

CHAPTER 1

Introduction

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WHEN TWO hijacked Boeing 767–200ER series aircraft struck the twin towers of the World Trade Center (WTC) on the morning of September 11, 2001, and caused them to collapse, New York City suffered an enormous and horrifying blow. Some 2,749 individuals perished. This represented the largest number of Americans killed in a single day in 139 years. The sense of pain and loss was intense, not only for the families of those who were killed but for all New Yorkers and much of the nation. In the weeks after the attack fear and anger were widespread, and New York City became a public space for grieving.

THE ECONOMIC IMPACT OF THE 9/11 TERRORIST ATTACK ON NEW YORK CITY

The terrorist attack was also an attack on the economy of New York City. The immediate economic losses were staggering. The New York City Comptroller's Office estimated that \$13.4 billion worth of office space was destroyed and \$16.6 billion worth was damaged (Comptroller, City of New York 2002). Economic activity in lower Manhattan all but ceased for several weeks. Some 13,000 jobs, mainly in the financial sector, were immediately relocated outside of the city. Economic losses quickly spread from the immediate site of the attack to key New York City industries, including travel and tourism. Between 75,000 and 100,000 jobs were lost in New York City during the fourth quarter of 2001 as an immediate result of the attack (Fiscal Policy Institute 2001; Comptroller, City of New York 2002). Gross city product (GCP), which is the

single most comprehensive measure of economic activity, fell by \$11.5 billion in the quarter following the attack; by July 2002 it had fallen by a total of \$17.6 billion (Comptroller, City of New York 2002). Total losses to GCP through 2004 are estimated at more than \$50 billion. Most estimates of total ensured losses in New York City range between \$40 billion and \$50 billion (Schwabish and Chang, this volume).

In a series of reports, economists at the Federal Reserve Bank of New York have also tried to assess the overall economic impact of the 9/11 attack. In an initial assessment, based on employment data available through June 2002, Jason Bram, James Orr, and Carol Rapaport (2002a) estimate that lost wages for those killed in the attack and those whose earnings were displaced ranged from \$11 billion to \$14 billion. Losses from destruction of buildings and public infrastructure were equal to \$21.6 billion. In the first month after the attack New York City lost 51,000 private-sector jobs. Bram and his colleagues estimate that between 75 and 90 percent (38,000 to 46,000) of those jobs were lost because of the 9/11 attack. By February 2002, the drop in employment due to the attack had risen to somewhere between 49,000 and 71,000 lost jobs. However, by June 2002 the employment impact had begun to recede: direct losses were down to 28,000 to 55,000 jobs. This assessment of the timing of the effects of 9/11 on job loss in the city is supported by Edward Hill and Iryna Lendel (this volume), who find that the pre-9/11 trend in jobs was regained sometime between eight and twelve months after the attack.

Losses were concentrated in particular industries. Through June 2002 there was a loss of 27,000 jobs in the key financial services sector, though about 30 percent of this drop represented jobs that were relocated, mainly to northern New Jersey. Apart from financial services, the most direct effects of the attack were felt in the restaurant, hotel, and air transportation sectors. Hotel employment declined by 15 percent between September 2001 and March 2002, but had rebounded to about a 5 percent loss by May 2002. Air transportation employment fell by 20 percent in the immediate aftermath of the attack (compared with a 10 percent drop nationally), and it had not yet rebounded at all by June 2002 (Bram et al. 2002a).

Revised employment data from 2003 suggest that the impact of the attack, though still very substantial, was somewhat less than originally thought (Bram 2003). This reassessment reflects the fact that the decline in New York's economy in the period preceding the attack, from its cyclical peak of 3.8 million jobs in December 2000, was greater than indicated by the initial data.¹ Based on jobs data through 2003, the Office of Management and Budget (2004) has also revised downward its estimates of the initial impact. OMB finds that of 116,000 jobs lost between the third quarter of 2001 and the fourth quarter of 2002, 50,000 were the result of the attack. This agency puts the loss in gross city product in the fourth quarter of 2001 at \$10 billion and the short-run loss

in city tax revenues at \$720 million. As a fraction of total output, as measured by GCP, these estimates range from 2 to 4 percent.

OVERALL FINDINGS

There is no question that in the short run the 9/11 attack was spectacularly successful in disrupting the social and economic fabric of a great city. The economic losses were almost fifty times as great as had been suffered in any previous terrorist attack (Schwabish and Chang, this volume). The questions asked in this volume, however, address the long-term impact of the terrorist attack: How severe have been the longer-lasting economic effects of the 9/11 attack? Has 9/11 lessened the attractiveness of NYC as a place to do business, to live, and to re-create, or have the natural economic advantages of the nation's largest city been strong enough to overcome the terrible shock suffered by the city?

To investigate these questions, the Russell Sage Foundation commissioned a three-year study of the economic effects of 9/11, along with parallel studies of the social and political effects of the attack. Reflecting our ultimate optimism about the future of our city, the study is called the New York City Recovery Project. Drawing on the intellectual capital based in New York's universities, governmental institutions, and research organizations—one of the city's great strengths—we assembled a team of leading economic researchers to investigate various aspects of the economic effect of 9/11. The resulting papers consider the effects of the attack on the overall economic competitiveness of New York City as well as the specific effects on low-wage workers, office markets, housing demand, insurance costs, the share prices of New York-based firms, and the fiscal condition of the city. Given the widespread fear and anxiety generated by the attack, we also look for evidence of behavioral changes in individuals as revealed by changes in child care arrangements. Such changes are a kind of leading indicator of changes in the city's quality of life and may affect the size and flexibility of the labor force.

The basic conclusions of the study are optimistic. Despite the magnitude of the losses, the sheer size of New York's economy kept the effects relatively small as a fraction of total economic activity, and the flexibility of markets in New York has enabled the city to recover much of its economic vibrancy. Like a very large firm with many production sites, the size of New York's office market enabled it to compensate for the disruption in one geographic area by substituting other facilities, mainly in midtown, thus keeping workers in the city. In the three years since the attack the city has made significant strides toward recovery. Despite the widespread apprehension that the terrorist attack would lead to a substantial deconcentration of firms and employment to less vulnerable locations outside of the city, particularly in the key financial

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services sector, the economic advantages of agglomeration—that is to say, the productivity-enhancing features of many firms being grouped together geographically and the cost savings for consumers from having many highly specialized service providers grouped together in one place—have remained dominant. Firms have been able to relocate many employees to equally dense or denser locations in midtown. As of 2004, vacancy rates for commercial office space in Manhattan are lower than for any other major metropolitan area in the country, and rents continue to be significantly higher. A vigorous residential real estate market has led to robust growth in property-related tax revenues, and this growth has helped to alleviate the severity of the fiscal pressure induced by the 9/11 attack. Labor market impacts, while severe, have been relatively short-lived. Overall, the impact on the disadvantaged was not found to be significantly different than in other large cities. Thus, the economic advantages that New York City derives from its sheer scale appear to be highly persistent. The city's economy has shown itself to be resilient to even the harshest of shocks.²

Nonetheless, significant problems remain. As discussed in the companion volume to this study on the social impact of 9/11, case studies reveal that there were severe impacts on specific groups who live or work in lower Manhattan and on particular industries (see, for example, Chin 2005). Although some of these effects were too small relative to the city as a whole to be detected in the available household survey data, James Parrott and Oliver Cooke (this volume) found earnings declines for low-wage households in the range of 10 percent between the last quarter of 2001 and the first quarter of 2002. In the time period of our study, the loss in New York City employment was greater than for the nation as a whole, and the recovery has been more sluggish. As of December 2004, New York was still 125,000 private-sector jobs below the level just before 9/11 (Comptroller, City of New York 2005). The number of jobs in 2003 was 6.5 percent below the December 2000 peak (Parrott and Cooke, this volume), and the average number of jobs in 2004 was still more than 4 percent below the average for the peak year of 2000 (Hill and Lendel, this volume). Though profits have rebounded, employment in the securities industry remains far below its pre-recession peak. The sluggishness in hiring after 2002 is not directly due to 9/11, but Erica Groshen, Simon Potter, and Rebecca Sela (2004) and Hill and Lendel (this volume) argue that the attack reinforced and accelerated ongoing structural changes, particularly in the financial sector. Since structural change involves the movement of routine jobs out of New York City (Hill and Lendel, this volume), this acceleration has increased the amount of temporary economic dislocation.

Terrorism-related increases in the cost of insurance for New York firms have diminished the city's comparative advantage as a location for economic

activity, though the amount is difficult to quantify. To deal with the enormous fiscal deficits brought about at least in part by the attack, there has been a large increase in city indebtedness and an almost 10 percent increase in taxes as a fraction of personal income. Given the short-term stability of New York's property tax, approximately one-third of the increase in tax burdens is an automatic consequence of the decline in personal income. This means that the remaining two-thirds stems from the increase in rates for income, sales, and property taxes. It is still too early to tell whether there will be substantial adverse effects in the long run from these increases in private- and public-sector prices.

The generally optimistic results are in line with previous studies showing that man-made disasters typically do not destroy the basis for cities and that their long-run effects have tended to be relatively minor (Glaeser and Shapiro 2002; Harrigan and Martin 2002). These results also have important implications in terms of the impact of terrorism on the overall productivity of the economy. Researchers have increasingly come to recognize the crucial role of cities in promoting productivity growth. Dense economic activity is favorable to the realization of significant increasing returns to scale, with the extra output translated into higher wages, land prices, and returns to entrepreneurs who have invested in the city.³ Moreover, increased employment density appears to lead to higher rates of growth in employment in the future. A likely source of this higher growth is the spillover of knowledge from one industry or occupation to another.

If the dangers of terrorism can serve to unravel the close relationships across firms and industries that are the hallmark of dense cities and the source of their economic strength, then not only are urban economies at risk, but so is the overall economy. The fact that New York, despite the lingering problems from the World Trade Center attack, has shown significant powers of resilience and recovery is thus reassuring in terms of overall national economic performance.

Conspicuously absent from the volume is any extensive discussion of the economic future of lower Manhattan. Given the ongoing program of rebuilding, such a discussion must perforce remain largely descriptive and speculative, hence outside the domain of the empirically based studies in this volume. This omission should not be taken to mean that the issue is not important to the economy of New York City. The rebuilding process is discussed extensively in the companion volume on the political impact of 9/11 (Mollenkopf 2005). Nonetheless, the chapters on the real estate markets do offer some intriguing hints as to the nature of the demands for space in lower Manhattan. Although demand for office space in lower Manhattan has held up better than expected, the attack served to accelerate a long-term shift in office employment, particularly in the securities industry, from lower Manhattan to midtown (Fuerst,

this volume). The rent differential between the two areas has increased. These movements of employment and the associated market price signals suggest that some shift away from commercial use of land in the downtown area toward greater use for residential purposes is appropriate (Haughwout, this volume; Glaeser and Shapiro 2002).

METHODOLOGICAL ISSUES

Any study of the economic effect of 9/11 suffers from the difficult methodological problem of separating the effects of the attack from those of two other important economic events: the national recession, which began in March 2001, and the collapse of the stock market, which began in 2000. We must address a counterfactual—what would have been the condition of New York City's economy had there been no terrorist attack?—that is particularly difficult to evaluate because the effects of the attack were not limited to the New York City region. Instead, it had national repercussions, prolonging and exacerbating the economic slowdown that had begun in 2001.⁴ The national repercussions in turn have had substantial effects on the New York City economy. These various lines of causality imply that a precise decomposition of effects is well nigh impossible. To illustrate, airline employment fell by 10 percent nationally in the aftermath of the attack, and by 20 percent in New York City (Bram et al. 2002a). Because the drop in airline travel nationally was so directly related to 9/11, the full 20 percent decrease in New York should be ascribed to the attack, rather than just the difference between the New York effect and the national effect. By contrast, the strong impact of the stock market on the city's economy, even after September 11, should be categorized as a national effect rather than a 9/11 effect.

While the effects in the first six to twelve months after September 11 almost certainly understate the long-run impact, the longer the time frame for analysis, the more the 9/11 effects are conflated with the ongoing national economic slowdown. In the time frame of our studies, it has not been possible to completely disentangle the 9/11 effects from the economic recession. Though our study has had the luxury of a longer-term perspective than many analyses of 9/11, still, as of this writing, only three years have elapsed since the attack. Given the lags in which data are produced, many of the analyses can report on economic developments only through 2002. Hence, what we present here should be viewed as a short- to intermediate-run assessment of economic impacts rather than a true long-run evaluation.

The overall macro estimates of the economic costs to New York City attributed to 9/11 depend on the difference between the actual performance of the New York economy post-9/11 and the pre-9/11 forecast. Straight-line estimates, essentially linear extrapolations of performance in the period just before 9/11,

have tended to give the largest estimates of the impact of 9/11 (Dolfman and Wasser 2004). Forecasting methods that take national trends into account have in general attributed a greater share of post-9/11 losses to the recession than to the attack itself (Bram 2003).

To isolate the various impacts of 9/11, the studies in this project make use of several types of comparisons. While no single one is sufficient, the cumulative weight of the various comparisons increases our confidence in the overall findings. The first and most obvious approach is to compare “just before” to “just after”; most of the studies presented in this volume start with this type of evaluation. The Parrott-Cooke chapter refines the before-after comparison by comparing the impacts in three subperiods in order to better isolate the effects of 9/11 from those of the recession. They compare job losses by industry or occupational grouping for the pre-9/11 period, an immediate impact period (August 2001 to January 2002), and a post-9/11 recession period (January 2002 to August 2003).

Most of the other studies use both time and geography as the basis for comparison, with an increasingly broad range in the definition of the affected area. If the effects of the attack diffuse outward from the immediate site, then in principle the strongest effects of 9/11 should be observed in the immediate area of the attack, with successively weaker impacts on the entire city and the metropolitan area. In general, the results in this volume, combined with the findings of *Wounded City*, the social impacts volume (Foner 2005), support this proposition.

In the most pinpointed comparisons, Andrew Haughwout, Franz Fuerst, and Sanders Korenman, in their respective chapters on housing, commercial offices, and child care arrangements, compare results in the areas closest to the World Trade Center to the rest of New York City. Edward Hill and Iryna Lendel also look at changes in Manhattan and New York City employment and earnings as a share of the entire metropolitan area. The low-wage labor market chapter by Cordelia Reimers compares employment and earnings outcomes for New York City residents to five other cities; Hill and Lendel make a similar comparison for jobs. These authors chose cities with industrial structures similar to New York’s because the national recession would be likely to have a similar impact on these cities. Hence, differences between New York and the other cities can be more reliably attributed to 9/11.

As discussed by Reimers, because 9/11 affected transportation and tourism all over the country and the world, the city comparison is an imperfect control. At best, it isolates the direct effects of the World Trade Center destruction in New York City as opposed to the more diffuse effects of the reaction to 9/11 on the national and world economies. Another potential weakness in comparing New York City to a set of other cities is rooted in the very reason for choosing them. If the attack promotes a perception that all large and dense

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cities are vulnerable to terrorist attack, then there could be a particularly strong economic impact on the comparison cities as well. For example, insurance costs might be expected to rise more, or firm values to decline more, in big cities as opposed to the nation as a whole. If true, the comparison with other large cities would be biased toward not finding any differences. For this reason, comparisons to the nation as a whole, as provided in chapters 4 (Haughwout on housing), 5 (Korenman on the stock market), and 8 (Reimers on labor), are an important complement to the comparisons with other cities.

The power of the comparisons is amplified by using both time and place together. In chapter 5 on the stock prices of New York City-based firms, Korenman relies on simple visual inspection of the trend lines for New York and non-New York firms before and after the attack. In chapter 8, Reimers uses multiple regression analysis to control for demographic characteristics in assessing before-and-after differences between New York City and the comparison cities. Other chapters make comparisons with the previous economic slowdown in New York precipitated by the 1987 crash on Wall Street. Because asset prices would be expected to adjust relatively rapidly to perceived changes in the economic competitiveness of New York, several of the chapters pay particular attention to changes in prices for commercial buildings, housing, and New York-based firms as an early indication of any long-term erosion in the value of a New York City location.

The chapters use a wide variety of data sources to evaluate the 9/11 impacts. The labor market analyses are drawn from the Current Population Survey (CPS), the Current Employment Survey, and the Unemployment Insurance Covered Wages and Employment data. The CPS, which is the household survey used to measure official unemployment rates and poverty rates, is the only monthly or annual survey that identifies workers' characteristics. The Employment Survey measures employment and payrolls by employer location and industry, but it provides no information on workers' characteristics or place of residence. The office market studies use data provided by various real estate organizations in New York City, and housing data come from a federal housing price index and the New York City Housing and Vacancy Survey (HVS). Stock market share values come from the 2001 Compustat annual file. In chapter 9 on child care arrangements, Korenman uses data from the Columbia University Social Indicators Survey.

THE INDIVIDUAL CHAPTERS

The Effects of 9/11 on Economic Competitiveness

Part I of the book addresses the effect of 9/11 on the competitiveness of New York City. In chapter 2, Edward Hill and Iryna Lendel take a broad look at the

performance of New York City's economy in the past twenty to thirty years in terms of jobs, economic output, and productivity. They use the most recent data from the North American Industry Classification System (NAICS) and a technique based on the export-base model of city comparative advantage. They find that Manhattan's economic strength is concentrated in three broad industry classifications: financial services and corporate finance; cultural services and performing arts; and information, broadcast entertainment, and publishing. Other critical parts of Manhattan's economic base, such as insurance and the headquarters and office business function, are shared with the larger regional economy. Hill and Lendel's long-sweep review finds a progressive narrowing of the economic base of Manhattan combined with an unprecedented increase in output per job. This increase is reflected in the fact that even though the New York area's share of jobs has declined substantially compared to the next six largest metropolitan areas, its share of output has declined much less.

The terrorist attack did accelerate cyclical and long-term trends that were under way. This structural adjustment can be seen most clearly in finance, the sector of the economy most directly affected by the attack. To save on costs, the finance industry has been relocating its routine functions outside of New York City for many years. However, the rate of change after the attack is striking. Employment in the finance and insurance sector dropped every month after September 2001, except for June 2004. Manhattan lost 14 percent of its finance employment (56,000 jobs) while the suburban portion of the region lost 5 percent.

Hill and Lendel find no evidence that the 9/11 attack caused permanent damage to New York City as a business location. Looking forward, however, they argue that there are risks for New York. Competition for jobs and income, both within the region and with other cities, continues to increase. The city's most prominent industries must continue to innovate so as to provide a stream of new products and services that will justify the high costs of location in the central city.

In chapter 3, Franz Fuerst analyzes the effect of 9/11 on the market for commercial office space. His overall message is that in the three years since the attack, New York's office building market has held up surprisingly well. Some 31.1 million square feet of office space—approximately 10 percent of the total inventory of New York City and 60 percent of downtown's class A space—was destroyed or severely damaged by the 9/11 attack. The damaged and destroyed space equals the inventory of major office locations such as Atlanta and Miami. Widely derided as a white elephant, the World Trade Center (WTC) complex eventually proved to be a desirable location for financial services companies with a need for large floorplates. However, it was not until the Wall Street and dot-com booms of the 1990s that the WTC achieved 90 percent private occupancy.

All other things being equal, the sharp decrease in the supply of office building space would have been expected to raise rents and reduce vacancy rates in Manhattan. This did not happen, for three reasons. First, the decrease in supply was offset by a pronounced decrease in demand for office space, owing to the combined effects of 9/11 and the recession. Second, it turns out that real vacancy rates prior to 9/11 were higher than indicated by the data because firms were inventorying large amounts of unused space at various locations throughout Manhattan. Third, the higher prices for space in alternative midtown locations led firms to economize by reducing the amount of space per worker. In aggregate, companies that had occupied buildings in the affected area rented about 15 percent less space in their alternative locations. Fuerst estimates that half of the anticipated demand from tenants displaced from the attack site was accommodated through backfill into existing space, reduced staff, subleasing, and reduced space per worker. Contrary to expectations that the WTC attack would dramatically drive down the price of office buildings in New York, there was a significant increase in sales prices per square foot. Though factors such as low interest rates may have had some influence, in retrospect this price behavior seems at the least to be consistent with the trends in rents and vacancy levels.

Where did displaced tenants go? The core markets of midtown and downtown Manhattan captured about 80 percent of the stream of displaced tenants after 9/11 through reoccupation of restored buildings, backfill of previously underutilized space, and new leases. The back-office agglomerations for Wall Street located along the New Jersey waterfront dominate the residual. Notably, as of September 2003, more than half of the originally displaced tenants had returned to a downtown location. However, a number of leases in the downtown area were due to expire in 2004 and 2005, and there is some risk that, despite the substantial federal subsidies for public and private infrastructure, many tenants may choose not to renew at that time. The finding of limited spatial and temporal effects is also supported by a regression analysis. Though the downtown market, especially the World Trade Center submarket, was affected more clearly in the first two years after the attacks than the other submarkets, even in these submarkets the changes in vacancy rates have been moderate. That is a much weaker medium-term impact of the attacks than expected.

In light of the attack, tall buildings might have been expected to be particularly vulnerable to apprehensions about security. The tallest buildings (fifty stories or more) did record a sharp hike in vacancies after 9/11, even relative to buildings of forty to forty-nine stories, but in general the expected flight of tenants from tall office buildings has not occurred in the first three years following the attack. Over time the vacancy rate differential for the tallest building has decreased. Thus, the attack on the tallest buildings of all seems unlikely

to permanently alter Manhattan's signature industrial characteristic, which is an enormous density of employment supported by very high ratios of capital (in the form of buildings) to land.

In chapter 4, Andrew Haughwout investigates the effect of 9/11 on the demand for New York City locations. He starts by noting that the price of vacant land reflects the attractiveness of a city, as influenced by factors such as perceived safety, taxes, and public services. However, because we do not observe the prices of vacant land, particularly in a city as built up and dense as New York, changes in land prices must be inferred from the prices (and rents) for improved properties—that is, residential dwellings and office buildings. In his analysis of housing prices, Haughwout is able to control for the characteristics of structures so that the remaining variation may plausibly be argued to reflect the price of land.

If the WTC attack led to a perception that living or working in New York City exposes people to significant safety risks in comparison to other locations, then we might expect a noticeable decline in both business and residence demands for New York locations. The premise is that if demand suddenly decreased, the change would be rapidly capitalized in real estate prices. The problem in interpreting price data as a reflection of changes in perceptions is that the city was buffeted by a recession that overlapped 9/11, and the recession might affect housing prices as well. Haughwout argues that the decline in the New York City economy from 2001 to 2003 was about average in its severity; therefore, the changes in housing prices can be interpreted as indicative of the long-run effects of 9/11. To take account of concurrent national trends in housing demand, he compares New York's prices to those in the rest of the nation.

He first looks at prices of single-family homes in the New York primary metropolitan statistical area (PMSA), as compared to the nation as a whole. Using the quarterly index of housing prices produced by the Office of Federal Housing Enterprise Oversight (OFHEO), he finds that housing prices in the New York PMSA gained ground compared to the rest of the nation, both before and in the two years after the attack. However, because the OFHEO data cover only single-family homes, they may not pick up changes in the demand for New York City locations compared with the rest of the metropolitan area. To estimate the 9/11 effect on housing prices and rent levels in New York, Haughwout uses data from the New York City Housing and Vacancy Survey (HVS), a survey of about 18,000 housing units that is done roughly every three years. The advantage of the HVS is that it identifies the specific neighborhood where a house is located and has detailed information on housing characteristics. He estimates a set of regression equations in which housing price (or rent level) depends on the year, the neighborhood, and a set of housing characteristics. The results indicate that both housing prices and rents in New York City were higher in 2002 than in 1999 and that the increase in

housing prices was significantly greater than the national increase. However, rents in New York City increased at about the same rate as the nation during this period. Focusing on Manhattan, he finds the same pattern: prices rose faster than in the rest of the nation, and rents rose at about the same rate. Looking at rents in the areas closest to the WTC site itself, he finds that rent levels actually rose relative to the rest of New York City. This surprising result may be due to the temporary subsidies offered to tenants in the affected areas.

Using data from the National Real Estate Index, Haughwout also looks at trends in prices and rents for office buildings in the midtown and downtown areas, again in comparison to the rest of the country. He finds that rents in the downtown area did fall between 2001 and 2002, but the rate of decline was no greater than in the rest of the nation. The same result holds for midtown rents. By the end of 2003, however, rents seemed to have stabilized in both these areas. Evidence from prices of buildings suggests some post-9/11 weakening of demand for downtown office space, relative to the rest of the nation, and a strong increase in demand for midtown space. Thus, though there has been some shift in demand toward midtown, overall the market for office space in the immediate vicinity of the attack has held up relative to the nation. These price signals—very strong in midtown, weaker in lower Manhattan—lead Haughwout to the intriguing conclusion that the reconstruction of downtown should emphasize more residential housing as opposed to full replacement of the destroyed office space. The overall results support the conclusion that the economic impacts of 9/11 on New York City have been modest.

In chapter 5, Sanders Korenman looks at the value of New York-based companies to investigate the hypothesis that investors believe that the locational advantages of New York City have been reduced by the attack on the WTC. The share price for publicly traded companies is determined, in theory, by the present value of expected future earnings of the corporation. If investors fear that New York is no longer as desirable a place to do business after 9/11, then this perception should translate rapidly into a reduced value for the shares of New York firms. However, if investors believe that losses are only temporary, then there would be small effects on the share prices. Reduced profits could stem from higher costs or from what Korenman calls “incumbency” effects—workers in New York firms becoming less productive owing to the trauma of having lived through the 9/11 attack.

The sample consists of companies in the S&P 1500 in 2001, tracked between January 1997 and June 2002. New York companies are defined as having their corporate headquarters located in New York City or the New York City region. Korenman performs simple graphical before-after comparisons between the stock prices of firms headquartered in “New York” and stock prices for other firms. In various models, “New York” is defined alternatively as New York

City, New York State, or the tri-state area of New York, New Jersey, and Connecticut. He presents both comparisons for all New York City-based firms and industry-specific comparisons.

Overall, he finds little evidence that investors expected a major adverse impact on New York firms' profitability as a result of the terrorist attack on the World Trade Center. Stock valuations and company sales were already in decline months before the attack, but the attack did not seem to cause major breaks from this trend. Although the overall comparison suggests some decline in New York-based firms after 9/11, decomposition of the effects by industry suggests that the decline was due to a nationwide decline in those industries in which New York specializes, particularly the FIRE (finance, insurance, and real estate) sector. To the extent that there are any observed effects of the attack, they appear to be spread throughout the tri-state region rather than focused on New York City. Thus, Korenman's stock market valuation approach reinforces the conclusion of Haughwout's analysis of property values: neither study finds a negative effect on asset values of the 9/11 attack.

The 9/11 attack accentuated in a dramatic way a new type of business risk, that of a terrorist attack. New York City is at higher risk for losses than other cities because of its large concentration of symbolic targets and its density of economic activity. The city has sixty-seven buildings with fifty or more floors, almost twice as many as Chicago, and more than the next thirteen cities combined. If the attack causes the cost of insurance to rise substantially in New York relative to other cities, then its economic competitiveness could be seriously affected.

In chapter 6, Jonathan Schwabish and Joshua Chang consider the issue of insurance costs. Insurance claims of about \$47 billion have been paid to New York City firms and individuals as a result of 9/11, over forty-seven times as much as has ever been paid for a terrorist attack. The first response to the severe losses to insurers from the 9/11 attack was to exclude acts of terrorism from policies, leaving many firms in high-risk areas with inadequate or highly costly coverage. As a result, the federal government created a backstop insurance program through the Terrorism Risk Insurance Act of 2002. A major problem for the efficient pooling of risk through insurance markets is the potential for adverse selection, which occurs when there is much greater demand for insurance among those who are most at risk. This is particularly the case for insurance against terrorist attacks. A risk-modeling firm has calculated that the relative risk, in terms of average annual insured losses, is over four times as great in New York as it is in Los Angeles, and three times as great as in Chicago. The recommended rates of insurance against terrorism are 66 percent higher in the densest cities than in other large cities, and thirty times as high as the rest of the United States.

At this point the evidence on the consequences of higher insurance costs in

New York is mainly anecdotal. For example, the ratings on mortgage-backed securities totaling \$4.5 billion for a number of important properties in New York have been downgraded owing to the inability of the owners of the underlying properties to obtain full terrorism insurance coverage. A survey by the New York City Comptroller found that premiums for property and casualty coverage increased dramatically following 9/11 and that the availability of coverage fell. The rate of increase was significantly greater in New York than in the rest of the nation. This evidence suggests that the long-term economic risk to New York City posed by terrorism may be greater than the short-term risk.

Schwabish and Chang point out that it would be inefficient to allow the densest cities, which are places with very high-factor productivity, to bear the full cost of additional terrorism insurance and that there is a strong public good argument for at least some federal role. They conclude their chapter by considering a number of policy options for the provision of terrorism insurance: having the federal government act as the reinsurer of last resort, as was done in Great Britain; mandating a certain minimum level of terrorism insurance for all large firms to minimize the adverse selection problems; and reallocating funds under the Homeland Security Act to mitigate the hazards of future attacks in the densest cities. At present, the awarding of most of the homeland security grants has not been based on any real assessment of need or risk.

The Effects of 9/11 on Labor Markets and Families

Chapter 7 by James Parrott and Oliver Cooke and chapter 8 by Cordelia Reimers look at the effect of 9/11 on the labor market in New York City, particularly the impact on low-wage workers. Parrott and Cooke focus on the number of jobs as the key and most currently available indicator of the health of the local economy. They begin by noting the severity of the economic downturn faced by New York City in the 2000s. After a period during the late 1990s in which the rate of job growth in New York exceeded that for the nation, between 2001 and 2003 the city lost jobs at three times the national rate. Some 245,000 jobs, or 6.5 percent of its December 2000 peak level, disappeared. Though job growth has now resumed in New York, projections indicate that the number of jobs is not likely to regain its previous job peak until 2010.

Parrott and Cooke combine payroll employment data and an industry-occupation matrix with employment and earnings data from the Current Population Survey to estimate the effects of 9/11 on low-, middle-, and high-wage workers. To disentangle the particular effects of 9/11, the study combines the analysis of employment changes over the entire 2001 to 2003 recession with

the findings of other studies to identify those occupational groups that sustained substantial adverse employment effects in the aftermath of 9/11.

Parrott and Cooke divide New York City's 2001 to 2003 recession into three phases: the pre-9/11 phase, dominated by the bursting of the Wall Street and dot-com bubbles; August 2001 to January 2002, when the 9/11 impact was most concentrated; and early 2002 to August 2003. The employment losses that occurred in late 2001 in the hotel, restaurant, arts, air transport, building services, and apparel manufacturing industries were primarily the result of 9/11. Although there has been a perception that high-wage workers bore the brunt of the 9/11 effects, Parrott and Cooke's occupational analysis shows comparable job declines for the three wage groups. They find that workers in low-wage occupations experienced serious but short-term dislocation effects (higher unemployment and reduced earnings) from 9/11. Mean weekly wage earnings for low-wage households declined by 7.9 percent in the fourth quarter of 2001 compared to the same quarter a year earlier, and they dropped by 18.2 percent in the first quarter of 2002 over the first quarter of 2001. Workers in middle- and high-wage occupations experienced less pronounced adverse effects in the immediate aftermath of 9/11, but as the recession wore on through late 2002 and 2003, these workers experienced greater increases in unemployment and greater proportionate declines in wage earnings.

In chapter 8, Cordelia Reimers evaluates the impacts of 9/11 on disadvantaged New York City residents—those who have low skills, are members of minority groups, or are recent immigrants. Using the 2000 to 2003 Current Population Survey, which provides data for the calendar years 1999 to 2002, she analyzes labor market outcomes—employment rates, weekly hours worked, weekly and annual earnings—and economic well-being, as measured by annual household income, including receipt of government transfer payments. She identifies the impact of the 9/11 attack through both before-and-after comparisons and other-city comparisons. The comparison cities are Boston, Chicago, San Francisco, Washington, and Los Angeles. The use of the CPS allows her to control for individual characteristics—particularly age and education—that are strongly correlated with employment outcomes.

Remarkably, Reimers finds that the annual earnings and household incomes of the combined disadvantaged groups declined less in New York City than in other big cities in 2002. In retrospect, this result is perhaps not too surprising, given the overall estimates of 50,000 to 75,000 lost jobs in the eight to twelve months following the attack. However, her results do differ somewhat depending on the particular group. She finds a short-term negative impact of 9/11 on employment for disadvantaged women, while for disadvantaged men the decreases in employment, hours worked, and earnings after September 2001 were more likely due to the recession. The exception to the general conclusion

is for blacks, whose household incomes rose less in New York City than elsewhere. Medicaid coverage rose in New York relative to other cities, suggesting the importance of the social safety net in NYC.⁵ More advantaged groups—those who are college-educated, white non-Hispanics, and not-recent immigrants—fared as well in New York City as elsewhere in late 2001 and 2002, or even better. This finding reflects the underlying strength of New York's economy, as documented in chapters 2 through 4. Although these conclusions are relative to other big cities, a brief look at national outcomes suggests that they would not change if the comparison were with the rest of the nation. As emphasized by Parrott and Cooke, these conclusions should not be taken to imply that disadvantaged New Yorkers did “well” in any absolute sense in the post-9/11 period, but rather that the impact was not worse than elsewhere.

The argument was put forth after 9/11 that the terrorist attack could enduringly realign American values and priorities, leading to a “return to hearth and home.” One possible manifestation of a renewed commitment to family life or a concern for children's mental and physical health would be an increase in home-based care of children. In chapter 9, Sanders Korenman asks whether, since September 11, 2001, parents have altered their child care arrangements so that children are cared for either by parents at home or by close substitutes for parents, such as nannies, babysitters, or relatives. There was widespread concern about the effects of the attack on children's mental health. One study found a significantly elevated prevalence of mental health problems such as depression, agoraphobia, and separation anxiety among New York City school-children in grades four through twelve six months after the WTC attack. Korenman gives special attention to the changes among children reporting physical or emotional damage from the 9/11 attack. The data for the child care study came from the 1999 and 2002 waves of the Columbia University New York Social Indicators Survey, a representative survey of the household population of New York City. There were just over 600 families with children under thirteen in each wave of the survey, for a combined sample size of 1,230.

The study finds little evidence that the attack on the World Trade Center affected the child care arrangements of New York families. Parents did not appear more likely after the attacks than before to provide care at or close to home in response to increased fear of terrorism or in order to cope with the problems for children that resulted from the terrorist attacks. Nor were parents who reported that their children had new emotional or health problems more likely to care for their children at home. Instead, these families were more likely to use out-of-home care. Restricting the analysis to those most likely to have the flexibility to change child care arrangements—families in which both parents work and education levels are high—did not alter these results.

What do these (non)results say about the change in values that was widely reported in the aftermath of 9/11? One possibility is that the study may have

missed the very people most affected by the attack: those who moved out of the city and therefore were no longer in the sample. The more likely explanation is that families tended to resume their “normal” (previous) lives. If so, the purported change in values was more of a temporary phenomenon, as also evidenced by a brief spike in religious attendance, than a deep and long-lasting effect leading to real behavioral changes. The lack of any observable change in child care arrangements is consistent with the basic finding from other chapters in this volume: there is little evidence of a lasting effect of the attack on New York City.

In the last chapter, Howard Chernick considers the very substantial fiscal implications for New York City of September 11. As a result of the attack, many residents of New York City lost jobs and income. However, all faced higher tax rates and reduced public services. City government employment declined by at least 5 percent between fiscal year 2001 and fiscal year 2003. Medicaid enrollment went up by an additional 271,000 people, at a cost to the city of \$130 million in additional Medicaid expenditures. Property, income, and sales taxes were all increased substantially. Overall, taxes as a fraction of personal income rose by almost a full percentage point, from an estimated 7.0 percent in 2002 to 7.9 percent in 2004. The increase in taxes exceeds the increase in the previous economic downturn. To cover current expenses the city had to draw on an extraordinary \$2 billion in additional borrowing, creating future obligations of some \$150 million to \$180 million per year. As large as these adjustments have been, the underlying fiscal shortfalls were anticipated to be even greater. Fortunately, the city’s strong real estate markets have yielded tax revenues substantially above original estimates. In fiscal year 2004, actual tax revenues were at least 6.4 percent higher than in the preliminary budget. The extra revenues have given the mayor the fiscal flexibility to rebate most of the property tax increase for homeowners, as well as stave off the most drastic cuts in city services.

Drawing on studies of the fiscal impacts that were prepared by various government agencies, Chernick assesses the overall dollar magnitude of the public-sector losses incurred from the attack and the cost per resident. The impact on the city’s budget of the attack includes the effect of the additional expenditures required, the increase in transfer payments—mainly for Medicaid—and the loss in city and state tax revenues. The losses are then compared to the compensation paid to New York City through the federal 9/11 assistance package. Not including the cleanup costs at the World Trade Center site, the present discounted value of costs through 2003 is estimated to be about \$3 billion. This equals \$400 per capita, or about 0.8 percent of personal income. Total projected losses through 2010 equal \$4.71 billion, or 1.35 percent of personal income. Federal compensation for general budgetary relief will offset between one-third and a little more than one-half of these public-sector costs.

(The higher federal offset takes into account the automatic federal cost sharing in Medicaid and the deductibility of state and local taxes.) New York City has been forced to make up a fiscal shortfall through tax increases, spending cuts, and additional borrowing that is equivalent to 4 to 8 percent of the current tax burden.

The distribution of the burden of tax hikes and spending cuts has on balance been slightly progressive—that is, the net burden has been borne more by higher- than by lower-income groups. New York State tax revenues were also severely affected by the fiscal crisis brought on by the 9/11 attack. Except for granting New York City permission to raise its tax rates and taking over a small share of the city's debt obligations, the state has done little to compensate New York City for the fiscal costs of 9/11.

CONCLUSION

If journalism is the first draft of history, the chapters in this volume are a second draft. The studies present a short- to medium-range assessment of the impact on New York City's economy of the devastating terrorist attack that occurred on September 11, 2001. A full assessment must await a somewhat longer time period. The theme that emerges from our work is that, despite the magnitude of the losses, the city is so large and its major industrial sectors so flexible in location of employees that the overall impact of the attack was relatively small. Continued strong demand for New York City locations indicates that the economic and social advantages that firms and residents derive from clustering together in dense geographic areas outweigh the heightened risks to cities that are part and parcel of global terrorism. This is reassuring, both for New York and for the nation.

There is, however, a danger that higher insurance costs as a result of 9/11 will weigh on the city's future competitiveness. Another terrorist attack on New York City would clearly raise the danger level for the city's economy dramatically. Effective national policies to reduce the risks of future attacks and fairly spread the costs of protection are therefore crucial.

NOTES

1. The employment rate—the employment-population ratio—for eighteen- to sixty-four-year-old residents of New York City had begun declining eight months earlier, in April 2000 (Reimers, this volume).
2. The findings from our volume are consistent with those of an earlier report on the September 11 attack. Bram and his colleagues (2002b) found that, despite significant temporary disruption, New York's concentration of high-growth industries—securities, business services, motion pictures, education—and its highly educated

workforce give cause to believe that the prospects for economic growth in New York City remain favorable.

3. One widely cited study finds that a doubling of employment density in a county increases average labor productivity by about 6 percent and that more than half of the variance of output per worker across states can be explained by differences in the density of economic activity (Ciccone and Hall 1996).
4. The Council of Economic Advisers (2005, 17) reports that the national economy lost almost 400,000 additional jobs in the three months after the 9/11 attacks.
5. The rise in Medicaid coverage after 9/11 is discussed by Howard Chernick in chapter 10 of this volume on the fiscal effect of 9/11.

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