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TERRORIST ATTACKS

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## Property Damage and Insured Losses from the 2001 World Trade Center Attacks

Patricia Grossi\*

\*Risk Management Solutions, Inc., [patricia.grossi@rms.com](mailto:patricia.grossi@rms.com)

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# Property Damage and Insured Losses from the 2001 World Trade Center Attacks\*

Patricia Grossi

## **Abstract**

This paper presents a summary of the overall property damage and final insured loss estimates as a result of the World Trade Center (WTC) disaster on September 11, 2001. Initial research completed at the time of the event was combined with available information since this time to develop final monetary estimates for damage to buildings and their contents, infrastructure, and cleanup costs. In addition, the insured loss as a function of property damage is presented, emphasizing the enormous impact of this event on the U.S. insurance industry.

**KEYWORDS:** WTC, insurance, damage, loss

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## 1. Introduction

In the week following World Trade Center (WTC) disaster on September 11, 2001, Risk Management Solutions (RMS) issued a report on the event, based on its research and limited on-site reconnaissance to help qualify and quantify, as best as possible, the magnitude of the damage and insured loss from the disaster at the WTC (Risk Management Solutions, 2001). At the time, RMS was in the business of natural catastrophe modeling (e.g., earthquake, windstorm, and flooding events) and used its expertise in modeling analytics and understanding of the impacts of natural disasters to frame the potential insurance consequences of the tragedy. This paper builds on this initial research, as compared to the available information since this time and the development of an RMS<sup>®</sup> U.S. Probabilistic Terrorism Model, to summarize the overall property damage and final insured loss estimates from the WTC attacks in downtown Manhattan. Property damage and insured loss estimates can be an important input or benchmark for the econometric modeling results presented in other papers in this volume. The discussion is limited to property losses in and around the WTC complex in downtown Manhattan only; casualty estimates are outside the scope of this paper.

Overall, there was \$22.7 billion in property damage in and around the WTC complex as a result of the terrorist attacks. Insured loss to property, which includes building, contents, and time element coverage (e.g., business interruption), totaled approximately \$19 billion. With this large insured loss - ranking only 2<sup>nd</sup> behind Hurricane Katrina's \$41.1 billion insured loss<sup>1</sup> - the paper concludes with a discussion on the enormous impact of this event on the U.S. insurance industry, including the U.S. federal government backstop for terrorism-related losses.

## 2. Property Damage

Property damage or the loss of physical capital due to the 9/11 terrorist attacks is the sum of all physical assets partially or completely destroyed as a result of the hijacked planes. The focus of this paper, however, is the loss of property at the WTC complex site only. This includes building and infrastructure loss, as well as contents or asset loss. Building and infrastructure loss includes damage due to the collapse of structures, damage to building façades and other structural and nonstructural elements, and damage to the water supply, electrical power, telecommunications, and

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<sup>1</sup> As estimated by the Property Claim Services (PCS) of the Insurance Services Office (ISO) at the time of occurrence.

transportation systems. Contents or asset losses include damage to equipment, fixtures, and other contents within the damaged buildings.

There were numerous studies completed within the year following the 9/11 attacks that discussed the economic impact of the attacks on the WTC. In May 2002, the U.S. Government Accounting Office (GAO) reviewed eight studies by seven different organizations which estimated the economic impact on New York City due to the WTC attacks (U.S. Government Accounting Office, 2002). These included studies by: the New York City Office of the Comptroller, the New York Governor and State Division of the Budget, the New York City Partnership and Chamber of Commerce, the Fiscal Policy Institute, the New York State Senate Finance Committee, the Milken Institute, and the New York State Assembly Ways and Means Committee. Most of these were initial studies and ranges of economic losses varied significantly due to the inclusion or exclusion of various types of loss, as well as the timing of each study, as some aspects of loss vary over time – in particular, losses associated with the interruption of business activity.

### ***Estimates of Lost Physical Capital in 2002***

In order to determine a definitive estimate of property loss at the WTC complex and surrounding buildings, the latest of these initial studies was considered as a starting point. The study completed in September 2002 by the Comptroller of the City of New York (Thompson, 2002) was one that aimed to determine the financial impact on the city one year after the event. Within this report, the lost physical capital is estimated at \$21.8 billion (Table 1). This includes a replacement cost of \$6.7 billion for the Twin Towers (WTC 1 and WTC 2), calculated at \$500 per square foot for 13.4 million square feet of office space; a cost of \$4.5 billion to repair or replace the office space surrounding the Twin Towers; a cost of \$4.3 billion to repair or replace the utility infrastructure and underground trains; a cost of \$5.2 billion to replace the contents, fixtures, and computing technology within damaged and destroyed buildings; and a cost of \$1.1 billion to pay for clean-up costs in the surrounding region, as well as compensation to victims' families.

This breakdown of lost physical capital is a good starting point to estimate physical damage. Unfortunately, estimates for clean up and victim assistance are presented together; benefits for victims' families should be classified as life/casualty losses for this analysis. In addition, within the report, the \$6.7 billion cost to rebuild the Twin Towers is an estimate based on costs in 2003, whereas infrastructure costs are described as payments through the issuance of the report in 2002, as well as future costs through

completion. As a result, it is generally assumed that these estimates (presented in Table 1) are roughly based on 2002 dollars.

Table 1: Summary of lost physical capital, as estimated by the Comptroller of the City of New York in September 2002 (Source: Thompson, 2002)

Component	Value (\$ billions in 2002 dollars)
WTC Towers replacement (WTC 1 and WTC 2)	\$6.7
Other buildings around WTC 1 and WTC 2 that were damaged or destroyed	\$4.5
Infrastructure: trains, phones, electricity	\$4.3
Tenants' contents (fixtures, computers, furnishings)	\$5.2
Private costs of clean-up/victim assistance	\$1.1
<b>TOTAL</b>	<b>\$21.8</b>

***Physical Damage: Calculating Losses***

In order to determine a final estimate of physical damage at the time of the event (i.e., in 2001 dollars), excluding casualty estimates, a bottoms-up approach can be taken to calculate losses. In particular, physical damage to buildings in and around the WTC complex – or total building loss (TBL) – is calculated as follows:

$$TBL = \sum_i RC_i * SF_i * dr_i \tag{1}$$

where  $RC_i$  = replacement cost (per square foot) for building  $i$   
 $SF_i$  = square footage of building  $i$   
 $dr_i$  = damage ratio of building  $i$

Information must be gathered on these three key components: replacements costs in 2001, the square footage of the damaged or destroyed structures, and the damage ratio – or ratio of loss to replacement cost – for different levels of damage. Contents loss is then calculated as a function of total building loss.

In order to use this approach, additional sources of information are needed. These include post-damage assessment surveys following 9/11, real estate information, and catastrophe modeling and insurance data. To begin, consider the World Trade Center Performance Study completed by the

Federal Emergency Management Agency (FEMA, 2002), which chronicled the impacts to each destroyed or damaged structure in and around the WTC complex. As illustrated in Figure 1, buildings were inspected by representatives of the Structural Engineers Association of New York (SEAoNY) and classified as full collapse, partial collapse, major damage, moderate damage, and no damage. According to the study, major damage is “damage to structural members requiring shoring or significant danger to occupants from glass, debris, etc.” while moderate damage is described as “broken glass, façade damage, roof debris.” In all, six structures were classified as full collapse (colored black in Figure 1), including the four within the WTC complex (WTC 1, WTC 2, WTC 3, and WTC 7), as well as St. Nicholas Greek Orthodox Church and the North Bridge connecting the Winter Garden Building to the WTC’s North Tower (WTC 1). Three buildings were classified as partially collapsed (colored red in Figure 1) – WTC 4, WTC 5, and WTC 6. Finally, major damage (colored blue in Figure 1) occurred across an additional 11 buildings and moderate damage (colored yellow in Figure 1) occurred across 37 structures surrounding the WTC complex.

From the map in Figure 1, one has a sense of the scale of building damage and can begin to estimate the costs of physical damage for fully collapsed, partially collapsed, majorly damaged, and moderately damaged structures. However, the square footage of each of the buildings is still needed. Therefore, the map of damaged structures is combined with information on square footage from the real estate industry (TenantWise, 2003) to summarize the square footage and occupancy class of properties that fully collapsed, partially collapsed, or sustained major or moderate damage. This information is illustrated in Table 2.<sup>2</sup>

In Table 2, where the information is available, commercial properties are classified as Class A, B, or C according to its year of construction, location, and its finish and amenities. While the classifications are subjective, Class A buildings represent the newest buildings with the latest technology, residing in the best locations, and commanding the highest rental rates. This serves as a key piece of information to determine replacement costs for damaged or destroyed structures, as it can be assumed that Class A commercial structures will cost more to replace than Class B or Class C structures.

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<sup>2</sup> The 37 structures sustaining moderate damage, though not listed in Table 2, were additionally studied as part of this analysis.

Grossi: Property Losses from the 2001 World Trade Center Attacks

Figure 1: New York City DDC/DoB Cooperative Building Damage Assessment Map of November 7, 2001 based on SEAoNY inspections (Source: Federal Emergency Management Agency, 2002)

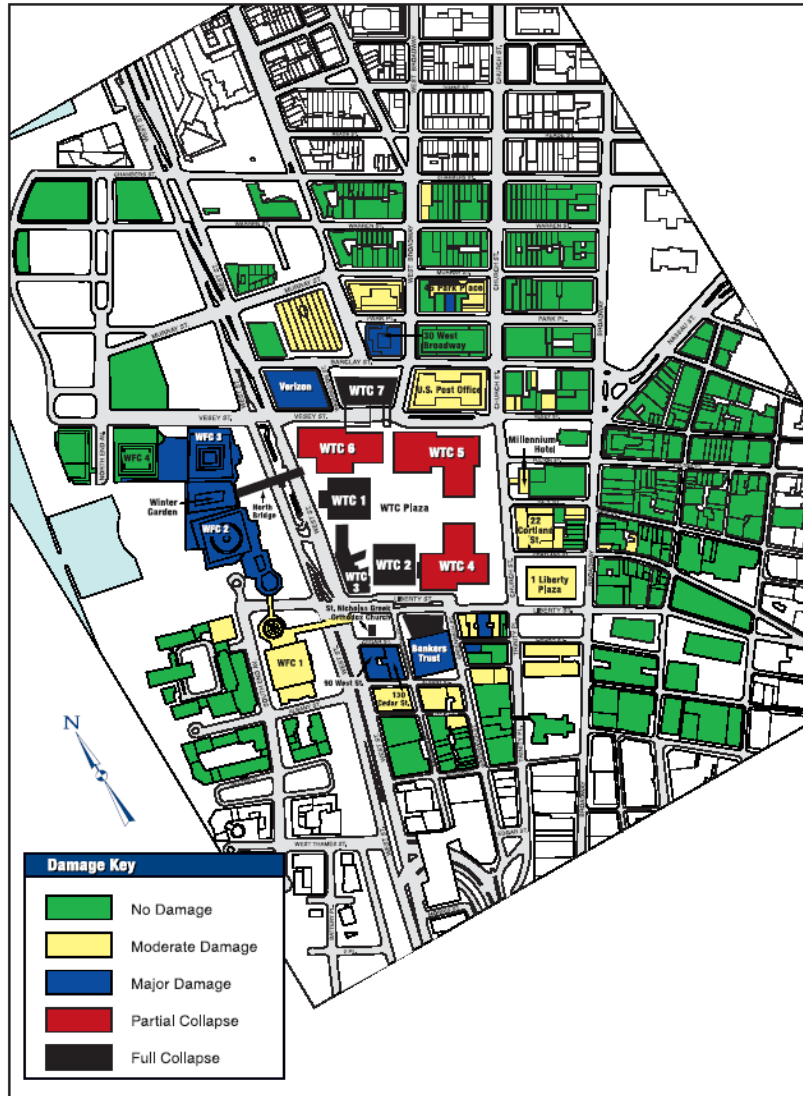


Table 2: Square footage and occupancy class of properties in and around the WTC Complex that sustained full collapse, partial collapse or major damage as a result of the 2001 WTC attacks (Source: Federal Emergency Management Agency, 2002; TenantWise, 2003)

<b>Building</b>	<b>Damage</b>	<b>Square Feet</b>	<b>Occupancy</b>
WTC 1 (North Tower)	Full collapse	4,761,716	Commercial (Class A)
WTC 2 (South Tower)	Full collapse	4,761, 716	Commercial (Class A)
WTC 3 (Marriott Hotel)	Full collapse	584,600	Commercial Hotel
WTC 4 (South East Plaza)	Partial collapse	576,000	Commercial (Class A)
WTC 5 (North East Plaza)	Partial collapse	783,520	Commercial (Class A)
WTC 6 (Custom House)	Partial collapse	537,693	Commercial (Class A)
WTC 7	Full collapse	2,000,000	Commercial (Class A)
Greek Orthodox Church (155 Cedar Street)	Full collapse	1,232	Religious
North Bridge (from Winter Garden to WTC 1)	Full collapse	8,000	Commercial
2 WFC Tower B (125 West St.)	Major Damage	2,591,244	Commercial (Class A)
3 WFC Tower C (200 Vessey St.)	Major Damage	2,263,855	Commercial (Class A)
Winter Garden Building (201 Vessey St.)	Major Damage	54,000	Greenhouse
1 Bankers Trust Plaza (130 Liberty St.)	Major Damage	1,415,086	Commercial (Class A)
120 Cedar St.	Major Damage	18,319	Commercial
Engineering Building (114 Liberty St.)	Major Damage	69,000	Commercial (Class C)
130 Cedar St.	Major Damage	135,000	Commercial (Class C)
90 West St.	Major Damage	350,000	Commercial (Class B)
140 West St. (Verizon)	Major Damage	1,171,540	Commercial (Class C)
45 Park Place	Major Damage	75,000	Commercial
30 West Broadway	Major Damage	381,000	Commercial (Class C)

In addition to combining the SEAoNY inspection information with the details from the local real estate industry, the total square footage of damaged or destroyed commercial structures was gathered. According to real

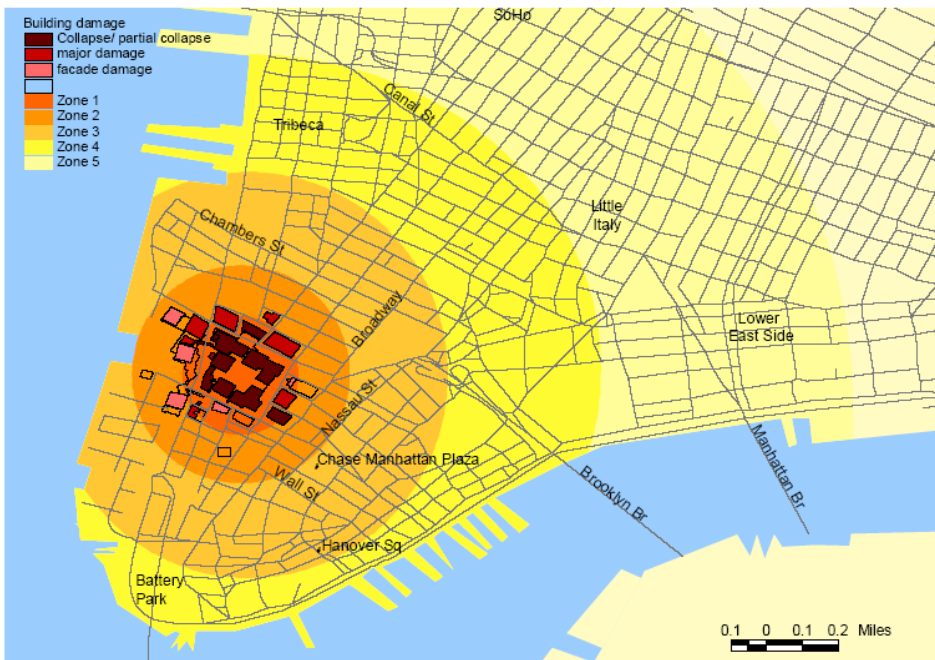


estate information (TenantWise, 2003), there was approximately 27.8 million square feet of damaged or destroyed Class A commercial property, with another 4.9 million square feet of damaged Class B property and 1.8 million square feet of damaged Class C property. With a total loss of 34.5 million square feet of commercial property, these buildings represent the majority of building and contents losses from the WTC attacks.

With this information on the scope of damage and square footage of the damaged structures, an estimate of building and contents damage can begin to be calculated. However, the damage due to airborne debris, the replacement costs for collapsed buildings (in 2001 dollars), and the damage ratios for structures with moderate or major damage must additionally be determined.

Immediately following the event, RMS conducted its own research into the damage from the attacks and published a map of five damage zones surrounding the WTC complex (Figure 2) in order to estimate the nature and intensity of the loss extent beyond the WTC complex. A set of concentric zones was defined, centered on the WTC complex.

Figure 2: Damage zones surrounding World Trade Center complex (Source: Risk Management Solutions, 2001)



Zone 1 was defined as the immediate area of impact, with damage caused primarily by building collapse, fire, and massive debris surcharge onto neighboring buildings. Zone 2 represents the areas beyond the range of fire spread and damage mechanisms are primarily from falling debris, collapse, possible pressure waves resulting from the collapse, and airborne debris. Building damage is characterized by large debris falling on roofs, damaged cladding, and many broken windows. Structural damage was suspected among many buildings in this zone, and the SEAoNY engineering surveys were primarily conducted within this zone.

Zones 3 through 5 represent areas of debris damage. Zone 3 includes damage due to scattered items of smaller debris and wind-blown missiles causing damage by falling on roofs and breaking windows. Zone 4 includes areas of thick dust, requiring major clean-up and resulting in mechanical damages as well as damage to equipment and finishes. Finally, zone 5 includes areas of far-field impacts, with light dust requiring cleanup and resulting in damages to equipment and finishes. These zones of damage, beyond the scope of the post-damage assessment survey conducted by the SEAoNY engineers and the information gathered by the real estate industry, can be used to assess the additional square footage of buildings impacted by the WTC attacks.

### ***Replacement Costs and Damage Ratios***

The final pieces of information needed to calculate property damage to buildings and contents are the replacement costs and damage ratios (i.e., ratio of loss to replacement cost). Replacement costs in 2001 dollars were checked against various sources (e.g., RSMeans, 2000), concluding that an estimated \$450-\$500 per square foot for the approximate 14 million square feet of space across the WTC complex is reasonable to calculate total costs for building replacement. In addition, a collapse or partial collapse of a building represents a 100% damage ratio, while moderate damage would be an approximately 20% damage ratio. The amount of damaged contents is estimated at between 20% and 50% of building value, depending on the degree of damage.

For the amount of damage due to airborne debris, including the layer of dust which impacted a wide area, the property within zones 3 through 5, as indicated above, was studied. It is expected that replacement costs would be slightly lower than those for buildings and contents damage – at \$300 per square foot – with damage ratios ranging from 0.1% to 1%. Values were also earmarked against estimates of loss published immediately following the event, confirming these choices of replacement costs and damage ratios.

***Infrastructure Damage***

In order to determine a final estimate of infrastructure damage, the previous estimates (from Thompson, 2002) were studied and updated as appropriate. Infrastructure damaged during the WTC attacks in New York City includes the water and sewer system, underground trains, the power grid, and telephone lines. Damaged water mains around the WTC site included various sized mains in the immediate vicinity and estimates of replacement totaled \$200 million. Damage to the trains run by the Port Authority Trans-Hudson (PATH) and Metropolitan Transportation Authority (MTA), totaled \$2.3 billion. Costs for replacement of damaged telephone lines owned by AT&T and Verizon total another \$2.3 billion. Finally, damage to electricity, gas, and steam powered by Consolidated Edison, Inc (Con Ed) totaled \$400 million. In all, this is a total of \$5.2 billion in damage.

***Total Property Damage***

Based on this analysis of calculating property damage based on replacement costs, square footage, and damage ratios, the applicable damage estimates in Table 1 are updated and shown in Table 3. Overall, property damage in the devastation zone surrounding the WTC complex totals \$22.7 billion.

Table 3. Summary of property damage in and around the WTC complex as a result of the 2001 WTC attacks

<b>Component</b>	<b>Value (\$ billions in 2001 dollars)</b>	<b>Description</b>
WTC complex replacement	\$6.4	replacement cost of \$450-\$500/sq ft x 14 million sq ft
Buildings surrounding WTC complex with major or moderate damage	\$5.5	costs of \$300-\$450/sq ft x 8.5 million sq ft (major damage) with 20% ratio for moderate damage
Tenants' contents	\$5.2	50% of building value for collapsed, major damage; 10% for moderate damage
Costs of cleanup (airborne debris building/contents damage)	\$0.4	mechanical damages; damage to equipment and finishes
Infrastructure: trains, phones, electricity, water	\$5.2	previous estimates with additions of water main damage
<b>TOTAL</b>	<b>\$22.7</b>	

In particular, the WTC complex (including WTC 1 through WTC 7) damage – with four fully collapsed and three partially collapsed structures - totaled \$6.4 billion. The additional buildings surrounding the WTC complex which collapsed (2 structures) or sustained major damage (11 structures) totaled \$3.5 billion in loss, with the moderately damaged buildings (37 structures) had damage totaling \$2.0 billion. In Table 3, these are summed and shown as \$5.5 billion of total loss to buildings surrounding the WTC complex. The loss to contents within all of the impacted buildings, based on a percentage of the total building value, is calculated at \$5.2 billion.

The contents damage due to debris generation in buildings outside the immediate damage zone total an additional \$400 million; this includes costs to repair damage to mechanical equipment from the thick ash, as well as the loss of contents from debris damage. Finally, the infrastructure damage (as discussed above) totals \$5.2 billion in loss.

### **3. Insured Losses**

Of the \$22.7 billion of total property damage in and around the WTC complex, a portion of loss was covered by property insurance. In the U.S., commercial and residential insurance is generally broken down into three types of coverage: building, contents, and time element coverage (i.e., business interruption for commercial coverage and additional living expenses for residential coverage). For the 2001 WTC attacks, the time element coverage payouts were primarily business interruption (BI) payouts to the companies housed within the damaged or destroyed buildings in the WTC attacks.

In the days and weeks following September 11, 2001, property-related claims were gathered by various insurance organizations for property damaged in New York (from the WTC attacks) and in Virginia (from the attack on the Pentagon). The main gatherer of information was the Property Claim Services (PCS) of the Insurance Services Office (ISO), which provides metrics around catastrophe loss to the insurance industry. Beginning on 9/11/01, PCS issued its first catastrophe bulletin on the event, describing it as “an apparent coordinated terrorist attack on properties in several locations caused significant and extensive damage, particularly in New York City.” The 24<sup>th</sup> and final catastrophe bulletin, published on March 24, 2004, contains its final estimate of total insured loss for the event.

In addition, the U.S. Insurance Information Institute (III), which provides information on insurance-related matters to improve public understanding of the business of insurance, issued its own estimates of insured loss from the 2001 terrorist attacks in 2006. The losses were issued

on the 5<sup>th</sup> anniversary of September 11 and were presented in both 2001 dollars and 2006 dollars (Insurance Information Institute, 2006).

It should be noted that any estimates of insured loss include insurance claims on personal (i.e., residential), commercial, and automobile lines of business in New York and Virginia. As a result, insured loss is not a direct subset of the total property damage as listed in Table 3 – as insured losses include damage to another line of business (auto), payouts associated with time element coverage (e.g., business interruption), and losses to another geographic area (Virginia).

### ***Business Interruption***

As coverage for business interruption (BI) was a large portion of total insured loss from the WTC attacks, causing a number of lawsuits to be filed when coverage conditions were in dispute, it is important to clarify this type of coverage. The insurance contract language for BI coverage can vary from company to company. Business interruption can be driven by four different causes: (1) physical damage (damage to actual building/contents); (2) civil authority (lack of access to a building); (3) lifeline outage (power, water, gas, etc.); or (4) contingent BI (loss of operations/damage to supplier or contractor).

In order to have a claim, two criteria must be satisfied. First, there needs to be a “necessary” suspension of operations, and second, a “direct physical loss” must be sustained, although the loss does not have to be on the actual premises of business. In addition, coverage can take many forms, such as coverage for: gross earnings, where coverage is in place until a business is fully operational; gross profit, where coverage is in place until market share is re-established; or extra expenses, where coverage is designed to reduce BI losses. For example, the cost of conducting business on a temporary basis in a new location with a higher rent is covered. Notably, extra expenses coverage has been scaled back significantly since the WTC attacks.

Limitations to coverage can take different forms as well. The period of restoration (usually starting 48 to 72 hours after suspension of operations) is defined as the time needed to re-establish a business – and usually has a maximum period of coverage (e.g., one year). There are also “war exclusions” which were discussed at length in the media after the WTC attacks – as many insurers declared they would ignore the exclusion – but it was not applicable as the attacks needed to be caused by a recognized nation, which was not the case in the 2001 WTC attacks.

### ***Insured Losses from the Insurance Services Office***

Table 4 summarizes the insured loss estimates from the Property Claim Services of ISO for the state of New York only, totaling \$18.77 billion. This estimate, in 2001 dollars, comprises 38,000 claims across the personal, residential, and auto lines of business. If insured losses from Virginia are included, the total increases by approximately \$6.5 million or less than 1%. The overwhelming majority of the loss was sustained in New York and is associated with the commercial line of business.

As previously mentioned, following the attacks in 2001, ISO issued a total of 24 bulletins through the Property Claim Services, with the first one issued on 9/11/2001 and the last one issued in March 2004.<sup>3</sup> The claims estimates in Table 4 reflect this final bulletin in 2004. At this time, the commercial losses were updated from a 2002 estimate to reflect settlement of a number of outstanding claims. In addition, losses to personal (e.g., residential) and automobile lines of business were updated to reflect the fact that claims relating to clean-up due to debris (or heavy dust) were either not filed or paid for by residential building owners for their tenants.

Table 4. Summary of insured loss as a result of the 2001 WTC attacks in New York (Source: Property Claim Services of the Insurance Services Office)

<b>Line of business</b>	<b>Payout (\$ billions in 2001 dollars)</b>	<b>Number of claims</b>
Personal	\$0.2	15,000
Commercial	\$18.5	15,000
Auto	\$0.07	8,000
<b>TOTAL</b>	<b>\$18.77</b>	<b>38,000</b>

### ***Insured Losses from the Insurance Information Institute***

Table 5 summarizes the insured loss estimates from the Insurance Information Institute (III), which totals \$19.75 billion (in 2001 dollars) for property-related losses in New York and Virginia, including business interruption. If one includes life and liability coverages, including workers comp coverage, the total loss reaches \$31.6 billion (in 2001 dollars). More than one-half of the property losses stems from building and contents damage

<sup>3</sup> Note that these catastrophe bulletins are accessed through a fee-based service of ISO. For more information, see <http://www.iso.com/Products/Property-Claim-Services/ISONet-PCS-technical-info-on-catastrophes-and-insurance-losses.html>.

to the commercial line of business, with business interruption losses totaling approximately \$9.8 billion in loss. This estimate of business interruption losses associated with insurance payouts serves as a good benchmark for the calculation of business interruption and relocation costs to firms at the WTC complex, as analyzed by Rose and others in their paper in this volume.

Notably, in May 2007, the final insurance payments on the WTC buildings owned by Larry Silverstein, which includes the two towers (WTC 1 and WTC 2), as well as WTC 4 and WTC 5, was paid, totaling \$4.55 billion. Litigation ensued following the WTC attacks, as the insurance policies on the four buildings were underwritten by 24 different insurance companies with different contract language (For more information, see Hamblett, 2004). While the combined total of \$3.55 billion per occurrence in property damage coverage was never in dispute, the interpretation of the number of occurrences was uncertain. Mr. Silverstein claimed that the two airplane strikes constituted “two occurrences” while the insurers claimed the attacks were “one occurrence”. The insurers were grouped for trial according to contract language, where 11 insurers were liable for coverage for one occurrence and the remaining insurers were liable for coverage for two occurrences, doubling the payouts on the property coverage.

Table 5. Summary of insured loss as a result of the 2001 WTC attacks (Source: Insurance Information Institute, 2006)

<b>Component</b>	<b>Value (\$ billions in 2001 dollars)</b>	<b>Description</b>
WTC 1, WTC 2, WTC 4, and WTC 5	\$4.55	Final settlement (May 2007) – (cap \$3.5 billion/event)
Other property	\$5.4	Assuming building damage, tenants’ contents (primarily commercial with some residential and auto losses) – New York and Virginia
Business interruption	\$9.8	Primarily commercial lines of business – New York, Virginia, elsewhere
<b>TOTAL</b>	<b>\$19.75</b>	

### ***Total Insured Loss***

From these two estimates from ISO and III, it is estimated that the insured losses from the WTC attacks in New York, including damage to buildings, contents, and business interruption coverage, totaled approximately \$19 billion in 2001 dollars. This value represents an estimated 85% of the property damage, allowing businesses to recover from the WTC attacks.

However, it should be clarified that these insurance payments did not cover 85% of the physical property damage.

To be more accurate, \$9.95 billion paid out on the WTC buildings and other property (\$4.55 billion + \$5.4 billion in Table 5) covered the \$17.5 billion property damage to the WTC complex, surrounding buildings, contents, and clean-up, assuming infrastructure damage is not part of insurance losses (i.e., \$22.7 billion – \$5.2 billion in Table 3). This corresponds to an approximate 57% ratio between insured and total property losses, excluding business interruption coverage.

### **Impacts on the U.S. Insurance Industry**

The large insurance payout from the 2001 terrorist attacks has instigated a number of changes throughout the insurance industry. Immediately following the event, the reinsurance industry (i.e., the insurers to the primary insurance industry), who were liable for the majority of the loss, began to renew reinsurance policies that explicitly excluded terrorism coverage. Primary insurance companies, where regulation would allow, began to exclude terrorism coverage as well. By the one-year anniversary of the event, the U.S. remained largely uncovered – and unable to pay – for a future terrorist attack. The lack of available terrorism coverage spurred the U.S. Congress to pass the Terrorism Risk Insurance Act of 2002 (TRIA).

Under this act, which was in place through December 31, 2005, insured losses from property, contents, and business interruption were covered (i.e., shared between the federal government and the primary insurance industry) under the following 2 conditions: (1) if the event was certified by the U.S. Treasury Secretary as an “act of terrorism” carried out by foreign persons or interests and (2) the event resulted in aggregate losses greater than \$5 million. Since this time, there has been the passage of two extensions to this original legislation: the Terrorist Risk Insurance Extension Act (TRIEA), passed in 2005 and effective through December 31, 2007, and the Terrorism Risk Insurance Program Reauthorization Act (TRIPRA), a seven-year extension through 2014.<sup>4</sup>

In TRIEA, the portion of the loss insurers would pay in the event of a terrorist attack was increased. For example, the triggering event (on aggregate losses) rose from \$5 million under the original TRIA in 2002 to \$50 million in 2006 and to \$100 million in 2007. In other words, only terrorist attacks producing losses above the threshold to the entire insurance industry results in a payout of federal funds.

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<sup>4</sup> For the latest on TRIPRA, see <http://www.ustreas.gov/offices/domestic-finance/financial-institution/terrorism-insurance/>



TRIPRA, which was signed into law on December 17, 2007, provides a seven-year extension of the federal backstop for terrorism losses. Previously, TRIA had only been extended by two years at a time, resulting in many insurers unable to plan a longer-term strategy for terrorism coverage. As a result of this legislation, enacted through 2014, decisions on the amount of capital to commit to terrorism insurance can be determined, as well as product offerings and portfolio management over at least a seven-year business cycle.

In early 2009, terrorism remains a dynamic peril and the state of the market is constantly changing. There is an increasing worldwide demand for terrorism insurance, as international corporations seek protection from terrorism threat. The RMS<sup>®</sup> U.S. Probabilistic Terrorism Model, first released by Risk Management Solutions in 2002, continues to provide a comprehensive look at terrorism risk in the U.S., quantifying risk from both foreign and domestic terrorist organizations. The RMS model considers a wide range of different types of terrorist attacks at various targets, both inside and outside New York City, estimating the losses to property, liability, and other types of insurance coverage.

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