The impact of terrorism on commercial office real estate in Manhattan

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THE IMPACT OF TERRORISM ON COMMERCIAL OFFICE REAL ESTATE IN MANHATTAN

A Thesis Submitted
in Partial Fulfillment
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University of Northern Iowa
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has been approved as meeting the thesis or project requirement for the Designation University Honors with Distinction.

Date ____________________________
Dr. Art Cox, Honors Thesis Advisor, Department of Finance

Date ____________________________
Dr. Jessica Moon, Director, University Honors Program
Introduction

The September 11, 2001 terrorist attacks (“9/11”) caused major loss of human life, financial resources, and infrastructure. Within hours, over 30 million square feet of real estate in Downtown Manhattan was lost, creating an unprecedented change in supply and demand for real estate in the area. Hundreds of companies were directly affected by the loss of their offices and business fixtures, and were forced to quickly develop plans for how and where to resume work (“A Look at Former World Trade Center Tenants,” 2002). Property owners – many of whom owned the then damaged or nonexistent buildings as ground leases\(^1\) – were responsible for clean-up and construction of a new skyscraper at their own expense, even though they invested in the property based on the assumption that the building would remain as is and fully operational during their ownership. This was an extensive financial burden for property owners and created fear amongst commercial real estate investors, especially immediately after the attacks when it was unclear as to whether the government and the Port Authority would allow the damaged sites to be rebuilt.

Property owners had to work extensively with the government in order to redevelop the area. Each party had a unique vision for how to rebuild, with some arguing that the area should be left as-is, some believing it should become a memorial, and others arguing that high-rise buildings needed to be redeveloped to show the world the strength of New York. Ultimately, a compromise was met with the area featuring memorials in the footprints of the former World

\(^{1}\) A ground lease is a form of property investment where the initial owner maintains ownership of the land which the investor leases, typically for 99 years. The investor is responsible for maintaining any improvements (buildings) to the ground lease, and must return the property in the same form at the end of their lease. In the case of the World Trade Centers, the Port Authority of New York and New Jersey owned the land, and Larry Silverstein held the ground lease (Sanders, 2011).
Trade Centers, an underground memorial museum, five high-rise office towers, and a state-of-the-art transit station. This redevelopment provides remembrance of the lives lost, functional and much needed real estate, and acts as a symbol of the strength and commitment of the government, investors, and New Yorkers.

Redeveloping the damaged area instilled confidence in businesses and property owners whose support was crucial for the success of the rebuild. However, that confidence was not enough to fully mitigate the impacts of 9/11 on the real estate market. Similar to the economy, the real estate market responds quickly to major political changes, world events, and changes in consumer patterns. The 9/11 attacks caused extreme panic and changed the dynamics of the entire world, which in turn had an impact on both the economy and the real estate market, as will be further analyzed in this research.

Unfortunately, there is always the risk of massive loss of infrastructure due to terrorism, natural disaster, or human error, and therefore an event with impacts similar to 9/11 could happen again. Yet even with this risk, there is very little centralized, longitudinal research regarding the impacts of 9/11 on the real estate market. This study aims to fill the gap in research by providing centralized analysis of the Manhattan office market’s performance as a result of 9/11. By analyzing the actions taken in response to 9/11, as well as the impact to financial markets and property performance, investors can be aware of the risks and how to best mitigate them. To compare the performance of the market both before and after the attacks, a two-step analysis was completed. First, a literature review was utilized to compile data from governmental and industry-specific publications issued after the attacks. Second, trend analysis on economic and property performance statistics from 1990 to 2010 was completed. This two-part analysis sought to answer the following research questions:
1) What was the financial and economic impact of the 9/11 terrorist attacks?
2) What was the extent and impact of governmental aid in rebuilding Downtown Manhattan?
3) How did vacancy and rental rates in Manhattan respond to the sudden loss of Class A office space?

By analyzing the actions taken in response to 9/11, as well as the impact to property performance, investors will gain a better understanding of the risks associated with investing in New York City or a comparable location.

**Definitions and Acronyms**

**Class A Property:** The highest quality property, either new or recently remodeled with top-of-the-line amenities and superior quality.

**Federal Emergency Management Association:** “FEMA”

**Gross Rent:** Leases wherein the landlord is responsible for paying operating expenses and taxes; the tenant does not pay for these separately.

**Metropolitan Statistical Area:** “MSA”

**Net Rentable Area:** Total building square footage minus square footage of elevator core, stairs, piping and HVAC, and any other mechanical space that is not rented to tenants.

**Port Authority Trans-Hudson:** “PATH”, rapid mass transit system servicing New York City and New Jersey.

**Per Square Foot:** “PSF”

**Square Feet:** “SF”

**Tax Abatement:** A decrease in taxes owed, resulting from a governmental stimulus program.

**World Trade Center:** “WTC”
Vacant Space: Rentable square footage which is vacant at the time of analysis or can become vacant as soon as it is signed for by a new tenant.

Literature Review

Physical Loss

The destruction caused by 9/11 was immense. Thousands of lives were lost, hundreds of companies were affected, the economy suffered, and the nation was stunned. There were 3,043 total lives lost, 2,819 of which were in New York City\(^2\) (Thompson, 2002). Of these lives lost, 415 were emergency responders, 88 were on American Flight 11 which hit the North Tower, and 59 were aboard United Flight 175 which hit the South Tower (Thompson, 2002). Outside of New York, American Flight 77 crashed into the Pentagon and United Flight 93 crashed in Pennsylvania, resulting in 99 deaths aboard these aircraft. Finally, 125 individuals inside the Pentagon were killed due to the impact of Flight 77’s crash (Thompson, 2002).

The planes hitting the North and South World Trade Center Towers ultimately caused severe damage to 23 office buildings, and environmental or minor impact to several other buildings. Upon impact, jet fuel on board the planes caught fire and subsequently started fires inside the two towers. Both World Trade Center Towers remained standing for multiple hours but eventually collapsed due to the fires weakening the steel structure (FEMA, 2002). When the buildings collapsed, flaming debris hit surrounding buildings and fires spread, causing many other buildings to be damaged. In Downtown Manhattan where the World Trade Centers were located, most buildings were primarily office space, thus, a majority of the damage impacted office real estate.

\(^2\) Each estimate of loss varies slightly. The estimate reported by Thompson comes from data provided by the New York City Medical Examiner’s Office, dated August 19, 2002.
The total lost and damaged office space was over 30 million square feet, nearly one-third of the total Class A office real estate in the Downtown Manhattan submarket\(^3\) (CBRE Econometric Advisors, 2017). As detailed in Table 1: Lost and Damaged Office Space, 13,420,000 square feet of office space was fully destroyed (and therefore considered “lost”), with another 16,586,000 square feet severely damaged and requiring extensive repair.

**Table 1**

<table>
<thead>
<tr>
<th>Lost and Damaged Office Space, NYC, as of 9/23/01</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Tenants</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>1 WTC Tower</td>
</tr>
<tr>
<td>2 WTC Tower</td>
</tr>
<tr>
<td>7 WTC</td>
</tr>
<tr>
<td>5 WTC</td>
</tr>
<tr>
<td>4 WTC</td>
</tr>
<tr>
<td>6 WTC</td>
</tr>
<tr>
<td>2 World Financial Center</td>
</tr>
<tr>
<td>3 World Financial Center</td>
</tr>
<tr>
<td>Liberty Plaza</td>
</tr>
<tr>
<td>4 World Financial Center</td>
</tr>
<tr>
<td>1 World Financial Center</td>
</tr>
<tr>
<td>1 Bankers Trust Plaza</td>
</tr>
<tr>
<td>140 West Street</td>
</tr>
<tr>
<td>90 Church Street</td>
</tr>
<tr>
<td>195 Broadway</td>
</tr>
<tr>
<td>22 Cortlandt Street</td>
</tr>
<tr>
<td>30 West Broadway</td>
</tr>
<tr>
<td>90 West Street</td>
</tr>
<tr>
<td>130 Cedar Street</td>
</tr>
<tr>
<td>114 Liberty Street</td>
</tr>
<tr>
<td>2 Cortlandt Street</td>
</tr>
<tr>
<td>106 Liberty Street</td>
</tr>
<tr>
<td>110 Liberty Street</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Notes to Table:
1. Does not include space such as the Marriott Hotel at 3WTC, retail stores, or other nearby buildings that were evacuated due to ash, broken windows, etc.
2. Cushman & Wakefield estimates the total lost or damaged office space to be 26 million square feet
3. Insignia/ESG estimates the total lost or damaged office space to be 25 million square feet
4. Data on the number of tenants per building comes from CBRE Econometric Advisors, 2017

(FEMA, 2002)

\(^3\) The total square footage in Downtown Manhattan prior to 9/11 was approximately 92 million square feet (CBRE Econometric Advisors, 2017).
Tenant Relocation

With the massive loss of office space, tenants were forced to relocate and rebuild their facilities quickly to continue business operations. It is estimated that as of July 2002, 70% of tenants relocated to Midtown, and nearly 85% of tenants remained in New York State (Thompson, 2002). Further, over 9% of impacted tenants moved to New Jersey in order to stay near Manhattan. Detail on tenant relocation can be seen in Table 2: Relocation of WTC Tenants.

<table>
<thead>
<tr>
<th>New Location</th>
<th>Percent</th>
<th>Representative Tenant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midtown</td>
<td>70.00%</td>
<td>Empire Blue Cross Blue Shield</td>
</tr>
<tr>
<td>Downtown</td>
<td>6.40%</td>
<td>Morgan Stanley</td>
</tr>
<tr>
<td>NYC, Outer Boroughs</td>
<td>8.00%</td>
<td>Verizon Communications</td>
</tr>
<tr>
<td>New York State (Other than NYC)</td>
<td>0.40%</td>
<td>Morgan Stanley</td>
</tr>
<tr>
<td>New Jersey</td>
<td>9.20%</td>
<td>Citigroup/Salomon Smith Barney</td>
</tr>
<tr>
<td>Connecticut</td>
<td>2.90%</td>
<td>Citigroup/Salomon Smith Barney</td>
</tr>
<tr>
<td>Other (Outside of NY, NJ, CT)</td>
<td>3.10%</td>
<td>Cantor Fitzgerald Securities</td>
</tr>
</tbody>
</table>

(Thompson, 2002)

Similarly, a study done by Colliers ABR identified the relocation of 53 companies formerly located in the World Trade Centers, as is represented in Map 1. Of these companies, 45 chose to remain in or near Manhattan, with the remaining eight relocating further from downtown Manhattan (Colliers ABR, 2002). Many of the companies that relocated further away cited the need for a more secure headquarters or a need for concentrated space that was not available in Manhattan. Morgan Stanley and the Royal Bank of Canada both moved north of Manhattan to Purchase, New York\(^4\). In suburban New Jersey, American Express took over office space in Parsippany and Short Hills, Nomura Securities moved to Piscataway Township,

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\(^4\) The Morgan Stanley office was divided amongst four locations, three in downtown Manhattan and one in Purchase, New York. The Purchase location was the former Texaco headquarters which Morgan Stanley bought post-9/11 and was the largest of the relocations.
and the Port Authority of New York and New Jersey moved to Newark. Finally, American Express and Citigroup moved operations to Stamford, Connecticut\(^5\) (Colliers ABR, 2002).

\textit{Map 1: World Trade Center Tenant Relocation}

Prior to 9/11 when tenants relocated out of Manhattan, it was typically due to the high rental rates for office space in Manhattan. Jersey City, directly across the river, was an attractive option for those companies, as rents there were significantly lower but the location offered many

\(^5\) Additional American Express office located in Manhattan.
of the same amenities and opportunities as Manhattan. This changed post-9/11, as rental rates in Lower Manhattan converged with those of Jersey City (Studley, 2002). Additionally, fear became a significant factor for many companies who considered moving to Jersey City post-9/11, as “many companies considering the relocation of certain operations may feel that Jersey City is not far enough away from Manhattan to immunize them from a catastrophe and will therefore consider other markets” (Studley, 2002, p.2).

Financial Loss

Accompanying the challenges of the physical loss and tenant relocation, the financial loss due to the attacks was extreme. Estimates on the total financial loss provided by the New York City Comptroller range from $82.8 billion to $94.8 billion, as shown in Table 3: Financial Loss due to 9/11 (Thompson, 2002). This loss estimate is made up of two components: lost wealth and capital, and lost gross city product. Lost wealth and capital totaled $30.5 billion, divided between physical and human capital. Physical capital lost is comprised of $6.7 billion for the replacement value of the World Trade Center Towers, $4.5 billion for the other damaged buildings, $4.3 billion for infrastructure (including trains, phones, and electricity), $5.2 billion for tenants’ fixtures, computers, and furnishings, and $1.1 billion for private costs of cleanup and victim assistance. Human capital lost is estimated based on the lost earnings of prematurely deceased workers and is estimated to be $8.7 billion (Thompson 2002). Lost gross city product – the lost value of goods and services that would have otherwise been produced – is estimated to be $52.3 billion to $64.3 billion from September 11, 2001 to 2004 (Thompson, 2002).
This is a major financial impact, and could have caused severe, long-term damage to New York’s economy had the government not provided assistance to the city, state, and impacted businesses.

**Government Assistance in Rebuilding**

The local and Federal Government quickly took action to repair and rebuild the city. Locally, rescue teams, police and fire departments, and public works officials spent hours in the rubble. As the initial wreckage was cleared, funding was needed to rebuild. This was the Federal Government’s primary form of assistance: providing financial incentives for building commercial space in Manhattan. A sample of programs implemented included the Lower Manhattan Economic Revitalization Plan, World Trade Center Small Firm Attraction and Retention Grant Program, World Trade Center Business Recovery Grant Program, and the Federal Stimulus Liberty Zone Package. In addition, FEMA and private donors provided funding for rebuilding and assisting impacted persons. This was immensely beneficial to the city and the real estate market, as it provided incentives to rebuild damaged space, subsequently repairing supply and keeping rental rates from excessively escalating.

The Original Lower Manhattan Economic Revitalization Plan was initially enacted in 1995, but was extended through March of 2005 as it provided valuable benefits to those

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**Table 3**

<table>
<thead>
<tr>
<th>Nature and Timing of Impact</th>
<th>Subtotal (Minimum)</th>
<th>Subtotal (Maximum)</th>
<th>Total (Minimum)</th>
<th>Total (Maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost Wealth/Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001 (3 months)</td>
<td>$11,500,000,000</td>
<td>$11,500,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>$15,800,000,000</td>
<td>$15,800,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003-2004</td>
<td>$25,000,000,000</td>
<td>$37,000,000,000</td>
<td>$52,300,000,000</td>
<td>$64,300,000,000</td>
</tr>
</tbody>
</table>

(Thompson, 2002)
impacted by the changing real estate conditions. This plan aimed to minimize the continued
effects of the economic recession during the 1990’s, specifically to the Downtown submarket,
and included tax incentives such as abatements and tax reductions for qualifying investments in
Lower Manhattan (Massachusetts Institute of Technology). Qualifying investments included
tenants who leased space in buildings constructed prior to 1975, businesses with less than 125
employees that signed a minimum of a five-year lease, or businesses with greater than 125
employees that signed a minimum of a ten-year lease (Colliers ABR, 2002). These qualifying
investments benefitted the market by creating incentives for tenants to sign long-term leases and
providing much-needed tenant stability in the Manhattan office market.

The World Trade Center Small Firm Attraction and Retention Grant Program was
enacted to encourage firms that were located in Lower Manhattan to stay, and to incentivize
other companies to move there (Siegel et al, 2005). This program gave grants based on the
number of employees. Companies with 10 to 200 employees were eligible to receive two
payments of $1,750 to $2,500 per employee, meaning qualifying firms received a total of $3,500
to $5,000 per employee, depending on the firm’s application and location (Siegel et al, 2005).

The World Trade Center Business Recovery Grant Program provided grants to
businesses, with the value given depending on lost revenue or expenses incurred in four specific
areas of Manhattan, as can be seen in Map 2: WTC Business Recovery Areas (United States
Department of Housing and Urban Development, 2003). Businesses located from 14th Street to
Houston Street were eligible for a maximum grant of $50,000. From Houston to Canal Street,
businesses were eligible for up to $100,000. South of Canal Street, but excluding the Restricted
Zone, businesses could get a grant of up to $150,000. Finally, businesses in the Restricted Zone,
which included Broadway Street west of the Hudson River and Chambers Street south to Rector
Street, were eligible for a grant up to $300,000 (Colliers ABR, 2002). By December 31, 2002 when the program ended, $219 million in grants were awarded, assisting 8,214 businesses (United States Department of Housing and Urban Development, 2003).

The Federal Stimulus Liberty Zone Package, also called the Job Creation and Worker Assistance Act of 2002, was one of the most extensive programs put in place. The Liberty Zone was defined as the area south of Canal Street, where the impacts of 9/11 were most severe. This program had multiple parts. First, the Work Opportunity Tax Credit (WOTC) provided grants of up to $2,400 per employee. Businesses were considered eligible if they had a maximum of 200
employees, and were located south of Canal Street from December 31, 2001 to December 31, 2003 (Colliers ABR, 2002). Second, the Act approved $8 billion in tax-exempt bonds over a three-year period, with proceeds being utilized to repair and rebuild office, residential, and utility infrastructure (Colliers ABR, 2002). Limitations to this portion of the act stated that no more than $1.6 billion could be allocated to residential rental properties, and a maximum of $800 million could go towards retail space, with the remaining money to be used for office and public utilities (Colliers ABR, 2002).

To benefit tenants located in the Liberty Zone, accelerated depreciation of 30% in the first year was allowed, minimizing the bottom-line financial impact for businesses who had to reinvest in office space and equipment (Colliers ABR, 2002). This was beneficial to qualifying firms because it allowed them to deduct a higher percentage of their expenses upfront, which subsequently decreased their taxable income. Continued depreciation allowances permitted these companies to depreciate up to $59,000 in equipment depreciation annually through 2006, a large increase from the $24,000 that was previously permitted (Colliers ABR, 2002). The accelerated depreciation included in the Act allowed companies to depreciate the entire cost of leasehold improvements made from September 10, 2001 to January 1, 2007 in five years as opposed to the typical 39-year depreciation period (Colliers ABR, 2002). Finally, any business that received insurance proceeds in excess of the depreciated value of their property had up to five years to reinvest the proceeds into real estate in Lower Manhattan without having to pay taxes on the gain. This was beneficial to impacted businesses as it gave them additional time to decide where to relocate, since previously they would have had to reinvest within two years. Furthermore, these tax benefits provided immense incentive for building and relocating in Downtown Manhattan, as there were immediate financial savings.
Additional federal funding provided support to the city to fund the rebuilding of public infrastructure. The Federal Government provided $167 million for streets to be rebuilt, and $750 million for phone and electric lines to be replaced (Colliers ABR, 2002). To compensate for overtime paid to emergency rescue and clean-up crews, the replacement of damaged equipment and public areas, and to remediate environmental concerns FEMA provided $1.8 billion (Colliers ABR, 2002).

On top of the billions of dollars in Federal stimulus that went to rebuilding office space and providing tenant incentives, the government also allocated funding for repairing mass transit. Transportation was greatly impacted by 9/11, with six subway lines being damaged, but the damaged lines were repaired quickly. Within one year, four were repaired and returned to full functionality (lines 2, 3, N, and R), and the remaining two (lines 1 and 9) were completed by the end of 2002⁶ (DeBlasio, 2002). Plans to permanently rebuild the Lower Manhattan PATH transportation hub were allocated $4.5 billion from the federal government, with the goal of creating a facility as renowned as Grand Central Station (Colliers ABR, 2002). This goal was met with the World Trade Center PATH Station being completed in 2016 for a total cost of nearly $4 billion (Dunlap, 2014).

The billions of dollars in governmental stimulus programs were essential in the rebuilding of Lower Manhattan. It allowed the city government and Port Authority to repair and rebuild infrastructure. Businesses were encouraged to return their operations to Lower Manhattan, and those that experienced severe loss of physical or financial capital were offered monetary reimbursement. Additionally, this funding proved to the people of Lower Manhattan

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⁶ Most of the closed subway lines were only closed in Downtown Manhattan, continuing to operate north of the damaged areas. Service of other lines was also extended to cover the service of the closed lines.
that the government was truly committed to rebuilding the city, and terrorism would not destroy their way of life. Without these programs, it would have been much more difficult for businesses to return to normal operations, and it would have taken the city much longer to recover. Further, the way the government responds to crisis can have a major impact on the economy, and this positive message helped mitigate the possible negative economic impacts of 9/11.

**Economic Analysis**

**Nationwide Economic Condition**

In determining the economic impact of the September 11, 2001 attacks, the health of the economy before the attacks must first be determined. This can be measured through an analysis of the Gross Domestic Product (GDP) and the unemployment rate. The annual GDP has grown every year since 1990, as can be seen in Figure 1: Average Annual GDP. However, the percentage growth in national GDP has been much more variable, and provides better evidence of economic health.

*Figure 1*

(Federal Reserve Bank of St. Louis, 2017)
Quarters with negative GDP growth, as indicated in Figure 2: U.S. Quarterly GDP Percent Change, correspond to periods of economic recession. Negative GDP growth has occurred as part of all three economic recessions from 1990 to 2016. Fourth quarter of 1990 saw GDP growth of -0.852%, and first quarter of 1991 had GDP growth of -0.469%, aligning with the economic recession of 1990. GDP growth was positive until first quarter of 2001 when it dropped to -0.284%. Second quarter of 2001 saw positive GDP growth, but third quarter dropped to -0.316%. From then, GDP growth was positive until the Great Recession starting first quarter 2008 with GDP growth of -0.682%. Four successive quarters of negative growth began third quarter of 2008, with GDP growth of -0.480%, -2.113%, -1.386%, and -0.135%. Similar to 1990 and 2008, the negative GDP growth in early 2001 indicates a nationwide economic recession prior to 9/11. Thus, any trends of economic recession or a worsening economy after 9/11 cannot be attributed solely to 9/11, since worsening economic trends are in place prior to 9/11.

(Federal Reserve Bank of St. Louis, 2017)
The annual unemployment rate also serves as an indicator of economic health, with unemployment of 4.5% to 6.0% being considered the healthy long-term unemployment rate by the United States Federal Reserve (United States Federal Reserve, 2017). Inflated unemployment rates are typically not seen until slightly after an economic recession has started, as unemployment increases as businesses are forced to respond to challenging economic conditions. In analyzing the unemployment rate as evidenced in Figure 3, unemployment has been above the standard 6.0% in two periods from 1990 to 2016: 1991 to 1994, and 2009 to 2014, both of which were periods of recession. The unemployment from 1991 to 1994 ranged from 6.1% to 7.5%. From 2009 to 2014, it ranged from 6.2% to 9.6%. By contrast, the 2001 unemployment rate was 4.7%, followed by unemployment of 5.8% in 2002 and 6.0% in 2003. These unemployment rates are within what is considered healthy, and below the rates seen during the nearest recessions. Thus, while the increasing unemployment rates do indicate worsening economic conditions, the unemployment figures for 2001 to 2003 do not reflect an economic recession.
Economic Condition of Financial Center Metropolitan Statistical Areas (MSAs)

To better analyze the economic condition in New York City in 2001, unemployment and GDP growth rates for the New York City MSA are compared to the Chicago and San Francisco MSAs, as these are the three largest financial centers in the United States.

Unemployment for the three MSAs is evidenced in Figure 4: Annual Unemployment Rate by MSA. The unemployment rates for New York City, Chicago, and San Francisco follow the unemployment trends of the United States, with increasing rates through 1992, decreasing rates through 2000, and increasing rates through 2003. Most importantly, the New York City MSA unemployment rates follow the trends of both the Chicago and San Francisco MSAs. This suggests that 9/11 affected New York City’s economy in the same way it affected the national economy and the economies of comparable MSAs. The trend of increasing unemployment rates was relatively short-term and did not escalate to the levels of the 1990 or 2008 recessions,
indicating that the early-2000s economy was not as severe, even with the additional adverse impact of 9/11.

*Figure 4*

The conclusion drawn by the MSA unemployment data is supported by Figure 5: Annual GDP Growth by MSA\(^7\). Although this data is limited in scope, it provides valuable insight into the economic condition of the New York City MSA in comparison to the Chicago and San Francisco MSAs. For the most part, the MSAs follow the same trends. From 2001 to 2005, the New York and San Francisco MSAs experienced increasingly positive GDP growth, followed by

\(^7\) Governmental GDP data for GDP growth prior to 2001-2002 is not readily available, thus limiting the scope of the economic analysis based on GDP growth.
decreasing GDP growth through 2009. The Chicago MSA followed nearly the same trends, but was slightly non-conforming in 2005 and 2006.

When taking a more detailed look at the data, the New York City MSA’s GDP growth rate from the 2001-2002 period to the 2002-2003 period was smaller than Chicago and San Francisco’s, as the New York City MSA GDP increased only 0.3% from 1.9% to 2.2%, compared to the Chicago increase of 1.1% from 2.0% to 3.1%, and the San Francisco increase of 3.4% from 0.7% to 4.1%. This could indicate some level of economic impact affecting solely the New York City MSA due to 9/11. However, throughout the fourteen years of data, in ten periods San Francisco experienced a higher GDP growth rate than New York, so this is not an uncommon trend and therefore cannot be attributed solely to 9/11. Overall, the New York City MSA experienced relatively similar GDP growth to the Chicago and San Francisco MSAs in the years immediately following 9/11, and therefore there is not evidence of an economic recession disproportionately affecting New York because of 9/11.
While the unemployment and GDP data shows a worsening economy in the early 2000s, there is no evidence of a disproportionate impact to the New York City MSA caused by 9/11. The immediate governmental response through stimulus packages and grants encouraged businesses in New York to rebuild, thus preventing unemployment rates from increasing further due to businesses relocating out of New York and leaving behind unemployed individuals. Further, the rebuilding added construction and design jobs, also to the benefit of the unemployment rate. The GDP benefitted from governmental assistance as it encouraged business and consumer spending, and therefore production of goods and services. Thus, without the governmental response, the economic condition in New York could have been much worse. Further, since New York is the United States’ main financial center, a worsened economic
condition in New York could have spread across the United States, causing a subsequent economic recession nationwide.

**Property Analysis**

Property values are highly sensitive to the status of the economy, and therefore relevant factors must be analyzed to determine the impact of the economy and 9/11 on overall property performance. Determining the impact of 9/11 on property values in the New York City MSA includes analysis of asking rental rates and vacancy, as these variables are the most crucial determinants of investor return. With New York City being a large and diverse market, it is important to first understand the submarkets that will be analyzed.

First, it should be noted that this research specifically will analyze the Lower Manhattan submarkets as well as Newark and Jersey City. Lower Manhattan can be divided into 20 submarkets, each with different characteristics, and thus, different rental rates. These submarkets are categorized into three clusters: Midtown, Midtown South, and Downtown, as can be seen in Map 3: Lower Manhattan Submarkets. The Downtown cluster is made up of the WFC/Brookfield Place, City Hall, and Financial districts. The World Trade Centers were located in the WFC/Brookfield Place submarket, so the trends of the Downtown cluster are highly important for this analysis. The Midtown South cluster includes the Chelsea, Flatiron, Hudson Square/Tribeca, NoHo/SoHo, PAS/Madison Square, and Union Square submarkets. The Midtown cluster includes the East Side, Fifth/Madison Avenue, Grand Central, Park Avenue, Penn Station, Plaza, Sixth/Rock Center, Times Square South, and Times Square/West Side submarkets.
In analyzing the health of Manhattan’s real estate market pre- and post-9/11, analysis of vacancy and gross asking rental rate of office properties in the Downtown cluster will first be compared to rates of the Midtown and Midtown South clusters. Next, the Downtown cluster will be analyzed in more detail by comparing data for the WFC/Brookfield Place district to the City Hall and Financial districts.
Cluster Analysis: Vacancy Rates of Downtown Class A Office Compared to Midtown, Midtown South, Jersey City, and Newark

Analysis of Class A office vacancy rate by cluster provides valuable insight into each cluster’s health and desirability, as vacancy rates are an indication of supply and demand in the real estate market. Trends from 1990 to third quarter 2016 can be seen in Figure 6: Class A Office Vacancy by Cluster. Vacancy rates for Downtown Class A office trend higher than those of Midtown or Midtown South from the beginning of the analysis through 2008. For example, from 1990 to 1997, the Downtown Class A office vacancy averaged 17.3%, while Midtown averaged 11.4%, and Midtown South averaged 11.8%. As Downtown Class A office vacancy dropped after 1997, the Class A office vacancy rate in all three clusters began to converge, however Downtown Class A office remained the highest vacancy rate. These values indicate that throughout the 1990s, the supply of Downtown Class A office was higher than demand. Midtown and Midtown South office supply was closer to demand, but still not aligned.

From 1998 to second quarter of 2001, Downtown Class A office vacancy averaged 4.7%, Midtown Class A office vacancy averaged 3.3%, and Midtown South Class A office vacancy averaged 2.0%. These values indicate that office supply and demand were converging, but the ratio of Downtown supply to demand was still the largest. Class A office vacancy hit its lowest point Downtown in third quarter of 2000, second quarter of 2000 for Midtown, and first quarter of 2000 for Midtown South, and was increasing after this point. When 9/11 occurred, office vacancy had seen multiple quarters of increasing rates, but these rates grew immensely after 9/11. From second to third quarter of 2001, Class A office vacancy Downtown increased 47.6% (from 4.2% to 6.2%), Midtown increased 36.8% (from 3.8% to 5.2%), and Midtown South
increased 8.1% (from 3.7% to 4.0%)\(^8\). This suggests that 9/11 did cause an increase in vacancy rates nearest to the attacks, with the largest impact being in Downtown.

The increase in Downtown office vacancy following 9/11 is expected for a number of reasons. First, many businesses lost their office space completely and had to relocate immediately following the attacks. Even those whose office space was not destroyed or damaged suffered, as roads, subway lines, electricity, internet, and phone lines were all damaged, hindering business’ ability to work and therefore forcing many more tenants to vacate. Further, many people became scared of the risks of housing business operations in a high-rise building in a high-profile city like New York, and therefore opted to move their businesses to lower-rise buildings or out of the city where they felt safer. Thus, the increased vacancy rate immediately following the attacks is both explainable and expected.

Downtown Class A office vacancy remained higher following the attacks until 2008, but not abnormally high for a period of uncertainty in the market. From fourth quarter 2001 to fourth quarter 2008, Class A office vacancy Downtown averaged 9.3%, Midtown averaged 6.1%, and Midtown South averaged 4.2%. The data suggests that it was not abnormal for Downtown Class A office vacancy to be higher than vacancy for Midtown or Midtown South Class A office vacancy, since Downtown exhibited perpetually higher vacancy from 1990 to 2008. Further, the vacancy rates following 9/11, while escalated, were not as high as the vacancy rates of the 1990s, so supply and demand were not as mismatched as other times in history. The escalated vacancy for an extended period reflects that some companies needed or wanted to relocate out of Manhattan, and others ruled out the area for relocating into. However,

\(^8\) Midtown South vacancy experienced much larger growth – 146.7% – from first to second quarter of 2001. This was unrelated to 9/11, but may explain why vacancy in this market did not increase suddenly as it did in Downtown and Midtown.
the vacancy rate could have been much higher, but remained relatively stable due to the many companies made the conscious decision to locate there, either for personal reasons or to take advantage of the many incentives provided by governmental stimulus programs.

Figure 6

(CBRE Econometric Advisors, 2017)

It was expected that many office tenants who no longer wanted to or could no longer operate in Manhattan would relocate across the Hudson to Newark or Jersey City, decreasing vacancy rate trends in these areas. These New Jersey cities are both lower-profile and feature lower-rise buildings, but are still located close enough to Manhattan that businesses would not have to hire new employees or pay to move existing employees. However, the Newark and Jersey City office vacancy rate trends prove otherwise, as indicated in Figure 7. For Newark, in the second quarter of 2001, the vacancy rate was 13.3%, and had been increasing for multiple quarters. In the third quarter of 2001, the rate was up to 16.2%. Thus, the availability of office space in Newark did not attract a significant number of tenants out of Manhattan as was expected. In Jersey City, the second quarter 2001 vacancy rate was 2.0%. In the third quarter, vacancy jumped to 5.2% and continued growing, reaching 10.4% in first quarter of 2002, and
reaching its highest value of 18.5% in fourth quarter of 2004. Thus, Jersey City also did not provide office tenants with the safety and amenities needed to encourage relocation to this area as was expected.

Figure 7

Cluster Analysis: Asking Rental Rates of Downtown Class A Office Compared to Midtown, Midtown South, Jersey City, and Newark

Analysis of Gross Asking Rent provides insight into desirability of property, as tenants are willing to pay higher rental rates for offices in desirable locations with desirable amenities during economically strong periods. A massive misalignment between supply and demand with demand outpacing supply would typically cause gross asking rent to increase significantly and be considered a positive for investors. However, gross asking rent trends did not perform as expected following 9/11, as evidenced in Figure 8. Instead of increasing, from third to fourth quarter of 2001, gross asking rent Downtown decreased 6.6%, and Midtown decreased 4.2%. While this does not conform to the expected market reaction due to loss of space, demand also
changed after 9/11 due to fear of being located in a high-profile, high-rise area and the destruction of infrastructure needed for businesses to operate. During the same period, Midtown South exhibited a 1.7% increase in gross asking rent, but decreased by 21.6% in the following quarter. This indicates increased demand in this submarket immediately after 9/11 as the market responded to the sudden loss of office space, but decreasing after as tenants’ fear and the destruction of infrastructure caused Lower Manhattan to become less desirable.

Figure 8

Trends in gross asking rent for Jersey City and Newark are analyzed in Figure 9. The gross asking rent in Newark is relatively stable, ranging just $1.84 from $22.84 to $24.68 from 2000 to 2008. More specifically, in the year following 9/11, gross asking rent for Newark dropped only $0.46. The gross asking rent in Jersey City is much more volatile, dropping from $32.66 per square foot to $30.97 per square foot within one year of 9/11, and continuing to decrease until stabilizing near $27 per square foot. These gross asking rates do not follow the expected trends for an area that experienced sudden and severe loss of supply, and therefore
support the conclusion drawn from the vacancy rate trends that neither Jersey City nor Newark were attractive alternative locations for tenants looking to relocate following 9/11.

**Figure 9**

![New Jersey Office Gross Asking Rent](image)

*(CBRE Econometric Advisors, 2017)*

**Conclusion**

The 9/11 terrorist attacks caused extreme damage, destroying over 30 million square feet of real estate in Downtown Manhattan, and shocking the nation. The economic recession that was already occurring continued, but was relatively mild when compared to the recessions of the 1990s and late 2000s, even considering the shock of the terrorist attacks. The government’s quick financial action to rebuild Manhattan sent a nationwide message of strength, and encouraged the people of the United States not to allow fear to change their spending habits, thus preventing the recession from drastically worsening.

The extensive government programs also helped minimize the impact of the attacks on the real estate market, as the overall impact could have been much worse. This impact is
measured by vacancy and rental rates, which are indicative of supply and demand. With a decrease in supply, it is expected that demand will increase, and subsequently vacancy rates will decrease and rental rates will increase. This was not the case for property values following 9/11, as vacancy rates increased and rental rates decreased, opposite of what property owners and investors desired. These trends were relatively short-term, with all trends reversing to positive movement going into 2008.

For investors and property owners, this is very promising, as the negative impacts of 9/11 were not long-term. Unfortunately, unexpected loss of supply could happen at any time, which makes property investment risky – especially in high-profile, high-rise areas like New York City – but since the impact is relatively short-term, investors should not be concerned about investing in locations like Manhattan. Most importantly, investors should be aware of the impact to their returns in the event of extreme vacancy and rental rates, as well as the importance of them taking quick action in the event of any loss of supply that they experience in the future.

To the rest of the world, this research should be used as an example of the resiliency of New Yorkers in the face of fear. Even though the area surrounding the World Trade Centers is still being rebuilt nearly sixteen years later, New Yorkers have taken on the challenge and supported each other in the process of rebuilding. Today, Lower Manhattan has transformed into a vibrant live-work-play district, with employment and property values that are higher than ever. Since 2001, over nine million square feet of new office space has been rebuilt at 1, 4, and 7 World Trade Center and the Goldman Sachs Headquarters. Transportation has been upgraded, over 3,000 hotel rooms have been added in sixteen hotels, 104 residential buildings have brought nearly 15,000 apartment units online, and expansive greenspace invites locals and visitors alike
to enjoy the area (LaRusso et al., 2014). With determination and resiliency, investors should be informed, but not afraid of investing in Lower Manhattan.

**Limitations and Future Research**

Further analysis could be done to obtain a more detailed understanding of how 9/11 impacted the economy and real estate market. In this analysis, limitations in GDP growth data resulted in data analysis that began in 2001, thus no comparison of trends prior to the attacks could be done. As for real estate impacts, further research could be done to measure fear of skyscrapers post-9/11, as several companies quoted this as a major factor in choosing office space after the attacks. Finally, to better understand the vacancy and gross asking rent in Manhattan after 9/11, these could be compared to an analysis of vacancy and gross asking rent in Chicago and San Francisco.
References


