One Year Later

The Fiscal Impact of 9/11 on New York City

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September 4, 2002

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September 4, 2002

Dear Fellow New Yorker:

One year ago, New York City faced the worst tragedy in its history. The attacks on the World Trade Center touched New Yorkers from all walks of life in countless ways.

While this devastating event can never be reduced to numbers, it is clear that New York City and the nation will continue to suffer its economic ramifications for years to come. Over the last several months, a team of economists and budget analysts in my office studied the financial impact of the September 11 attacks on New York City.

The report that follows, entitled: “One Year Later, The Fiscal Impact of 9/11 on New York City,” is a comprehensive examination of the financial toll exacted on the city’s economy, budget, and cash flow. Additionally, the analysis provides an overview of the level of federal support earmarked for New York City.

The facts demonstrate that the city has experienced an unprecedented loss, but already there are signs of recovery. Together we have witnessed heroic struggles from businesses and citizens alike to surmount the daunting obstacles placed before them.

Time and time again New York City has overcome great difficulties. I know that we will meet this challenge, and emerge stronger than ever.

Very truly yours,

William C. Thompson, Jr.

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IMPACT OF 9/11 ON THE ECONOMY

The loss to the City on September 11 is truly incalculable as an event that killed thousands, shattered the lives of hundreds of thousands more and left a scar on our landscape and in the hearts of New Yorkers and Americans alike. Just as prescribing for an ailment first requires a diagnosis, repairing NYC's economy requires an understanding of the economic and budgetary impact of 9/11 on the City. Even while mourning, we have all harnessed New York's strong spirit to look beyond our sorrow, to the challenges of rebuilding.

Economic Loss. The estimated NYC economic loss is in two parts – a one-time wealth loss and a continuing loss in jobs and Gross City Product (GCP). For the purpose of calculating the impact on GCP, losses are calculated from September 2001 to the end of 2004. This is taken to be the sum total, on the basis that other factors will play an increasing role. While much smaller in scale, the 1993 World Trade Center (WTC) bombing's impact was felt primarily in the first three to four years. Adding the wealth and capital loss to the four-year GCP loss, the overall economic loss to the City is $82.8-$94.8 billion as shown on Table 1. The lower end of the range is consistent with the NYC Partnership's November 2001 estimate of the economic impact ($83 billion). The upper end of the range is consistent with the New York City Comptroller's October 4, 2001 estimate.

Table 1. *Summary, Economic Impact on NYC of the WTC Attacks, $ in billions*

Nature and Timing of Impact	**Subtotals**	**Total**
1. Total Economic Impact		$82.8-$94.8
2. Lost Wealth/Capital		$30.5
2a. Physical	$21.8	
2b. Human[a]	$8.7	
3. Lost Gross City Product: 2001-04		$52.3-$64.3
3a. 2001 (3 months)	$11.5	
3b. 2002	$15.8	
3c. 2003-2004	$25-37	

[a]The human capital loss from 9/11 is the loss to NYC's productive capacity, measured by the average income and expected working life of those who perished.
Source: NYC Comptroller, September 2002. For sources and details, see Tables 2-4.

Gross City Product Impact. Real GCP losses by calendar year were $11.5 billion in 2001 (last three months only) and $15.8 billion in 2002, for a total of $27.3 billion for the period from September 2001 through 2002. The range of loss over 2003-2004 is $25 billion to $37 billion. The cumulative range of GCP impact is therefore $52.3 billion to $64.3 billion.

Loss of Wealth. Wealth is both fixed and human capital. The Comptroller estimates the impact of the WTC attacks on the City's wealth as $30.5 billion, of which $21.8 billion is the cost (replacement value) of lost buildings, infrastructure and tenant assets and $8.7 billion is an estimate of the present value of the future earnings of those who died.

Jobs. The cumulative loss in NYC jobs from expectations prior to 9/11 after 10 months (through July 2002) is 146,100, made up of:

- The actual job loss, from September 2001 to July 2002, of 83,100 jobs.
- The loss of job growth which would have resulted from trends in place as of early September 2001 had the 9/11 attacks not occurred of 63,000 jobs.

These numbers are close to the difference between the City's pre-9/11 jobs projections and the post-9/11 projections. A gap of this size, from pre-9/11 projections, is expected to continue through 2004.

The following analytical framework and procedures are used in this estimate of the economic impact of the 2001 WTC attack:

- The effects of the attack on NYC's physical infrastructure and its human capital are analyzed as an impact on the City's wealth and productive capacity.
- The effects of the attack on jobs and Gross City Product are estimated through 2004.
- When several methods of valuation are possible, the implication of using the selected method as opposed to other methods is explained.
- The report utilizes a variety of published reports including web sites and industry newsletters for data and news of recent developments.
- These published reports have been supplemented by interviews with individuals who have expertise in special aspects such as insurance, real estate, or law.

LOST WEALTH - PROPERTY AND HUMAN POTENTIAL

The immediate economic impact of the destruction of the WTC on NYC was the loss of the WTC-area buildings and the deaths of those who were in the buildings or were killed in rescue efforts is shown in Table 2.

Table 2. *Wealth/Infrastructure/Capital Loss from 9/11 Attacks, $30.5 billion*

Nature and Timing of Impact	**Subtotals $ bil.**	**Subtotals $ bil.**	**TOTAL $ bil.**
I. Lost Wealth/Capital – Total			$30.5
A. Property Loss/Damage		$21.8	
1. WTC Towers, Replacement Value	$6.7		
2. Other Buildings (incl. Retail, Hotel)	$4.5		
3. Infrastructure: Trains, Phones, Electricity	$4.3		
4. Tenants' Fixtures, Computers, Furnishings	$5.2		
5. Private Costs of Cleanup/Victim Assistance	$1.1		
B. Human Loss: Lost Earnings of Workers		$8.7	

Source: See text for sources.

In addition, the impact includes the destruction of business and personal property left in the buildings, the closing down of the transportation hub underneath the towers, and the destruction of telephone, electricity and other networks.

Property Loss/Damage - Lost Work Space and Hubs

The property-loss and damage figures are considered first because they are the most visible of the economic effects and are the easiest to quantify. They directly affect the economy and City taxes. The lost downtown space created an immediate scarcity as companies quickly sought temporary replacement space and planned for relocation.

A. Office Space Trends in Manhattan Prior to the WTC Attack

With the growth of the dot-coms in the second half of the 1990s, rising demand for office space resulted in lower vacancy rates and higher rents. As rents rose, NYC-based corporations looked for alternatives and New Jersey tried to attract their attention with such programs as its Business Employee Incentive Program (BEIP). It rewarded companies for bringing jobs to New Jersey by refunding a portion of their state taxes. Jersey City was the major beneficiary of BEIP, tripling its Class A office space from four to 12 million square feet (sf) in the 1990s and adding another six million sf in 2000-2003.[1]

Prior to the WTC attack, office-relocation activity in Manhattan was not great. However, the contraction of the dot-com industry was beginning to raise the availability of vacant or sublet space. The Manhattan office vacancy rate was 6.7 percent in mid-2001 but rose above eight percent in the next two months, showing signs that demand was cooling even prior to the attack.

B. Lost Buildings, Infrastructure, and Tenant Property

Of the five largest U.S. blocks of office space, three are in Manhattan. Midtown Manhattan ranks first, followed by Chicago's central business district, then Downtown Manhattan, then Washington, DC, followed by Manhattan's Midtown South. The 13 million sf of Class A office space destroyed on 9/11 equals the entire office-space inventory of Atlanta or Miami.

Besides the 13 million sf of lost Class A office space, 17 million sf more was damaged, for a total of 30 million sf, as shown in Table 3. This Table does not include other space, such as the Marriott Hotel at 3 WTC, retail stores, or nearby areas that were covered with ash, suffered broken windows, and had to be evacuated to permit repair of the damage.

[1] Cushman & Wakefield, *The Manhattan Office Market after the WTC Tragedy*, MarketBeat Special Report, September 27, 2001. Class A Buildings are those that are well-located, professionally managed, attract high quality tenants and command upper-tier rental rates. Structures are modern with high-finish or have been modernized to successfully compete with new buildings.

Table 3. *Lost and Damaged Office Space, NYC, Thousands of sf, as of September 23, 2001*

		Lost sf '000[a]	Damaged sf '000	Total sf '000
1 WTC Tower	"WTC Complex" 13,420 sf[a]	4,761		4,761
2 WTC Tower		4,761		4,761
7 WTC		2,000		2,000
5 WTC		784		784
4 WTC		576		576
6 WTC		538		538
2 World Financial Center			2,591	2,591
3 World Financial Center			2,264	2,264
1 Liberty Plaza			2,121	2,121
4 World Financial Center			2,084	2,084
1 World Financial Center			1,462	1,462
1 Bankers Trust Plaza			1,415	1,415
140 West Street			1,172	1,172
90 Church Street			950	950
195 Broadway			875	875
22 Cortlandt Street			668	668
30 West Broadway			381	381
90 West Street			350	350
130 Cedar Street			135	135
114 Liberty Street			69	69
26 Cortlandt Street			25	25
106 Liberty Street			18	18
110 Liberty Street			6	6
Total		**13,420**	**16,586**	**30,006**

a. The Marriott Hotel (WTC 3) was totally destroyed but is not included in the list because it is not office space. Source: *New York Tim*es, September 23, 2001, p. RE2. sf=square feet. WTC=World Trade Center. The listed buildings outside of the "WTC Complex" are the rest of the "WTC area," for a total of 30 million sf. Cushman & Wakefield estimates total lost or damaged space to be 26 million, Insignia/ESG estimates it as 25 million sf.

The destroyed space is three percent of all Manhattan office space; adding the damaged space brings it to six to seven percent of Manhattan space. But the destroyed space is five percent of Manhattan Class A office space and 21 percent of Downtown Class A space. Including the damaged space, the loss is 11 percent of Manhattan Class A space and 44 percent of Downtown Class A space.[2] The WTC complex included the Twin Towers plus four additional buildings.

The WTC Towers - $6.7 billion. The WTC Twin Towers (WTC Nos. 1 and 2) were built for about $1 billion in the early 1970s. This is nearly $5 billion in 2001 dollars, so that the WTC inflation-adjusted book value, using straight-line-depreciation with 30 percent of its life used up (30 years of a 100-year useful life), would be $3.5 billion. But on a replacement-value basis, i.e.,

[2] Ibid.

the cost in 2003 to rebuild the WTC complex of 13.4 million square feet (sf) at $500/sf would be $6.7 billion.[3]

Other Buildings - $4.5 billion. Other buildings in and around the WTC complex that were destroyed or damaged (using a broad definition of damage) have more than twice the square footage of the WTC complex (30 million sf vs. 13.4 million sf). Some of the damaged buildings will not be expensive to repair, about five million sf. The remaining 12 million sf space is seriously damaged.[4] The Comptroller estimates that the rebuilding or repair of the additional 17 million sf will cost an additional $4.5 billion.[5]

Infrastructure: Trains, Phones, Electricity - $4.3 billion. The Port Authority has estimated $2.4 billion in losses apart from the WTC itself—damage to the PATH hub and new security requirements, but it includes revenue losses, so $1.4 billion may be a better estimate.[6] The Metropolitan Transportation Authority and Transit Authority may need to spend another $900 million to replace lost equipment and facilities and repair the subways underneath the WTC. Another $2.3 billion in utility-repair costs are borne by AT&T and Verizon (300,000 phone lines severed and five switching stations affected) and Con Ed, for which replacement of 33 miles of cable and repair of two WTC substations is so far costing $400 million. The total additional infrastructure cost is about $4.3 billion.

Tenant Assets - $5.2 billion. The impact of the attack extends beyond the buildings to include the value of the furnishings and fixtures of business tenants, the property of their employees, the vehicles destroyed in underground parking lots or on the streets surrounding the buildings, inventory in the retail stores, and computers and other equipment in the offices. Some $2 billion is needed to replace retail-space inventory and fixtures. For securities firms in the WTC complex, the technology losses alone are estimated at $3.2 billion.[7]

Private Costs of Cleanup/Victim Assistance - $1.1 billion. Private companies absorbed costs of damage and aid to victims outside the WTC complex, beyond what is being provided or reimbursed by government agencies or life insurance companies. Many companies will provide special compensation and lifetime benefits for victim's families.

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[3] A large block of Class A office space in midtown Manhattan was being constructed in the fall of 2001 at a cost of $600/sf *including* $180/sf for the cost of the land, so the building cost was $420/sf. The WTC land, being leased, is not part of the capital cost.

[4] Cushman & Wakefield estimates 26 million sf permanently or temporarily unoccupied because of definitional differences such as between structural damage and minor damage.

[5] Table 2 shows that the two WTC towers together had more than 9.5 million sf of office space, and the WTC complex together had 13.4 million sf. Insignia/ESG estimates 25 million sf was seriously affected by the attack, indicating another 12 million sf beyond the WTC complex itself.

[6] *$2.4 Billion in Losses Are Detailed in Report*, New York Times, September 21, 2001, p. B12. The PA estimate also includes lost revenues, which are not a property loss.

[7] The securities firms involved in the WTC attack will need $3.2 billion to replace their technology, i.e., the various computer work stations through which they conduct their trades, according to the TowerGroup. *TowerGroup's Estimate on the Impact of the World Trade Center Disaster to the Securities Industry's Technology Infrastructure*, September 18, 2001. The Tower Group estimates the cost of business fixtures at $125/sf (an industry standard).

C. Treatment of Property/Casualty Insurance Payments

Probably more than half of the amount lost by tenants is insured by the office building's landlord or tenants or both.[8] But it is inappropriate to "net out" insurance payments in the process of calculating the economic impact of 9/11. In brief, business interruption insurance is computed differently for economic purposes than for insurance purposes and a major disaster affects future premiums so that it is best seen, in economic terms, as a loan to the affected economy, to be paid out of an ongoing differential in premiums that reflects the loss that insurers and reinsurers have sustained. Security-related spending is a cost that may be seen as an investment because it helps to narrow the future property/casualty premium differential between NYC and other cities.

Human Loss: Lost Economic Contributions from Those Who Perished

The human cost of a shortened life is multiple. A person's contribution to the world goes far beyond the workplace. The person who dies is denied his or her potential. The children are left behind without a father or mother. A parent has lost a child. A brother or sister or spouse or loved one must continue alone. Our analysis, however, focuses solely on the present value of expected earnings during the person's remaining working life.

The loss of life is summarized in Table 4. Of the 3,043 victims nationwide, 2,819 were in NYC.[9] Of this number, 88 were passengers or crew on American Flight 11, which hit the north tower; 59 were passengers or crew on United Flight 175, which hit the south tower; and the remaining 2,672 were on the ground at the time of the attacks.[10] Of the 2,672 on the ground, 415 were emergency or rescue personnel and the remaining 2,257 were working in or visiting the WTC complex at the time of the attacks.

A. Estimate of Lost Economic Contributions

To estimate the present value of the earnings potential of those lost in the 9/11 attack, the Comptroller's Office determined both the victims' average expected working lifetimes, and their average current compensation levels. To determine the average remaining working life, information was compiled on the 2,819 victims of the WTC attacks.[11] The database provides the

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[8] The Towers were valued at $3.2 billion in a 99-year net lease when transferred fully tenanted, generating $200 million per year to Silverstein Properties earlier in 2001. But the towers were reportedly valued for insurance purposes at $5 billion, with a cap on claims for a single event of about $3.5 billion each.

[9] Information from the NYC Medical Examiner's Office as of August 19, 2002

[10] The Newsday database includes the airplane passengers and crew. Many of them neither worked nor lived in NYC, but as a percentage of the total number of victims they were small; no attempt was made to separate out their situation from that of the rest of the victims.

[11] The Newsday database includes the 147 passengers and crew on American Flight 11 which hit the north tower and United Flight 175, which hit the south tower. It does not include the 99 passengers and crew of American Flight 77

ages of victims. Of victims in the database, 2,257 were WTC workers and 415 were killed while on a rescue mission, for a total of 2,672. Table 4 shows the average ages of the five age groups of victims. The average number of years to retirement at age 65 is 25 years.

Table 4. *Average Age and Remaining Working Life of WTC Victims*

Age Group	30 or Under	31-40	41-50	51-60	Over 60	Total
Percentage (out of 2,819)	19.5%	36.8%	27.7%	13.0%	3.0%	100%
Average Age	26.63	35.61	44.83	54.73	65.94	39.85
Years to Retirement	**38.37**	**29.39**	**20.17**	**10.27**	**0.00**	**25.15**

Source: 9/11 victim database at www.newsday.com , which includes 2,819 WTC victims as counted in late August, including 147 victims on American Flight 11 and United Flight 175. Of the victims on the ground, 415 were rescue workers and the rest were in the WTC complex or were killed by fallout from the WTC. The ages of about 50 victims are unknown so they are distributed proportionately among all age groups. Because the number of visitors who died was relatively few in number (and the passengers on the plane included some NYC workers), no attempt has been made to distinguish the impact on NYC of their loss of life from that of workers in NYC. Also, no distinction is made between residents of NYC and nonresidents.

If the average income of lost WTC workers was $130,000 per year and they would have retired at 65, then the loss of 2,672 WTC workers equates to a loss of $8.7 billion in productive capacity.[12] This loss is attributable to NYC, because that is where the workers were located, but from the broader perspective of the labor pool, it is a loss to the region.

B. Economic Impact of Life Insurance, Federal Compensation and Charity

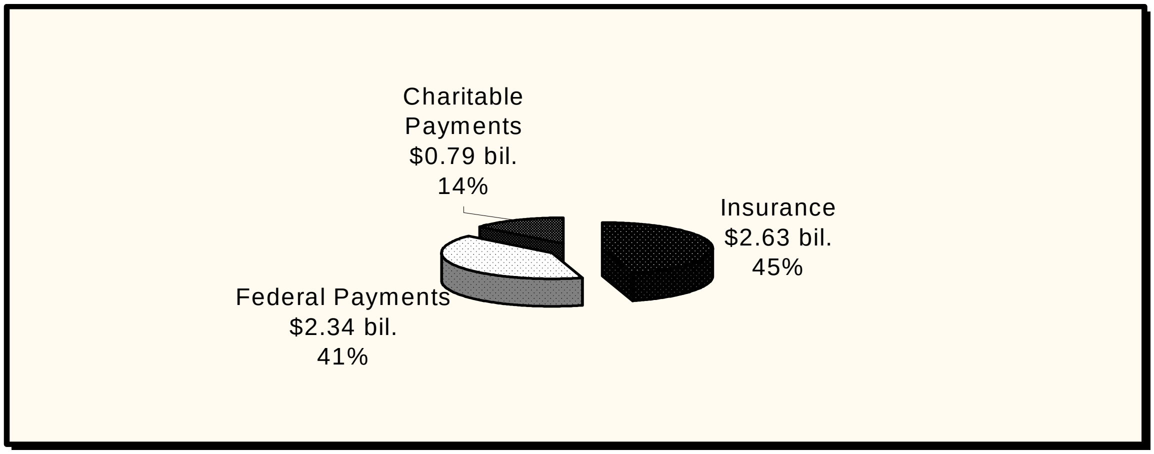
Life insurance or other forms of compensation provide economic benefits to the families of survivors, but do not cancel out the lost economic contribution of the workers who perished. The NYC economy lost workers with an accumulated wealth of human capital, based on the individuals' training, experience and track record of productivity. This was a major economic loss. The support of their dependents is a separate issue addressed by insurance and other payments, but these payments do not replace the productive capacity of the deceased workers. Dependent survivors may live a long way from NYC or may, after they receive their settlements, retire in a lower-cost community or for other reasons move away from NYC. These payments are therefore not linked directly to the NYC economy.

which hit the Pentagon and United Flight 93 which crashed in Pennsylvania. None of the numbers include any of the terrorists. Also excluded are the 125 occupants of the Pentagon who died.

[12] The average salary for *all* Manhattan workers in 2000 was $70,000, but the average salary for workers in the finance, insurance, and real estate (FIRE) sector *in Manhattan* was $156,000. As more than half of the 2,672 missing/dead were in the FIRE sector, and 40 percent were in the securities industry, an estimated average salary of $130,000 is conservative. The NYC Partnership report used $150,000 but took the present value of incomes in the remaining years of working life, which is what the Comptroller's Office did in its October 4, 2001 report, but with a $100,000 salary. About 30 percent of the workers lived outside of NYC, primarily in New Jersey; prior to September 11; some 70,000 New Jersey residents commuted daily to the WTC on the PATH train. It is ordinarily appropriate to take the present value of a future stream of income using a discount rate. However, the average salary here is a starting point and could be assumed to grow with inflation and with larger responsibilities from promotions. This growth would offset the time-value-of-money factor.

Of the lost human productive value, life-insurance payouts are estimated at $2.63 billion.[13] Federal payments after offsets are estimated at $2.34 billion.[14] Charitable payments are estimated at $0.79 billion.[15] So against productive potential lost to NYC of $8.7 billion, families of the victims have a $5.8 billion offset. This is summarized as shares of a pie in Chart 1.

Chart 1. Victims' Benefits by Sources



Source: Estimates by NYC Comptroller, as discussed in the text. This excludes payments unrelated to victims, such as residential subsidy or business compensation.

LOST GROSS CITY PRODUCT - 2001-2004

The various economic effects have implications for NYC taxes, as both businesses and individuals only pay taxes to NYC based on what they earn. If they earn less, they pay less in taxes. If they are no longer located in NYC, they may end up paying NYC no taxes at all. The eventual impact on the NYC economy depends on relocation decisions by corporate executives that are being made in 2002 and 2003. The Comptroller's estimates are summarized in Table 5.

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[13] This number is estimated based on the assumption that 10 percent of those who perished had $1 million life insurance policies, 15 percent had $500,000 policies, and the rest had $250,000 policies. To this is added Workers' Compensation survivor benefits, $400,000 per victim, and $5 million "key employee" policies for 100 people, for a total of $2.63 billion. Fitch estimates life insurance exposure from life insurers, multi-line insurers and reinsurers at $2.7 billion.

[14] This number is based on survivors of victims with policies of $500,000 or more receiving Federal payments of about $400,000 and those of victims with policies below $500,000 payments of $1,000,000.

[15] Distribution of charitable gifts has been controversial. Families of the non-uniformed deceased or missing are reported receiving an average amount of $90,000 per family from various charities in *A Study of the Ongoing Needs of People Affected by the World Trade Center Disaster*, McKinsey & Co. sponsored by the 9/11 United Services Group, June 27, 2002. But *USA Today* calculated as of August 20, 2002 that fire fighters and ambulance workers' families received $1.04 million each, police officers' families about $900,000 each, and non-emergency workers' families about $146,000 each. Using figures developed by the Twin Towers Fund, it is estimated that families of uniformed victims have received $444 million and the 2,383 families of non-uniformed victims have received $348 million from charities, for a total of $792 million.

Table 5. *Economic Impact of 9/11 on NYC's Gross City Product, $ in billions*

Nature and Timing of Impact	Subtotals $ bil.	TOTAL $ bil.
1. Total Economic Impact		$82.8-$94.8
2. Lost Wealth/Capital		$30.5
2a. Physical	$21.8	
2b. Human	$8.7	
3. Lost Gross City Product: 2001-04		$52.3-$64.3
3a. 2001 (3 months)	$11.5	
3b. 2002	$15.8	
3c. 2003-2004	$25-37	

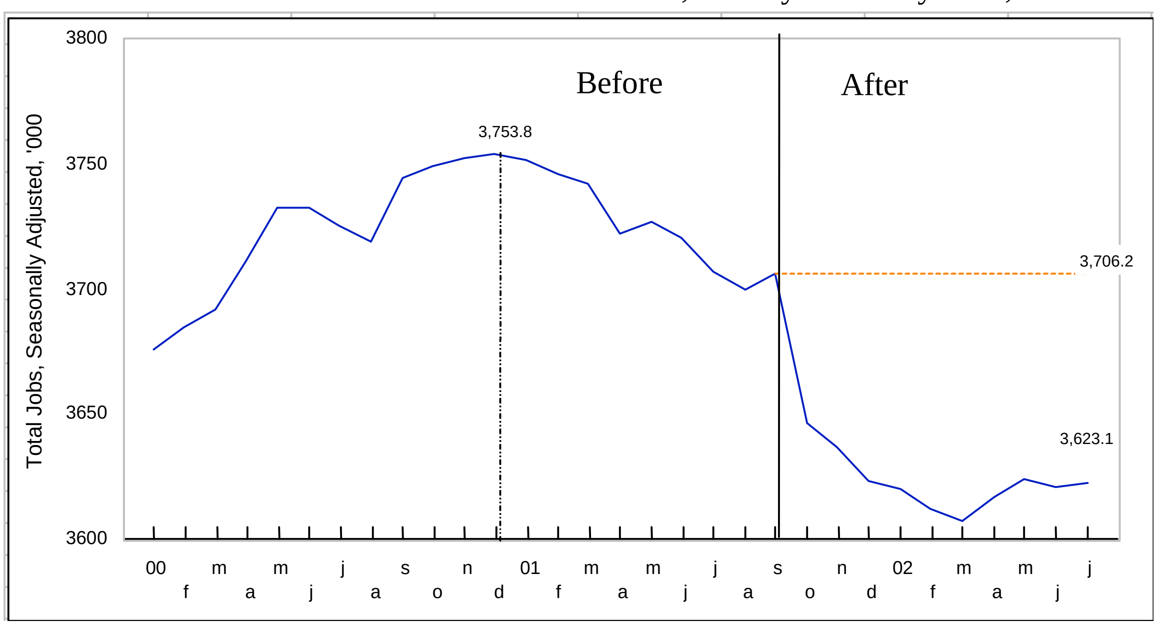
Source: See tables that follow.

Lost Jobs - 146,100 Below Projection in July 2002 - and Beyond to 2004

Lost jobs provide the most up-to-date source of information, and provide a base for measuring the impact of 9/11 on the overall economy, i.e., the Gross City Product (GCP).

A. NYC Lost 83,100 Jobs from September 2001 to July 2002

Chart 2. NYC Jobs Before and After 9/11, January 2000-July 2002, '000



Note: The dotted vertical line indicates the jobs peak in December 2000. The solid vertical line indicates the number of jobs immediately before 9/11.
Source: Seasonal adjustment by the NYC Comptroller's Office of monthly data from the NYS Department of Labor.

NYC's current recession began in January 2001.[16] The pre-recession peak was 3,753,800 jobs. By September 2001, jobs had fallen to 3,706,200 because of the recession.[17] By July 2002, jobs had fallen to 3,623,100 as shown in Chart 2. From September 2001 to July 2002, NYC lost 83,100 jobs.

NYC jobs were growing through the end of 2000 despite the sharp declines in the fortunes of the dot-coms, based on their stock values, in 2000. The recession hit both the nation and the City in the first quarter of 2001. In August 2001, based on the most recent data from the Bureau of Labor Statistics and the New York State Department of Labor, the number of NYC jobs turned up.

If the job growth from August 2001 to September 2001 is taken as a signal that NYC's recession had ended, and the growth rate is projected 10 more months through July 2002, NYC would as of July 2002 have had about 3,769,200 jobs. This is diagrammed in Chart 3.

B. The Outlook for Post-9/11 Corporate Location Decisions

A key question for evaluating the impact of 9/11 is the extent to which companies are moving employees out of the City permanently. To answer this question it must be determined what happened to the surviving employees who were working in the WTC on 9/11. Table 6 shows the total square feet of office space occupied by the largest tenants in the WTC complex.

Table 6. *Space Occupied by the Largest WTC Tenants Immediately Prior to 9/11*

WTC	Total Sq. Ft. Included	Percent of Total Sq. Ft.	Biggest Tenant
1 WTC	2,084,836	22%	Empire Blue Cross Blue Shield
2 WTC	3,307,132	35%	Morgan Stanley
4 WTC	2,357,546	25%	Deutsche Bank
5 WTC	179,244	2%	Credit Suisse First Boston
7 WTC	1,543,005	16%	Citigroup/Salomon Smith Barney
Total	**9,471,763**	**100%**	

Source: TenantWise and computations by the NYC Comptroller's Office.

Where have these large corporate tenants gone? An early answer is given in Table 7. Only 6.4 percent of the relocated square footage is in Downtown Manhattan, which ranks fourth as a new site after Midtown, New Jersey and the NYC Outer Boroughs. Since Downtown vacancies are plentiful, rents are as little as half that of Midtown, not counting concessions for those who move Downtown. Some former WTC tenants are clearly sending a signal that for the time being their employees do not wish to be in the Downtown area and have transferred them to other locations. Cantor Fitzgerald, for example, relocated some of its surviving WTC employees to its offices in London.

[16] The Comptroller dates NYC's recession on quarterly changes in GCP, which in turn depends on the number of jobs located in the City as a major component of the model for calculating GCP.

[17] "September" jobs were based on payrolls of the week in which September 12 falls (September 12 was a Wednesday). Since payrolls lag timesheets by at least a week, the impact of 9/11 on jobs is not reflected in September data.

Table 7. *Relocation of WTC Tenants by New Location, Ranked by Percent*

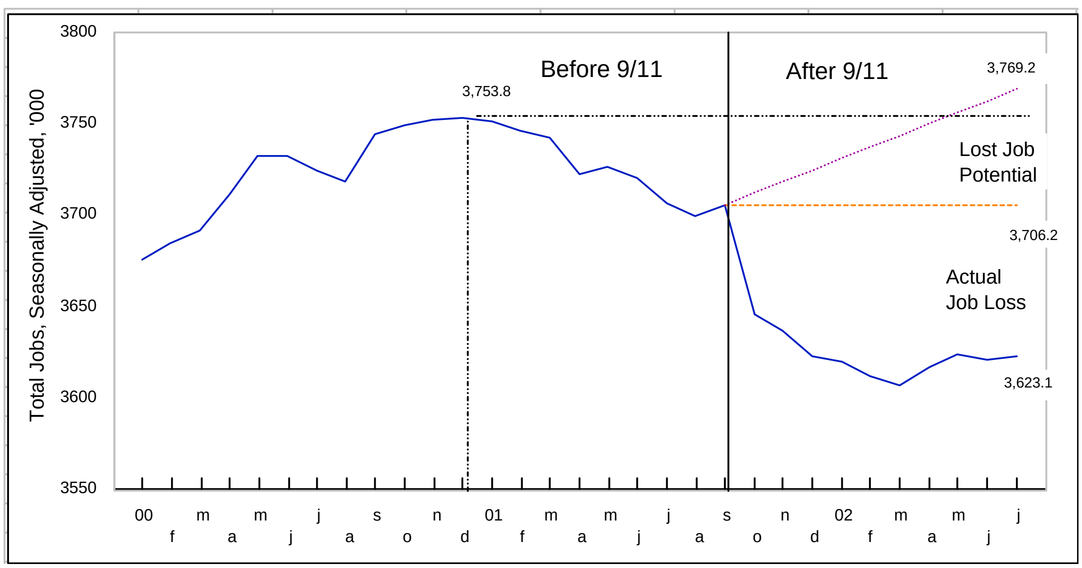
Since 9/11			
New Location	**Total New Sq. Ft.**	**Percent of Total**	**Representative Tenant**
1. Midtown	3,642,500	70.0%	Empire Blue Cross Blue Shield
2. NJ	481,451	9.2%	Citigroup/Salomon Smith Barney
3. NYC, Outer Boroughs	414,430	8.0%	Verizon Communications
4. Downtown	334,384	6.4%	Morgan Stanley
5. Other Than NYS, NJ, CT	162,500	3.1%	Cantor Fitzgerald Securities
6. Conn.	149,000	2.9%	Citigroup/Salomon Smith Barney
7. NYS, Other than NYC	22,000	0.4%	Morgan Stanley
Total	5,206,265	100.0%	

Source: TenantWise and Grubb & Ellis and computations by the NYC Comptroller's Office.

C. Lost Jobs from Projection as of July 2002: 146,100

One way to measure the City's recovery from 9/11 is the trend of jobs compared with projections prior to 9/11. As of July 2002, actual jobs were down 146,100 below the projected number of jobs. This 146,100-job loss has two components that are diagrammed in Chart 3:

Chart 3. Impact of 9/11 on NYC Jobs, January 2000-July 2002, '000



Note: As in Chart 2, the dotted vertical line indicates the jobs peak in December 2000. The line to the left of the solid vertical line indicates the number of jobs immediately before 9/11. The upward sloping dotted line from September 2001 is a continuation of the jobs change from August to September on the assumption that the NYC recession was ending. Source: The primary solid line is the seasonal adjustment by the NYC Comptroller's Office of monthly data from the NYS Department of Labor.

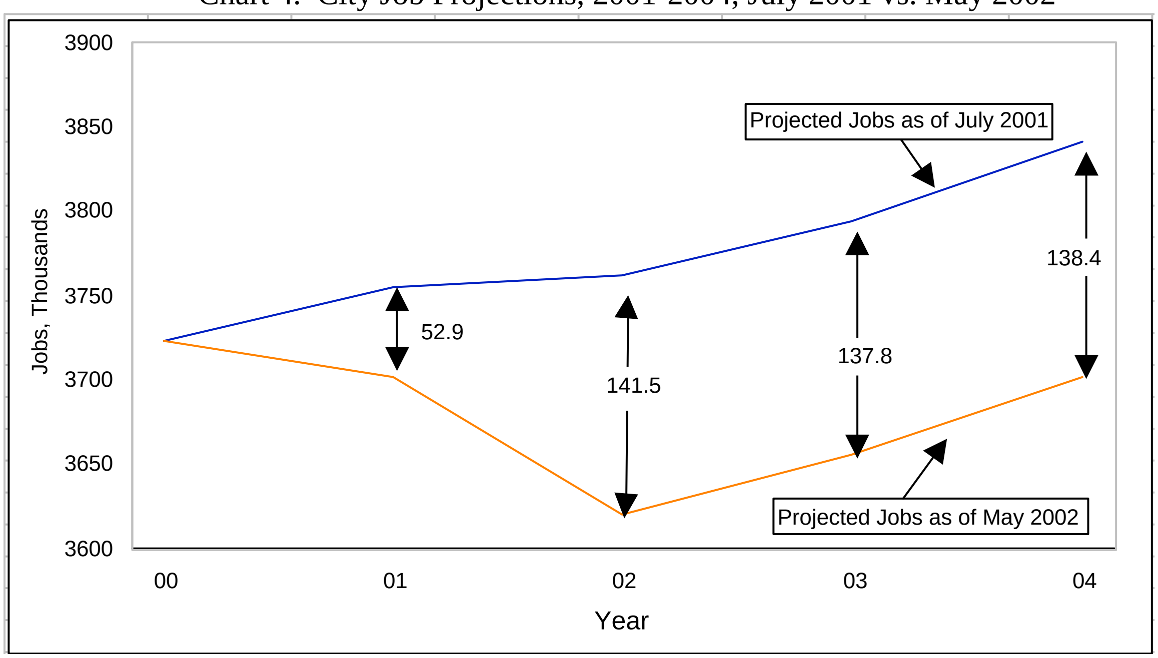
- The previously noted actual loss of jobs, from 3,706,200 in September 2001 to 3,623,100 in July 2002, i.e., 83,100 jobs. (These are "below the horizontal line" losses in Chart 3.)
- The loss of potential growth from the ending of the recession, i.e., 63,000 jobs. (These are "above the horizontal line" losses in Chart 3.)

The case for including the extra 63,000 jobs as a loss to the City is based on analysis of 2001 data from the vantage point of 2002, taking into account that the City and the nation had been in recession for three quarters and were due for revival based on eight Federal Reserve interest-rate cuts, the fiscal stimulus and that the nation recovered from the recession following 9/11.

D. Lost Jobs in 2001-2004, Based on Change in the City's Forecast

Actual jobs data go only to July 2002. To obtain an estimate of job losses through 2004, the City's pre-9/11 projection of job growth as of July 2001 (in the FY 2002 Adopted Budget) is compared with the City's current post-9/11 projection (in the FY 2003 Executive Budget). The original pre-9/11 projected a steady increase, as shown in the top line of Chart 4. Actual job growth in 2001 is shown in the bottom line along with the City's new projection of job growth in May 2002. This chart shows a 141,500-job shortfall[18] in 2002, continuing as a 137,800-job difference in 2003 and a 138,400-job difference in 2004. The main development between July 2001 and May 2002 was 9/11, so the lost jobs can be ascribed primarily to it. The 52,900-job loss in 2001 could be consistent with the other years because it is for one year and the impact since 9/11 is only for three months in 2001.[19]

Chart 4. City Job Projections, 2001-2004, July 2001 vs. May 2002



Source: Data from NYC Office of the Mayor, *Adopted Budget, FY 2002* and *Executive Budget, FY 2003*. Computations and chart by the NYC Comptroller's Office.

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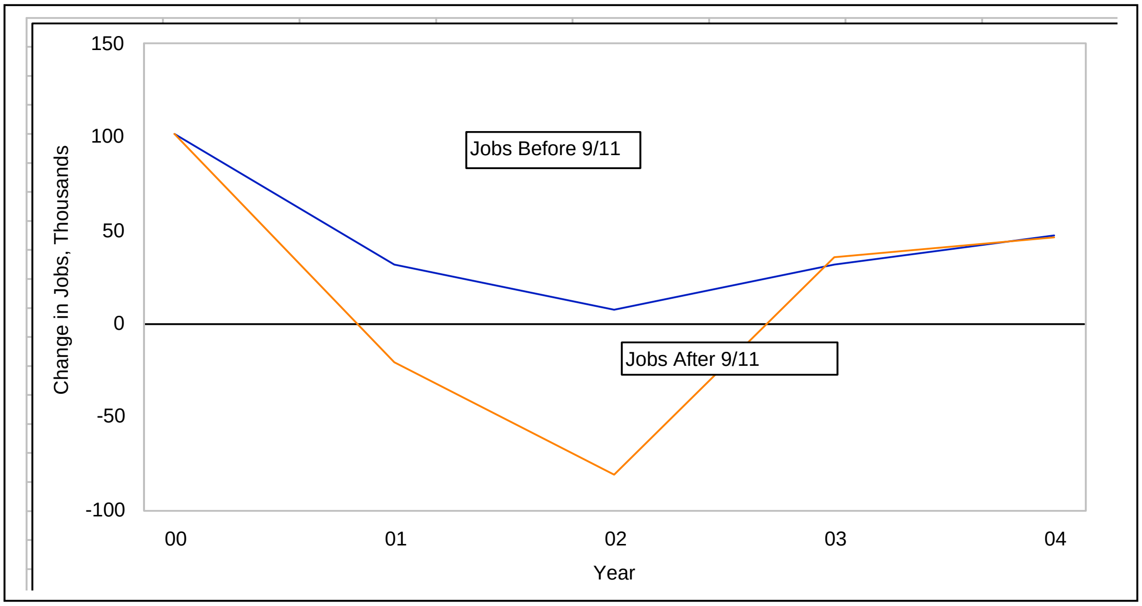
[18] This number is close to the difference in the previous section and may be confused with it. The two numbers are from different projections, one being a straight-line projection from August-September 2001 on, compared with actual jobs numbers through July 2002. The other is the difference between the City's pre-9/11 and post-9/11 projections.

[19] Since jobs are reported as of the first week of the month, the impact does not show up until October.

The City's new projections bring the percentage change in 2003 and 2004 back to the projection of 2001, as may be seen by the coincidence of lines in these two years in Chart 5. But the number of jobs in these two years is at a lower level.

Chart 5. City Projections, 2001-2004 vs. Actual 2001 and Projected 2002-2004



Source: NYC Comptroller's Office computations from data used to create Chart 5.

Lost GCP, 2001-2004

The jobs numbers provide a basis for calculating the impact of 9/11 on GCP. Each job is associated with a loss of wages, which in turn represents a major portion of measured GCP.

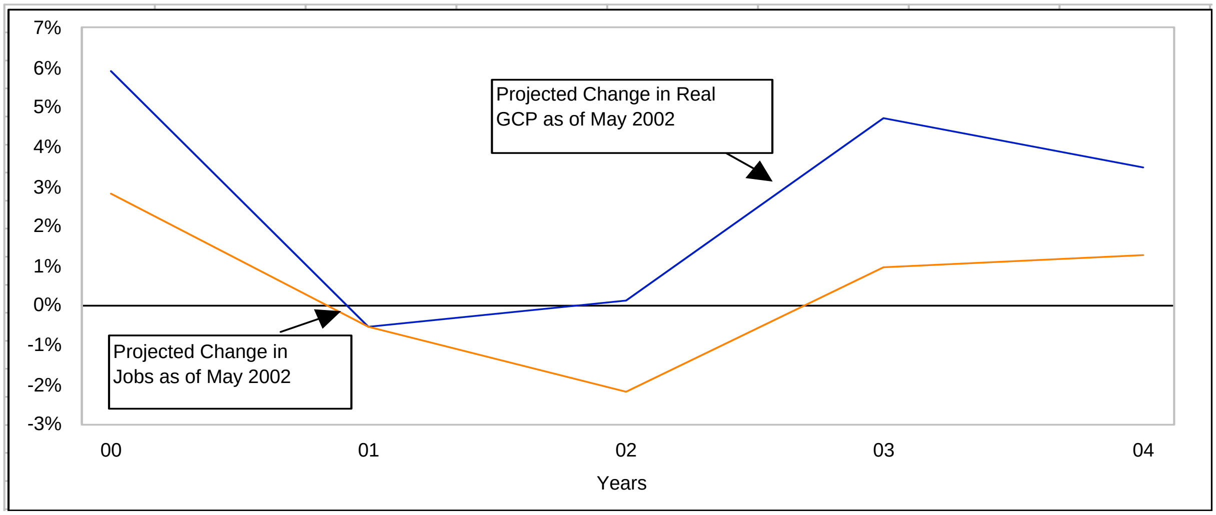
A. GCP More Volatile than Jobs

The connection between jobs and GCP is shown in Chart 6. Because wages include bonuses, which vary significantly from year to year, they tend to be more volatile than job numbers. As wages are a major component of measured GCP, the GCP number tends to be volatile.

B. First Three Months after 9/11, 2001 - Lost GCP Was $11.5 Billion

The impact on business was drastic in the early weeks after 9/11. The New York Stock Exchange was closed, airports were closed, and theaters were mostly dark. For NYC alone, the Gross City Product (GCP) averages $1.2 billion per day. With the airports closed, rental-car and other businesses dependent on them had few customers. The 50,000 people who worked in the WTC, the 50,000 more who worked in nearby buildings, and the 100,000-plus additional people who ordinarily passed through the PATH hub and subway stations and shopping areas were lost to the economy. The rest of the downtown area below 14th Street was closed off to allow free movement of the rescue and demolition workers.

Chart 6. Volatility of GCP Greater than Jobs, Actual 2000-2001 and Projected 2002-2004



Source: Chart by the NYC Comptroller's Office based on computations from data in the FY 2003 Executive Budget.

One way to estimate the loss of business activities is as a percentage of normal economic activity, i.e., a normal daily or weekly gross product. Three-quarters of the GCP is generated in Manhattan, which is about $900 million based on the previously cited daily number. One-third of this is in lower Manhattan, which at $300 million, is the equivalent of about one-quarter of NYC's GCP. For the first four days lower Manhattan was 90 percent shut down, costing .9 x $300 million per day for four days, for a total of $1.08 billion. The rest of NYC was 20 percent shut down because the NY Stock Exchange and airports were closed. Working on this basis through the first four days to the first four weeks and then to the end of 2001, the total GCP loss is $11.5 billion as shown in Table 8.

Airline travel suffered a major business interruption because all airports were shut down nationwide immediately after the attack. Only the NYC portion of this impact (including LaGuardia and JFK airports) is included. The national loss of revenues to the airlines has been estimated at about $10 billion after the first week, which led to layoffs of 118,000 airline employees in about two weeks, many in NYC.

During the weeks following the WTC attack business interruptions resulted from the destruction of the WTC and the shutdown of airports and financial markets. Some of these impacts are permanent - for example, flights postponed may be cancelled forever. Other impacts may simply represent a shift to a later time period.

The major initial impact over the first five weeks was on (1) Wall Street firms, (2) tourism, i.e., Broadway theaters, museums, hotels, air travel, automobile travel in NYC, and (3) retail sales. For the remainder of FY 2002, the business interruption is estimated equal to the value of the first five weeks.

Table 8. *Estimated Loss in Gross City Product, 2001, $11.5 billion*

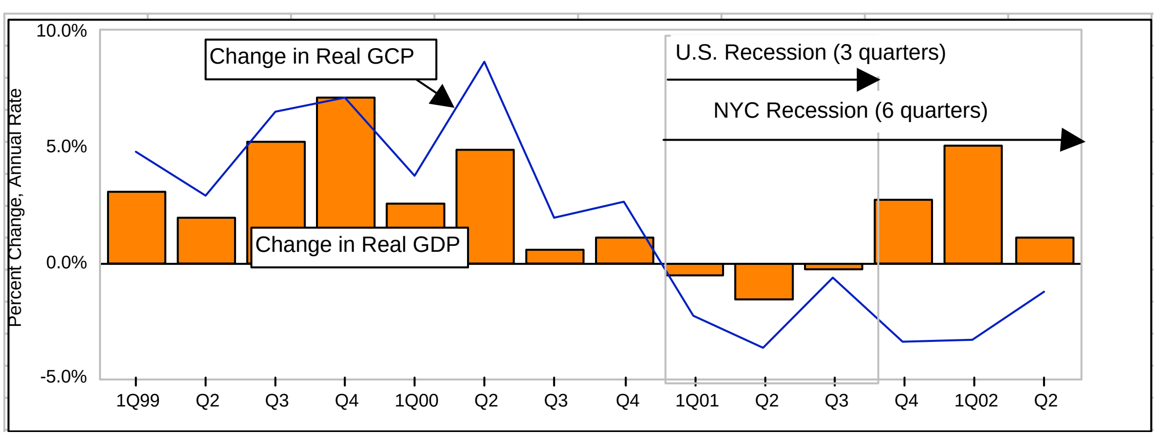
Source of Loss	A. Gross Product, $bil.	B. Share Lost, %	C. Units of Time	D. Total $bil.
First 4 days – Lower Manhattan	$.3/day	90%	Days: 4	1.08
– Rest of NYC	$0.9/day	20%	Days: 4	0.72
Next 4 weeks – Lower Manhattan	$2.1/wk	30%	Weeks: 4	2.52
– Rest of NYC	$6.3/wk	15%	Weeks: 4	3.78
Next 10 weeks–Lower Manhattan	$2.1/wk.	10%	Weeks: 10	2.10
– Rest of NYC	$6.3/wk.	2%	Weeks: 10	1.26
Total, 2001				**$11.46**

Source: Preliminary estimates by NYC Comptroller's Office. Gross City Product (GCP) calculated by NYC Comptroller's Office at $430 billion in 2002 dollars, averaging $1.2 billion/day, of which one-fourth is in lower Manhattan, i.e., $300 million, because Manhattan generates three-quarters of NYC's GCP and downtown Manhattan generates one-quarter (i.e., one-third of Manhattan). NYC's weekly GCP is seven times the daily GCP. The lost GCP includes losses to (1) companies located in the WTC complex, (2) companies dependent on them for business, (3) companies losing customers because of loss of communication, (4) companies losing customers because of the creation of "frozen" or "red" areas restricting vehicular and pedestrian traffic to allow rescue workers to move more freely, (5) companies failing to obtain supplies because of long lines of trucks and cars being checked by the police, (6) companies losing productivity or clients from long lines for pedestrians being checked into buildings, (7) companies suffering such consequential damage as loss of advertising, Broadway ticket sales, electricity usage, and telephone usage.

Business-interruption (or "lost income and relocation") claimants are for the most part, (1) those in the WTC area, (2) businesses impaired by "frozen areas" from which pedestrians and vehicles were excluded, and (3) companies elsewhere that provided supplies or services to those directly affected.

C. Change in GCP, 1Q 1999 to 2Q 2002

Chart 7. Before 9/11, NYC Grew Faster than U.S.; Since 9/11, NYC Has Not Grown at All



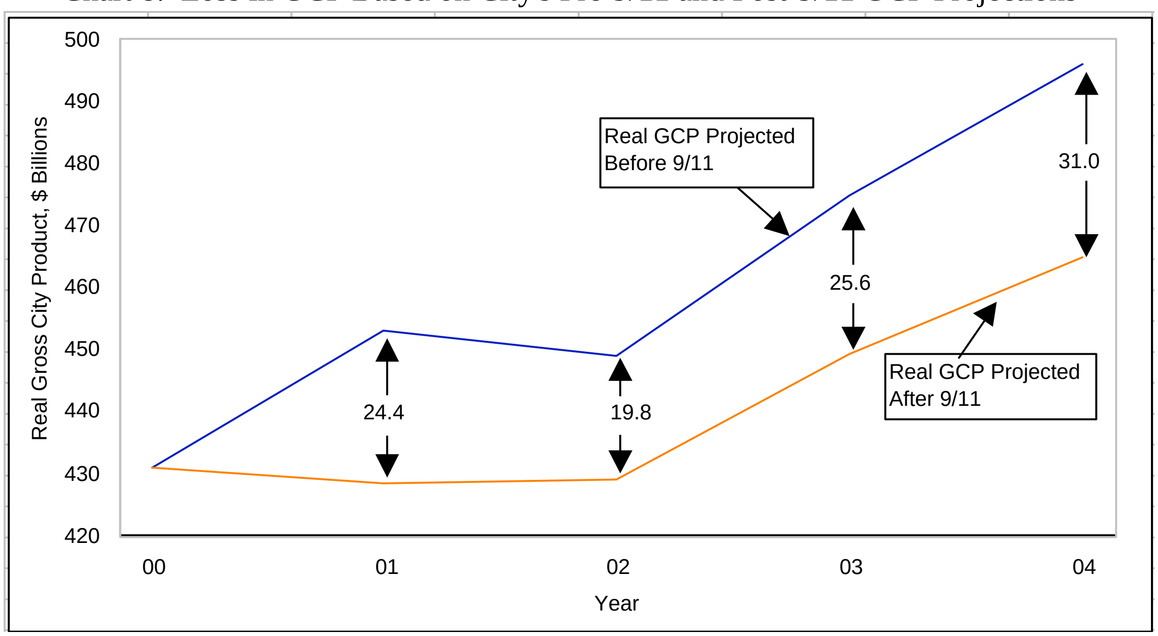
Sources: Percent changes are quarter-to-quarter. GCP = Gross City Product [New York]. GDP growth data from U.S. Department of Commerce. NYC GCP estimates are from the NYC Comptroller's Office, based on a model that incorporates both monthly NYC jobs data and quarterly GDP data, and changes retroactively when these numbers are revised by the Department of Commerce. GDP=Changes in real GDP, based on chain-weighted 1996 dollars.

From the jobs numbers, the Comptroller estimates that the total loss in NYC wages from 9/11 is $8.5 billion in the ten-month period from September 2001 to July 2002. Since the national ratio of GDP to wages is 2.07, we can approximate the GCP loss in the ten months since September 2001 as 2.07 times $8.5 billion, or $17.6 billion.[20] During the three quarters prior to 9/11, NYC's real GCP fell by $6.8 billion. During the three quarters after 9/11, real GCP fell by $8 billion as shown on Chart 7.[21]

D. Lost GCP in 2002-2004 - $40.8-52.8 Billion

Moving ahead to the remaining years of the 2001-2004 period for which GCP losses are computed, the City's change in GCP projections provides a useful indication of the out-year costs, as shown in Chart 8. For the three years between 2002 and 2004, the difference between the City's pre-9/11 GCP projection and post-9/11 GCP projection is $76.4 billion. This number is too low in nominal dollars by a factor of about ten percent (i.e., nominal GCP should be about $84 billion) because the City's projections follow national practice in using real 1996 dollars rather than nominal GCP.

Chart 8. Loss in GCP Based on City's Pre-9/11 and Post-9/11 GCP Projections



Source: Data from NYC Office of the Mayor, *Adopted Budget, FY 2002* and *Executive Budget, FY 2003.* Computations and chart by the NYC Comptroller's Office.

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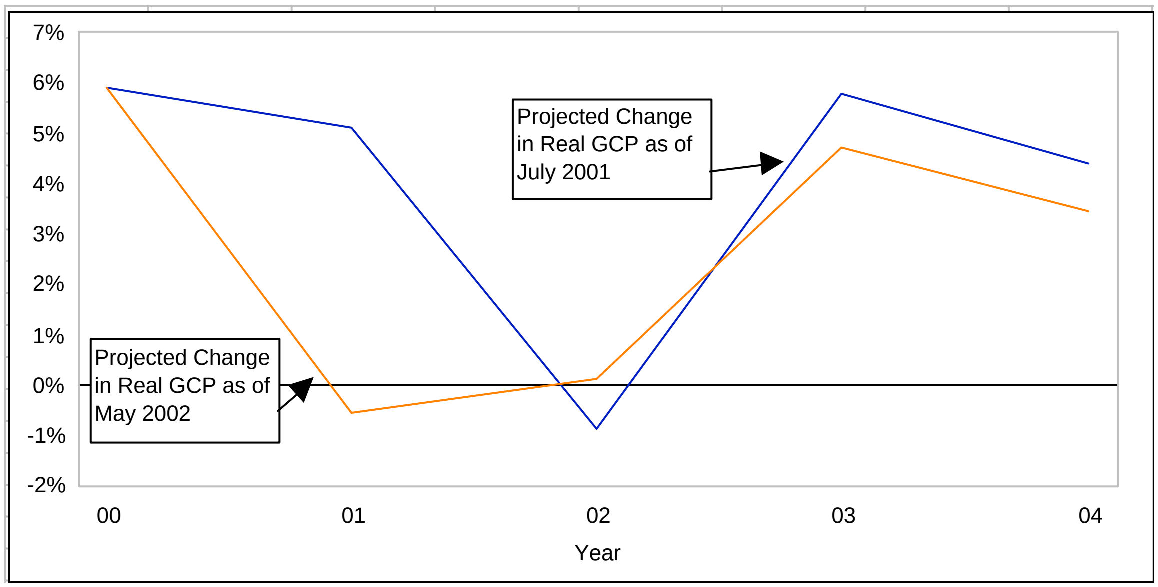
[20] The 2.07 multiplier is the ratio of GDP to wages in 1999 (see *Statistical Abstract of the United States, 2000,* Tables 721, 724). Based on internal comparisons of NYC data, this number is a reasonable one to apply also to NYC.

[21] The three-quarters GCP of $8 billion is in 1996 (real, inflation-adjusted) dollars. To convert to nominal GCP, a multiplier of 1.1 may be used, for a total of $8.48 billion. These numbers may seem lower than would be indicated by the job losses in the previous section, and the wage losses that the job losses would imply. But GCP changes are quarter-over-quarter whereas the job losses are computed from an upward projection indicating jobs potential.

How much of this projected GCP loss of about $84 billion should be attributed to 9/11? Other factors have also played a role, such as the drop in the stock market and the exposure of widespread corporate accounting irregularities. One could argue that the stock market drop was influenced by 9/11 because of the loss of consumer and investor confidence created by 9/11, and the stock market declines in turn contributed to the exposure of accounting irregularities that might otherwise have come to light more slowly and in a less traumatic way.

On balance, slightly more than half of the loss in the City's projected GCP is attributed to 9/11, i.e., a range of $52.3-$64.3 billion, with the range depending on the number of NYC-based employees who have moved out of NYC for reasons of "diversification" or "backup" of NYC offices. Interestingly, as shown in Chart 9, the City had projected a downturn in its economy, but not as soon as 2001.

Chart 9. Change in GCP, City's Projections Pre-9/11 and Post-9/11



Source: Data from NYC Office of the Mayor, *Adopted Budget, FY 2002* and *Executive Budget, FY 2003.* Computations and chart by the NYC Comptroller's Office.

Lost GCP, 2001-2002

The economic impact of job losses depends on the composition of the job losses and the conversion of jobs to wages and thereby to GCP, as illustrated in Table 9.

Selected Loss Components
(Already Counted in GCP Loss)

The economic cost from the perspectives of disabilities and trauma and higher spending on security (both on buildings themselves and on private guards) provides additional insight into the impact of 9/11.

Table 9. *Estimated Lost Jobs/Wages from 9/11, NYC, September 2001-July 2002*

	Sep 01-July 02		**Job Loss '000**	**Wage Rates in 2000**	**Total Wage, in Mil.**	**Approx. Share of GCP, $mil.**	**Percent of Total**
	'000	**%**					
Total	-83.1	-2.7%	-146.1	$58,099	-$8,488	-17,571	100.0%
Private	-82.5	-3.1%	-110.5	$60,446	-$6,679	-13,826	78.7%
Government	-0.6	-0.1%	-35.6	$45,113	-$1,606	-3,324	18.9%

Source: NYS Department of Labor. Wage rates are based on the insured job numbers (ES202) for 2000. Job losses represent the difference between actual job numbers through July 2002 and the projected jobs based on the August-September 2001 trend as shown in Chart 3. For the 146,100 total jobs lost, see the jobs section. Computations in the last five columns by the NYC Comptroller' Office. To compute the GCP share, a 2.07 multiplier is used. That is the 2000 ratio of real GDP to wages, which approximates the NYC GCP ratio.

A. Disabilities and Trauma - $943 Million

The toll on human life does not end with the dead and missing. Many people who were in the WTC complex or were involved in rescue efforts have been severely wounded by falling glass or other debris, or by slips, trips, and falls, or were affected by the particles of dust and fine debris in the air. But the impact of the WTC attack on worker productivity and worker absences is hard to measure.

The City has advised its employees that: "Emotional responses to disasters can appear immediately or sometimes months later. Understanding what you're feeling and taking positive steps can help you cope with disaster. Remember you're having a normal reaction; don't label yourself as crazy."[22] The advice continues with a list of symptoms: disbelief and shock; fear and anxiety about the future; confusion; feeling overwhelmed; irritability and anger; sadness and depression; feelings of powerlessness; change in eating habits; poor concentration or memory problems; questioning of spiritual beliefs and practices, anger at God; headaches and stomach problems; difficulty sleeping; increased drinking and drug use.

These symptoms have an economic impact. They affect worker productivity. Fortunately, for most people, the effects are temporary. Time heals wounds, and for most people the healing is a matter of days or weeks. For others, especially the bereaved and those who were close to the scene of the attack, or had a prior condition that made them susceptible to trauma, the effects of the event linger for months, even with counseling and rest.

Another widespread condition is respiratory illness from particles in the air, which lingered in lower Manhattan for months as the WTC buildings continued to burn. These ailments may be especially severe for those with a prior condition, or for those – including many rescue workers, fire fighters, police officers, medical personnel, and volunteers – who worked close to the WTC site where the concentration of particles was highest.[23]

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[22] From nyc.gov homepage link for City employees.

[23] Asthmatic children and adults have been adversely affected by smoke from the WTC destruction eight miles from the site, some of them being hospitalized. "For Asthmatic Children, An Extra Health Burden," *New York Times*, September 20, 2001, p. B11.

The cost of injuries, respiratory illnesses, trauma, and other causes of worker absence is subject to a wider range of estimates than property cleanup or business interruption. Costs are imposed on the medical care system, the victim, the victim's employer, members of the victim's family who serve as caregiver, or the caregivers' employer. Some of these costs will be funded by business interruption insurance, Workers' Compensation, disability insurance, and health plans.[24]

The cost of disabilities would show up in a shortening of the working lives of the average New Yorker and therefore in a reduction in lifetime NYC wages. But the economic impact is ameliorated if the employer replaces the disabled victim and hires someone who was unemployed. NYC's unemployment rate rose from 6.3 percent in August 2001 and to 7.7 percent in July 2002, suggesting that skilled unemployed people are available in NYC.

Some major categories of losses associated with the reduction in worker productivity are:

- Leave from work and associated medical costs resulting from injuries, including ailments created by air-borne articles and emotional stress.[25]
- Leave for bereavement by co-workers and family member(s).
- Medical costs, including the costs associated with individuals suffering from post-traumatic stress who may not have been near the WTC at the time of the attacks, but who are affected because of personal loss or a personal history that makes them more susceptible to emotional impact from the attacks. The estimates allow for these patients being treated in a hospital or privately at any time during the first five weeks after the attacks.
- Lost productivity from sufferers from Post-Traumatic Stress Disorder (PTSD).

About 7,000 people working in the WTC complex, not including City government workers, were injured or affected by particles of dust and fine debris in the air,. Of the 7,000 persons, 500 were hospitalized. The costs fall into five categories as shown in Table 10, which suggests a loss from disability and trauma of about $943 million.

Those at risk are:

- Those physically injured, i.e., who received medical treatment soon after the event.
- Those in the "zone of danger" - i.e., they were threatened with physical harm, but did not sustain any.
- Those physically near the scene, observing the event and knowing someone who was killed or injured, although not a relative. (Bystander proximity)

[24] The issue of the incidence of the employee's medical and leave costs is only one side of the equation. The employer may hire a replacement, but must incur the costs of recruiting and training a new employee. It will also take the new employee time to become as productive as the previous one.

[25] Leave may be taken because of disabilities or aggravated ailments such as asthma or post-traumatic stress disorder. Some disabled workers are not entitled to be paid for staying home from work, but with a doctor's prescription are allowed to take up to six months off without pay. This cost might be another $100 million, at 5,000 workers times an average of 20 percent of salaries averaging $100,000 each, as an average of general Manhattan salary and FIRE Manhattan average salary.

- The “families” group which includes adult family members of those killed or injured, who may have seen the event personally or on television.
- Persons who despite being remote in space, time or personal connection to the event are still seriously damaged emotionally.

Table 10. *Estimate of 9/11 Disability Losses, Non-City Employees, 2001-2004*

Category	**PTSD Literature**	**Total Potential**	**Estimated Percentage**	**Estimated Number**	**Loss/Victim, 4 Years $**	**Total Lost, 4 Years, $ mil.**
1. Sustained Physical Injury	20% - 50%	7,000	20%	1,400	$120,000	$168
2. Within Zone of Danger	20%	25,000	20%	5,000	$45,000	$225
3. Bystander Proximity	5%	250,000	5%	12,500	$20,000	$250
4. Families	N.A.	25,000	20%	5,000	$40,000	$200
5. Others	~0.1%	10,000,000	0.1%	10,000	$10,000	$100
Total				**33,900**		**$943**

Notes by Row:

1. Sustained physical injury - physical harm (hit by falling debris, inhalation of smoke or dust, injury from fall, shock) soon after the event, as well as mental distress.
2. Zone of danger - threatened by physical harm.
3. Bystander proximity, someone near the scene observes the event and knows someone who was killed/injured.
4. Families - relatives of those killed/injured who saw the attacks in person or on television.
5. Others - persons despite being remote in space, time or personal connection to the event still are seriously damaged emotionally through repeated exposure in media, especially television.

Source: PTSD literature summarized by Jennifer Christian, president and chief medical officer of Webility Corporation. Remaining columns estimated by the Comptroller, with the estimated percentage based on the PTSD literature. N.A. = Not applicable. PTSD = Post-Traumatic Stress Disorder. NYC Government workers are excluded because they are included in the Budget Impact section of this report.

The estimate of $943 million may be too low. The Center for Urban Epidemiological Studies at the New York Academy of Medicine did a study of adults living south of 110 Street in Manhattan. It found that 67,000 had post-traumatic stress disorder and 87,000 were suffering from depression. A Red Cross study found that one-third of adults in the NYC metropolitan area were at risk for trauma and two-thirds had signs of substantial stress. Similarly, a study by the 9/11 United Services Group estimated that 250,000 to 400,000 people in the 121,000 households directly affected by the attack were emotionally damaged and that approximately $100 million would be needed over two years for mental health services alone, not counting the impact on worker productivity.

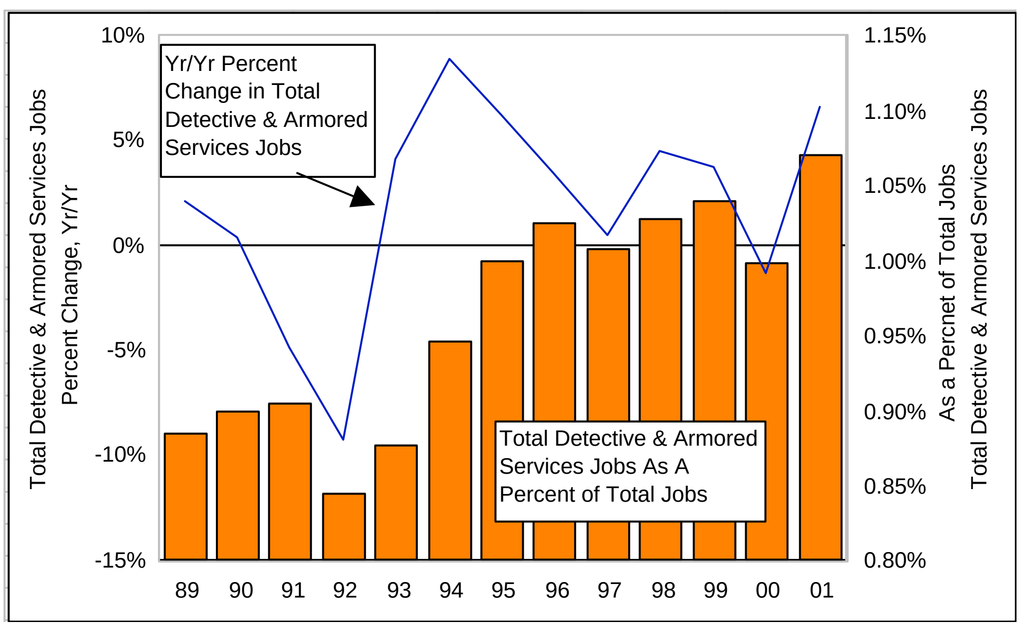
B. Higher Spending on Private Security Guards - $964 Million

Increased spending by the City itself is linked to intergovernmental decisions, i.e., the extent to which Federal and State appropriations will absorb the cost. Private-sector security issues are virtually all absorbed by individual companies, so that higher security costs represent an increased cost of doing business. For NYC's economy, an issue is to what extent the increased costs are significant and to what extent they are unique to the City. For private-sector decision-makers, a question is the extent to which the security costs are avoidable by locating elsewhere and what the offsetting disadvantages of locating elsewhere such as difficulties in recruiting personnel, dealing with customers and suppliers, and developing new business.

Higher spending on security helps address the need for individuals to go about their daily activities without fear. People may be willing to pay a great deal for this benefit. New security precautions taken by police and government regulators will cost the nation billions of dollars, plus extra time at airports and other transportation centers. These precautions will discourage air travel for shorter trips where trains and cars are a viable alternative, at the same time as the costs reduce the profitability of airports and airlines. From an economic and environmental standpoint, however, a switch from fuel-inefficient airplanes to more-efficient trains (if that is an outcome) may be beneficial.

The costs of the tighter security are less than they were initially when traffic was backed up for hours in Lower Manhattan but are still substantial. They include: (1) Lost productivity of companies located in Lower Manhattan. (2) Lost orders to companies dependent on them for business. (3) Lost business to retailers and other companies because of a change in traffic patterns. While the "frozen" or "red" areas, which restricted vehicular and pedestrian traffic to allow rescue workers to move more freely, were the extreme example of this type of change, since the ending of these zones traffic patterns have still been changed in ways that adversely affect many retailers. (4) Police checks of trucks, for example at tunnel entrances, impose costs that can be severe when companies fail to obtain supplies and materials because of long lines of waiting trucks and cars. (5) Delays in entering office buildings because of the requirement of identification and the X-raying of packages and cases. Security costs are often gladly borne by those concerned about their personal safety, but they have business effects.

Chart 10. Private NYC Security Guards, Percent Change and Share of Work Force, 1989-2001



Source: NYS Department of Labor, ES202 data.

Businesses have engaged in contingency planning that often leads to a search for backup and alternate activity sites at a different location. The cost of such secondary headquarters offices and backup sites is expensive for a company that is doing it only out of concern for another terrorist attack. After the 1993 WTC bombing, the number of private security guards as a percentage of total jobs rose 23 percent in four years - five percent in the first year (1993), ten percent in the second, five percent in the third and three percent in the fourth, after which it settled into a zero-change pattern until 2001, when it rose six percent after a one percent decline in 2000. This is shown in Chart 10.

The percentage of all workers who are security guards rose from about 0.88 percent in 1993 to about 1.07 percent in 2001, an increase of 21.6 percent in the share (1.07/0.88). Either way, as a percentage increase in security guards or a percentage-point increase in the share of security guards to all NYC workers, the impact of the 1993 bombing appears to have been a 22-23 percent increase in security spending over four years, followed by little net change. The average salary for a security guard is about $20,000, costing the employer about $30,000 with benefits, supervision and other costs, so another 21.6 percent increase in the number of guards from a base of 37,159 in 2000 would mean a cost increase of $241 million per year, or $964 million over four years. Security-related spending, however, is a cost that may be seen as an investment because it helps to narrow the future property/casualty premium differential between NYC and other cities.

IMPACT OF 9/11 ON THE BUDGET

The attacks that destroyed the World Trade Center have put significant pressure on the City's budget. Tax revenue has been reduced, expenditure levels were increased, and capital costs appear to be higher than would otherwise have been expected.

The Comptroller estimates that as a result of the attacks the City has lost nearly $3 billion in tax revenues with the bulk of revenue loss from the economically-sensitive non-property taxes. However, real estate values outside of Lower Manhattan appear to be stable, which gives support to property tax collections.

The City has also had to fund nearly $500 million in unreimbursed expenses, especially from overtime and security costs and will be facing higher Medicaid and pension costs as a result of the September 11 attacks. The City may also have an exposure to higher claims costs as a result of the attacks. In addition, the City will be obligated to pay about $36 million in additional debt service costs on the bonds it has issued since the attacks.

On the positive side, the City's budget and financial plan recognize the scope of the issues before us. The City is facing a $5 billion deficit in FY 2004 and has already begun to plan strategies to address this shortfall. Working together, New Yorkers will overcome these problems.

TAX REVENUE LOST

The City's drop in tax revenues clearly illustrates the effect of 9/11. Overall, the City has lost nearly $3 billion in tax collections in FYs 2002 and 2003. The bulk of this loss is from the economically-sensitive non-property taxes. Fortunately, real estate values outside of Lower Manhattan appear to be stable, which gives support to property tax collections.

Overall Loss

The loss to tax revenues from the September 11 attacks is estimated at more than $2 billion for FY 2002 and $928 million for FY 2003 as shown in the figure to the right. Non-property taxes are responsible for all of the 9/11 loss in FY 2002 and 80 percent of the estimated 9/11 loss for FY 2003.[26]

Effect of September 11
Attacks on Tax Revenues,
$ in millions

	2002	2003
Property	$0	$(184)
Non-Property	(2,015)	(744)
Total	$(2,015)	$(928)

Tax revenues in FY 2002 totaled $22.1 billion as shown in Table 11. This is $1.2 billion, or 5.3 percent below FY 2001. Non-property taxes were $14 billion, which is $1.7 billion, or 11 percent below FY 2001 collections. Property taxes increased by $489 million, or 6.4 percent. For FY 2003, total tax revenue collections are expected to increase by $966 million, or 4.4

[26] Non-property taxes include personal income, business income, sales and some other small taxes.

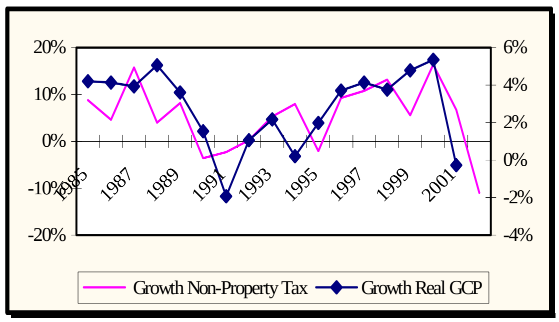
percent. Non-property taxes are forecast to increase by $643 million, or 4.6 percent and the property tax is forecast to increase $324 million, or four percent.

Table 11. *Tax-Revenue Collections FY 2001-FY2003 $ in millions*

	2001	2002	2003 (e)
Property	$7,661	$8,150	$8,474
Non-Property	15,670	13,955	14,597
Total	**$23,331**	**$22,104**	**$23,071**

Source: Office of Management and Budget.
Excludes audits, the STAR aid program and the effects of changes in tax policy. Figures for 2003 are forecasts

A. Significance of Non-Property Tax Loss



Non-property taxes are sensitive to economic performance as the figure to the right shows. Non-property tax revenues fluctuate with Gross City Product (GCP), which measures economic output of the City. When the economy is in a recession, as it is now, tax collections are also affected as business and workers earn and spend less. This impact on non-property tax collections has major consequences for the budget, since non-property tax collections account for over 60 percent of total tax revenues. When non-property taxes fluctuate, they have a significant impact on total tax revenues. The contraction of total and non-property tax revenues affects the amount of city-funded revenues available to finance city expenditures as total tax revenues account for about 85 percent of total city-funded revenues and non-property taxes account for about 55 percent of total city-funded revenues as shown in Table 12.

Table 12. *Non-Property and Total Tax Revenues as a Share of City-Funded Revenues, Percent*

	1997	1998	1999	2000	2001
Non-Property Taxes /City-Funded Revenues	52.1%	55.1%	55.3%	55.4%	54.4%
Total Taxes/City-Funded Revenues	83.8%	85.4%	86.3%	85.6%	84.4%

Source: Comprehensive Annual Financial Report of the Comptroller, 2001.
Although the levels fluctuate the ratio remain relatively constant overtime as non-property taxes are also included in city-funded revenues.

B. Resilience of Real-Estate Tax Helps to Offset Non-Property Tax Loss

The real-estate taxes have been very valuable in mitigating some of the impact to the budget from the decline of non-property taxes. Legislated covenants require that changes in property values exceeding certain amounts be phased in over time. This has helped stabilize the flow of tax revenues from this source. Rising real-estate values in the past few years have built up a cushion that reduces the impact on collections when values fall or slow.[27] Additionally, investment and values in the real-estate market have remained resilient thus far during this recession because of low interest rates and growing uncertainties in the stock market.

FY 2002 real-estate tax revenues were not affected by 9/11. FY 2003, however, will be affected. Lower Manhattan property assessed valuation for selected major areas shown in Table 13 prior to 9/11 is estimated at $4.3 billion, which represents 4.5 percent of total city assessed valuation. These Lower Manhattan properties produced about 4.9 percent of total city real-estate tax revenue in FY 2002. As a result of 9/11, their estimated assessments fell 37 percent to $2.7 billion in FY 2003. This results in an expected reduction to real estate tax revenues to the area of $113 million. This reduction is offset by increases to assessed valuation to other areas so that overall real estate tax revenues are forecast to increase four percent for FY 2003.

Table 13. *The FY 2003 Growth of Property Values, $ in billions*

Assessed Values	**2002**	**2003**	**Change**	
Downtown Manhattan – Selected Areas – Market Values				
Secondary Office	$2.4	$2.2	(0.2)	-8%
WTC Complex	2.84	0.51	(2.33)	-82%
Major properties in WTC Vicinity	1.79	1.32	(0.47)	-26%
Battery Park City Commercial	2.02	1.58	(0.44)	-22%
Battery Park City Residential	0.60	0.46	(0.13)	-22%
Total Downtown – Market Values	9.65	6.07	(3.58)	-37%
Total Downtown – Estimated Assessed Values (.45 Market Value)	4.34	2.73	(1.61)	-37%
Hotels – Estimated Assessed Value – (.45 Market Value)	2.07	1.62	(0.45)	-22%
Manhattan	60.41	64.25	3.84	6.4%
City-wide	$97.49	$103.27	5.78	5.9%

Source: Calculations from NYC Department of Finance data.

Estimating the Impact of 9/11 on Tax Revenues

Three methodologies were used to estimate the impact of the 9/11 attacks on tax revenues. All three approaches support the theme or conclusion that the attacks have caused most of the decline in tax revenues for FY 2002.

A. Economic Growth and Tax Revenues

The first approach is to separate the effect on tax revenues due to the economic slowdown or recession and from the effect due to 9/11, by estimating the effect that economic

[27] Assessment values for Class 1, which consists of one- to three-family homes and small condominiums may increase by no more than six percent annually and no more than 20 percent over five years. For Class 2 residential properties and coops and condominiums, which consist of fewer than 11 units, assessment increases may not exceed eight percent per year or 30 percent over five years. For Class 2 properties which consist of residential properties of more than 11 units and Class 4 properties which are basically commercial properties, changes in assessed values are phased in over five years.

growth has on taxes. Since non-property taxes are economically sensitive and account for more than 60 percent of total taxes, they will therefore also fluctuate with changes in the economy.

The economy began to slow in the first quarter of FY 2001 or four quarters before 9/11. This did not immediately impact tax revenues partly because of the offsetting effect of the less economically sensitive real-estate taxes. Personal income taxes (PIT) declined in the second and third quarters of FY 2001 but showed some recovery in the fourth quarter of FY 2001 as shown in Table 14. The business taxes slowed but also showed some recovery in the fourth quarter of FY 2001. Sales tax growth slowed in the fourth quarter of FY 2001. Non-property taxes overall slowed in the first three-quarters of FY 2001 but showed recovery in the fourth quarter of FY 2001. Except for sales tax, the major non-property tax groups showed recovery in the quarter before 9/11. The evidence is overwhelming that this recovery would have continued and NYC would have come out of recession in FY 2002 in the absence of 9/11.

Table 14. *Gross City Product and Various Taxes, FY 2001, Year-Over-Year Quarterly Growth Rates, in Percent.*

Quarter	**Real GCP**	**Nominal GCP**	**Total Tax**	**Non-Property Tax**	**Personal Income Tax**	**Business Tax**	**Sales Tax**
1Q-FY2001	5.2%	7.6%	5.1%	7.5%	4.2%	30.8%	3.4%
2Q-FY2001	4.1%	6.6%	-10.0%	1.6%	-1.6%	7.0%	5.8%
3Q-FY2001	2.7%	5.2%	13.3%	0.7%	-0.8%	-1.3%	8.5%
4Q-FY2001	-0.1%	2.1%	10.3%	9.0%	5.9%	6.0%	0.3%

Source: GCP figures from the NYC Comptroller's Office. Tax data from the Office of Management and Budget.

A baseline for taxes without recession or 9/11 was estimated using trend growth. The difference between this baseline growth and actual growth was then separated into loss due to recession and loss due to 9/11. The weakening economy was causing a slowdown in GCP growth prior to 9/11, which occurred in the first quarter of FY 2002. The effect of this slowdown in GCP growth prior to 9/11 is used to estimate what tax collections would have been with recession or slowdown only. The results are presented in Table 15.

Table 15. *Loss to FY 2002 Tax Revenues From Recession and 9/11, $ in millions*

Tax	**Loss From 9/11**	**Loss From Economic Slowdown/Recession**
Total Tax	$(2,015)	$(519)
Property[1]	0	0
Non-Property Tax	(2,015)	(519)
Personal Income Tax	(1,164)	(249)
Sales Tax	(308)	(109)
Business Tax	$(543)	$(161)

[1]Three main non-property taxes were used in our methodology - personal income tax, business taxes and sales tax. These were aggregated for our evaluation of non-property taxes, though there are some other smaller taxes included in non-property taxes. The sum of loss from 9/11 and recession is the difference between the actual 2002 and estimated baseline without recession or 9/11.

The estimated effect of 9/11 on tax-revenue collections for FY 2002 is a decrease of $2 billion. Property tax collections increased but these rates were set before 9/11. FY 2002 property tax rates were fixed in June 2001 and property owners remain liable for FY 2002 real estate taxes associated with property lost on 9/11.[28] Net total taxes only fell $1.5 billion because of the positive offset from property taxes. The bulk of the decline is as a result of the drop in PIT collections.

B. Forecasts Before and After 9/11

Comparing tax-revenue forecasts before and after 9/11 supports the prior analysis as shown in Table 16, which compares the City's tax-revenue forecasts in the Financial Plans before and after 9/11.

Table 16. *City's Tax-Revenue Forecasts Before and After 9/11*

	2002 Growth	**2003 Growth**	**2002 Less 2001, $in millions**
Adopted 2002 – Non-Property	-3.4%	5.0%	$(580)
Total	-0.4%	5.9%	(97)
November 2002 – Non-Property	-11%	2.6%	(1,730)
Total	-5.4%	3.8%	$(1,254)

Source: Office of Management and Budget. Excludes audits, STAR aid and changes due to tax program.

The attacks occurred between the Financial Plans released June 2001 and November 2001. The forecasted decline for FY 2002 increased between these plans from 0.4 percent to 5.4 percent. It can be argued that the anticipated greater decline of $1.2 billion in non-property taxes is the result of 9/11 rather than the recession. Just before 9/11, the City was expecting tax growth adjusted for tax policy to remain flat during the recession, declining only 0.4 percent. The Mayor at the time admitted to taking a conservative slant on revenues suggesting that it is not unrealistic to forecast that growth may have been positive. The drop of $1.2 billion is likely conservative as this was estimated shortly after the attack.

C. Historical Perspective

Looking at the behavior of tax revenues in previous recessions also supports the analysis. During the last major recession of 1990-1992, the growth of common-rate-and-base taxes (taxes adjusted for changes in tax policy) slowed but did not decline. Real estate growth during this span averaged six percent, similar to the growth in FY 2002. Non-property tax declined an average of 1.9 percent and overall taxes grew an average of 1.7 percent. Non-common-rate-and-base total taxes grew on average 5.1 percent in 1990-91 while non-property taxes grew 1.1 percent. Much of this growth occurred because of increased tax rates. This approach extrapolates this trend to the 2001-2002 recession, which was expected to be milder than the 1990-1992 recession.[29] By the standards of the last recession, assuming growth rates ranging from –2 percent to 2 percent resulting from recession, the loss in taxes from 9/11 would range from $0.9 billion to $1.8 billion as depicted in Table 17.

[28] Business interruption insurance is expected to cover some of these losses

[29] In the June 2001, the City projected GCP growth of one percent in 2001, and growth of –0.8 percent in 2002. During the last recession, GCP grew 1.5 percent in 1990, -1.9 percent in 1991 and 1.1 percent in 1992.

Table 17. *Decline in FY 2002 Taxes Caused By 9/11, $ in millions*

	Actual	**Effects**	**Assuming Recession Tax Growth Rates Of**				
			-2%	-1%	0%	1%	2%
2001	23,247	Projected 2002	22,782	23,015	23,247	23,479	23,712
2002	21,872	Recession- 2001 Less Projected 2002	(465)	(232)	0	232	465
Difference	(1,375)	9/11– 2002 Less Projected 2002	(910)	(1,143)	(1,375)	(1,607)	(1,840)

Compiled from data from the Office of Management and Budget.

While the results of the three approaches do not exactly coincide, they all support the position that 9/11 is responsible for most of the drop in tax revenues for 2002.

D. FY 2003 Impact

The estimated impact of 9/11 on tax revenues for 2003 is a loss of $928 million as shown in the figure to the right. Because of the drop in assessed values in Lower Manhattan from destruction of property and slower overall growth in assessed values, the potential loss from property tax for 2003 is estimated at $184 million. Property taxes for the FY 2003 outyear were projected to grow 5.6 percent in the FY 2002 budget adopted June 2001. One year later after the 2003 assessment roll was released the forecasted growth rate fell to 3.2 percent. About $113 million of this is projected to be from the lower assessed value of Lower Manhattan as shown in Table 18.

Tax	**2003 Loss from 9/11, $ in millions**
Total	$(928)
Property	(184)
Non-Property	(744)
PIT	(343)
Sales	(148)
Business	$(253)

Table 18. *Estimated 2003 Property-Tax Loss From Lower Manhattan, $ in millions*

	2002	**2003**	**Difference**	**Lost Levy (Lost AvxTax Rate)**
Market Value MV	$9,649	$6,073	($3,576)	
Assess Value (AV=.45 MV)	$4,342	$2,733	($1,609)	
Billable Assess Value	$3,821	$2,733	($1,088)	($113)

Tax levy = billable assess value (BAV) x average tax rate of 10.366. The BAV is the lower of the AV or an interim value that includes phase in of the pipeline. 2002 BAV set at .88AV for FY 2002. Because AV fell so much in lower Manhattan it is assumed that the BAV=AV for 2003.

INCREASED EXPENDITURES

The City's expenditure estimates were also adversely affected by the 9/11 tragedy. The City has experienced increases in its overtime and security costs and will be facing higher Medicaid and pension costs as a result of the September 11 attacks. The City may also have an exposure to higher claims costs as a result of the attacks.

Overtime

In the aftermath of the WTC attack, the City confronted the enormous task of rescuing possible survivors and combing the debris for remains and evidence. As a second priority, City personnel were responsible for restoring and continuing essential services, establishing security control of restricted areas, and protecting the City from any additional threats. In this effort, the City spent over $365 million on overtime in FY 2002 as shown in the figure to the right.[30] In the month of October 2001 alone, the City accrued 41 percent of this WTC-overtime cost, or $150 million.

WTC OVERTIME - FY 2002 $ IN THOUSANDS	
AGENCIES	**EXPENDITURE**
Police	$ 257,315
Fire	61,832
Sanitation	23,308
Transportation	6,276
Health	3,956
Environmental Protection	1,596
Design & Construction	1,449
General Services	1,219
All other agencies	8,478
Total	$365,429

Source: Office of Management & Budget, as of July 22, 2002.

The Police Department accounted for 70 percent of the WTC related overtime for FY 2002; a total of $257 million. Immediately after the attack, the Police Department began to work 12-hour shifts. The amount of disaster-related work by the Department was so extensive that it cancelled all previously granted leave time for six weeks and suspended all training. Initial emergency response included searching rooftops and buildings for casualties, providing search and rescue support at Ground Zero, identifying remains in the City morgue, assisting in the evacuation of the area below Canal Street, patrolling Ground Zero, manning bridges and tunnels, among other security related activities. The WTC overtime for Fire and Sanitation Departments, which were extensively involved in the rescue and clean up efforts, amounted to about $85 million. A breakdown of City agencies that were intensively involved in addressing issues that resulted from the attacks and, therefore, accumulated significant WTC overtime is shown in the figure above. WTC overtime activities by these other agencies included demolition and debris removal, monitoring private contractors, safety inspection, air quality testing, temporary relocation of essential services, establishment of temporary communications and emergency transportation. The City's total overtime spending for FY 2002 was $1.158 billion, of which WTC related expenditures represented 32 percent of this amount.

WTC overtime is expected to be less significant in FY 2003. From July 1 through August 20, 2003, WTC overtime expenditures were $2.4 million. Most of this amount was accrued by the Police Department and it involved safeguarding locations that are at risk. It is unlikely that FEMA will reimburse the City for WTC overtime expenditures accrued in FY 2003.

Additional Security Costs

The City was in a heightened state of alert after the attack. Taking into consideration prior terrorists acts, including the 1993 bombing of the WTC and a subsequent failed bomb plot

[30] The WTC-related overtime expenditures of $365 million represents about 32 percent of total overtime spending of $1.16 billion in FY 2002, based on data reported through August 13, 2002.

against a landmark, the City had to address the threat of future terrorist acts on a permanent basis. As a result, new security measures were established that, to a great extent, still continue today. This added security, referred to as Omega, assigned as many as 1,400 officers a day to security patrols/posts at bridges and tunnels, City Hall, Ground Zero, City landmarks and at traffic checkpoints in Lower Manhattan. In addition, there are other security measures that are ongoing and necessary, but the City does not receive reimbursement for these expenses.

The Police Department has also formed a Counterterrorism Taskforce, which added two newly created positions: a Deputy Commissioner for Counterterrorism and a physician specializing in dealing with chemical, biological and radiological weapons.[31] The Department will also provide specialized anti-terrorism training to all police officers to prepare them for future responses to an attack, while new equipment, such as protective suits and gas masks for officers and more sophisticated sensors that can detect chemical, radiological and biological weapons, will be procured. The unit will also provide training to businesses to establish a protocol for any possible future attacks. The City has not assigned a cost to this new initiative.

Clean Up Efforts

The enormous task of removing debris was essential in rebuilding the downtown area after 9/11. The City, through the Department of Design & Construction, hired private contractors to perform the clean up tasks. The 16-acre WTC site was divided and the sections were awarded to four different contractors. As of July 2002, these contractors received a combined total of $380 million.[32] Including insurance payments and closing payments following the City's arduous auditing process, the City estimates that the total cost will be close to $659 million. The clean up process in Ground Zero took eight months and 19 days to complete, removing a total of 1,640,707 tons of debris including 190,568 tons of steel.

Hundreds of City workers, especially firefighters, were involved in the clean up efforts. There are conflicting reports as to the levels of toxins that may have been present at the site after the attack. Contaminants that were present include asbestos, mercury, polychlorinated biphenyls (PCB), cadmium and dioxins. Toxins like cadmium and mercury, once ingested or inhaled, resist degradation or excretion and tend to build up to dangerous levels in the body over time. Earlier this year, Congress appropriated $12 million to track the health of rescue workers that were present in Ground Zero. The funding will provide a comprehensive program of outreach and education, medical assessment, and diagnostic referrals for individuals exposed to health hazards at the WTC site. In addition, FEMA dedicated another $20 million to establish a WTC Health Registry. The City's Department of Health & Mental Hygiene will oversee the creation of the registry, and will track individuals who were exposed, either from working, living, or cleaning up in the area affected by the disaster.

As of January 1st, the Police Department had received 37 disability claims related to injuries suffered as a result of the WTC attack. Since January, the Fire Department has received

[31] Details on the number of other officers or detectives assigned to this taskforce have not been made available.
[32] AMEC Construction received $62.5 million, Tully Construction $69.3 million, Turner Construction $39 million and Bovis Lend Lease $209 million.

269 disability applications. In addition, 561 retirement applications have been filed in the Fire Department since January, compared to 531 applications received during FY 2001.[33] Both the Fire and Police Departments expect an overwhelming number of uniform personnel to retire this year, given the trauma and emotional stress experienced.[34]

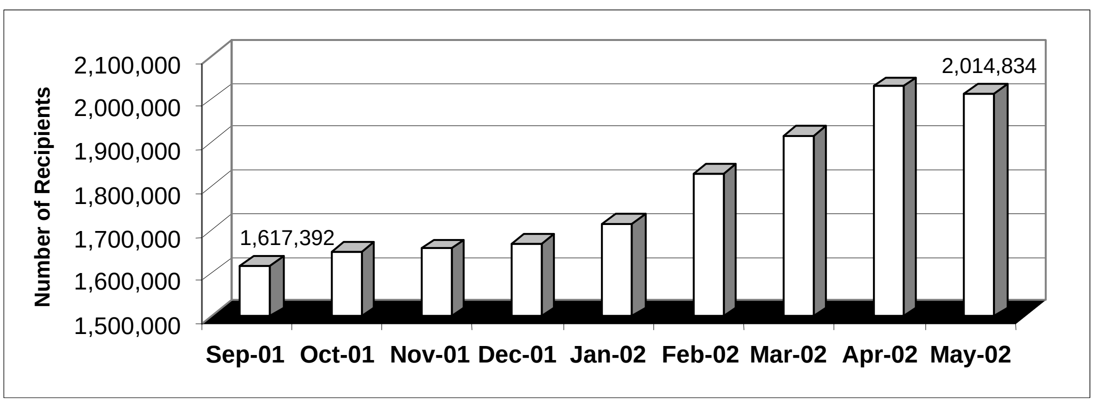
Personnel Cost

The tragic attack took the lives of nearly 494 government workers.[35] The Fire Department suffered a loss of 343 active members, including many decorated and ranking officials (a First Deputy Commissioner, a Chief of Department, two Assistant Chiefs Citywide Tour Commanders, 19 Battalion Chiefs, 22 Captains and 46 Lieutenants). The Police Department lost 23 of its officers, including four Sergeants and two Detectives.

Disaster Relief Medicaid

About two weeks after the events of September 11, the City began offering temporary Medicaid coverage to lower-income families. To expedite the eligibility determination process for qualified individuals, the State and the City Human Resources Administration (HRA) simplified the normally lengthy application for Medicaid enrollment to a one-page application for these temporary benefits.

Chart 11. NYC Medicaid Enrollment Since The 9/11 Attack



Source: HRA Fact Sheet, October 2001-June 2002, Human Resources Administration.

[33] Based on information provided by Senator Clinton's website, up to 300 firefighters who were involved in rescue and recovery efforts at Ground Zero may be forced to retire because of health ailments.

[34] In 1982, the City hired a substantial number of officers and firefighters, since the fiscal crisis in the late 1970s had limited the number of personnel the City could hire. As a result, 2002 is the year in which many uniform personnel will complete their 20 years of service and become eligible to retire. In addition, pension benefits are based on final salaries. Therefore, the amount of overtime accumulated by officers and firefighters after the WTC attack provides yet another incentive to retire.

[35] This figure includes 82 Port Authority personnel (8 of whom were temps), 40 staff members from the NYS Department of Taxation and Finance, 3 court officers, and 3 members of the State Department of Transportation, as well as 343 active members of the Fire Department and 23 active members of the Police Department.

In the months following the terrorist attacks, the City's Medicaid population grew by about 25 percent, from 1,617,392 in September 2001 to 2,014,834 in May 2002, as illustrated in Chart 11. The Medicaid population actually reached a temporary new peak of 2,030,616 in April 2002 before scaling back to 2,014,834 in the following month, though still exceeding the prior peak of 1,860,000 in October 1994.

The City estimates that, largely as a result of the simplified enrollment process and less restrictive income eligibility standards, a total of 380,000 individuals enrolled in the temporary Disaster Relief Medicaid (DRM) program.[36] Under the program, enrollees were entitled to four months of temporary fee-for-service Medicaid benefits. Medicaid coverage for enrollees was subsequently extended past the four-month terms to allow DRM recipients the opportunity to enroll for permanent Medicaid benefits. In late March, HRA began conducting interviews to enroll these recipients into either the traditional Medicaid program or Family Health Plus (FHP) program.

Thus far, about half of the DRM enrollees scheduled for interviews with HRA showed up for their appointments. The City expects that 70 percent of the interviewed applicants will be eligible for the traditional Medicaid program. Based on these estimates, about 35 percent of the 380,000 DRM recipients, or 133,000 recipients will enter the Medicaid program.

The City has allocated approximately $120 million in its Medicaid budget for spending by this group in FY 2002. The latest estimates indicate that the City has spent about $109 million of the allocated funding. In future years, on the assumption that half of these recipients will transition into Medicaid or the FHP program, the annual costs of the new enrollment could reach about $130 million in additional Medicaid spending for the City.

Claims

Numerous claims have been filed against the City following the WTC attacks. As of August 6, 2002, approximately 1,464 claims amounting to $8.2 billion have been filed. At this time, the City's Law Department has indicated that the City's liability for WTC claims is most likely to be no higher than the $350 million being provided by the Federal Government through an act of Congress.[37] As such, the City's budget makes no provisions for additional expenditures that could arise from WTC related claims.

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[36] According to a recent report by the United Hospital Fund, the income eligibility standards for the DRM program were raised to 133 percent (parents) and 100 percent (singles and childless couples) of the Federal Poverty Line (FPL). These standards are similar to those used to determine eligibility for Family Health Plus (FHP), a program that provides health care coverage to low-income families that do not qualify for Medicaid. In comparison, the respective income eligibility standards for the traditional Medicaid program are 87 percent (parents) and 50 percent (singles and childless couples) of the FPL.

[37] The liability of any airline carrier, the City, and airport sponsors shall not exceed the limits of their insurance coverage or in the case of the City $350 million (Aviation and Transportation Security Act enacted November 2001).

The claims being filed against the City results mainly from personal injuries suffered by City employees in the aftermath of the WTC attacks. As shown in Table 19, 1,087 personal injury claims totaling approximately $5.2 billion have been filed thus far. Claims of approximately $3 billion have also been filed for suffering caused as a result of the loss of lives. The City has also been served with claims for property damage that occurred, such as the claim for $250 million filed by AEGIS Insurance Company.

Table 19. *WTC Related Claims, $ in millions*

	Value of Claims Filed	Number of Claims Filed	Average per Claim
Claims Resulting From Personal Injuries			
Department of Sanitation	$242	54	$4.48
Fire Department	4,460	962	4.64
Police Department	440	70	6.29
Other	10	1	10.00
Sub-total	**$5,152**	**1,087**	**$4.74**
Claims Resulting From Deaths			
Fire Department & Police Department	$491	74	$6.64
Other	2,157	289	7.46
Sub-total	**$2,648**	**363**	**$7.29**
Other Claims			
Peace Officer/Police Action	$64	3	$21.33
AEGIS Insurance /Building & Property	250	1	250.00
All Other Claims	39	10	3.90
Sub-total	**$353**	**14**	**$25.21**
TOTAL	**$8,153**	**1,464**	**$5.57**

Families of the victims who died during the WTC attacks were given the opportunity to file claims with the Federal Government for full compensation of the victim's lost wages and for pain and suffering. To qualify for compensation, families had to provide confirmation of death or physical injury suffered in the attacks and show qualifying information about economic and non-economic losses. Compensation granted to families will be reduced by the value of collateral benefits, such as life insurance and pension policies. These sources will be excluded if families are not the designated beneficiaries on such policies. To participate in this program, families are required to waive their rights to file a civil action or be a party to a civil action in any Federal or State court of law for damages sustained as a result of the WTC attacks.[38] However, this limitation does not apply to collateral benefits, which may be recovered in a court of law.

The City may also be protected from claims that may be filed by workers involved in the recovery and clean up at the WTC site. The Federal Government through FEMA has allocated funds for liability insurance of up to $1 billion that will serve to protect the City and contractors from claims that may arise from workers at the WTC site.

Of concern, though, is the possibility of environmental-related claims that may be filed against the City. Residents, workers and students in lower Manhattan have complained about

[38] Department of Justice, September 11th Victim Compensation Fund of 2001, enacted March 2002.

respiratory illnesses resulting from being in close proximity to the WTC area. Attempts will be made by claimants to establish a link between health problems and the WTC attacks.

Pension Expenses

The City's pension expenses will be affected in several ways owing to the WTC attacks on 9/11. A huge number of City employees died, numerous others were injured and/or traumatized. Beyond the harsh and hard numbers that are available, a significant portion of the impact to the City's future pension contributions cannot be quantified at this time because the entire fallout from the attacks will take a long time to sort out.

It is believed that 366 active City employees, including 343 uniformed members of the Fire Department and 23 uniformed members of the Police Department, died in the attacks, as did five retired members of the Police Department and three retired members of the Fire Department. The resulting present value of the net additional liability incurred by the Police and Fire Department pension funds amounts to about $64.6 million.[39] The present value of death benefits payable by other City pension funds is estimated to be about $1.2 million.[40] These losses will increase the City's pension costs by about $7.2 million in FY 2003. The City expects that FEMA will reimburse the City fully for these liabilities and resulting costs.

A substantial number of City employees, mostly firefighters and police officers were injured when the towers collapsed.[41] As a result, in the Fire Department, 709 individuals had to go on medical leave and 390 had to be placed on light duty. As of August 19, 2002, 22 individuals are still on medical leave and 101 on light duty. The cost to the City of these injuries, including lost earnings and medical costs, should also be recovered from FEMA.

Beyond this, there will be further pension cost impact. For example, some City employees who participated in the search and recovery operations have reported respiratory problems. While no information is available on the number of cases or the prognosis, these may lead to disability retirements in the future. These costs also should be recoverable from FEMA.

There are also indirect, but expensive, effects of related events. For example, Police and Fire Department members worked extensive hours in the recovery and clean-up efforts, during which they earned significant amounts of overtime pay. The inclusion of this extraordinary overtime pay in the calculation of final salary for pension purposes has provided an incentive for many senior police and fire fighters to retire. In fact, the concern of losing such a large number of experienced personnel has spawned several legislative proposals designed to encourage senior officers to remain in service.[42] One proposal that has already become law is a new benefit,

[39] Based on estimates from letters by the Chief Actuary of the New York City Retirement Systems, dated May 22, 2002, to the Boards of Trustees of the Police and Fire Department Pension Funds.

[40] Because the impact to the budget will be spread out over several years, a Present Value technique is used to represent the entire cost of the impact if it were to be paid as one lump sum. The Present Value does not represent amounts that have to be paid immediately.

[41] No numbers are available for the Police Department.

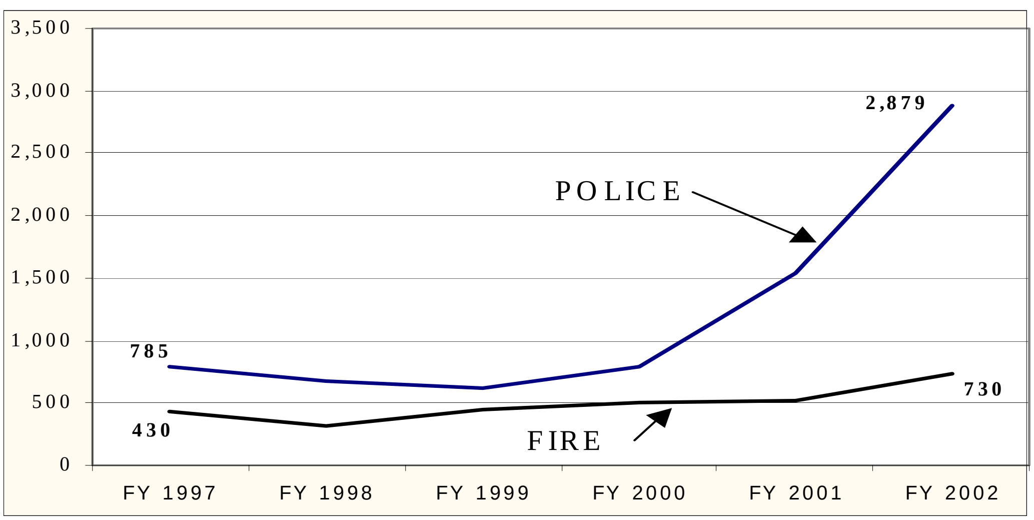
[42] Another legislative proposal would allow police and fire members to include their FY 2002 overtime in their final salary for pension purposes regardless of when they retire. If these or similar bills are eventually enacted, they

dubbed the Variable Supplements Fund-Deferred Retirement Option Plan (VSF-DROP), that will pay a lump sum from the Variable Supplements Funds to police and fire service retirees who retire with more than twenty years of active service. The VSF-DROP will pay police and fire service retirees, on retirement, a one-time lump sum benefit from the Variable Supplements Funds. The benefit amount will be the total VSF benefits the member would have received (from the date of enactment of this legislation) if the member had retired on the day after completing twenty years of service, less any supplementation or COLA payable during that period. The present value of this benefit is estimated to be $350.7 million, if the law becomes effective retroactively, as of January 1, 2002. While the total actuarial cost of the benefit is over $40 million in FY 2003, the City's contributions will increase by $26 million in that year because assets in the VSFs will absorb part of the cost.[43]

However, not all the increases in police and fire attrition are due to financial incentives. Inescapably, some fire and police officers who have been exposed to the horrors of this terrible act are leaving or retiring from their jobs simply because their perspectives have been radically altered by the experience. Chart 12 illustrates the increase in the number of Police and Firefighter retirements compared to recent years.

From January through June of 2002, all categories of attrition in the Police force are up over the same period last year. Remarkably, resignations have increased 42 percent, from 365 last year to 517 this year. In another comparison in the Police Department, about 1,444 cops retired or resigned in the three months following September 2001, almost twice the 739 who did so during the first three months of 2001. All of these actions have an impact on the City's pension costs.

Chart 12. Number of Service, Ordinary Disability and Accidental Disability Retirements



would increase the City's pension liability in the police and fire retirement systems by about $166.4 million and increase the City's pension contributions by about $18.8 million in the first year, as estimated in fiscal note number 2002-24 dated June 7, 2002 issued by the Chief Actuary of the City's Retirement Systems.

[43] Fiscal Note number 2002-23U dated June 13, 2002 issued by the Chief Actuary of the City's Retirement Systems.

The State Legislature has also drafted a bill to provide certain additional death, disability and medical benefits for victims of the WTC attack.[44] If enacted, the law would add liabilities amounting to $129 million and increase the City's pension contributions by $10.5 million per year. It is unlikely that the City would be reimbursed by FEMA for these costs. As of June 2002, FEMA has paid the City $27.8 million for pension expenditures. The impact on the City's budget from the increase in pension costs is illustrated on Table 20.

Table 20. *Impact on the City's Pension Expenses*

DESCRIPTION	PV of Impact	FEMA Payable	Additional Pension Contributions			
			FY 2003	FY 2004	FY 2005	FY 2006
Deaths	$65.8	$65.8	$7.2	$7.4	$7.6	$7.9
Disability Retirements From Injuries on 9/11	Unknown	Yes				
Disability Retirements from WTC Post 9/11 Injuries	Unknown	Yes				
Police Fire Retention Program - VSF-DROP	350.7	0.0	26.0	27.0	28.0	29.0
Additional Death, Disability & Medical Benefits to Victims of WTC	129.0	0.0	10.5	10.8	11.1	11.5
Pension Cost Impact Total	**$545.5**	**$65.8**	**$43.7**	**$45.2**	**$46.7**	**$48.4**
NET IMPACT TO CITY BUDGET			**$36.5**	**$ 37.8**	**$39.1**	**$40.5**

CAPITAL COSTS

On September 11, 2001 the City sustained structural damage, loss of equipment, and other losses of long-term capital assets. With the exception of projects overseen by the City's Department of Transportation (DOT), the City will bond for WTC capital related costs while at the same time receiving unrestricted revenue reimbursement from FEMA currently, for use in the City's general fund. As of the FY 2003 Adopted Budget, there were $170.5 million in City-funded capital costs eligible for FEMA reimbursement.

In addition, approximately $116 million in forecast capital projects will be reimbursed primarily from the Federal Highway Administration (FHWA). The capital expenditures comprise a myriad of costs across 14 agencies including the Mayoralty, the Fire and Police Departments, the Department of Sanitation, the Department of Public Health (DOPH), the City University of New York (CUNY), and the Department of Environmental Protection (DEP) among others. Significant items include the replacement of the office space for the Mayor's Office of Emergency Management (OEM), the replacement of fire trucks and other equipment, and the replacement and upgrade of computer equipment and creation of new databases.

[44] Fiscal Note numbers 2002-01 dated March 8, 2002 issued by the Chief Actuary of the City's Retirement Systems.

Agency Detail

As depicted in Table 21, over 85 percent, or $147 million of the capital costs arising from 9/11, are contained in six agencies: 1) the Mayoralty; 2) the Fire Department; 3) the Department of Public Health; 4) the City University of New York; 5) the Department of Sanitation; and 6) the Law Department.

Costs in the amount of $52.9 million related to the Mayoralty are primarily the result of the loss of the citywide Office of Emergency Management (OEM). A permanent site has still not been selected.

The Fire Department sustained significant losses of capital equipment in the amount of $32.9 million. These costs are for the replacement of 88 destroyed vehicles and their associated equipment along with the replacement of Engine Company 10 on Liberty Street, and the replacement of call box system conduits formerly located underneath the WTC complex.

Costs in the amount of $20.5 million are associated the Department of Health's extensive work with the Office of the Chief Medical Examiner (OCME). This included such items as the data integration of information technology support, an extensive case-tracking computer system, and a specialized forensic DNA program and related interlinks. In addition, DOH performed air quality testing at affected public schools.

Table 21. *WTC Capital Related Costs Eligible for FEMA Reimbursement, FYs 2002-2004*

Agency Name	**Amount between FYs 2002-04 $ in millions**	**Percent of Total**
Mayoralty	$52.9	31.0 %
Fire Department	32.9	19.3
Department of Health	20.5	12.0
City University of New York	16.2	9.5
Department of Sanitation	12.5	7.3
Law Department	12.2	7.1
Department of Information Technology	8.2	4.8
Economic Development Corporation (EDC)	7.7	4.5
Board of Education	4.1	2.4
Police Department	1.7	1.0
Department of Social Services	1.0	0.6
Department of Transportation[a]	0.3	0.2
Department of Citywide Administrative Services	0.3	0.2
City Council	0.1	0.1
Grand Total	**$170.6**	**100.0 %**

Source: FY 2003 Adopted Revenue Budget, City of New York's Office of Management and Budget, June 2002.

[a]In addition to the amount shown above, the City DOT forecasts $116 million of capital costs reimbursable primarily from the FHWA between FYs 2002-2006.

The City University of New York sustained $16.2 million worth of costs related to the purchase, furnishing, and installation of about 30 trailers to substitute for space lost at the partially destroyed Fitterman Hall located on West Broadway. Some trailers are located at the Borough of Manhattan Community College campus with the majority located at the City College campus in upper Manhattan. The demolition, construction, and /or reconstruction of Fitterman Hall is still under negotiation. If demolished and reconstructed, the total cost could be as high as $280 million. At present, this cost is not reflected in any of the City's reimbursement estimates.

The Law Department, also known as the Corporation Counsel, incurred costs of $12.2 million. The agency was moved to various locations throughout the City over a period of approximately seven months. The majority of costs incurred were for costs related to relocation, leased space, and the eventual return to its original space.

The Department of Information Technology and Telecommunications incurred $8.2 million in costs related to the purchase of computer equipment and professional service contracts.

The Economic Development Corporation (EDC) spent $3 million for the dredging of Pier 79 located at West 39th Street in Manhattan. The pier was dredged to allow for additional passenger ferry service. Costs include processing the dredged material and depositing it at a landfill in Brooklyn. Also, the EDC assisted in building a second emergency operations center for use by OEM. It built out a 10,000 square foot climate controlled area in Brooklyn, with conference rooms, dormitories, restrooms and kitchenettes. The cost incurred was $918,329. In addition, the EDC spend $3.8 million to expand service at Pier 11 already used by commuter ferries. Work included upgrades to slips and the installation of adjustable ramps.

The Board of Education incurred $4.1 million for environmental testing and remediation at Stuyvesant High School and in Public Schools 89 and 234, all situated in lower Manhattan.

The Police Department has estimated capital costs of $1.7 million. These costs are primarily for the replacement of two specialized rescue trucks at a cost of $887,000, the upgrade of the telephone system at Police Plaza and replacement of a lost mobile light generator for approximately $400,000, and the purchase of video and sound projection systems at a cost of $280,000.

Although excluded from the WTC Capital Related cost category, DEP estimates $5 million of water main reconstruction and $1 million for sewer work directly attributable to the events at the WTC. Approximately $25 million of additional water main and sewer reconstruction will be accelerated over the next two to three years to better match DOT's street resurfacing program in lower Manhattan. However, DEP views this as re-programming and not an incremental cost to the agency's capital budget.

Unlike the agencies above, which will eventually use general obligation (G.O.) bond proceeds to reimburse their capital expenditures, DOT is carrying approximately $116 million in the capital budget as non-city costs awaiting reimbursement from the federal government. In the April Capital Plan, DOT was not slated to use G.O. bonds to finance its capital expenditures. The primary source of the anticipated reimbursement flow will be from FHWA, not FEMA. Programmatically, about $83 million is scheduled for the resurfacing of streets in the affected areas of lower Manhattan, followed by sidewalk and pedestrian ramp construction of about $30 million. In addition, $3.4 million will be used to replace traffic signal systems and street lights.

Use of TFA Financing

The New York City Transitional Finance Authority (NYCTFA) is a public benefit corporation and instrumentality of the State of New York created by the Legislature in March of 1997. The TFA was created to fund a portion of the City's capital program. Before 9/11, the TFA was authorized to issue up to $11.5 billion of debt. The TFA's underlying legislation was amended in September 2001 to permit the TFA to have outstanding an additional $2.5 billion of its bonds and/or notes to pay for costs related to or arising from the World Trade Center disaster.

On October 4, 2001, the TFA issued $1 billion of New York City Recovery Notes, Fiscal 2002 Series A with an interest rate of 3 ¼ percent and a yield of 2.13 percent. Recovery bonds in the amount of $1.05 billion will be issued to redeem the principal and interest on these notes prior to their stated maturity date.

The NYCTFA also issued $480 million of Fiscal 2003 Series 1 Recovery Bonds in July of 2002. These Fiscal 2003 Series 1 Recovery Bonds were issued as variable rate debt with principal amortizing from 2004 through 2022. Interest rates on variable rate debt have historically been lower than fixed rate interest bonds. Given this trend, interest on the Fiscal 2003 Series 1 Bonds is likely to be lower than if they had been issued as fixed rate bonds. The NYCTFA expects to issue an additional $520 million of variable rate recovery bonds in September. In total, the NYCTFA will issue over $2 billion of recovery bonds at an estimated annual cost of $150 to $180 million.

The City's Cost of Borrowing and the Events of September 11

The events of 9/11 have increased the City's bonding program by $2.1 billion as a result of the issuance of the NYCTFA Recovery Bonds. Although the market for the City's debt remains strong, this unforeseen increase in volume contributes to pricing pressure and market perception of the City's credit. Analysis shows that while the relative value of interest rates are currently low, the City's post 9/11 bond issues have sold at higher spreads to a AAA municipal market index than in the four-year period prior to 9/11.[45] Although a precise basis point figure is at times difficult to quantify, the use of historical TFA pricing data compared with the Municipal Market Data (MMD) AAA scale has produced some meaningful results.[46] Specifically, years two through ten are on average six basis points higher compared with the averages prior to 9/11.

[45] A statistical analysis of the spread data may be found in the Appendix.
[46] The AAA Municipal Market Data is a yield curve indicative of AAA State G.O. credits produced by Municipal Market Data (A Thomson Financial Services Company).

Years 11 through 20 are only one basis point higher, and years 21 through 30 are about six basis points higher from the data observed.[47]

The analysis of the City's general obligation bonds also provides some interesting results. On average, GO bonds issued after 9/11 produced spreads to MMD that are 16 basis points higher in years two through ten, nine basis points higher in years 11 through 20, and a modest three basis points higher in years 21 through 30.[48]

The widening of spreads to MMD can be attributed to various factors, including the events of September 11 as well as market saturation of New York paper. A favorable interest rate environment post 9/11, however, presented several opportunities for the City to capture overall debt service savings by refunding a portion of its outstanding debt. Despite the tragedy of September 11 and the widening of spreads, the City has managed to achieve savings and contain debt service cost. Lower variable rates and debt refinancing have helped to achieve these debt service savings along with the City's ability to maintain flexibility in light of very challenging circumstances.[49]

[47] Represents the averages of TFA Bond Series' 2002 B, 2002 C, and 2003 A. All were individually compared to the pre-9/11 MMD AAA average as calculated from TFA Bond Series 1998 A through TFA Series 2002 A.
[48] Represents the average of individual G.O. bond series 2002 A through 2002 D,E,F & G, compared with the average spread of GO issues to the MMD index as calculated from Series 1999 G through 2001 H.
[49] On the combined $3.39 billion of fixed-rate uninsured debt issued for both G.O. and the TFA since the attacks on the World Trade Center, the additional debt-service costs which can be attributed to 9/11 sums to just below $36 million over a 30-year period.

IMPACT OF 9/11 ON CASH BALANCES

In the immediate aftermath of the WTC disaster the City faced the possibility of immense clean-up and recovery costs and unknown revenue losses that could seriously impact its cash balances. In spite of tremendous uncertainty the City was able to maintain a strong cash position and avoid a crisis by taking two important steps.

First, the City received State authority to issue New York City Transitional Finance Authority (NYCTFA) Recovery Notes and Bonds beyond prior authorizations. The enabling legislation allowed the NYCTFA "to issue (notes) without limit…payable solely from State or Federal aid received on account of the disaster." In addition, other law notwithstanding, the NYCTFA was "authorized to have outstanding (up to) $2.5 billion of bonds or notes the proceeds of which are to be used to pay costs related to the September 11 attack." This provision essentially freed the City from the Financial Emergency Act requirements that banned the use of borrowed funds for operating purposes. The City quickly sold $1 billion of Recovery Notes, due October 2, 2002, and closed the sale on October 4, 2001.

Second, the City proceeded with its annual seasonal borrowing. The City sold $1.5 billion in Revenue Anticipation Notes (RANs) due April 12, 2002 and closed the sale on October 23, 2001. These RANs were funded by State education aid and were twice the amount sold in FY 2001.[50] These actions provided the City with the cash necessary to pay the immediate extraordinary costs that it faced in the aftermath of the attacks.

In FY 2004 the City will be facing both budget and cash stress. Since the budget must be in balance by law, the methods used to achieve balance and account for the loss of deficit financing proceeds at the start of the year will significantly impact the level of cash balances and the seasonal borrowing need.

Table 22. *WTC Related Expenditures, $ in millions*

Month	PS	OTPS	Capital	Total
September 2001	$ 43.26	$ 80.00	$ 0.00	$ 123.26
October 2001	152.08	67.08	0.00	219.16
November 2001	67.79	42.31	0.00	110.10
December 2001	58.45	110.75	0.00	169.20
January 2002	34.56	93.78	0.00	128.34
February 2002	22.41	51.52	0.64	74.57
March 2002	13.80	47.00	1.59	62.39
April 2002	4.63	41.75	4.73	51.11
May 2002	4.28	76.81	3.54	84.63
June 2002	4.06	39.04	8.52	51.62
Total	**$405.32**	**$650.04**	**$19.02**	**$1,074.38**

[50] In the aftermath of 9/11, the City doubled the size of its seasonal borrowing over FY 2001 to ensure it had the ability to cover any revenue losses or increased expenditures resulting from the attacks on the World Trade Center.

Over $1.07 billion in disbursements paid by the City during FY 2002 were directly attributable to 9/11. These disbursements were for both personal service (PS) costs, primarily uniformed forces overtime, and other than personal service (OTPS) costs, including demolition contracts and capital expenditures. Table 22 shows these expenditures by month in FY 2002. The largest expenditures occurred in the months following 9/11. PS was highest in October 2001 at $152.08 million and has tapered off to under $5 million a month. OTPS averaged $65 million a month in FY 2002 and was $36.79 million in July 2002.

In FY 2003 through August 16 there were $77.27 million in expenditures attributed to 9/11 as shown in the figure to the right. The figure illustrates that at this time the bulk of ongoing 9/11 expenditures are for OTPS needs with some support for capital spending.

9/11 Disbursements for FY 2003
$ in millions

PS	$ 6.23
OTPS	60.09
Capital	10.95
Total	**$77.27**

Aid from the Federal Emergency Management Agency (FEMA) quickly began to flow to the City as reimbursement for 9/11 related expenditures. In September $126 million was received and $658 million thereafter during FY 2002 for a total of $784 million as illustrated on Table 23.

Table 23. *FEMA Reimbursements and 9/11 Expenditures, $ in millions*

Month	Reimbursements	Expenditures	Difference	Cumulative Difference
September 2001	$125.66	$ 123.26	$ 2.40	$ 2.40
October 2001	146.26	219.16	(72.90)	(70.50)
November 2001	57.84	110.10	(52.26)	(122.76)
December 2001	46.80	169.20	(122.40)	(245.16)
January 2002	0.15	128.34	(128.19)	(373.35)
February 2002	0.00	74.57	(74.57)	(447.92)
March 2002	154.89	62.39	92.50	(355.42)
April 2002	152.04	51.11	100.93	(254.49)
May 2002	1.50	84.63	(83.13)	(337.62)
June 2002	98.65	51.62	47.03	(290.59)
FY 2002 Total	**$783.79**	**$1,074.38**	**($290.59)**	

This alleviated the drain on the City's cash during FY 2002 caused by the $1.074 billion in 9/11 related expenditures, but by the end of the fiscal year left a $290.6 million cash deficit. Chart 13 shows the match of receipts from FEMA and 9/11 related expenditures by month and the deficit incurred by the City in FY 2002.

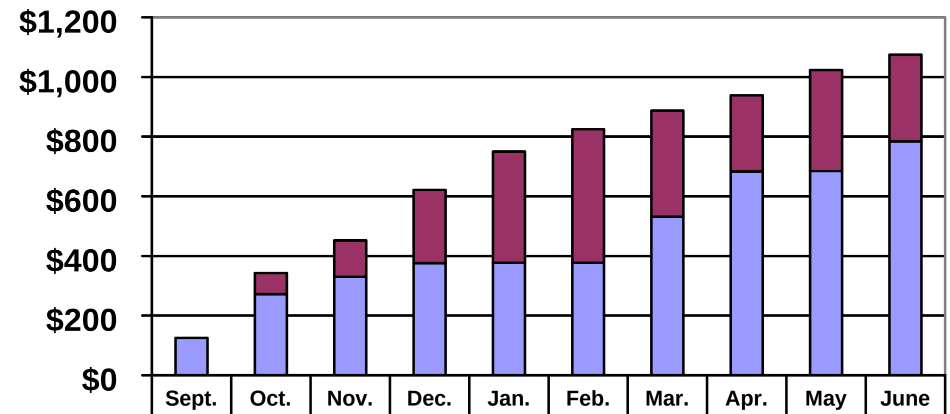
Through August 16, 2002, in FY 2003, the City has received an additional $117.26 million from FEMA compared with additional expenditures of $77.27 million as shown in the figure to the right. This lowers the cumulative amount of expenditures not yet reimbursed to $250.60 million.

Non-Reimbursed 9/11 Expenditures
$ in millions

FEMA Reimbursement	$117.26
9/11 Expenditures	77.27
Difference	39.99
Cumulative Difference*	**($250.60)**

*Through August 16, 2002.

Chart 13. Cumulative FEMA 9/11 Reimbursements and Resulting Cumulative Deficits in FY 2002, $ in millions



	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Unreimbursed 9/11 Cumulative Expenditures	0	70.5	122.76	245.16	373.35	447.92	355.42	254.49	337.62	290.59
Cumulative FEMA Reimbursements	125.66	271.92	329.76	376.56	376.71	376.71	531.7	683.64	685.14	783.79

The City's June 2002 Financial Plan modification shows, by category, the reimbursements expected from FEMA and the use of TFA Recovery Note proceeds. In addition to the FEMA reimbursements shown in Table 23, the City transferred $458 million in TFA note proceeds to the central treasury to fund expenditures not reimbursed and revenue losses - $286 million in April 2002 and $171 million in June 2002. In FY 2003 another $1 billion was transferred to the central treasury on July 11, 2002.

Table 24. *9/11 Revenue by Category for FY 2002, $ in millions*

	Actual	Financial Plan	Difference
Federal Welfare	$ 7.62	$ 12.12	$ (4.50)
Federal Education	3.75	9.16	(5.41)
Federal Other	772.42	1,314.45	(542.03)
Unrestricted Aid	0.00	34.44	(34.44)
Sub-total	783.79	1,370.17	(586.38)
Miscellaneous Revenue and Other Categorical Grants from TFA Notes	457.84	479.95	(22.11)
FY 2002 Total	**$1,241.63**	**$1,850.12**	**($608.49)**

Table 24 shows the anticipated revenue by category and the cash received through June 30, 2002.[51] The City has received $1.242 billion out of the forecast $1.85 billion in anticipated

[51] Adjustments may be made to the categorizations during the FY 2002 audit of the City's financial results. The Certified Audited Financial Report is scheduled to be released at the end of October.

revenue, in the City's June 2002 Financial Plan, leaving an accounts receivable of $608 million.[52] The accrual will be reviewed as part of the City's audit of FY 2002.

Fortunately the events of 9/11 and the related expenditures did not seriously drain the City's cash in FY 2002, due to the quick actions of the City, State and Federal governments. In FY 2003 the City will be using $1.5 billion of NYCTFA Recovery Note and Bond proceeds in the first three months of the fiscal year. The total consists of $458 million in cash from FY 2002 and $1 billion from sales at the start of FY 2003.[53] This will enable the City to reduce seasonal borrowing accordingly in FY 2003, because these monies are being transferred to the City's central treasury before the City's peak seasonal need in the second quarter of the fiscal year. However, the availability of such funds, in both cash and to balance the budget, is a one-time extraordinary event. In FY 2004 the City will be facing both budget and cash stress. Since the budget must be in balance by law, the methods used to achieve balance and account for the loss of deficit financing proceeds at the start of the year will significantly impact the level of cash balances and the seasonal borrowing need.

[52] The $1.242 billion is the total of the $784 million in FEMA reimbursement and $458 million in NYCTFA Recovery Note proceeds. The $1.85 billion is the City's estimate of World Trade Center expenses which will be charged to FY 2002.

[53] The NYCTFA sold $480 million in Recovery Bonds in July 2002 and plans to sell an additional $520 million in September 2002. This will bring the total NYCTFA recovery bond and note issuance to $2 billion

IMPACT OF FEDERAL SUPPORT

Immediately after the events of September 11, President George W. Bush pledged $20 billion to help New York with the clean-up and rebuilding efforts at the WTC site and lower Manhattan area as part of a $40 billion national emergency aid proposal.

The City anticipates that the pledged Federal help will provide support in the restoration of lower Manhattan and the City's economy. The Federal government has allocated a total of $9.1 billion through FEMA to reimburse the City and State for recovery and clean-up costs related to the WTC attack. There is general expectation that FEMA will distribute the full amount of the pledged funds to the City and State over a number of years. FEMA is currently reviewing claims and gradually releasing funds as claims are being approved. The City has thus far recognized about $1.1 billion in revenues against expected FEMA reimbursement of $1.6 billion projected in the City's June 2002 Financial Plan.

Details of the sources and uses of the expected Federal funding began to emerge in the months following the WTC attack. In July, Congress approved the latest installment of supplemental funding for rebuilding efforts in the lower Manhattan area, bringing the total Federal disaster aid relief package for New York to $21.4 billion. The main elements of the package are shown on Table 25. A more detailed breakdown may be found on Table A4 in the Appendix.

Table 25. *Federal Aid to New York City, $ in billions*

Federal Funding	**Appropriated**	**Released**	**Benefit**
FEMA[a]	$9.100	$2.276	Emergency and Recovery Work and Transit Projects
Liberty Zone Package	5.029	0.000	Tax Benefits to Businesses
LMDC and ESDC	3.450	0.445	Business Compensation and Job Retention and Creation
All Other	3.779	0.000	Transit and Transportation Projects, Individual Assistance and Security
TOTAL	**$21.358**	**$2.721**	

[a]FEMA has released $2.3 billion, including $1.3 billion to the City and State for response and recovery work.

The Federal Disaster Relief package contains three key elements that are directed towards: 1) helping New York City finance the rescue, recovery, and clean-up efforts at the WTC site under the oversight of the Federal Emergency Management Agency (FEMA); 2) providing economic stimulus to businesses in the lower Manhattan area largely through tax incentives and job creation; and 3) re-developing the WTC site and vicinity through the creation of the Lower Manhattan Development Corporation (LMDC) and the Empire State Development Corporation (ESDC). In addition, the package includes funding that supports a wide range of initiatives such as the upgrade and reconstruction of mass transit infrastructure, roadway and tunnel repairs, small business loans, and health monitoring.

The largest component of the Federal aid package is FEMA support, estimated at about $9.1 billion. Unlike many of the business tax incentives in the disaster relief package that are scheduled to take effect over various timeframes of between five to ten years, the timing of the FEMA reimbursement is less structured. Thus far, FEMA has been gradually releasing funds to the City and State, as well as other entities, to cover eligible expenses. Under the package, FEMA reimbursement will be dedicated towards covering expenses that are directly related to the clean-up and recovery activities in the WTC area. Given this limited scope, the City only expects FEMA reimbursement to support part of the total WTC-related spending in its financial plan. For instance, against about $2.1 billion in WTC related costs, the City projects that FEMA will provide about $1.6 billion in reimbursement, covering about 78 percent of the total WTC-related costs.[54]

However, in a recent development, the Federal government announced in August that funding for a planned intermodal transit station for lower Manhattan will be expanded from $1.8 billion to about $4.6 billion. The additional funding of about $2.8 billion will be in the form of FEMA funding, an indication that the Federal government may widen the scope of FEMA reimbursement to include other costs that are less directly related to the clean-up and recovery efforts.

FEMA SUPPORT

The Federal government has allocated a total of $9.1 billion through FEMA to reimburse the City and State for recovery and clean-up costs related to the WTC attack as shown in the figure to the right. The FEMA reimbursement will cover, among other needs, overtime and personnel expenses, replacement costs of lost equipment such as fire and police vehicles, repair of public facilities, non-Federal transit and road repairs, and environmental monitoring and remediation. A portion of these funds will also allow the City and general contractors to purchase private insurance policies to resolve outstanding liability issues that may arise during the clean up process.

FEMA REIMBURSEMENT ALLOCATION
($ in billions)

Public Assistance-Emergency Response and Recovery	$6.35
Intermodal Transit Project	2.75
Total	**$9.10**

FEMA is currently reviewing claims and gradually releasing funds as claims are being approved, thus there is a general expectation that FEMA will likely distribute these funds to the City and State over a number of years. According to Senator Charles Schumer, the Federal Office of Management and Budget has guaranteed that, in the event that the FEMA expenses do not reach the $9.1 billion goal, the unused portion will be redistributed to New York for other related purposes.[55]

In August, the Federal government expanded the scope of FEMA reimbursement by approving up to about $2.8 billion in FEMA funding to support the construction costs of an intermodal transit station. The Federal government has authorized total funding of $4.6 billion

[54] The City expects that $1.85 billion of the costs will be charged to FY 2002.
[55] Senator Charles E. Schumer, *White House Makes Good on $20 Billion Pledge to Aid NY Recovery*, Press Release, March 7, 2002.

for this project, primarily designed to link various transit systems (including the PATH subway system and the New York City subway system) in lower Manhattan, in the current disaster relief package.

With regards to WTC recovery and clean-up costs, the City anticipates receiving a total of about $1.6 billion in FEMA reimbursement over the course of its FYs 2003-2006 Financial Plan. The projected FEMA reimbursement will be used to support projected WTC-related spending totaling $2.1 billion. Thus far, the City has spent at least $1.2 billion on WTC activities in FYs 2002 and 2003. Against these expenditures, the City has recognized about $1.1 billion in FEMA reimbursement.

The Liberty Zone Economic Stimulus Package

The Federal Government enacted legislation in March 2002 creating a new "Liberty Zone" in lower Manhattan costing approximately $5 billion as shown on Table 26. The Liberty Zone Tax Package provides economic subsidies to businesses in lower Manhattan, thereby encouraging economic growth and business retention in the area. The net tax benefits are mostly earmarked over a ten-year period with approximately 95 percent targeted for the first five years from FYs 2002 to 2007. The package also allows the State and City to issue tax-exempt bonds to fund the construction of office and residential units in lower Manhattan.

Table 26. *Liberty Zone Economic Package and Revenue Benefits to Businesses*
FYs 2002-2012, $ in millions

Tax Benefits	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2007-2012**	**Total**
Tax Credit to businesses of 200 employees or less	$119	$259	$176	$52	$19	$6	$0	$631
Depreciation acceleration								
a. Property	535	490	464	445	411	(192)	(1,613)	542
b. Residential and non-residential new structures	87	114	136	152	154	150	233	1,026
Tax exempt bonds	11	41	90	127	137	137	685	1,228
Advanced refunding of municipal bonds	103	124	133	125	115	98	238	937
Write Offs on Equipment - increase by $35,000	36	56	37	29	23	(20)	(124)	37
Deferring taxes on insurance proceeds	145	199	18	(1)	(2)	(3)	(37)	318
Accelerated leasehold improvements depreciation	11	26	45	70	102	115	228	595
Interaction with general business tax provisions	(563)	(520)	(470)	42	303	270	653	(285)
Total	**$484**	**$789**	**$629**	**$1,041**	**$1,262**	**$561**	**$263**	**$5,029**

About $2.2 billion of the package covers the cost of allowing businesses in lower Manhattan to accelerate the depreciation of equipment and leasehold improvements. This tax benefit allows businesses to depreciate 30 percent of the cost of office equipment, new technology, and other property in the first year of ownership. This provision, available through 2007, makes it cheaper for businesses to purchase equipment. Also, the depreciation of leasehold improvements made to office space, which is currently depreciated over thirty-nine years, will be accelerated to five years, lasting through 2006.

The Federal Government will also forego estimated revenues of about $2.2 billion over a period of approximately five years by allowing the State and City to issue tax-exempt bonds and refinance municipal bonds. Since these bonds are tax-exempt, the Federal Government will be foregoing income that is normally collected on taxable bonds.

The City and State have received the authority to issue $8 billion of tax-exempt bonds, which will be used to provide funding for office space, residential units, and public utilities. The City and the State will each be able to issue $4 billion worth of bonds. The provision provides at least $6 billion to finance the construction of new office space and residential units in lower Manhattan. In lower Manhattan, as much as $800 million may be issued for retail development and up to $1.6 billion for residential rental projects. The remaining $2 billion is discretionary and up to $2 billion could be used to finance commercial projects in lower Manhattan and other parts of the City. The NY Liberty Development Corporation and the NYC Industrial Development Agency will issue bonds for commercial and utility projects. The NY State Housing Finance Agency and the NYC Housing Development Corporation will issue bonds for residential facilities. The bonds will not be the obligations of the State or City, but will be the obligations of the above mentioned entities.

Provisions in the economic package allow the City, the MTA, Municipal Water Authority, and NYC hospitals to refinance municipal bonds and take advantage of better rates. Federal law allows municipal bonds to be refinanced one time. An exception was made by the Federal government allowing the above mentioned authorities to do an additional refinancing of municipal bonds. The City has achieved savings of over $500 million in FY 2003 from such refinancing.

Furthermore, the package includes an annual $2,400 per employee Work Opportunity Tax Credit for businesses with 200 employees or less on or below Canal Street. This credit is valid for the two-year period from December 31, 2001 through December 31, 2003, affecting approximately 1,000 businesses and applies to any business that moves into the area during this span. This program, estimated to cost the Federal Government $631 million, is expected to help generate new businesses in lower Manhattan.

Other tax benefits included in the Liberty Zone package are provisions allowing companies in lower Manhattan to increase the write-off limit on equipment to $59,000 from $24,000 (until 2006) at a cost to the Federal Government of $37 million. Also, the package grants five-year waivers on insurance proceeds above property replacement costs, if proceeds are reinvested in lower Manhattan at a cost to the Federal Government of $300 million. Normally, insurance proceeds that are above the replacement costs of destroyed properties are taxable after three years.

Lower Manhattan Development Corporation and Empire State Development

LMDC and ESDC will oversee $3.45 billion appropriated by the Federal Government as part of the overall aid to revitalize New York City as shown on Table 27. These funds are directly targeted to compensate businesses for economic losses, to encourage job retention and creation, to provide financial assistance to residents, and to help rebuild infrastructure in lower Manhattan.

Table 27. *Business Assistance Through LMDC and ESDC, $ in millions*

CD Block Grants – LMDC		$2,000
Rebuilding Assistance for Utility Companies		750
Business Assistance – ESDC:		
Small Business Assistance		$506
Compensation for Economic Losses	$331	
Business Attraction and Retention Grants	105	
Recovery Loan Fund	50	
Other	20	
Larger Business Assistance		$175
Job Creation and Retention Program	$170	
Compensation for Economic Losses	5	
Other – Administration and Business Information		$19
Total Assistance		**$3,450**

Of these funds, $2 billion of Community Development (CD) Block Grants were appropriated to LMDC through the Federal Housing and Urban Development Department for rebuilding and revitalization activities in lower Manhattan. LMDC, a joint State-City corporation, was formed earlier this year to aid in the recovery of New York City. It will also oversee the planning of a memorial at the WTC site. Thus far, LMDC has unveiled six development options for the WTC site and is currently reviewing public opinions on these options.

LMDC is in the process of developing programs that will be implemented to aid businesses and individuals in the recovery effort. Two proposals, projected to cost about $656 million in total, have been developed so far. The LMDC will use $350 million in funding to expand the business recovery and grant programs that are being currently administered by ESDC. This funding will partly satisfy a requirement from the $2 billion authorizing legislation that at least $500 million must be dedicated for assisting small businesses, non-profits and individuals south of 14th Street.

LMDC Action Plan, $ in millions	
Housing Assistance	$281
Employment Training	10
Design & Administration	15
Total	**$306**

Another $306 million will be used to retain and attract residents in lower Manhattan as shown in the figure to the right. Among the grants being administered by this program are monetary awards of up to $12,000 to new and existing residents who make a two-year commitment to live in lower Manhattan. These residents will be eligible for grants of 30 percent of the monthly rent or mortgage payments (plus maintenance costs and taxes) for purchases. A family bonus of up to $1,500 will be given to families with at least one child in an effort to encourage families to live in lower Manhattan. The application process for these grants will begin towards the end of summer 2002.

To help employees displaced or affected by the WTC attacks, LMDC will provide funding for employment training to better match skills required by employers. Grants will be given to eligible businesses in lower Manhattan with fewer than 500 people that will cover up to 50 percent of employee training expenses. Grants will also be awarded to agencies or businesses for the training and retraining for specific skills to match the needs of businesses and non-profits. Funding for these programs are expected to cost approximately $10 million.

The LMDC will also be responsible for distributing funds to utility companies, such as Con Edison and Verizon, for the rebuilding of more modern communications and energy infrastructures in lower Manhattan. Approximately $750 million is allocated for the rebuilding of destroyed power and telecommunications facilities, enabling businesses in lower Manhattan to obtain additional power to meet their energy needs.

In addition to the $2 billion block grant allocation, the Federal Government made a special allocation of $700 million for business assistance. These funds are being administered by ESDC with the cooperation of the NYC Economic Development Corporation. The funding will provide assistance to both small and larger businesses in lower Manhattan. Approximately $506 million is allocated to provide compensation to small businesses with fewer than 500 employees for economic losses and encourage firms with fewer than 200 employees to sign or renew leases for periods of five or more years in lower Manhattan. As of August 23, 2002, 8,768 firms have been approved for the recovery grants at a cost of $240 million. In the meantime, 253 firms have been approved for the attraction and retention grants at a cost of $12 million.

Larger firms are also receiving grants for job creation and retention in lower Manhattan. The terms of these grants are discretionary, but require a commitment of at least seven years in lower Manhattan. Forty-eight firms have been approved for these grants and $164 million have been awarded. Larger firms could also qualify for compensation for economic losses. Altogether, $175 million is allocated by ESDC for assistance to large firms.

Other Assistance

The Federal aid package also provides about $3.8 billion to the City for other programs and revitalization efforts, such as rebuilding of transit stations, highway repairs, health assistance and security as shown on Table 28. About $1.8 billion will be earmarked for the construction of a "state of the art" transit station in lower Manhattan. This will be in addition to a recent announcement from FEMA that the agency will commit up to $2.75 billion toward the rebuilding of lower Manhattan's transportation infrastructure. The planned intermodal station will connect PATH trains with MTA lines and provide a walkway to the World Financial Center. Other projects that could also be included in the funding are the rebuilding of the PATH, 1 and 9 subway stations that were destroyed during the WTC attacks.

Among other programmatic funding included in the Federal disaster relief package are: 1) $242 million for the repairs to the West Side Highway and other related highway repairs; 2) $140 million for health related funding; and 3) $259 million in aid to individuals, including $175 million for workers compensation.

Table 28. *All Other Programs, $ in millions*

Transit Intermodal Station	$1,800
Transportation Repairs	210
Security and Safety Repairs at Hudson River Tunnels	100
DOT Highway Administration (West Side Highway)	242
Repair and Relocation of Federal Offices	265
Aid to Individuals	259
Small Business Association Loans	150
Assistance to Hospitals	140
Local Counter-Terrorism Activities	81
Other	532
Total	**$3,779**

APPENDIX

Budget Detail

Table A1. *WTC Related Expenditures by Agency, $ in millions*

Agency	FY 2002	FY 2003	2-Year Total
Design and Construction	$659	$0	$659
Police Department	339	5	344
Mayor's Office	265	32	297
Fire Department	179	38	217
Social Services	129	2	131
Sanitation	46	50	96
Health Department	17	50	67
Citywide Administrative Services	40	0	40
Business Services	29	8	37
Pensions	28	0	28
Transportation	27	0	27
Miscellaneous Budget	25	0	25
All Other	67	46	113
Total	**$1,850**	**$231**	**$2,081**

Table A2. *Long Term Impact of Additional Expenditures to the City, $ in millions*

Medicaid	($130)
Pensions	(45)
Debt Service	(4)
Total	**($179)**

Table A3. *Near-Term Budget Impact of WTC Attack, $ in millions*

	FY 2002	FY 2003	2-Year Total
Tax Revenue Loss[a]	($2,015)	($931)	($2,946)
WTC-Related Costs[b]	($1,850)	($231)	($2,081)
Demolition and Debris Removal	*(659)*	*0*	*(659)*
Overtime	*(462)*	*0*	*(462)*
Disaster Relief Medicaid	*(120)*	*0*	*(120)*
All Other	*(609)*	*(231)*	*(840)*
Total Revenue Loss and Additional Costs	($3,865)	($1,162)	($5,027)
Less: FEMA Reimbursement[b]	$1,370	$231	$1,601
Net Budget Impact	**($2,495)**	**($931)**	**($3,426)**

[a]Comptroller's Office estimates.

[b]FY 2003 Adopted Budget and Financial Plan, Office of Management and Budget, June 2002. Agency details to these costs can be found in the Appendix.

Components of Federal Aid

Table A4. *Federal Aid Pledged to New York City, $ in billions*

I. FEMA	
Disaster Relief Funds for Emergency Construction, Housing, etc.	$6.350
Disaster Relief Funds for Transportation System	2.750
Subtotal	**$9.100**
II. LIBERTY ZONE ECONOMIC PACKAGE	
Issuance of Tax Exempt Bonds	$1.228
Advanced Municipal Bond Refunding	0.937
Acceleration of Equipment and Property Depreciation	1.568
Acceleration of Leasehold Depreciation	0.595
Tax Credit to Businesses of 200 Employees or Less	0.631
All Other Net Tax Benefits	0.070
Subtotal	**$5.029**
III. LMDC	
Community Development Building Grants	$2.000
Business Assistance	0.700
HUD CDBG for Private Utilities (Con Edison/Verizon)	0.750
Subtotal	**$3.450**
IV. Other	
Transit Station	$1.800
Highway & Other Transportation Repairs	0.552
Repair/Relocation Federal Offices & Counter-Terrorism Activities	0.346
SBA Loans, Health Related Funding, Aid to Individuals & All Other	1.081
Subtotal	**$3.779**
Total	**$21.358**

NYC GO and TFA Spread to MMD Before and After September 11

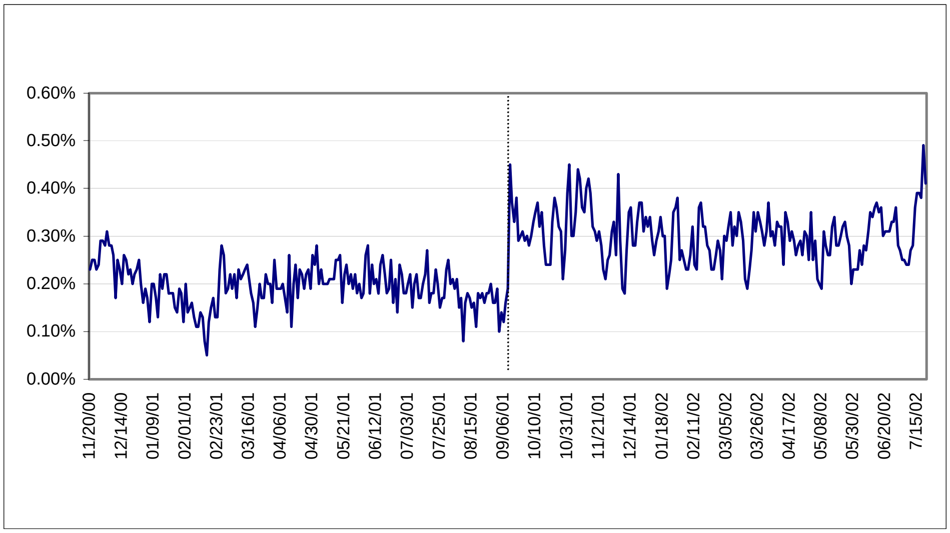
Data

Yield spread data used in the tests include:

- NYC Uninsured Tax Exempt General Obligation (GO) Bond yield spreads to 20-Year AAA Municipal Market Data (MMD) bond national index are shown on Chart A1.
- Transitional Finance Authority (TFA) Bond yield Spread to 20-Year AAA Municipal Market Data (MMD) national index are shown on Chart A2.

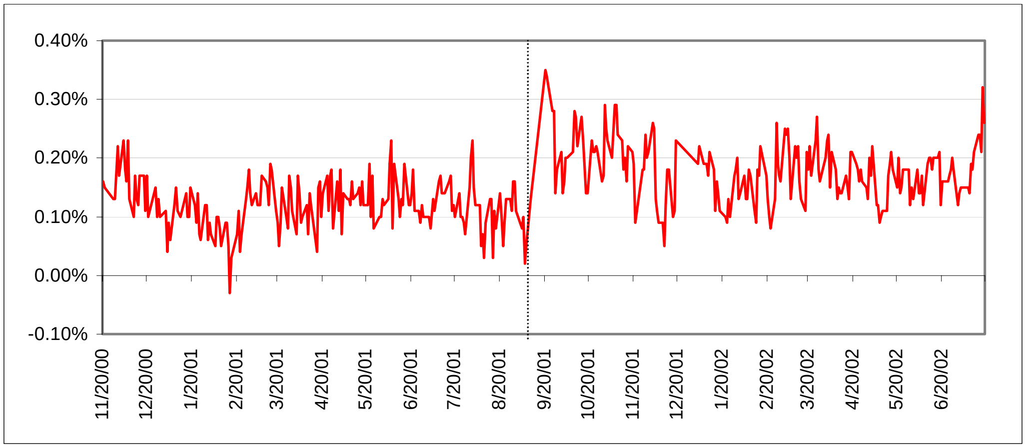
Observations are split into two equal-size groups, from 11/20/2000 to 9/10/2001 and from 9/10/2001 to 7/19/2002.

Chart A1. NYC GO Spread to MMD, Daily Data



Note: Spread = GO minus MMD.

Chart A2. TFA Spread to MMD, Daily Data



Note: Spread = TFA minus MMD.

Descriptive Statistics

Table A5 shows the descriptive statistics for GO spread and TFA spread before and after September 11 2001.

Table A5. *Descriptive Statistics, Daily Data*

		Mean	Maximum	Minimum	Std. Dev.
GO Minus 20-Year MMD	Before Sept. 11	20	31	5	4
	After Sept. 11	30	49	18	6
TFA Minus 20-Year MMD	Before Sept. 11	12	23	-3	4
	After Sept. 11	18	35	5	5

Note: Basis points. 198 Observations before Sept. 11 and 198 observations after Sept. 11.

Test Results

Chow's breakpoint test and Chow's forecast test are use to examine if the spreads are stable across two subsamples before and after September 11. Chow's breakpoint test fits the equation separately for each sub-sample to see whether there are significant differences in the estimated equations. A significant difference indicates a structural change in the relationship. Two statistics are reported in Table A6. The F-statistic is based on the comparison of the restricted and unrestricted sum of squared residuals and in the simplest case involving a single breakpoint. The log likelihood ratio statistic is based on the comparison of the restricted and unrestricted maximum of the log likelihood function. The Chow's breakpoint tests show that significant differences exist in two periods before and after September 11 for the two spreads based on a 99.99 percent probability that this conclusion in accurate.[56]

Table A6. *Chow's Breakpoint Test*

Data	**Variable**	**F-Statistic**	**Probability**	**Log Likelihood Ratio**	**Probability**
Daily	GO Minus MMD	83.62	0.0000	140.65	0.0000
Daily	TFA Minus MMD	40.30	0.0000	74.04	0.0000

The Chow's forecast test first estimates the model for a subsample and then uses the model to predict the values of the dependent variable in the remaining period as shown on Table A7. A large difference between the actual and predicted values casts doubt on the stability of the estimated relation over the two subsamples. The Chow's forecast test statistics reject the null hypothesis of no structural change before and after September 11 for the two spreads based on a 99.99 percent probability that this conclusion is accurate.

Table A7. *Chow's Forecast Test*

Data	Variable	F-Statistic	Probability	Log Likelihood Ratio	Probability
Daily	GO Minus MMD	2.72	0.0000	523.47	0.0000
Daily	TFA Minus MMD	1.87	0.0000	420.34	0.0000

[56] A probability of 0.0000 shown in Tables A6 and A7 represents the probability of a conclusion being wrong. Thus, conversely, it represents a greater than 99.99 percent probability of the conclusion being right.

GLOSSARY OF ACRONYMS

AV	Assessed Value
BAV	Billable Assess Value
BEIP	Business Employee Incentive Program
CDBG	Community Development Block Grant
COLA	Cost of Living Adjustment
CT	Connecticut
DEP	Department of Environmental Protection
DOPH	Department of Health
DOT	Department of Transportation
DRM	Disaster Relief Medicaid
ESDC	Empire State Development Corporation
FEMA	Federal Emergency Management Association
FHWA	Federal Highway Administration
FHP	Family Health Plus Program
FIRE	Finance Insurance and Real Estate
FPL	Federal Poverty Line
FY	Fiscal Year
GCP	Gross City Product
GDP	Gross Domestic Product
G.O. Debt	General Obligation Debt
HRA	Human Resources Administration
HUD	Housing Urban Development
ISM	Institute for Supply Management
LMDC	Lower Manhattan Development Corporation

MMD	Municipal Market Data
MTA	Metropolitan Transportation Authority
NBER	National Bureau of Economic Research
NYC	New York City
NYCTFA	New York City Transitional Finance Authority
NJ	New Jersey
NYS	New York State
OCME	Office of the Chief Medical Examiner
OEM	Office of Emergency Management
OMB	Office of Management and Budget
OTPS	Other Than Personal Service
PA	Port Authority
PATH	Port Authority Trans-Hudson Corporation
PCB	Polychlorinated Biphenyl
PIT	Personal Income Tax
PTSD	Post-Traumatic Stress Disorder
PS	Personal Service
RAN	Revenue Anticipation Notes
SBA	Small Business Administration
S&P	Standard and Poors’
SF	Square Feet
VSF-DROP	Variable Supplements Fund – Deferred Option Plan
WTC	World Trade Center