terrorism Take-up Rates by Industry



Take-up Rates by Industry

According to Marsh's analysis, the property terrorism insurance take-up rate increased for each of the 15 major industry groupings. Real-estate firms, financial institutions, and health care facilities had the highest property terrorism insurance take-up rates in 2005, each exceeding 75 percent (see Chart 3). Next were media companies, at 74 percent; hospitality firms, at 69 percent; and transportation companies and educational institutions, at 65 percent. In contrast, only about 43 percent of general manufacturing, construction, and energy organizations bought terrorism coverage.

Industry Categories

This report examines property terrorism insurance purchasing patterns for 15 industry groups. These industries were selected based on criteria that included sample population size, perceived exposures, take-up rates, and premium rates. Other industry groups that are part of the overall analysis—but are not reported on individually—include agriculture, automotive, aviation, distribution, nonprofits, professional services, and general services.

The industry groupings in this report included, but were not limited to, the following lines of business:

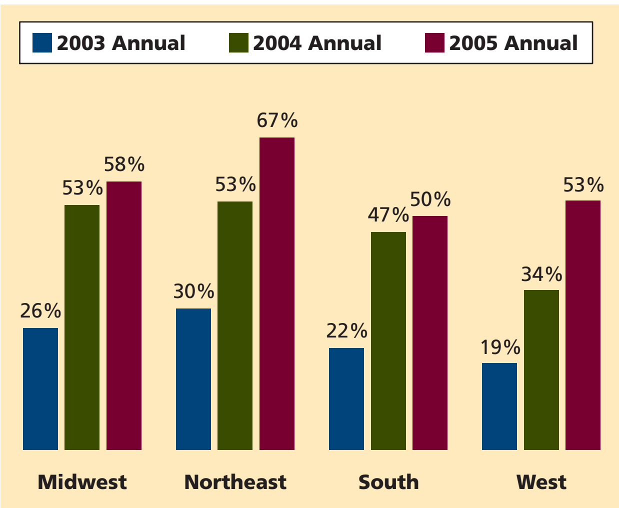
- Construction: contractors, homebuilders, and general contractors
- Education: universities and school districts
- Energy: oil, gas, and pipelines
- Financial institutions: banks, insurers, and securities firms
- Food and beverage: manufacturers and distributors
- Hospitality: hotels, casinos, sporting arenas, and performing arts centers
- Health care: hospitals and managed-care facilities
- Manufacturing: all manufacturers, excluding food and beverage technology
- Media: print and electronic media
- Public entity: city, county, and state entities
- Real estate: real-estate and property-management companies
- Retail: retail entities of all kinds, including restaurants
- Technology/telecom: hardware and software manufacturers and distributors, telephone companies, and Internet service providers
- Transportation: trucking and bus companies
- Utility: public and private gas, electric, and water utilities

Almost every industry sector saw a double-digit increase in take-up rates in 2005, with some of the industries that had the lowest take-up rates in the past—construction, food and beverage, and transportation—showing the largest increases.

Take-up Rates by Region

The 2005 property terrorism insurance take-up rate rose most significantly in the West, from 34 percent to 53 percent, and in the Northeast, from 53 percent to 67 percent. For the first time, every region had a take-up rate greater than 50 percent (see Chart 4).

Chart 4: Terrorism Take-up Rates by Region



Most surprising was the increase in the West, since in prior years the take-up rates there were dramatically lower than were those in the rest of the nation. The increase in take-up rates in the West and Northeast may be due to a significant reduction in terrorism pricing in those two regions (see Chart 10).

Types of Coverage Companies Are Buying

The vast majority of Marsh clients—92 percent—that purchased terrorism insurance did so as part of their property policies rather than as standalone placements. However, standalone policies are an important alternative or supplement to TRIA coverage for some companies (see Chapter 5). The primary purchasers of standalone policies were hospitality companies, large real-estate firms, and financial institutions. Retail companies, public entities, and utilities, however, also purchased significant, though lesser, amounts.

When companies purchase terrorism coverage as part of their property policies, they can purchase either TRIA coverage, noncertified acts coverage, or a combination of the two. In 2005, the vast majority—more than 75 percent—of companies purchased both TRIA and noncertified acts coverage. Many firms used their captives to access TRIA, as outlined in the captive segment of this report (see Chapter 8).

The Cost of Terrorism Coverage

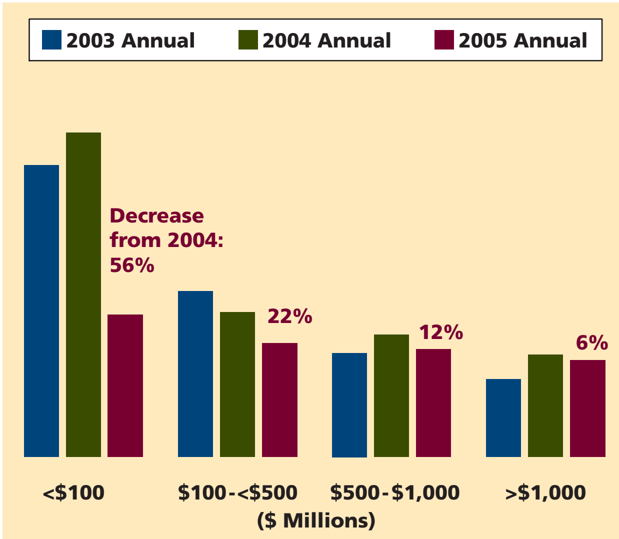
For this report, the cost of terrorism coverage was measured both as a premium rate—premium divided by TIV—and as a percentage of a company's overall property premium. The first method—premium rate—allows companies to track what they paid in absolute terms; the second shows how terrorism coverage affected a company's overall property insurance budget.

The cost of property terrorism insurance decreased significantly in 2005. The median terrorism rate for 2005 was 0.0042 percent, down over 25 percent from 2004's rate of 0.0057 percent. There was a more moderate reduction in the median percentage of a company's annual property program costs attributable to terrorism premiums—from 4.7 percent in 2004 to 4.2 percent in 2005.

Cost by Company Size

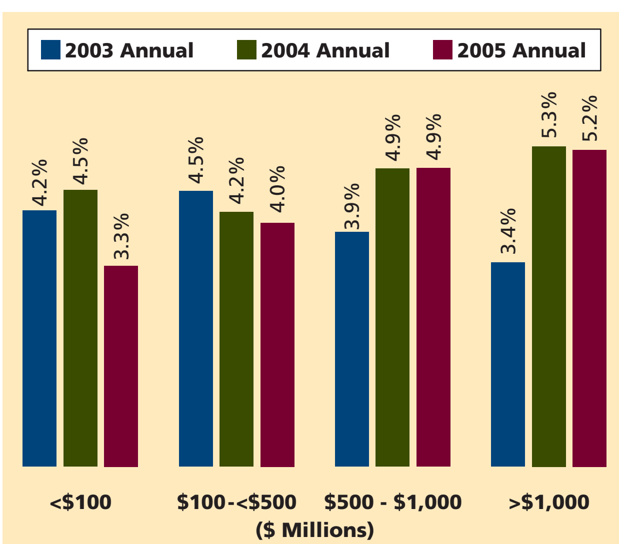
Median property terrorism rates decrease steadily as the size of the company increases (see Chart 5). The differentiation by company size narrowed significantly in 2005, however, as the premium rates for those companies with TIV less than $100 million decreased more than 55 percent. For companies with TIV between $100 million and $500 million, the median rate decreased 22 percent; and for those with TIV between $500 million and $1 billion, rates decreased 12 percent. For the largest companies—those with TIV more than $1 billion—the median rate reduction was only 6 percent. Whereas the median rate in 2004 for the smallest companies was three times that of the largest companies, in 2005 the multiple was only 1.47, a result of this flattening of the rate. It seems likely that the reduction in price contributed to the increased take-up rates.

Chart 5: Terrorism Pricing—Median Rates by TIV



When examining cost as a percentage of overall property premiums (see Chart 6), the 2005 reductions were more modest for all companies, except those with TIV under $100 million. This trend can be explained in part because the largest companies tend to have greater terrorism exposures and lower property rates due to higher retentions and extensive loss control. Terrorism insurance rates do not tend to range as widely as property rates and are less subject to credits for higher retentions and loss-control efforts. Thus, terrorism represented a larger share of the overall property premium budget for the bigger companies.

Chart 6: Terrorism Pricing as Percentage of Property Premium by TIV



Cost by Industry

Comparing the 2005 median terrorism insurance premium rates by industry to the 2004 rates shows that the median rates decreased for 12 of the 15 industry categories (see Chart 7).

Chart 7: Terrorism Pricing—Median Rates by Industry

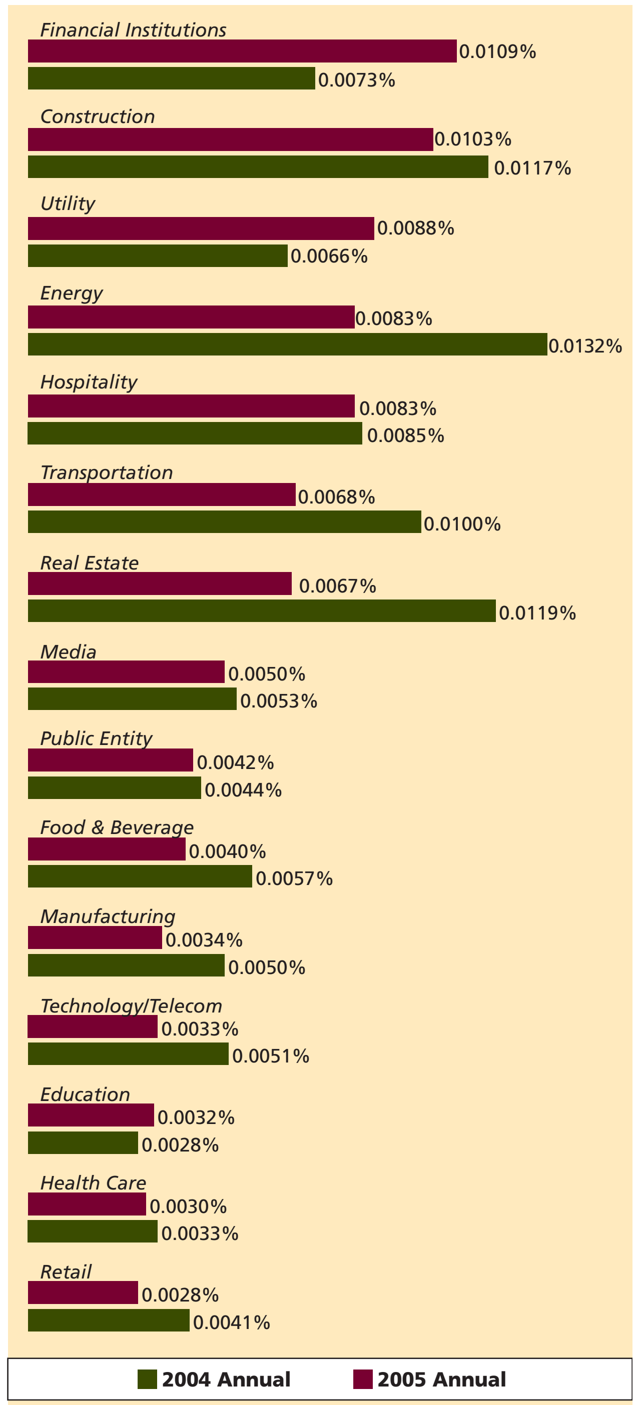
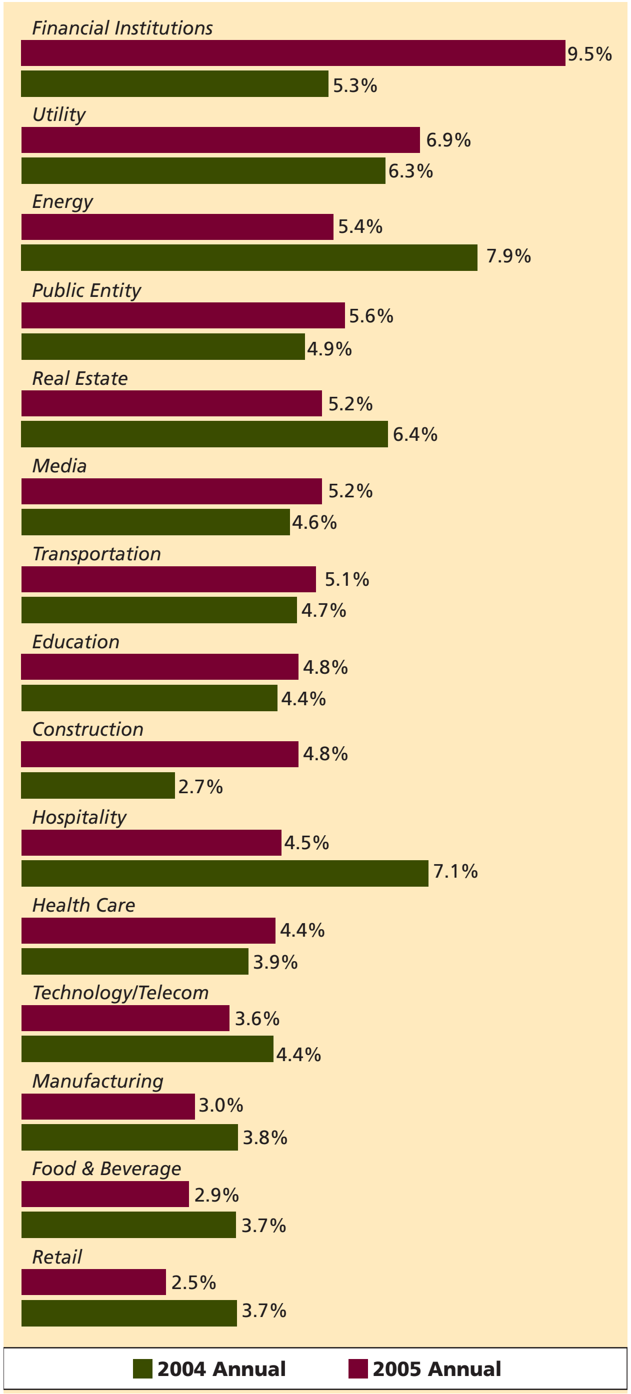


**Chart 8: Terrorism Pricing—
Median Rates by Industry**



Terrorism insurance rates for financial institutions and utilities increased substantially, 49 percent and 33 percent respectively. Rates decreased most dramatically for real estate, down 44 percent; energy, down 37 percent; and technology/telecom, down 35 percent.

Construction firms had the second-highest median premium rates in 2005, which may help explain the industry's low take-up rates.

When looking at terrorism insurance pricing as a percentage of overall property premiums, construction firms and financial institutions had the largest percentage increases— nearly 80 percent—while hospitality, retail, and energy companies had the largest decreases—more than 30 percent (see Chart 8).

Cost by Region

Terrorism insurance continues to be most expensive in the Northeast based on premium rate (see Chart 9) and calculated as a percentage of property premium (see Chart 10), although the variation by region has decreased significantly. Whereas the difference between the median rates in the Northeast and the Midwest was more than 60 percent in 2004, that difference was less than 25 percent in 2005. The median rate in the Northeast fell by 34 percent, compared to drops of 27 percent in the West, 14 percent in the Midwest, and 12 percent in the South. Although the cost as a percentage of property premium decreased in the Northeast, South, and West, it increased slightly in the Midwest. Overall, pricing by region flattened substantially in 2005.

**Chart 9: Terrorism Pricing—
Median Rates by Region**

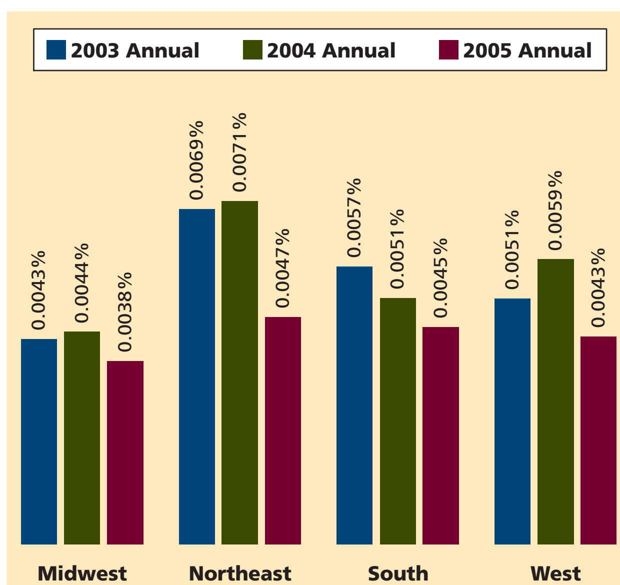
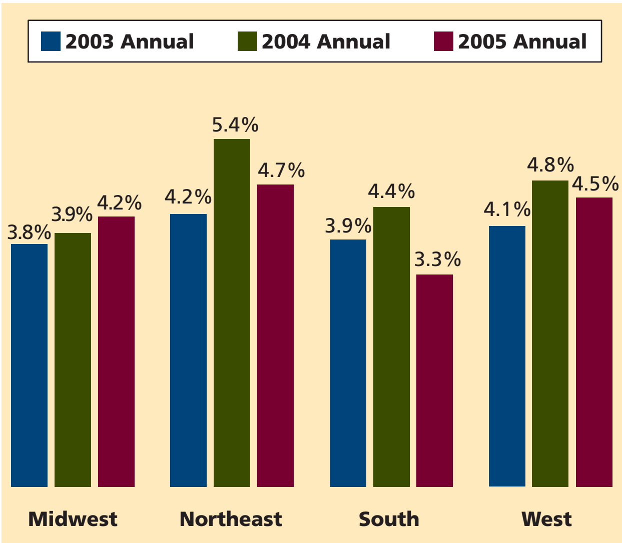


Chart 10: Terrorism Premium as Percentage of Property Premium by Region



Post-Katrina Effect and Uncertainty of Extension

In the fourth quarter of 2005, the property insurance marketplace was in turmoil as a result of both Hurricanes Katrina, Rita, and Wilma and the uncertainty as to whether TRIA would be extended. It was expected that as companies spent more on their overall property insurance programs they would cut back on their terrorism purchases. Surprisingly, this did not happen. Despite a changing and uncertain marketplace, terrorism take-up rates continued to climb to record levels during this period as companies of all sizes, in all industries, and in every region continued to purchase terrorism coverage.

5 The Standalone Insurance Market

After the events of September 11, 2001, and prior to TRIA's enactment, the standalone insurance market became the main source of capacity for companies looking to obtain property terrorism insurance. Mainstream property insurers were generally unwilling or unable to provide the coverage.

The standalone insurance market continues to provide terrorism coverage, at times competing with "all-risk" property insurers that provide TRIA coverage and at other times complementing the TRIA coverage. Standalone insurance markets also serve companies whose needs are not met by TRIA. For example, in situations where the "all-risk" program terrorism limits cannot be filled by "all-risk" markets, then the standalone insurance market may offer alternative capacity. Capacity in the standalone terrorism insurance market during 2005 and early 2006 grew by $185 million, with new capacity from Lancashire Re, Glacier Re, Transatlantic Re, and Arch Insurance Group.

The standalone property terrorism insurance market offers coverage for both TRIA-certified and noncertified risks and enables clients to tailor the capacity to their coverage needs. Other features of this insurance market include the following:

- **Noncancelable coverage**: Standalone policies that cannot be canceled by either party—other than for nonpayment of premium—are available.
- **Coverage for international locations**: Standalone coverage, unlike TRIA coverage, is available for most locations worldwide. Companies with overseas exposures often look to the standalone market to provide solutions not satisfied by local government terrorism insurance schemes, including Pool Re (United Kingdom), GAREAT (France), Extremus (Germany), Consorcio (Spain), SASRIA (South Africa), and TIA (Australia).

Standalone Pricing

Many factors can affect the pricing of standalone policies for terrorism risk, including:

- the location of the risk;
- the insurer's accumulation of aggregate exposure in specific areas;
- the limit/amount of coverage required;
- the insured's TIV;
- the extent of requests to broaden the standard coverage conditions;
- the insured's profile and ownership;
- the perception as to whether the company is a target;
- the nature of the tenants, such as government agencies; and
- the terrorism loss history.

- **Reinsurance of U.S.-domiciled captives for TRIA-certified terrorism**: Some of the standalone insurance markets offer policies to reinsure captives for the captive deductible—the 10 percent of TRIA-certified losses that the federal government does not cover once the captive insurer's deductible is reached—and the increased liability resulting from TRIA's new $50 million program trigger.

If TRIA is extended beyond December 31, 2007, the standalone insurance market is expected to continue to satisfy companies whose needs are not addressed by the Act. If TRIA is not extended, demand for standalone coverage is expected to increase dramatically. The standalone insurance market, however, would be unlikely to have sufficient capacity to satisfy the expected demand at commercially viable prices. Standalone capacity is supplied on a first-come, first-served basis. This means that if TRIA expires, aggregation issues in major metropolitan areas are likely to worsen. Without TRIA, organizations could be left with

Market Capacity at Second Quarter 2006*

The standalone market in the second quarter of 2006 has a limited number of active insurers, as follows:

The Standalone Terrorism Market

Insurer (Group)	Insurer	S&P Rating	A.M. Best Rating	Max. Capacity in Q2 2006 ($ Millions)
ACE USA	Illinois Union	A+	A+	$25
AIG	Lexington, WorldSource, AIU	AA+	A+	$100
ARCH Insurance Group	Arch Specialty	A-	A-	$10
AXIS Specialty Ltd.	AXIS Specialty Ltd.	A	A	$100 to $150
Berkshire Hathaway	National Fire & Marine	AAA	-	$500 to $1,000
Hannover Re	International Ins. Co. of Hannover	A+	A-	$10
Lloyd's	Various syndicates	A	A	$50 to $600
Montpelier Re	Montpelier Re Ltd.	A–	A-	$50
QBE	QBE	A+	A	$10
Glacier Re	Glacier Re	-	A-	$25
Transatlantic Re	Transatlantic Re	AA-	A+	$50

** as of April 20, 2006*

Theoretical Maximum: $930 million to $2,030 million

few options to address the potentially catastrophic and ongoing risk of terrorism and could face the possibility of being left with no insurance for this risk.

Market Underwriting Position

- AIG/Lexington supports the market by offering coverage for both U.S. domestic and foreign locations. Although no restrictions have been instituted, pricing is tiered for U.S. locations to recognize perceived risk level.
- ACE is restricting its standalone terrorism insurance capacity to accounts where it has a significant property position. It supports the ACE Global Property branches for foreign exposures only.
- Berkshire Hathaway continues to support standalone terrorism insurance submissions but has some limitations. In certain cases, it will issue policies only when they are fronted, which generally requires the use of a captive. This is open to negotiation on a case-by-case basis.
- Lloyd's capacity for risks outside urban areas is about US$600 million.
- Monitoring of aggregates has become a priority for all standalone terrorism insurance markets. Capacity in top-tier cities is priced accordingly.

Although capacity—the limit of coverage that is available for a single risk—is relatively stable in the standalone property terrorism insurance market, it can vary considerably for individual risks. This is primarily due to the following factors:

- **Location of risk**: The demand for coverage in major metropolitan areas has a substantial affect on the available capacity.
- **Insurer's accumulation of exposure**: Insurers have aggregate limits on the risks they will take. Capacity can be limited in certain locations, particularly in major metropolitan areas such as New York City, where some insurers currently have severe aggregation issues.

- **Concentration of exposure**: Terrorists attack targets of opportunity. Although it is certainly possible that an attack could occur anywhere—including a remote town or shopping mall—demand for coverage will likely be higher in metropolitan areas simply because there is a greater concentration of exposures.

The typical maximum standalone capacity available—at a cost companies find acceptable—is approximately $400 million to $500 million for companies that do not have sizeable exposures in locations where insurers have aggregation problems. For locations where markets have aggregation issues—particularly New York City—the estimated market capacity is approximately $150 million to $300 million without accessing more expensive capacity. For companies willing to pay the price, capacity above $500 million may be available.

Coverage Issues

The current standalone markets use what is known as the T3/T3A policy forms, although AIG and ACE also have their own forms. ACE requires additional exclusions to the T3 form. The following table compares some of the characteristics of standalone property terrorism coverage and TRIA coverage. (**Note**: Marsh would have to undertake a complete review of any form issued to provide a detailed comparison of coverage.)

Product Enhancements

The following are among the new products developed by standalone property terrorism insurers:

- **AIG/Lexington's BioChem Shield℠**: This endorsement can offer a sublimit of up to $10 million aggregate for biological/chemical terrorism; this still excludes nuclear or radiological terrorism. It is offered as an endorsement to a standalone terrorism policy or to a company's "all-risk" program.
- **AIG/Lexington's Op Shield℠**: This endorsement covers business interruption and extra expense losses triggered by a civil or military authority order to evacuate that arises from either a terrorist act or a threat of terrorism. It is offered as an endorsement to a standalone terrorism policy or to a company's "all-risk" program. Lexington can offer a sublimit of up to $25 million aggregate. There is a 72-hour waiting period and the indemnity period is limited to 30 days.
- **Hiscox at Lloyd's (NBCR)**: This syndicate offers nuclear, biological, chemical, and radiological (NBCR) terrorism coverage. A limit of up to $25 million aggregate may be available in the Lloyds market.

Comparison of Standalone Coverage and TRIA Coverage

Standalone Property Terrorism	TRIA as Part of "All-Risk" Property
Covers acts of "foreign" and "domestic" terrorism	Covers only "foreign" acts of terrorism
Can cover locations inside and outside the United States	Covers only U.S. locations
Limits are typically aggregated or with one reinstatement	Per-occurrence limits that match property policy limits
Account- and terrorism-specific deductibles	Deductibles match property policy deductibles
Location and schedule specific	Coverage for all locations, including unscheduled, depending on terms of property policy
Noncancelable policy available	Cancelable terms follow property policy
Long-term policies up to 3 years available	Policies typically written for one year
Select markets	All markets that meet insurer definition under TRIA

6 Workers Compensation and Liability Coverages

Workers Compensation

Largely because it is controlled by the states—which have not allowed exclusions for terrorism losses—workers compensation presents unique challenges to insurers, brokers, and risk managers. Insurers and qualified self-insured employers *cannot exclude* coverage for acts of terrorism from workers compensation coverage as they can with other insurance lines. Nearly all states require employers or insurers to pay medical costs and wage replacement without limits or exclusions for workers injured on the job. Workers compensation generally provides lifetime medical care for on-the-job injuries, leading some computer models to project that the "worst-case" cost of a terrorism incident could exceed $90 billion. In contrast, some experts put the total workers compensation capacity for the entire insurance marketplace at $30 billion.

Risk managers should be aware that insurers will carefully calculate and try to limit their exposures to high concentrations of risk. Multiline insurers will be particularly sensitive to site-specific accumulation of risk. As a result, care should be taken to obtain insurance-market alternatives for workers compensation programs likely to be affected. One major insurer has publicly stated it will limit its exposure to a predetermined amount and close its book once that amount is reached. Other insurers may follow suit. Anecdotal evidence suggests that insurers may disengage from long-term relationships because of concentration issues, lack of reinsurance capacity, and/or the inability to quantify or limit workers compensation exposure. Marsh has seen insurers, however reluctantly, not renew major accounts for these reasons. Even where the insurer renews, insureds should be wary of larger retentions, accompanied by increasing amounts of collateral to support those retentions.

TRIA's limitation to certified acts of terrorism has prompted state regulators and insurers to pay more attention to finding premium mechanisms for domestic terrorism and other potential catastrophic losses. Historically, rate makers included a small, undifferentiated charge for potential catastrophic losses in their overall rates.

Pursuing a more explicit approach, the National Council on Compensation Insurance (NCCI) approved the Domestic Terrorism, Earthquakes, and Catastrophic Industrial Accidents Premium Endorsement (DTEC) for workers compensation, effective January 1, 2005. The endorsement provides funding for some catastrophic losses, including acts of terrorism specifically excluded by TRIA, but not for TRIA-certified acts of terrorism.

The endorsement defines a $50 million loss aggregate threshold for workers compensation for:

- domestic terrorism, defined as all acts of terrorism outside the scope of TRIA;
- earthquake, defined as a single event involving underground movement along a fault plane, or volcanic activity; and
- catastrophic industrial accident, which qualifies if a single event results in the losses.

The premium for this endorsement is calculated as rate multiplied by payroll and is applied after the standard premium. It is not, however, subject to any other modifications such as premium discount, experience rating, schedule rating, or retrospective rating.

Additional changes were made under the TRIA extension that may affect the casualty marketplace (see Chapter 3). The U.S. Treasury will be addressing the implications of these changes in its future rulemaking under the Act. At a minimum, more of the burden of terrorism losses has been shifted to the insurance marketplace in accordance with TRIA's original vision as providing a backstop. It remains to be seen whether the direct liability insurance market and the influential reinsurance market can tolerate the risks posed by terrorism. Major questions loom, including whether TRIA risks can be quantified and predicted with sufficient accuracy to give comfort to the risk-based capital investors that sponsor both public and privately held insurers.

General Liability

The premium charges for TRIA, quoted for general liability (GL) policies, have been relatively modest. As a result, insurance buyers have purchased TRIA coverage at much higher take-up rates in those lines than in property. Interestingly, GL take-up rates are declining.

Marsh's latest figures show TRIA take-up rates for GL in 2005 were 78 percent, down from 81 percent in 2004. The actual rate—charged as a percentage of premium for the overall coverage—held steady at about 1 percent, implying that the reduction in the take-up rate was not driven by the cost of the coverage, but by the perceived risk. In fact, the widely varying perception of the risk on the part of insureds is one of the reasons often cited for the lack of universal acceptance of the coverage.

[**Note**: Marsh's Casualty Practice continually surveys GL and workers compensation renewals among our clients. Data from nearly 1,400 companies that purchase GL and 1,800 companies that purchase workers compensation were included in last year's *Casualty Cost of Risk* report. For a copy, contact your Marsh representative.]

Focused Attack vs. Generic Assault

The nature of a terrorist attack could have serious implications on workers compensation coverage.

A terrorist attack could be either a focused attack on a specific site—such as a business or government building—or it could be a generic assault on a locale, city, or neighborhood. A focused attack on a building—as in the September 11 attacks on the World Trade Center and the Pentagon—would trigger workers compensation coverage for employees injured or killed.

In some jurisdictions, however, generic assaults resulting in injury or death to employees while they are at work may not be deemed compensable if the risk to the employees was not greater, due to their employment, than the risk to the general public. In other words, an act of terrorism that poisoned the public water supply and caused illness or death to employees would not have created a greater risk to those employees than it did to people in a nearby restaurant or at home. As a result, some states' workers compensation laws may allow the insurer to deny benefits.

7 TRIA's Impact on the Insurance and Reinsurance Markets

Commercial insurers are strongly supportive of TRIA, as it provides them an ultimate safety net for their terrorism exposures. However, the residual risk for terrorism events retained by insurers below the triggers and retentions levels set by TRIA, coupled with the relatively high cost of reinsurance, means that insurers remain cautious about terrorism exposure. As a result, they continue to avoid accumulating high-profile urban exposures.

Managing the Gaps in TRIA Coverage

TRIA provides high-level reinsurance protection to insurers for commercial insurance lines. TRIA's design results in a number of gaps in reinsurance protection for insurers. These gaps include:

- personal lines insurance;
- domestic terrorism for commercial lines insurance;
- the deductible and co-pay share for TRIA-certified (foreign) events; and
- nuclear, biological, chemical, and radiological (NBCR), depending on primary policy coverage (traditional property policies exclude the nuclear and radiation risks).

Since TRIA is a commercial lines program, personal lines policies of insurers are fully exposed to both TRIA-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, excluding NBCR losses. This protection is frequently provided with no explicit cost breakout.

For commercial lines, coverage is needed for domestic terrorism. Most insurers address this exposure by adding coverage for domestic terrorism in their private market reinsurance programs. Such coverage normally excludes NBCR and may be subject to event limits or other sublimits. Reinsurance markets now routinely provide this domestic terrorism coverage within occurrence programs for little or no additional cost.

From the insurers' perspective, a large, unreinsured gap in terrorism exposure exists for certified acts below the 17.5 percent retention set by TRIA for 2006 and within the 10 percent co-participation above the retention. There is also exposure for certified events where industry loss is less than the event trigger of $50 million ($100 million in 2007). Cedents' preference is to have commercial certified terrorism covered within their standard property and casualty reinsurance programs. This coverage, however, is available only in limited sums and can be expensive, depending on the location and values of the original insured terrorism policies.

Reinsurers put limited capital at risk to terrorism exposures, given their lack of confidence in how to underwrite, model, or price for this peril. Typically, they seek to manage the risk by offering terrorism coverage in a standalone contract, in which they can monitor and control exposure, rather than within a normal "all-risk" catastrophe treaty, especially for insurers writing a national portfolio. Some regional insurers with exposures limited to rural or suburban areas have secured full terrorism coverage within their standard reinsurance programs.

Insurers that have *not* purchased standalone terrorism reinsurance cite the following factors:

1. Terrorism coverage can be expensive, depending on the location of the original insured terrorism policies.

2. Cedents are comfortable with the extra coverage for terrorism added to their normal reinsurance contracts.
3. There is an inability to pass along the full cost in primary insurance policies.
4. There are limited capacity/limits available at affordable rates.
5. Exposure concentrations are controlled and/or are limited, particularly for clients with little exposure in targeted urban centers.
6. They are comfortable with the TRIA retention.
7. There is no coverage offered for NBCR.

A growing concern currently in the reinsurance marketplace involves the more detailed questions asked by rating agencies—such as A.M. Best—regarding capital adequacy, taking into account various terrorism scenarios and their impact on capital after reinsurance.

In workers compensation, most insurers—other than smaller regional insurers—incorporate some level of terrorism coverage into their corporate catastrophe programs. The most common structure is for insurers to add coverage for certified acts of terror, excluding NBCR, to their existing workers compensation catastrophe programs. Pricing and capacity for terrorism coverage have continued to improve over the past year, and more reinsurers are now willing to provide options for NBCR perils. Terrorism coverage is offered on both a per-occurrence and aggregate excess basis (exclusively on an aggregate basis if NBCR is covered). When clients add terrorism coverage, excluding NBCR, to an existing catastrophe program, reinsurers have priced the additional coverage as a surcharge above the natural perils pricing. This pricing has become more competitive, with reinsurers now charging 5 percent to 15 percent of additional premium.

Capacity

In the current marketplace, it is normal to see limits of about $200 million placed. Estimates of capacity for individual cedents range up to $600 million on an occurrence basis for property and liability insurance. For certain programs where the terrorism exposure is limited to a single state, it is feasible to secure more than $1 billion of capacity. Such capacity may expand or contract based on price, type of risk, and overall reinsurance-market conditions.

Modeling Terrorism

Although not impossible, quantifying the economic and human losses from a terrorist act poses major challenges for insurers. A variety of approaches exists for insurers to model terrorism risk. Most models involve three techniques:

1. conducting exposure-concentration analysis;
2. generating deterministic loss estimates; and
3. producing probabilistic loss estimates.

- **Exposure-concentration analysis**, also known as accumulation assessment, identifies and quantifies concentrations of exposures around potential terrorist targets. Target-based accumulation assessment locates potential targets—typically with high economic, human, and/or symbolic value—and aggregates an insurer's exposures at various distances from targets. To complement this approach, it is useful to search for clusters of exposure exceeding an economic threshold within a portfolio irrespective of perceived targets. This recognizes that some probability of attack exists at any location.

  A variation of this analysis looks at exposure concentrations independent of a target. This addresses questions about vulnerability to a random attack.

- **Deterministic modeling** represents a compromise between the lack of accuracy in accumulation analysis and the vast uncertainty surrounding probabilistic models. By imposing an actual event's damage "footprint" at a specified target, a specific—yet hypothetical—scenario can be analyzed with some certainty. Major modeling firms offer an array of deterministic-analysis tools for conventional and NBCR attacks at target and non-target locations. This approach can be effective where coarse screening studies show that exposures for an area or event could be high and a detailed assessment may reduce uncertainties and help decision making.

- **Probabilistic modeling**, also known as catastrophe modeling, estimates losses based on a large number of events and their associated probabilities. A key factor is the estimated frequency of the event. Many insurers question the credibility of probabilistic terrorism modeling, as it requires predictions of human behavior. While credible probabilistic terrorism modeling remains elusive, Guy Carpenter, a Marsh sister company, helps insurers explore possible terrorism losses using a judgment-based approach that goes beyond purely deterministic modeling.

Terrorism modeling is in its infancy. Insurers, reinsurers, and modeling companies are learning more each day, thereby increasing their ability to manage terrorism risk in an educated and quantitative fashion. Currently, deterministic testing is the most common tool used by insurers to assess their vulnerability to terrorism. Given the human and societal nature of the risk, it cannot be expected that the probability of terror events can be determined with the accuracy needed to make critical risk management decisions.

8 TRIA, Captives, and International Terrorism Pools

Using a captive insurer to access TRIA can be an effective way for businesses to manage their exposures to certain terrorist acts. Marsh has worked with many clients to implement captive solutions using new and existing captives. Captives offer certain advantages over traditional insurance markets: better control over costs, broader coverage, potential to recapture premiums if no losses occur, and the capability of covering exposures that commercial insurers find unacceptable or undesirable. However, the addition of an event trigger in TRIA's extension complicated captive insurer participation and—in a few cases—invalidated the use of a captive insurer.

The Treasury Department, in various interpretative letters and regulations issued after TRIA's passage in 2002, made clear that the Act applies to captive insurers that meet its definition of an insurer. Those captives that meet the definition are entitled to all of TRIA's benefits, but also are subject to its burdens. The key benefit is the substantial amount of protection the program provides—up to 90 percent of the policy limit in 2006 and up to 85 percent in 2007. The requirements to make coverage available for certified acts of terrorism and to satisfy certain disclosure and reporting requirements are key burdens of TRIA.

Non-U.S.-based captives—including those in Bermuda and the Cayman Islands—are not insurers licensed by a U.S. state and, as such, are not qualified insurers under TRIA. Accordingly, they cannot derive any benefit from the Act, nor are they subject to its requirements.

The ability and willingness of a captive to carefully tailor the policy form to its insured's needs is one of the most attractive features of using a captive insurer to cover losses from certified acts of terrorism. The clearest example of this is where captives have created manuscript policy forms with provisions to include protection for perils—such as NBCR—generally excluded by their commercial insurer counterparts. The Treasury Department issued guidance plainly stating that to the extent a subject insurer provides protection for certified NBCR-based acts (and the program trigger is satisfied), TRIA's reinsurance protection will apply. TRIA does not require that NBCR perils be covered; and as a result, most commercial insurance policies continue to exclude these perils. The reluctance of commercial insurers to offer such protection means captives are one of the only viable means of securing such protection in meaningful quantities.

A key objective of TRIA is to ensure the availability of terrorism coverage. Nevertheless, provisions of the Act allow commercial insurers to avoid covering a given insured's terrorism exposure. For example, TRIA compels an insurer offering property coverage to also offer coverage for certified acts of terrorism; but the insurer can avoid offering terrorism coverage by not offering *any* insurance for the property. In some cases, commercial insurers have exercised this option, leaving clients with no property coverage. Similar situations have occurred with other lines, including workers compensation. Captives have been used to fill the resultant gaps in coverage, thereby creating capacity and indirectly helping fulfill the Act's objectives.

The approval of the captive insurer's regulator is generally required when adding coverage for certified acts to an existing captive insurer. The approval usually can be secured within a few days. Forming a new captive to provide such protection requires the submission of an application for licensure and associated supporting documents and is typically more time-consuming, taking about 7 to 60 days. Regulators typically approve a change in plan for an existing captive or license a new captive once they are satisfied that the captive's proposed plan of operation is prudent. In making this determination, regulators consider factors such as premium to be charged, net exposure to the captive, quality of commercial reinsurance to be used (if any), the financial strength of the captive sponsor, and the capitalization level of the captive.

The Treasury Department has taken a watchful stance regarding the use of captive insurers accessing TRIA. The Treasury formally acknowledged the existence of captive insurers both in confirming the Act's applicability to them and in issuing some cautionary statements about the importance of not using captives to inappropriately exploit TRIA. In those statements, the Treasury warned of concerns with three captive situations in particular:

- captives formed after TRIA's enactment;
- captives writing coverage only for certified acts; and
- captive transactions designed to circumvent the deductible requirement that the Act imposes on each insurer before TRIA contributes.

The Treasury Department has not yet used its discretionary authority to curtail the use of captives. Instead, it is seemingly opting to recognize the clear value captive insurers provide and how they can—when used appropriately—support TRIA's and captive owners' objectives. Users should carefully consider the objectives and appropriateness of their overall plan before implementation, given the Treasury's cautionary statements.

The most significant development to affect captive insurers as a result of TRIA's extension is the introduction of an event trigger. The trigger requires aggregate insured losses for events occurring in 2006 to exceed $50 million ($100 million in 2007) before government participation begins. As a result, it is possible that captives—or at least those with TRIA deductibles less than $50 million—may reconsider participating in the first $50 million of insurance programs. Continued participation in the primary layers may require additional capitalization or the purchase of additional reinsurance if available. It should be noted that once the total insured loss exceeds $50 million in 2006—or $100 million in 2007—the federal government backstop will apply, and individual insurers will be reimbursed for amounts in excess of their increased percentage deductibles. Therefore, the concern for these captives is only in respect to losses that do not exceed $50 million (or $100 million in 2007) in total.

Given this possibility, there has been a marked increase in underwriting discussions, especially concerning the evaluation of capital adequacy for the trigger "shock loss" and reinsurance options for shock loss. Overall, though, the trigger provision ultimately had only a modest negative impact on captive participation of those clients we manage. Unfortunately, in the small number of cases where captives have stopped participating after evaluating their trigger exposure, most of the insureds involved were not able to find viably priced commercial-insurance-market replacements and instead opted to go uninsured.

There are many potential benefits to forming a captive, but they need to be carefully weighed against the potential costs and risks. The decision to use a captive should be made in consultation with appropriate internal and external legal counsel and advisors.

International Terrorism Pools and Captives

For a number of years, direct-writing captives in the European Union—particularly those domiciled in Ireland—have had the ability to provide coverage for terrorism in certain countries through membership in terrorism pools. In a number of countries, the existence of a property policy obligates the insurer—including captives issuing a policy under the European Freedom of Service regulations—to provide terrorism coverage. Terrorism pools are then accessed on a reinsurance basis to protect the captive's terrorism liabilities.

Captives—subject to satisfying domicile and terrorism-pool regulations—have been used to provide terrorism coverage in the following countries:

- Australia—Australian Reinsurance Pool Corporation (ARPC)
- Austria—Terrorpool Austria
- France—GAREAT
- Germany—EXTREMUS
- Netherlands—NHT
- Spain—Consorcio de Compensación de Seguros
- United Kingdom—Pool Re

A full report, published by Guy Carpenter, provides details on all the different international terrorism programs and is available through your Marsh representative.

9 Terrorism Risk Management

This section examines some current trends in terrorist activity in the United States, discusses strategies for mitigating terrorist threats across the risk life cycle, and focuses on new U.S. regulations for the food and beverage industry as related to bioterrorism.

U.S. Terror Threat Environment

The events of September 11, 2001, immediately made the al-Qaida terrorist group a household name in the United States and abroad. However, both small- and large-scale events targeting U.S. businesses, citizens, and the economy have been occurring in increasing numbers for many years. Attacks are launched for myriad reasons: religious motivations, government opposition, and protection of the environment, to name a few.

Historically, the main objective of terror attacks within the United States, which typically have been small in scale, has been to afflict financial losses on the targeted government entity or corporation. Most terror events catalogued by the FBI were perpetrated in an effort to disrupt business continuity and garner publicity for an issue, although some of these attacks deliberately targeted employees. This type of attack is becoming much more common in the United States and is seen in everything from critical infrastructure sabotage to improvised explosive device (IED) attacks on largely uninhabited facilities.

Two highly public ecoterror groups—the Animal Liberation Front (ALF) and the Earth Liberation Front (ELF)—are the most active perpetrators of terror attacks within the United States. Typically, their *modus operandi* is the use of arson or various types of IEDs to cause destruction to property. In recent years, there has been a noticeable tactical shift from the targeting of what are considered the primary marks—such as animal-testing facilities—to secondary, softer targets, such as ski resorts or home developments.

Kroll, a Marsh sister company, has found that these groups are now targeting companies that play ancillary roles to some of the organizations that the ecoterrorists have historically targeted. Examples of this include companies that handle accounting for the organization or those that simply manufacture equipment used by an animal-testing-related company. These softer targets are often chosen because there is a greater chance for success in carrying out an attack than at better-secured primary targets and also because such an attack can still support the ultimate goal of restricting the ability of the primary target to continue operations.

The risk associated with international terror groups, including al-Qaida, is at an elevated level due to rising tensions across the globe. Domestically, this risk is higher in major urban population centers; however, it cannot be discounted in other parts of the country. While al-Qaida typically attempts large-scale attacks, it is not unprecedented for this group to resort to smaller, more frequent attacks. High-profile buildings face relatively high threat levels because of the potential negative impact an attack could have on the U.S. economy. The goal of small-scale attacks would be to instill fear, ensuring general activities would be curtailed and that U.S. citizens would feel vulnerable. Risk managers must be cognizant of their threat levels and capable of responding to increased threats and incidents regardless of their location or operations.

Assessing Your Threat

An organization must be able to assess its situation relative to its terrorism exposures. A potential terrorist often weighs the risks associated with planning and carrying out an attack against the potential rewards garnered by the successful completion of the attack. Many facilities considered at high risk for a terror attack—such as financial institutions, public utilities, and transportation hubs—have already implemented increased security measures. In most cases, however, the typical corporation has been reticent in assessing its threat level and responding with proper countermeasures.

We recommend an annual assessment of corporate threat, conducted in conjunction with periodic updates based on changing world or corporate conditions that might affect overall threat levels. These assessments should calculate threat on both a macro and micro level. Macro relates to world events and attacks on U.S. targets at home and abroad. Micro looks at elements specific to the corporation, such as corporate and client operations, and at associations with other entities either tied to the corporation or to its executive leadership. Importantly, an organization's corporate-security function should be actively involved during the assessment process so that it will know what to look for when monitoring threat levels.

The assessed threat level faced by a corporation can vary across the company based upon location, operations, and incident history. Location is not only important for assessing threat relative to the part of the world the facility is in, but it also concerns adjacencies. It is essential that any assessment include the threat of collateral damage to structures, personnel, and overall continuity of business operations. Additionally, the operation as a whole should be periodically reviewed. This review should be augmented by a reexamination of those corporate subsidiaries that might increase the assessed threat level for their specific locations. The corporation must understand that its overall threat levels can be affected by associations with outside groups, especially those held with controversial entities, and even those maintained by executive leaders on their personal time. By successfully and accurately assessing its threat level, the corporate-security function can prepare for those threats most prevalent while concurrently developing progression plans for other less prominent threats as are dictated by changing threat levels and scenarios.

Threat-Based Security Programs

Threats are fluid in nature, therefore requiring an equally adaptable system to effectively address changing levels. This is best accomplished by adopting a Threat-Based Tiered Security Program, which allows a corporate security manager to properly test for, train for, and procure in advance for any threat levels. Any supplies and vendors necessary for program implementation can be sought out beforehand, greatly limiting downtime and ensuring that personnel are familiar with technology that will be utilized at a predetermined threat level. It also allows time for management to address any limitations or inefficiencies identified in the plan during testing.

While changes to the U.S. Department of Homeland Security's tiered-threat program can affect a corporation's threat level, each corporation must also understand threat levels specific to its industry and location to properly mitigate the threats. We generally recommend a five-tier model that starts with a baseline security plan and allows a corporation to adjust its program and resources according to the current threat level. The baseline security plan should focus primarily on the policies necessary to provide a secure environment while limiting disruption to daily operations. Plan components—including security technology, access-card type and design, visitor policies, and security-staffing requirements—will form the foundation for the day-to-day security operations. As a corporation moves up on the threat tier, operational and technical upgrades to the baseline system will require implementation. Typical technology upgrades can consist of additional closed-circuit television cameras, automated visitor-management systems, walk-through magnetometers, and small-parcel X-ray machines. To make those technology upgrades truly effective, there must be commensurate operational upgrades, such as increased guard-force numbers or limitations on building visitors. These upgrades will progress as threat levels increase.

In a business environment where threats change continuously, it is essential for every corporation to have an established and tested security program capable of dealing with increasing threat with minimal input and decision making needed during an actual incident.

Focus on Bioterrorism for Food and Beverage Companies

The Public Health Security and Bioterrorism Preparedness and Responsive Act of 2002 (the Bioterrorism Act) directs the Secretary of Health and Human Services to take steps to protect the public from a threatened or actual terrorist attack on the U.S. food supply.

This regulation pertains to facilities that manufacture/process, pack, or hold food—as defined in the regulation—for consumption in the United States. Examples of food include dietary supplements and dietary ingredients; infant formula; beverages (including alcoholic beverages and bottled water); fruits and vegetables; fish and seafood; dairy products and shell eggs; raw agricultural commodities for use as food or components of food; canned and frozen foods; bakery goods, snack food, and candy (including chewing gum); live food animals; and animal feeds and pet food.

Illness Related to Contaminated Food

Based on current population data, the Centers for Disease Control (CDC) estimates that each year, one out of every four Americans will develop a food-borne illness. Major outbreaks of food-borne illness occur all too frequently, sometimes affecting hundreds of thousands of people. Among the largest reported outbreaks caused by unintentional biological contamination was an outbreak of *salmonella typhimurium* infection that sickened approximately 170,000 people in 1985 and was linked to post-pasteurization contamination of milk from a U.S. dairy plant. In 1994, an outbreak of *salmonella enteritidis* infection linked to a contaminated ice cream pre-mix sickened an estimated 224,000 people in 41 states.

If an unintentional contamination in one event can affect 224,000 individuals, a concerted, deliberate attack on food could be devastating, especially if a more dangerous chemical, biological, or radio-nuclear agent were used. It is reasonable to assume that a terrorist using the food supply as a vehicle for attack would use an agent designed to maximize the number of deaths. Many of these agents are the same pathogens that have been linked to significant outbreaks of food-borne illness due to unintentional contamination.

Mitigating the Risk

The following are some examples of what a company can do to mitigate the risk of food contamination or the threat of bioterrorism:

- Develop processes and procedures that achieve world-class corporate standards, which comply with regulatory statutes locally and internationally.
- Develop world-class traceability mechanisms that can trace your product from your supplier to the end consumer (farm-to-fork).
- Develop incident-management processes and procedures.
- Develop an early-warning system that will alert your company to a potential event.
- Develop a system for the quick identification of the product affected.

Marsh's Global Product Recall Solutions and Prevention Practice has participated in more than 5,000 product safety and product recall projects in 122 countries, including one of the largest product recalls to date. The team can assist a company with a thorough assessment of its facilities and processes. This evaluation reviews a company's current processes and procedures for product recall and compliance with relevant local and international statutes, traceability mechanisms, early-detection systems, and overall readiness of the company to conduct a recall should a product event take place. We believe that engaging in such an assessment, combined with other risk mitigation strategies, can best support a company's compliance efforts and prepare it for managing the impacts of a direct or indirect bioterrorism incident.

Business Continuity in Managing Terrorism Threat

Many terrorism risks can be managed by utilizing a well-thought-out terrorism risk management plan. The plan should consider the impact of an event on property security, personal security, insurance coverage, and business-operations continuity. By assessing how terrorism affects the life cycle of risk across the business, companies can survive and even thrive during a terror threat or actual event, whether or not they are directly affected. Consider, for example, September 11, which although a regional event, rippled across the United States and internationally, leading to restricted transportation, stranded individuals, increased security, and psychological trauma. Many industries and companies still have not recovered from this event and its impacts, while others have learned its lessons and prepared themselves better for any future incidents. To best understand how business continuity planning and other risk management tools can help manage the threat of terrorism, companies should review their complete business process and determine how best to mitigate the impact of terrorism on vital operations and assets.

Terrorism is not a probabilistic event: It cannot be easily quantified with probabilities, nor can it be accurately predicted. Terrorism is an opportunistic event. If the opportunity exists within an area, company, region, or industry and there is a group targeting that area, the potential is high for the event to happen. These are deliberate acts, and they are often very well planned and organized.

Acts of terror will affect a business either directly or, in many cases, indirectly. By understanding the complete business process and all the interdependencies present in that business process, an appropriate plan can be developed. A terrorist act should be planned for as if planning for any other business event. Focus on the process, develop a strong decision-making process, understand the data elements needed to make decisions, implement measurement and monitoring to provide as much advance warning as possible, and complete a thorough training program.

Once a company understands the business process, it can evaluate the impact of an outage in that process. It can also determine what risk management steps are most appropriate—transfer to an insurance product, accept the risk, mitigate the risk with plans and programs, and/or reengineer the process to help minimize the risk. In some cases, the most appropriate action will be to close that portion of the operation; in others, it may be to build a redundant capability to minimize the impact of a single outage. Often, the solution will be a combination of activities. Marsh strongly believes risk management decisions should be focused on and guided by the core business operations: that is, what is vital to keeping the business running.

A core feature of any terrorism risk management plan is business continuity. Business continuity is not an add-on to operations; it is a necessary part of a complete business plan. A well-focused company understands the risks involved and ensures that its operations are designed to react in the correct manner. The impacts of a terrorist attack are complex, but there is a process for evaluating the actions that need to be taken.

It is only through a well-designed testing program that the actions can be fine-tuned and properly focused. Testing does not need to be exceedingly complex or difficult to accomplish. It can be done in tabletop sessions and scenario run-throughs that can highlight the major problems or potential issues in the plans and actions. When people know what to do and how to get it done, continuity programs will often work.

10 Conclusion—A Future Without TRIA

This report reviews the terrorism insurance marketplace in 2005 and early 2006. As the take-up rate analysis in Chapter 4 demonstrates, the availability and purchase of terrorism coverage continues to be a national issue in the United States. The exposure to potential future terrorist attacks is felt in central business districts and in areas that present "soft" targets. This exposure picture lies at the root of the need for a national terrorism insurance solution, with involvement from both the federal government and private industry.

Detractors of the federal government's continued involvement in a program to provide terrorism insurance are quick to point out that the insurance marketplace has increased surpluses to a level that should be able to deal with future terrorism losses. This argument, however, takes little account of the pressures faced throughout the commercial property and casualty insurance industry as a result of last year's heightened catastrophic hurricane activity, which, based on a number of estimates, is likely to continue for the foreseeable future.

The continued stability of the insurance industry will have a direct impact on the availability of insurance for fire, workers compensation, and liability coverage. With the likelihood of TRIA's expiration in December 2007, market dislocation is likely to occur due to the obligatory nature of terrorism coverage for certain lines of insurance. As a result, without TRIA, insurers that provide workers compensation to U.S. clients—and where the peril of terrorism cannot be excluded—are unlikely to be able to also support property coverage including terrorism at the same level. In addition, even in the event that a long-term solution comes to fruition, it will take a number of years to develop the surplus necessary to deal with catastrophic terrorism events of the magnitude of September 11. Therefore, some combination of public- and private-sector involvement may still be required to appropriately address terrorism exposure in the United States.

Long-term solutions for terrorism insurance are being discussed. In April 2004, Treasury Department officials contacted some industry groups and asked that they develop a mechanism to handle terrorism risk once TRIA expires. Since that time, various organizations have submitted proposals, including a number of different pooling/risk-sharing concepts and a catastrophe bond facility. While each proposal has its own merits, much more analysis and coordination needs to be done in addressing issues such as:

- the role of the federal government;
- levels of required funding, pre- and post-event;
- mandatory participation;
- lines of coverage to be included;
- limits and retentions; and
- federal versus state regulation.

Whether these concepts, individually or collectively, represent a workable long-term solution is debatable. The potentially adverse economic ramifications associated with the unavailability of terrorism insurance should drive the industry to fully explore all possible options. The majority of long-term terrorism insurance solutions—including overseas terrorism insurance programs—rely on the presence of government protection in the event that pool mechanisms have been eroded through terrorism losses.

The TRIA extension calls for the President's Working Group on Financial Markets to consult with the National Association of Insurance Commissioners

(NAIC), representatives of the insurance and security industries, and policyholders to analyze the long-term availability and affordability of terrorism insurance. This group is to report to Congress by September 30, 2006. All constituents must get actively involved if an acceptable solution is to be created and implemented.

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