

Report for Congress

Received through the CRS Web

The Economic Effects of 9/11: A Retrospective Assessment

September 27, 2002

Gail Makinen, Coordinator
Specialist in Economic Policy
Government and Finance Division

The Economic Effects of 9/11: A Retrospective Assessment

Summary

The tragedy of September 11, 2001 was so sudden and devastating that it may be difficult at this point in time to write dispassionately and objectively about its effects on the U.S. economy. This retrospective review will attempt such an undertaking. The loss of lives and property on 9/11 was not large enough to have had a measurable effect on the productive capacity of the United States even though it had a very significant localized effect on New York City and, to a lesser degree, on the greater Washington, D.C. area. Thus, for 9/11 to affect the economy it would have had to have affected the price of an important input, such as energy, or had an adverse effect on aggregate demand via such mechanisms as consumer and business confidence, a financial panic or liquidity crisis, or an international run on the dollar.

It was initially thought that aggregate demand was seriously affected, for while the existing data showed that GDP growth was low in the first half of 2001, data published in October showed that GDP had contracted during the 3rd quarter. This led to the claim that “The terrorist attacks pushed a weak economy over the edge into an outright recession.” We now know, based on revised data, this is not so. At the time of 9/11 the economy was in its third consecutive quarter of contraction; positive growth resumed in the 4th quarter. This would suggest that any effects from 9/11 on demand were short lived. While this may be true, several events took place before, on, and shortly after 9/11, that made recovery either more rapid than it might have been or made it possible to take place. First, the Federal Reserve had eased credit during the first half of 2001 to stimulate aggregate demand. The economy responds to policy changes with a lag in time. Thus, the public response may have been felt in the 4th quarter giving the appearance that 9/11 had only a limited effect. Second, the Federal Reserve on and immediately after 9/11 took appropriate action to avert a financial panic and liquidity shortage. This was supplemented by support from foreign central banks to shore up the dollar in world markets and limited the contagion of 9/11 from spreading to other national economies. Nevertheless, U.S. trade with other countries, especially Canada, was disrupted. While oil prices spiked briefly, they quickly returned to their pre-9/11 levels.

Thus, it can be argued, timely action contained the short run economic effects of 9/11 on the overall economy. Over the longer run 9/11 will adversely affect U.S. productivity growth because resources are being and will be used to ensure the security of production, distribution, finance, and communication.

This report is retrospective in nature and will not be updated.

Contents

An Overview	1
Economy-Wide Implications and the Fiscal-Monetary Response	1
Terrorism and National Productivity	2
Oil Supply and Prices	2
World Economies	3
International Capital Flows and the Dollar	3
Financial Markets	3
Sectoral, Industry, and Geographic Effects	4
A. Airlines	4
B. Insurance	4
C. Agriculture and Food	5
D. Small Business	5
E. New York City	5
F. Layoffs and Unemployment Benefits	6
G. Public Finances of the United States: Patriot Bonds	6
Economy Wide Implications and the Fiscal-Monetary Response	6
The Setting	6
The Existing Picture of the Economy on 9/11	7
The Picture of the 2001 Economy in 2002	8
Actions Undertaken	10
Monetary Policy	10
Fiscal Policy	11
Looking to the Future	11
Terrorism and National Productivity	12
The Setting	12
Actions Undertaken	14
Oil Supply and Prices	15
Effects of the Attacks	15
Lessons Learned	16
World Economies	17
The Setting	17
Actions Undertaken	20
Looking to the Future	22
International Capital Flows and the Dollar	23
The Setting	23
Background	23
Options and Implications for U.S. Policy	27
Financial Markets	28
The Setting	28
Financial Infrastructure	28
Securities Markets	28
Commercial Banking	29

Conclusion	29
Sectoral, Industry, and Geographical Effects	30
The Airline Industry	30
The Setting	30
Current Situation	30
The Policy Response	31
Lessons Learned	31
The Insurance Industry	32
Terrorism and the Industry	33
Financial Position of the Industry	34
Agriculture and Food Sector	35
The Setting	35
Actions Undertaken and Policy Response	35
Looking Ahead	37
Small Business	38
The Setting	38
Actions Undertaken	39
Looking to the Future	42
New York City's Budget	42
The Setting	42
Local Economic Impact	43
Tax Revenue Loss	43
Actions Undertaken	44
Looking to the Future	47
Layoffs and Unemployment Benefits	48
The Setting	48
Actions Undertaken	49
Looking to the Future	50
Public Finances of the United States: Patriot Bonds	51
The Setting	51
Actions Undertaken	51
Brief History of Savings Bonds	51
Policy Analysis	51
Looking to the Future	52
Conclusions	53

List of Figures

Figure 1. 9/11 and the Forecasts for Economic Growth in Selected Countries	18
---	----

List of Tables

Table 1: Economic Indicators	8
------------------------------------	---

Contributors to this Report

Domestic Social Policy Division:

Celinda M. Franco
Specialist in Social Legislation

Linda Levine
Specialist in Labor Economics

Foreign Affairs, Defense, and Trade Division:

James K. Jackson
Specialist in International Trade and Finance

Dick K. Nanto
Specialist in Industry and Trade

Government and Finance Division:

Brian Cashell
Specialist in Quantitative Economics

Mark Jickling
Specialist in Public Finance

Marc Labonte
Analyst in Economics

Steven Maguire
Analyst in Public Finance

Gail E. Makinen
Specialist in Economic Policy

Bruce Mulock
Specialist in Government and Business

Resources, Science, and Industry Division:

John W. Fischer
Specialist in Transportation

Bernard A. Gelb
Specialist in Industry Economics

Lawrence G. Kumins
Specialist in Energy Policy

Jean M. Rawson
Specialist in Agriculture Policy

The Economic Effects of 9/11: A Retrospective Assessment

On the morning of September 11, 2001, a small group of dedicated fanatics hijacked four commercial airplanes in flight, crashed three of them into buildings symbolic in various ways of what they found offensive about the United States, and changed the course of American history. Shortly after this occurred, a group of CRS analysts was called upon to assess the possible effects of the terrorist attacks on the U.S. economy and the ability of the government to deal with them. This was but a small part of a much larger CRS effort on various aspects of terrorism that became an on-line electronic briefing book. This briefing book has been extraordinarily successful and has been used thousands of times by congressional staff. Over time, most of the economic entries served their purposes and were withdrawn.

While the studies of the CRS staff on the economic effects of terrorism were very useful, they were not designed to address other important questions related to this tragedy. For example, what did we learn from this experience that might be useful if the United States were to experience other acts of terror? While we know how the government responded in this instance, were alternative responses available? If they were, what were they and why were they not used? Does this episode suggest that new remedial stand-by programs should be put in place now? Or are acts of terrorism likely to be so unique that one-size-for-all remedial programs are unlikely to be useful? It is to address such questions, that CRS presents this retrospective assessment.

An Overview

Economy-Wide Implications and the Fiscal-Monetary Response

When the terrorist attack occurred it was known that the U.S. economy was in a transition from an unsustainable to a sustainable rate of growth. To accomplish this, the Federal Reserve began to tighten credit in mid-1999. This tightening continued through May 2000. Key economic indicators reflected this tightening: industrial production reached a peak in June 2000 and slowly began to decline, the two consumer confidence indexes peaked in May 2000 and the unemployment rate began to rise, reaching 4.9% in August 2001 (from a low of 3.9% late in 2000). The then available data on GDP growth showed that it was quite low, but positive, during the first half of 2001. Clearly, the economy was softening and the possibility of a recession loomed.

However, the actual state of the economy was quite different from that depicted by the GDP data. As a result, various claims were made for the economic effects of 9/11 which were unfounded, in particular that it “pushed a weak economy over the edge into an outright contraction.” This conclusion was based on data released in September, October, and November which showed a large rise in the unemployment rate, a fall in consumer confidence, and a contraction in GDP for the 3rd quarter of 2001.

As data revisions for GDP were released in the summer of 2002, we learned that GDP began contracting in the 1st quarter of 2001, a contraction that continued through the 3rd quarter and that positive growth began again in the 4th quarter (at an annual rate of 2.7%). This period of contraction would, of course, explain the rise in the unemployment rate. Moreover, the fall in consumer confidence seems now to be largely explained by such underlying factors as the rise in the unemployment rate, the increase in the rate of inflation, and the fall in stock prices.

Thus the events of 9/11, tragic though they were, did not “push a weak economy over the edge into outright contraction.” The economy was contracting when 9/11 occurred and it was poised to shift toward positive growth shortly thereafter. The terrorist attacks did cause some severe localized effects, especially in and around the target areas, and that may have muted the magnitude of growth in the 4th quarter. This fairly modest effect may have been due to assurances given by the Federal Reserve within hours of the attack that it was still in business and that sufficient liquidity would be available for the financial community. Over the next three days, the Federal Reserve added some \$100 billion per day in liquidity. As a result, it can be argued, a human tragedy was not compounded by a financial crisis.

Terrorism and National Productivity

The lasting economic effect of 9/11 will be of a different nature. Large amounts of resources are and will be committed to making production, distribution, finance, and communication more secure in the United States. Resources that could have been used to enhance the productive capacity of the country will now be used for security. Since it will take more labor and capital to produce a largely unchanged amount of goods and services, this will result in a slower rate of growth in national productivity, a price that will be borne by every American in the form of a slower rate of growth of per capita real income.

Oil Supply and Prices

A crucial part of U.S. imports, which now amounts to about 15% of GDP, is energy, primarily in the form of oil. Sharp and prolonged increases in the price of oil, popularly termed price shocks, can have significant negative effects for GDP growth in the short run. The individuals involved in the terrorist attacks came from an area that is an important source of the world’s oil production. It is possible that an oil price shock, with possible negative effects on the U.S. economy, could have followed from the attacks. In this instance it did not, except for a brief spike in prices that eased within little more than a week. Also, it is somewhat reassuring that when a major mechanism for determining current and future petroleum prices – the New

York Mercantile Exchange – was closed for a week, other commodity and futures markets filled in as did the spot market, and the oil industry was not materially affected.

World Economies

Because of the large size of the U.S. economy, America is an important market for many countries. Sharp shifts in the health of the U.S. economy can have important short run consequences for the economies of U.S. trading partners, especially Canada, Mexico, and Japan. About 40% of Canada's output is exported to the United States. Mexico is also an important trading partner of the U.S. While trade with both countries, especially Canada, was disrupted in the short run, various measures were put in place to minimize these disruptions. And, indeed, they may actually expedite border crossings for an important class of trade (motor vehicles). Thus far, it would appear that apart from an initial adverse reaction, the short run effects of 9/11 have not been great on foreign economies. The quest for greater security will, however, impose a longer run cost on the world economy both in terms of a decline in productivity growth and, possibly, greater impediments to the free movement of goods, services, and capital. These flows have contributed immeasurably to the integration of the world economy and its efficient functioning.

International Capital Flows and the Dollar

While international trade plays an important role in the U.S. economy, it is not the only role played by international forces. A characteristic of the economic expansions of the 1980s and 1990s was the large net inflow of foreign capital to the United States. During the late 1990s, this net inflow furnished between one-third and one-half of the U.S. net saving. In times of international crisis and uncertainty, foreign capital has often sought refuge in the United States. This time, however, the United States is the battle ground. Even though there was no panic selling of dollar-denominated assets after 9/11, it would appear that there was a short run decline in the net purchase of U.S. assets by foreigners. This was clearly over by mid-October. However, this may be due to timely action of the Federal Reserve, which restored confidence in the smooth functioning of the nation's payments system, action supporting the dollar in international financial markets by the Bank of Japan and the European Central Bank, among others, and interest rate cuts by key central banks in support of similar cuts by the Federal Reserve.

Financial Markets

While much economic analysis tends to concentrate on the determinants of output and employment, modern market economies depend to an important extent on a well-functioning financial system and financial institutions, such as insurance companies, commercial banks, pension funds, stock exchanges, etc. These institutions play a vital function in ensuring that resources represented by saving are transformed into new capital goods. They were put in harm's way by the terrorist attacks.

The attacks on the twin towers threatened the heart of the U.S. financial system. Their destruction devastated the leading dealer in U.S. Treasury securities, the loss of whose staff accounted for almost one quarter of those killed in New York City. The debris from the collapsing towers and the general chaos in the area brought about the closing of the New York Stock Exchange, the major stock exchange in the United States, as well as closing brokerage houses and banks in the Wall Street area. The grounding of all air planes severely hampered the clearing of checks and the distribution of paper currency, creating great uncertainty for financial institutions. Timely action by the Federal Reserve, the City and State of New York, the Federal Emergency Management Agency, and individuals in the financial sector resulted in the quick return to business by the stock and commodity exchanges in the affected area. This not only ensured the timely return to normal operations by the financial system, but was also a major boost to confidence.

Sectoral, Industry, and Geographic Effects

As the contraction of GDP in the U.S. during the first three quarters of 2001 has adversely affected some sectors and geographic areas of the economy more than others, so the costs of the terrorist attacks have been borne disproportionately by a few industries, especially airlines, tourism, and insurance; small businesses in the target areas; and the city of New York, the major target area.

A. Airlines. The use of commercial airplanes as assault vehicles to wreak havoc on the United States has no precedent in aviation history. At the time of 9/11, the industry was already in financial trouble due to the recession. 9/11 severely compounded the industry's financial problem. Even though the federal government quickly responded with an aid package that gave the airlines access to up to \$15 billion (consisting of \$5 billion in short-term assistance and \$10 billion in loan guarantees), it is by no means certain that the industry will not have to undergo a major reorganization typified by U.S. Airways filing for Chapter 11 bankruptcy and United suggesting that it may take a similar course of action.¹

B. Insurance. Insurance was one of two industries profoundly affected by 9/11. The loss of life and property gave rise to the largest property/casualty claim in history, estimated at \$40 billion.² While the industry as a whole has both the reserves and liquid assets to settle these claims, this will not be the case if terrorist attacks become a more frequent occurrence. The risk posed by terrorism is new and the industry has little or no prior experience upon which to base insurance rates and hold reserves. As a result, only a few insurers are offering limited, restricted, and expensive coverage for terrorism.³ This could have a negative effect on the ability of firms and households to acquire the financial wherewithal with which to put in place new buildings and equipment. Thus far, a large number of new projects in

¹ Edward Wong, *Is Bankruptcy Good for the Airlines?*, New York Times [www.nytimes.com/2002/10/20/].

² Insurance Information Institute, New York, NY: October 21, 2002.

³ Ibid. See also Jackie Spinner, "Terrorism Insurance Bill Moves Forward," *Washington Post*, October 18, 2002.

diverse geographical areas do not seem to be adversely affected. Since the government is responsible for the safety of the country against terrorism, questions have been raised about a possible federal role in providing compensation to companies that are adversely affected by future terrorist attacks should they occur.

C. Agriculture and Food. In the days following the 9/11 attack, the agriculture sector experienced some initial economic setbacks due to the halt of commodities futures trading and losses from delayed shipments of perishable commodities by air and by truck along U.S. borders with Canada and Mexico. These losses proved transitory; nonetheless, the changing geopolitical developments that have followed 9/11 have injected a significant amount of uncertainty into any predictions about world markets and their effects on the U.S. farm sector's longer term financial health, which is highly dependent upon trade.

The anthrax attacks in October 2001 had a far more dramatic and immediate effect, not upon the agriculture economy *per se*, but upon the realization that U.S. farms and the food supply are highly vulnerable to bioterrorism. Virtually all of the congressional actions on agricultural issues taken after autumn 2001 – including the 2002 farm act (P.L. 107-171), two emergency appropriations acts (P.L. 107-117, P.L. 107-206), and a separate anti-bioterrorism act (P.L. 107-188) – have contained provisions intended to protect agriculture from the threat of bioterrorism. Nevertheless, despite both legislative and administrative actions, many policymakers maintain that 100% protection of food and agricultural enterprises is not possible, and that further action should address preparedness and response planning.

D. Small Business. Nearly 18,000 businesses were dislocated, disrupted or destroyed by 9/11. Most were in and around the World Trade Center complex. Using existing programs, the Small Business Administration, in cooperation with other federal, state, local, and charitable groups worked to alleviate the distress. As of May, 2002, 4591 loans had been made to firms near the World Trade Center complex and 96 loans in Virginia including those made to businesses at Reagan National Airport. The federal government also provided financial assistance to small businesses in and around the World Trade Center complex in the form of Community Development Block Grant funds. In addition Economic Injury Disaster Loans became available nationwide to eligible small businesses that have suffered substantial economic injury due to 9/11 or a federal action in response to 9/11. These loans provide working capital for ordinary and necessary operating expenses that would have been incurred in the absence of a disaster. There has been considerable criticism of the federal response to the plight of the thousands of small businesses in proximity of the World Trade Center. Insufficient funding, burdensome application requirements, arbitrariness, and delays have been cited.

E. New York City. The destruction of the World Trade Center towers, nearby businesses, and human lives has had a major impact on the economy of New York City. Gross City Product (GCP) was estimated to have been reduced by approximately \$27.3 billion over the last 3 months of 2001 and all of 2002. The latest estimates put the tax loss stemming from the reduced economic activity at just over \$2 billion in FY2002 and another \$1 billion in FY2003. The tax revenue loss combined with the extraordinary expenditures for relief and recovery after 9/11 has severely strained the New York City budget. The federal response to this fiscal

crisis, through a series of legislative actions, has had two objectives: (1) to reimburse the city for emergency expenditures directly related to the attacks and (2) to reinvigorate the local economy with economic development incentives. To date, federal aid to New York City has been delivered in three phases: \$11.2 billion appropriated in September 2001 for debris removal and direct aid to affected individuals and businesses; just over \$5 billion in economic development incentives was approved in March 2002; and another \$5.5 billion for a variety of infrastructure projects for New York City was approved in August 2002.

F. Layoffs and Unemployment Benefits. Overlaid on a labor market already weakened by recession were 462 extended mass layoffs attributable to 9/11 that displaced nearly 130,000 employees.⁴ Although legislation initially introduced was directed at workers adversely affected by 9/11, the legislation that ultimately passed dealt with the economy-wide recession. It extended unemployment compensation (UC) benefits 13 weeks for those who had exhausted their basic benefits, and for UC exhaustees in “high-unemployment states,” it provided 13 weeks of benefits beyond the initial 13-week extension. Workers, including the self-employed, who are not eligible for regular UC benefits may be covered by an existing program, namely, Disaster Unemployment Assistance. Through August 2002, nearly 3800 individuals in New York and Virginia had received such benefits.

G. Public Finances of the United States: Patriot Bonds. Counter-terrorism spending presents significant implications for the federal government. Additional spending can be financed with higher taxes, less spending on other programs, or additional debt. The U.S. Treasury, in response to the bipartisan urging of Congress, created Patriot Bonds in December 2001 to assist in financing the war on terrorism and to provide an avenue for patriotic citizens to show their support for the effort. The new Patriot Bonds were formerly identified as Series EE Savings Bonds. The War Bonds (series E bonds) offered in the 1940s are the antecedents of the Series EE bonds.

Economy Wide Implications and the Fiscal-Monetary Response⁵

The Setting

There was widespread concern at the time of the attacks that 9/11 would have serious, negative effects on the overall economy, perhaps causing a deep recession. As late as January 2002, this theme still dominated official pronouncements. The President’s budget submission stated: “The terrorist attacks pushed a weak economy over the edge into an outright contraction. After September 11th, the forces that had been restraining growth since mid-2000 were augmented by temporary disruptions

⁴ BLS data on extended mass layoffs attributable to the terrorist attacks as shown in CRS Report 31250, *Layoffs Due to the September 11, 2001 Terrorist Attacks and the Worker Adjustment and Retraining Notification Act (WARN)*, by Linda Levine.

⁵ Prepared by Marc Labonte and Gail Makinen, Government and Finance Division.

to business travel and tourism and by the temporary shock to confidence that the terrorist attacks engendered.”⁶ These predictions and the theory that 9/11 caused the recession have proved to be largely unfounded. Yet, at the time they seemed plausible. In retrospect, they were, in part, the product of data that failed to give a complete picture of the economy. In fact, the picture was quite misleading.

The Existing Picture of the Economy on 9/11. During 1999 and the first half of 2000, the U.S. economy was growing at between 3% and 5% per year. The unemployment rate, 3.9% in September and October 2000, was at a 30-year low, and substantially below estimates consistent with a fully employed economy. This suggests that the economy was characterized by excess demand which could potentially be inflationary. To reduce GDP growth to a more sustainable rate, the Federal Reserve began in mid-1999 to tighten credit. This continued until May 2000. During this period, the key federal funds interest rate was raised to 6.5% from 5.0%. The index of industrial production, available monthly, reached a peak in June 2000 and slowly began to decline. By December, it had fallen 1.4%. The pace of GDP growth slowed noticeably during the second half of the year (from an annualized rate of 5% in the first half to 2% during the second half). Industrial production continued to fall during 2001 and by August it was down an additional 3.5% from December. However, the data then available showed that GDP growth during the first half of 2001 was low, but positive (the annualized rate during the first two quarters shown by these data was, respectively, 1.3% and 0.2%). The unemployment rate was also on the rise - reaching 4.9% by August. Clearly, the economy was softening and the possibility of a recession loomed.

The data for September and October were startling. Industrial production fell 1.1% in September, the largest single decline since it began to fall in July 2000, and another 0.6% in October. The unemployment rate rose to 5.0% in September (a difference from August that was not statistically significantly) and to 5.4% in October. At the end of October, GDP data for the third quarter were published and revealed that the economy contracted at an annual rate of 1.0%. Because of the time period in which the data are collected for the industrial production index and unemployment, the published results for October are relevant for indicating the initial effects of 9/11.⁷ Finally, consumer confidence, measured by either the Conference Board or the University of Michigan index, declined.⁸ The former fell from 114 in August to 84.9 in November while the latter fell from 91.5 in August to 81.8 in September (it rose slightly in October). With these data in hand, a number of observers blamed the terrorist attacks for the sharp fall in industrial production, the rise in unemployment, the decline in consumer confidence, and the contraction in

⁶ Budget of the United States. Analytical Perspectives. Fiscal Year 2003, p.22.

⁷ The industrial production index is published on or about the 15th of each month. Thus, the data published for September were collected prior to the 11th. Similarly, the unemployment data for September are published on the first Friday of the month and are collected from a household and establishment survey conducted in August.

⁸ Consumer confidence is thought by some to be an important determinant of consumption spending by households, and consumption spending is about 2/3rds of GDP. Thus, consumer confidence is thought by these individuals to play an important role in business cycles.

GDP, even though it is unlikely that the GDP contraction could have been due to 9/11, given the few days remaining in the third quarter.

The Picture of the 2001 Economy in 2002. In March and July of 2002, quite a different picture of the economy during this crucial period began to emerge. On March 26, the National Bureau of Economic Research, the think tank that dates the business cycle for the United States, declared that the economy had entered a recession beginning in March 2001, 6 months before the attacks. On July 29, the Commerce Department published the revisions to the GDP accounts for 1999-2001. These results are reproduced in Table 1. They show that GDP had begun to contract in the first quarter of 2001, a contraction that was to continue through the 3rd quarter of the year. Thus, when the terrorist attacks took place, the U.S. economy was in the third quarter of contraction and in a recession. Whatever effects the attacks may have had on the economy, they did not push “a weak economy over the edge into outright recession.”

Table 1: Economic Indicators

	1999	2000	2001:1	2001:2	2001:3	2001:4	2002:1	2002:2
GDP Growth*	4.1%	3.8%	-0.6%	-1.6%	-0.3%	2.7%	5.0%	1.1%
Unemployment Rate	4.2%	4.0%	4.2%	4.5%	4.8%	5.6%	5.6%	5.9%
Unemployment Rate – New York City	6.7%	5.7%	5.7%	5.2%	6.3%	7.1%	7.6%	7.6%

* For 2001:1 through 2002:2, the data are the annualized quarterly rate of change.

Source: Bureau of Economic Analysis; Bureau of Labor Statistics.

Moreover, the “crisis in consumer confidence” as an after effect of 9/11, that supposedly pushed the economy into recession, has recently come under critical scrutiny. Why, it is asked, if consumers were so adversely affected by the attacks, did they respond in such numbers to the special financing incentives offered by the automobile companies in October 2001 that led to record motor vehicle sales for that month and another near record month in November? A crisis in confidence supposedly leads consumers to refrain from purchasing durable goods. In this case, it did not. While it is true, as shown above, that the indexes of consumer confidence fell, did they fall by more than can be explained by the underlying economic variables that confidence depends upon? A recent study suggests that this is not the case.⁹ This implies that the negative effects of 9/11 on the overall economy may have been quite small. Even if they deepened or prolonged the recession, their effects were not long lived, for the data in table 1 show that economic growth resumed in the 4th quarter.¹⁰

⁹ See C. Alan Garner. Consumer Confidence After September 11. *Economic Review*. Federal Reserve Bank of Kansas City. Second quarter 2002. Vol. 87. No. 2. Pp. 5-26.

¹⁰ Even this number was subject to a substantial revision. When it was originally published, it showed a growth rate of 1.7%. The July 29 revisions boosted it to 2.7%, nearly 60% (continued...)

Notwithstanding their tragic effects on human life, the *direct* effects of the attacks were too small to make a significant dent in the nation's overall economic output. The *direct* effects were also too geographically concentrated to cause a national recession single-handedly, although a localized recession is certainly possible for New York until the rebuilding process gathers steam. Local GDP data will not be available for some time, but one can see from the unemployment data shown in Table 1 that unemployment in New York City rose more sharply after the attacks than in the rest of the country.

In its 2001 third quarter GDP release, the Bureau of Economic Analysis (BEA) stressed that most of the direct effects from the attacks were embedded in the data, so that no overall estimate could be made for the attacks' direct effect on GDP. For example, consumption of transportation and recreation services were both negative in the third quarter, but it is difficult to say how much of this decline was due directly to the terrorist attacks and how much of the decline would have occurred anyway due to the recession. The effects on the insurance industry were one area where BEA could single out the effects of the attacks. It adjusted down output in the domestic insurance industry, which is measured as premiums less benefits paid, by \$21.3 billion and output among foreign insurers by \$44 billion. The loss to foreign insurers is counted as a decline in imports, however, which boosts measured GDP. Thus, the net effect of the attacks on insurance output was to boost nominal GDP by \$22.7 billion. When adjusted for inflation, however, the effects on the insurance industry had no impact on real GDP because they were considered price adjustments rather than changes in output. Work interruption and the loss of rental income from destroyed capital are other areas where the attacks directly lowered national income, an equivalent measure to GDP. The largest cost of the attacks, the destruction to capital, is not included in GDP, although it is measured in other economic statistics. While certain aspects of the destruction are not measured in GDP, most aspects of the reconstruction are included, boosting economic output. For example, overtime wages of police and firefighters raised national income by \$0.8 billion in the third quarter.

That the direct effects of the attack are small relative to GDP and short-lived does not mean that the attacks had no impact on the economy. If the attacks were to have a lasting effect on the economy, it would have been due to indirect effects. For example, a sharp drop in consumer confidence or a decision by business to postpone capital investments in the face of uncertainty could deepen the recession. Indeed, the University of Michigan consumer confidence index fell to its lowest level since 1996 in September 2001 and has not yet returned to its August 2001 value. Another potentially harmful indirect effect could be a reluctance by foreigners to invest in the U.S. economy. By contrast, the rebuilding process could have positive indirect economic effects. The indirect effect of the attacks that is likely to be permanent is that a greater portion of our national income will likely be devoted to security measures, both public and private (see the Productivity Section). Any estimates of the indirect effects are purely speculative; there is simply no comparable historical experience.

¹⁰ (...continued)
higher.

At first, analysts feared that the direct effect on certain sectors would spill over into the economy at large. A sudden catastrophic event, such as the terrorist attacks of 9/11, could have set in motion a financial panic. Individuals and businesses may suddenly fear that they will not have access to currency or that the payments system involving checks and other credit instruments, essential to the smooth functioning of a market economy, may not be operable. As a result, they are tempted to go to banks and withdraw large amounts of currency. Bank may not have sufficient cash on hand to honor these requests and, in extreme circumstances, cease operations. In these circumstances, the payments system, involving checks and credit, also ceases to function. Moreover, in the 9/11 episode, part of the crucial infrastructure that facilitates the clearing of checks, ceased to function. This alone could have led to extreme caution in lending. Fears of a financial crisis proved to be unfounded. Trading in U.S. Treasury securities resumed September 13; futures and options markets in Chicago reopened September 14; and stock markets reopened September 17. It will take months to determine the total impact on the insurance industry, however.

The airline, tourism, and insurance industries are the sectors of the economy that have been singled out as potentially suffering the most harm from the terrorist attack in the medium term. Sectoral GDP data for 2001 are not yet available, so it is difficult to determine how seriously these sectors have been affected. There are employment data available, however, and these data show that only the airline industry experienced a decline in employment that was significantly larger than the overall decline in employment. It is important to remember that declines in the output of these sectors would not lead to equivalent declines in overall economic output. For example, in this case lower airline revenues would be partially offset by higher bus and train revenues.

Actions Undertaken

Monetary Policy. To forestall any possibility of a financial panic or a breakdown in banking activity, the Federal Reserve immediately after the attacks issued a simple 17-word statement: “The Federal Reserve System is open and operating. The discount window is available to meet liquidity needs.” This immediately reassured the financial system that ample liquidity would be available on request. To supplement the liquidity sought by banks through the discount window, the Federal Reserve bought a large number of government securities through open market operations. In addition, the backlog of uncleared checks caused “float” or Federal Reserve credit to the financial system to rise. On the three days after the attack, the Federal Reserve, by all three means, injected over \$100 billion per day into the financial system.¹¹ In addition, the Federal Reserve entered into or expanded existing agreements with the European Central Bank, the Bank of Canada, and the Bank of England to swap dollars for foreign currency in order to support foreign financial institutions operating in the United States. By these means an additional \$90 billion

¹¹ See Robert T. Parry. The U.S. Economy after September 11. *FRBSF Economic Letter*. Number 2001-35. December 7, 2001. For a distribution of the sources of the credit across the discount window, open market operations, and float, see Federal Reserve Bank of Chicago, 2001 Annual Report, pp. 14-16.

was added to the financial system.¹² These, and other timely actions, were essential to cushioning the terrorist effects on the economy. On September 17, the day the New York Stock Exchange re-opened, the Federal Reserve lowered the key federal funds rates by 0.5 percentage points. In the next 3 months, it made three additional rate cuts, bringing the federal funds target to 1.75% on December 11, 2001. These moves continued the easing of policy that had already reduced the federal funds rate from 6.5% in January 2001 to 3.5% prior to 9/11 in response to the recession. In evaluating the success of these monetary policy initiatives, it is important to keep in mind that shifts in monetary policy generally affect the economy with a lag of between 6 and 18 months. This implies that the economy may have received a significant boost after the attacks from policy changes made months *before* 9/11, meaning that the rapid recovery after 9/11 was not solely attributable to the economy's self-corrective mechanism.

Fiscal Policy. Fiscal policy operates primarily through the budget deficit: a larger structural budget deficit increases aggregate spending in the economy in the short run. Following September 11, fiscal policy became more expansionary, although much of the increase was either unintended or previously planned. Federal expenditures rose sharply, led by the \$40 billion emergency appropriation (P.L. 107-38) to fund relief efforts, and these expenditures were deficit financed. "Automatic stabilizers" in the budget were allowed to function: for example, the decline in tax revenues associated with the decline in the stock market and personal income was not offset by spending cuts or tax increases. In January 2002 components of the major tax cut of 2001, EGTRRA (P.L.107-16), were phased in as scheduled, which increased the budget deficit by an estimated \$31 billion in 2002; these phase-ins were planned before September 11. Finally, a stimulus bill was enacted on March 9, 2002 (P.L.107-47). It included an extension in unemployment benefits and accelerated depreciation rates for corporate investment. It is projected to result in a revenue loss of \$51 billion in 2002.

Looking to the Future

The response to 9/11 dramatically highlights economists' arguments favoring monetary policy over fiscal policy: the difference in implementation lags. Changes in monetary policy were implemented on the day of and largely completed within the week following the attacks. The fiscal response was significantly slower. While the automatic stabilizers and incidental emergency expenditures occurred fairly quickly, the stimulus bill was not signed into law until March 9, 2002 and turned out to be much smaller than either party had originally intended. By the time the bill went into effect, the recession may have already ended – even though the accelerated depreciation can be claimed for the next 3 years. Although Congress can change budget policies quickly to respond to a recession or other fiscal emergency, the development of a significant legislative response to the problem usually requires a substantial investment of time and effort. Consequently, such emergency legislation sometimes is enacted and implemented after the need for it has become much less pressing or ceased altogether. While Presidents from time to time have requested extraordinary budgetary powers in order to deal more quickly with fiscal

¹² Federal Reserve Bank of Chicago, 2001 Annual Report, p. 16.

emergencies, Congress by and large has resisted such requests. During the 107th Congress, for example, Congress rejected President George W. Bush's request for a "blank check" to fund counter-terrorism and related activities in the aftermath of the 9/11, and instead provided emergency supplemental appropriations for this purpose under customary procedures. September 11 also highlighted the crucial role played by the Federal Reserve. This suggests that the ability of the Federal Reserve to exercise discretion in such circumstances is of vital importance to the economy. Some have suggested that a back-up system be put in place to allow the Federal Reserve to act quickly even if a majority of the seven governors become incapacitated and cannot act in a timely fashion or in ways required by law (such as having a quorum present for the conduct of business).

It is worth noting that decision making on all levels will have to contend with the fact that the available data are unlikely to give an accurate picture of the economy when an attack takes place, even if they are produced without much of a lag. While this is unlikely to be fatal to good decision making, it is, nevertheless, likely to be a handicap.

If events continue on their present course, future economic historians may conclude that the terrorist attacks primarily demonstrated the U.S. economy's resilience. In spite of a dramatic attack at the nation's financial center during an economic recession, the economy quickly rebounded. In part, that is because virtually any attack – no matter how large or dramatic – will be small relative to a \$10 trillion economy. Any effects an attack would have on the overall economy depends on indirect effects.

The course of events following 9/11 suggests that policymakers are already adept at responding to crises on the macroeconomic level. In preparing for future crises, the lesson policymakers may take is that 9/11 is more aptly viewed as a human tragedy than an economic tragedy.

Terrorism and National Productivity¹³

The Setting

One direct result of 9/11 is that the cost of domestic security has risen. That increased cost is in the form of increased outlays on the military, as well as increases in spending for domestic law enforcement, public safety, and private security services. Some industries, such as the airlines, are more affected than others but there will be nationwide effects because domestic security is a public good (i.e., it must by its nature be provided to everyone) and much of the increased cost will be borne by taxpayers.

In light of the current international political environment, it seems likely that many of the factors motivating the demand for increased domestic security will persist for some time. Given that there is going to be a substantial increase in

¹³ Prepared by Brian Cashell, Government and Finance Division.

spending on public safety and security what, if any, are the macroeconomic consequences, and in particular the effects on productivity growth, likely to be?

Assessing the effects of higher costs for domestic security on the overall economy illustrates some of the limitations of existing measures of economic activity. The standard measure of overall economic activity is gross domestic product (GDP). GDP measures the market value of goods and services produced in the United States. It measures only the value of current production.

Although GDP may be the most comprehensive measure of our national standard of living, it necessarily falls short as a measure of national well-being. Many items are left out because they are difficult to measure, or because there is no market in which values are established. One example of that would be our diminished sense of security after 9/11.

There is no simple way of measuring the level of “security” itself. Moreover, an important goal of spending on security is the sense people have that they are safe as they go about their lives. There is not even a unit of measure that allows for an accounting of that sense of security. The only straightforward way to measure “security” is to add up the expenditures for labor and capital that are devoted to the provision of security. The effort to regain whatever sense of security the nation enjoyed prior to the attacks is likely to require a considerable increase in expenditures.

The effect of those expenditures on GDP, and also on measured productivity growth, will depend on where they are spent. It seems likely that both government and the private sector will be spending more for increased security. The effect on most measures of economic performance will also depend on who spends the money.

The value of goods and services that are included in GDP is based on the price paid by the final user. In the case of airline security, the product being consumed is a trip. If the cost of that trip rises because of the need for more spending by the airlines for airport security, that raises the price of the trip without changing any of its characteristics.¹⁴

Because of increased spending on security, the nominal value of the production of air travel will rise. But, other things being equal, the increase is attributable to increased production costs. The real value of the production of air travel would be expected to fall as consumers respond to the rise in price.

There may also be a once-and-for-all drop in productivity in the airline industry. Productivity is a ratio of the value of production to the value of the inputs (labor and capital) required to produce it. Because of the increased demand for security, each trip produced by the airline industry will require more labor and capital and so productivity will fall.

¹⁴ There are also costs that are not reflected in the economic accounts. Because of increased security screening, passengers are standing in line longer before boarding flights, and the value of that time is not counted as an increased cost of flying.

The effect on other industries will be similar. Certainly there will be other instances where the costs of producing a given quantity of goods or services will rise solely because of increased security requirements. That will mean an increase in the labor and capital to produce the same level of output as pre-9/11. In each case, that means a one-time reduction in the level of productivity for those industries.

Firms that are likely to face increased security costs are those that by their nature may be vulnerable to attack. That would include much of the transportation system, as well as transport for those goods that are inherently dangerous, such as fuel and chemicals. Many utilities, such as power stations and water supply, may also be affected by increased security requirements. All goods and services produced by affected firms will experience a one-time price increase, and those firms will also experience a one-time drop in productivity.

To the extent that the increased burden of security is provided by the government, that may not be reflected in most measures of productivity which account for the private sector. Nonetheless, it will have an effect on productivity in that the cost of maintaining security has increased, and resources must be diverted from other uses.

Actions Undertaken

In November 2001, President Bush signed the Aviation and Transportation Security Act (ATSA) into law. ATSA, among other things, created the Transportation Security Agency (TSA). ATSA also provided for federal oversight of airport security and required that security personnel in airports be federal employees, and strengthened the air marshal program.

In order to provide for some of the increased spending, ATSA authorized increased airline passenger fees as well as fees to be imposed on air carriers. For FY2003, the Bush Administration requested \$4.8 billion to fund the TSA.

In the case of air travel, when security services are paid for by the airlines they are an intermediate good; that is, they are an input to the production of air travel rather than output, and are not counted separately in GDP. As explained above, money spent on security is a cost of production and so would be reflected mainly in the price index for air travel, and in overall price indexes to the extent that air travel contributes to total production. The same is true for security expenditures by any firm engaged in the production of other goods and services.

In contrast, when the government pays for security services it is as a final consumer and those expenditures are counted explicitly as part of GDP. Any increase in those expenditures will thus appear as both nominal and real contributions to GDP. That is not to say that the net effect would necessarily lead to a permanent increase in GDP. Any increase in spending on security by the government must either be at the expense of other spending, higher taxes, or increased government borrowing.

Similarly, individuals may increase their demand for personal security services. These expenditures will be reflected in total GDP, but they would be at the expense

of purchases of other goods and services, or be paid for by reducing household saving. Individuals will also bear a part of the cost of increased security in a way that will not be captured by conventional economic statistics. For example, if security screening in airports takes longer than it used to, the additional time it takes for airline passengers to complete their trips reduces the quality of the service and thus raises its real price.

Unless and until conditions change, the increase in the cost of “security” is likely to persist. That increased cost will either be reflected in higher prices for affected goods and services, which would reduce real incomes, or in increased public sector spending. If increases in public sector spending are financed by higher taxes, that reduces disposable income. If they result in cuts in other categories of spending, that would reduce the incomes those outlays supported. If they are financed by borrowing then, other things being equal, interest rates will rise thus dampening those sectors of the economy that are sensitive to interest rate fluctuations.

In the end, the net result is likely to be a small temporary reduction in productivity growth due to the increased labor and capital required to increase security, and as the increase in the cost of those goods and services which require higher security expenditures to produce filter through the economy. The increase in labor and capital required to produce safe air travel is likely to be a once-and-for-all change; thus any significant effect on productivity is likely to be short lived. In the long run, other factors will determine the rate of growth of productivity in the production of air travel. The only enduring effect will be a shift in the share of employment and of expenditures devoted to security. If productivity growth in those firms providing security services is much slower or much faster than productivity growth in the rest of the economy, the increased share of spending on security could alter the long-run trend rate of growth of productivity, but any effect is likely to be very small. Relative to the size of the overall economy, any long-run costs are likely to be fairly small.¹⁵

Oil Supply and Prices¹⁶

The attacks of September 11th might have had serious impacts on oil markets and, consequently, upon the economy; but they did not. Thus, the realities of post-9/11 appear to have provided no reason for government measures to enhance the stability of energy markets.

Effects of the Attacks

Among the immediate effects of the attack on the World Trade Center was the closing of the New York Mercantile Exchange (Nymex) and the possibility that oil

¹⁵ It is also possible that there could be occasional market disruptions because of the continuing threat of additional terrorism.

¹⁶ Prepared by Bernard A. Gelb and Lawrence C. Kumins, Resources, Science, and Industry Division, and Marc Labonte, Government and Finance Division.

market participants – producers, refiners, marketers, and traders – would not have one of their bases for setting prices in their contracts and other transactions. The Nymex is a major oil trading market that serves as a mechanism for the important function of price “discovery” – the determination of current and future prices. Oil industry entities use as reference points publicly visible and instantly available prices established in markets such as Nymex, where market and political developments are reflected almost instantaneously in prices, embodying the collective judgement of the market participants. However, other commodity and futures markets filled in for Nymex; and, to some extent, the price discovery function shifted to the spot market. It does not appear that the oil industry was materially affected by the closing of the Nymex, which, in any event, resumed all operations in about one week.

While the immediate effect of the attacks on petroleum markets was to drive prices up, market forces – reflecting little change in supply and demand – acted quickly, and crude oil prices eased within little more than a week. Average crude oil prices paid by U.S. refiners actually declined for the month of September 2001 – falling to \$23.73 per barrel from \$24.44 in the previous month. The remainder of 2001 saw a continuation of price drops due to weakening demand caused by lower jet fuel consumption, and a warm winter in North America and Europe. Crude oil prices bottomed in December at a level one-third below those existing before the attacks. Events in 2002 – action by the Organization of Petroleum Exporting Countries and Iraq’s supply policy prominent among them – have resulted in crude prices re-attaining 2000 highs near \$30 per barrel. Politically sensitive gasoline pump prices followed a somewhat similar path. September 2001 retail prices for unleaded regular averaged seven cents per gallon above August’s \$1.43. But pump prices dropped sharply by year-end, reaching \$1.13 per gallon before rising in spring 2002. They remained stable in the \$1.40 per gallon range between then and September 2002.

For the economy as a whole, shocks to oil prices can have serious negative effects on the growth of GDP and on inflation, as experienced in 1973-74 and 1989-90. But, as noted above, the price spike following 9/11 was brief, and it was too short-lived to feed through to the overall economy. By October 2001, the economy was having more effect on the price of oil – in terms of weakening oil demand reducing oil prices – than the price of oil was having on the economy. For the independent effect of the attacks themselves on the economy, see the section titled “Economy-Wide Implications.”

Lessons Learned

In a nutshell, the 9/11 events appear to have had only a transitory impact on petroleum markets. Once fears of supply disruption faded, what oil price increases took place dissipated very shortly, and significant declines followed during the remainder of 2001.

Economic developments following 9/11 demonstrated that crises that do not adversely affect the fundamentals of supply or demand in energy markets have no lasting effect on those markets. And, inasmuch as there was neither disruption of oil

market fundamentals nor serious general economic effects, there was little scope for new government policy to enhance the stability of energy markets.¹⁷

World Economies¹⁸

The Setting

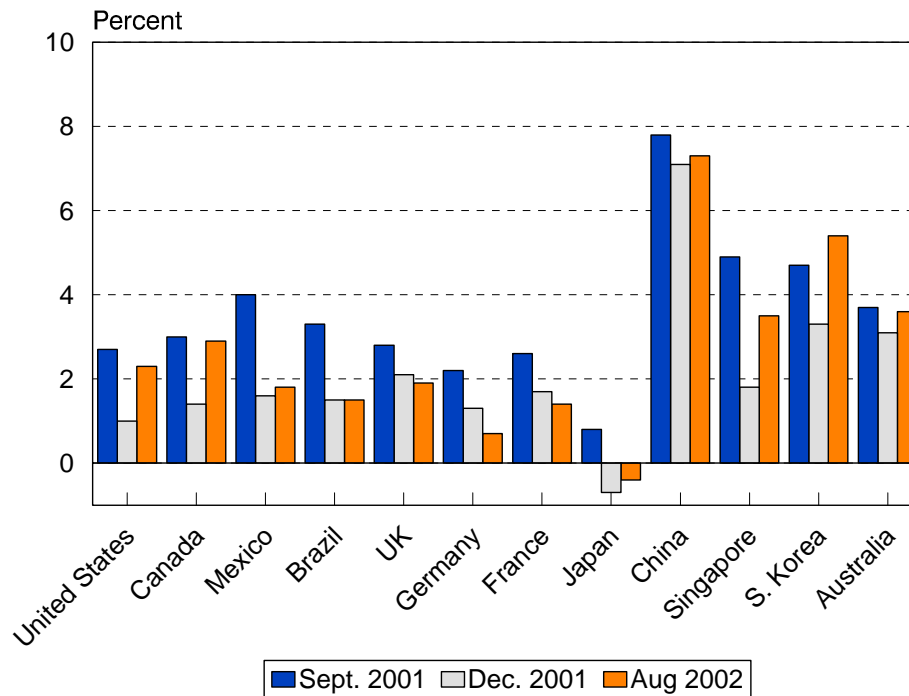
Following the terrorist attacks on 9/11, an already weak international economy was weakened further. The attacks occurred as the world economy was experiencing its first synchronized global recession in a quarter-century. Global growth was 1.4% for 2001 – down considerably from 4% in 2000. (For the world, an annual growth rate of less than 2% is considered to be a recession.) As a result of stimulative monetary and fiscal policies, particularly in the United States and China, the recession turned toward a weak economic recovery. According to DRI-WEFA, an econometric forecasting firm, the recovery is expected to generate global growth of about 1.9% in 2002 – still technically a world recession and lower than the growth rate of 2.3% in 1998 during the worst of the Asian financial crisis.

The weakened international economy has been a policy concern for Congress because of the possible negative effects on U.S. economic growth, increased financial instability in certain Latin American and Asian countries, effects on international trade and capital flows, and, in some countries, effects on political stability. The policy issues for Congress centered on what actions should be taken to revitalize world economic growth – particularly in the nations cooperating in the anti-terrorism effort, what the United States and the International Monetary Fund should do for countries facing financial crises (such as Argentina, Brazil, Uruguay, and Turkey in which financial turmoil would cause significant economic damage and political unrest domestically and harm to U.S. financial institutions and investors), and how to expedite imports and exports slowed by increased security procedures.

¹⁷ Discussions of the issue of safeguarding energy production and other plant sites from physical attacks can be found among the entries in CRS's Electronic Briefing Book on terrorism on CRS's web site.

¹⁸ Prepared by Dick K. Nanto, Foreign Affairs, Defense, and Trade Division.

Figure 1. 9/11 and the Forecasts for Economic Growth in Selected Countries



Source: Blue Chip Economic Indicators, various issues.

In the aftermath of 9/11, economic forecasts of growth in major countries of the world turned considerably more pessimistic, particularly for the fourth quarter 2001. As the year 2002 has progressed, however, forecasts of economic growth for 2002 have risen considerably. As shown in Figure 1, between September and December 2001, the consensus forecasts for economic growth for 2002 in 12 representative countries dropped dramatically (for the United States, from 2.7% to 1.0%).¹⁹ By August 2002, however, based on actual performance during the first half of the year and as the immediate effects of 9/11 were overtaken by other economic events, the forecasted growth rates have risen, although, except for South Korea, the expected growth rates still are below those made before 9/11.

Prior to 9/11, the slowdown in the U.S. economy already was being transmitted to other economies through trade and investment channels, particularly through a sharp decline in U.S. imports of high-technology components from Asian suppliers. The aftershocks of the terrorist attacks were felt immediately in foreign equity markets, in tourism and travel, in consumer attitudes, and in temporary capital flight from the United States. Central banking authorities worldwide reacted by injecting liquidity into their financial systems. Still, the downturn in business conditions became more generalized, and the world has had to rely on China and the United States – the only two major economies to register significant growth – to pull itself out of the recession. By and large, however, the sharp immediate drop in stock values, airline travel, and general consumer confidence was temporary. After a few

¹⁹ *Blue Chip Economic Indicators*, September 10 and December 10, 2001, August 10, 2002.

months, most began to turn upward again, but what recovery has occurred has been fragile and difficult to sustain.

The recession, along with increased government spending for the antiterror campaign, contributed to rising federal debt in the United States and other nations. Combined with a weakening dollar that pushed up the exchange value of the yen, Euro, Chinese renminbi, and other currencies, central governments intervened to bolster the value of the dollar by purchasing more U.S. debt instruments. A side effect of this activity is that, despite Japan's weak economy, its holdings of U.S. Treasury securities continue to rise (\$321.0 billion by May 2002). China also has become a major foreign holder (\$80.9 billion) of U.S. debt.

September 11 also marked the end of an era. In the United States, it wiped out the lingering euphoria from the roaring 1990s with its dot-com bubble, surging stock market, and unbridled optimism and replaced it with a cloud of uncertainty, a heightened sense of fragility, and lowered expectations of growth. This was followed in 2002 by major accounting scandals to push several high-flying U.S. companies into bankruptcy. This had a major effect on equity markets in other major industrial nations, since equity markets tend to be highly integrated and overall movements in stock prices tend to mimic each other. Since 9/11, in particular, stock market values in the United Kingdom, Germany, France, Canada, and Japan have tended to move in tandem with those in the United States (as measured by the S&P 500). On each of these markets, equity values, after initially recovering from the 9/11 shock, have subsequently fallen, and on September 11, 2002, they generally were below the lowest values reached in the immediate aftermath of 9/11.²⁰

While most of the immediate economic repercussions from 9/11 proved to be temporary, certain medium- and long-term effects are still being played out. Perhaps the most obvious medium-term effect is that citizens and institutions worldwide now are clamoring for more security, but that security comes at a price. Insurance costs, in particular, have risen – in part because of 9/11 but also because of subsequent events. Terrorism coverage has been under review worldwide. It is scarce, and where available expensive. Germany, the United Kingdom, and other countries have been considering government measures, such as establishing the government as a reinsurer of last resort.²¹ Even in countries, such as Italy, whose insurance companies did not have large exposure to 9/11 (\$20 million for Italian insurers), insurance rates, particularly for larger companies, have risen considerably.

In what might prove to have significant medium- and long-term effects, increased border security slowed shipments not only of final goods but of inputs in the supply chain of manufacturers. Some automobile assembly plants along the U.S.-Canadian border, for example, had to stop temporarily or slow operations because

²⁰ For charts showing movements of the S&P 500 relative to the FTSE 100 Index for the United Kingdom, the XETDRA Index for Germany, the CAC 40 Index for France, The S&P/TSX Composite Index for Canada, and the Nikkei 225 Index for Japan, see: [<http://cbs.marketwatch.com/tools/stockresearch/globalmarkets/intIndices.asp?siteid=mktw>].

²¹ Insurance Soars Up to 100 Per Cent in Wake of Terrorist Attacks. *Evening News*(Edinburgh, Scotland), February 2, 2002. P. 3.

cross-border shipments necessary for just-in-time inventory systems were delayed at the border. During the 1980s, borderless economies were being touted. That strategy is being challenged as heightened security measures, both on truck and maritime container shipments, have produced longer delays. Easing these bottlenecks while maintaining security is requiring large capital outlays for new equipment and more paperwork. The net effect of these additional costs of international trade could be that businesses will rely less on overseas production and have to adjust their just-in-time production methods. They may have to return to maintaining larger supply inventories which could raise costs.

For example, intensified U.S. security measures implemented in the aftermath of the terrorist attacks were partly responsible for the 2.4% decline in Canada's exports to the United States in 2001 after a robust gain of 16.3% in 2000.²² Although since the immediate post-September 11 days, the waiting times have decreased for some 6,000 freight trucks per day that cross at the Ambassador Bridge from Windsor, Ontario to Detroit, the trade-offs still are evident between security concerns and the needs of manufacturers (in particular, the 41 General Motors, Ford, and Chrysler assembly plants located within a one-day drive of the bridge).²³ According to the Organization for Economic Cooperation and Development, the increased costs of international shipping are roughly equivalent to the reduction in tariffs on industrial goods of 2.5 percentage points agreed to under the Uruguay Round of Multilateral Trade Negotiations.²⁴

The movement toward liberalization of world trade, however, seemed resistant to the terrorist attacks. In the World Trade Organization's Fourth Ministerial Conference in Doha, Qatar, on November 9-14, 2001, participants launched a new round of global trade liberalization talks.

The change in U.S. political, security, and diplomatic relations necessitated by the war on terrorism and Afghan campaign also had economic repercussions. U.S. aid policy took an abrupt turn in favor of providing assistance to Afghanistan and front line states, such as Pakistan and the Central Asian republics. With antiterrorism the overriding aim of U.S. foreign policy, concerns over nuclear tests by Pakistan and India suddenly became less prominent, and most sanctions were lifted to clear the way for economic and/or military assistance to the two nations.

Actions Undertaken

In the immediate aftermath of the attacks, the central banks of the United States and other nations injected a large amount of liquidity into the world financial system to avoid payment failures and cascading defaults. This liquidity later was withdrawn

²² Canada. Department of Foreign Affairs and International Trade. Trade Update. May 2002. Third Annual Report on Canada's State of Trade. Available at: [www.dfait-maeci.gc.ca/eet/state-of-trade-e.asp].

²³ Shannon, Elaine. Manning the Bridge. *Time*, September 9, 2002. Pp. 100-104.

²⁴ Organization for Economic Cooperation and Development. *OECD Economic Outlook No 71*, June 2002. P. 131.

as the system returned to normal. Other countries also provided some fiscal stimulus to their economies, but most had less leeway to do so than did the United States.

Increased security at borders has impeded international trade flows, but governments are working to ease the bottlenecks. Canada allocated \$1.2 billion to enhance border security and improve the infrastructure that supports major border crossings. On September 9, 2002, President Bush and Canadian Prime Minister Jean Chrétien recognized the Free and Secure Trade Program designed to speed pre-screened trucks across the U.S.-Canadian border and facilitate the \$1.3 billion in trade each day. The program offers increased integrity in supply chain management by providing expedited clearance processes to those carriers and importers who have enrolled in the U.S. Customs-Trade Partnership Against Terrorism or Canada's Partners in Protection. In December 2002, the crossings in Detroit and five other locations are to have dedicated lanes for trucks whose information is to be instantly verified by computer.

Partly as a result of the poor world economic conditions following 9/11 combined with the need for international cooperation in the war on terrorism, the Bush Administration has taken a somewhat more conciliatory approach toward emergency lending by international financial institutions. After early skepticism of so-called "bailout packages" for countries in financial distress, the U.S. Treasury supported a stand-by credit totaling \$2.8 billion from the International Monetary Fund for Uruguay in March, June, and August 2002 and a new \$30 billion stand-by credit package for Brazil in August 2002. While the Bush Administration still favors more crisis prevention, shifting more of the "burden of bailouts" to private sector lenders, and limits on official finance, the U.S. Treasury has stated that the United States will support countries that follow the right economic policies (i.e. currently Brazil and Uruguay but no further assistance to Argentina until the Argentine authorities develop a sustainable economic program).²⁵

With respect to aid to Afghanistan and Pakistan, in a January 2002 conference on Afghan reconstruction, the United States pledged \$297 million in aid, a figure that in FY2002 was being exceeded as the United States provided food, medicine, and other emergency support to that country. Given Pakistan's position as a front line state in the Afghan campaign, the United States lifted economic sanctions on Pakistan and cleared the way for a \$1 billion financial package that included \$600 million in direct aid, a proposal for \$73 million for border security, debt relief, and increased market access for \$142 million in Pakistani apparel exports to the United States. In the spring of 2002, as the threat of nuclear war between Pakistan and India arose along the Line of Control dividing Kashmir, it became apparent that the United States continued to have a strong interest in the stability of the region and the prevention of another conflict in Kashmir that could affect U.S. troops and divert attention away from the antiterror campaign. Diplomatic efforts by the United States and other nations temporarily eased tensions, but the threat of war raised security issues that likely will continue to affect U.S. foreign economic policy – particularly

²⁵ Dam, Kenneth W. The Role of the United States in the Global Economy, Remarks by Kenneth W. Dam, Deputy Secretary of the Treasury at the Center for Strategic and International Studies, Washington, D.C., September 11, 2002.

sanctions policy. The United States also sent U.S. troops to the Philippines and promised to send military equipment there to help the Philippines in its conflict with the Abu Sayyaf radical Muslim insurgents.

Looking to the Future

In the aftermath of 9/11, it appears that the international economy has currently become a one-locomotive world. Only United States – with some help from China – has had the size and strength to provide the economic stimulus to world economies necessary to help pull them out of the global recession. Japan and Western Europe remained coupled to the U.S. business cycle and have remained dependent on exports for economic recovery rather than relying upon domestic fiscal and monetary policies. The limited recovery in their domestic sectors has been too weak and unsteady to counter the global downturn. For U.S. policymakers, therefore, actions to restore health to the American economy also may determine global economic conditions. In this sense, foreign and domestic economic interests coincide.

U.S. policy options include the usual array of stimulative monetary and fiscal policies. The United States may coordinate monetary and fiscal policies with other nations or use its influence to induce foreign economic policymakers to pursue politically unpopular, but necessary, economic policies or reforms. Foreign economic policymakers also share U.S. interests in strong domestic economies. At times, however, national political, economic, or other considerations arise that hamper the ability of a country to pursue needed economic reforms or policies. This has been the case with Japan, where vested interests have thwarted plans to rid the banks of a large accumulation of nonperforming loans, or with European monetary authorities, who seem overly reluctant to lower interest rates at times because of their fear of rekindling inflationary pressures. While other countries may respond positively to U.S. pressures, such activity also can generate resentment among allies for what can be seen as American interference in domestic affairs.

The effect of terrorism could be significant in raising the costs of international trade because of heightened security measures. While businesses are adjusting, easing these bottlenecks while maintaining security is requiring large capital outlays and more paperwork. Although certain domestic industries would applaud what amounts to increased costs for imports, American exporters also face heightened costs to ship their products to foreign markets. As tariffs and other barriers to trade are being reduced or eliminated through multilateral trade negotiations and free-trade agreements, the possibility exists that non-tariff barriers imposed to assure security, whether warranted or not, may take their place.

The weights given to competing interests of the United States also have shifted because of the antiterror campaign. This has altered the calculus for the use of sanctions to achieve, nonproliferation, human rights, or pro-democracy goals.

International Capital Flows and the Dollar²⁶

The Setting

The terrorist attacks on New York and Washington raised concerns that foreigners would curtail their purchases of U.S. financial assets, thereby weakening the value of the dollar. Responding to these concerns, the Federal Reserve moved aggressively on its own and in tandem with other central banks to supply liquidity and take other actions in order to avert a potential crisis in financial markets. These efforts were largely successful: by year-end U.S. equity markets slowly recovered their pre-attack values, and the exchange rate value of the dollar returned to its pre-attack rate after fluctuating within a fairly narrow range. Although data also indicate that capital outflows were higher than normal for the month of September 2001, panic selling of U.S. assets did not occur.

Background

The 9/11 attacks on New York and Washington struck at the heart of the U.S. financial center, disabling some stock and equity markets for a short time. These attacks raised concerns about the ability of the markets to absorb the shock and about the prospects that foreign investors might curtail their purchases of U.S. financial assets and reduce the inflow of capital into the U.S. economy, thereby weakening the value of the dollar. Although a decline in the value of the dollar would have benefitted export-sensitive and import-competing U.S. industries, it likely also would have pushed up interest rates and had a negative impact on such interest-sensitive industries as autos and housing.

International flows of capital have grown dramatically over the last decade. These flows exercise a primary influence on exchange rates and global flows of goods and services. They also allow the United States to finance its trade deficit because foreigners are willing to lend to the United States in the form of exchanging the sale of goods, represented by U.S. imports, for such U.S. assets as stocks, bonds, and U.S. Treasury securities.

The dollar is heavily traded in financial markets around the globe, at times playing the role of a global currency. Disruptions in this role have important implications for the United States and for the smooth functioning of the international financial system. This prominent role means that the exchange value of the dollar often acts as a mechanism for transmitting economic and political news and events across national borders. While such a role helps facilitate a broad range of international economic and financial activities, it also means that the dollar's exchange value can vary greatly on a daily or weekly basis as it is buffeted by international events. Recent data indicate that the *daily* trading of foreign currencies totals more than \$1.2 trillion, or more than the annual amount of U.S. exports of

²⁶ Prepared by James K. Jackson, Foreign Affairs, Defense, and Trade Division.

goods and services. The data also indicate that 90% of the global foreign exchange turnover is in U.S. dollars.²⁷

In the U.S. foreign exchange market, the value of the dollar is followed closely by multinational firms, international banks, and investors who are attempting to offset some of the inherent risks involved with foreign exchange trading. On a daily basis, turnover in the U.S. foreign exchange market²⁸ averages \$254 billion; similar transactions in the U.S. foreign exchange derivative markets²⁹ averages \$135 billion.³⁰ Foreigners also buy and sell U.S. corporate bonds and stocks and U.S. Treasury securities.

A comprehensive set of data on capital flows, represented by purchases and sales of U.S. government securities and U.S. and foreign corporate stocks and bonds, into and out of the United States is collected by the Treasury Department on a monthly basis. These data indicate that during September 2001, capital flows out of U.S. capital markets were slightly higher than normal. These capital flows were in the form of a statistically significant³¹ decline in foreigners' net purchases of U.S. government and corporate bonds and an increase in Americans' net purchases of foreign stocks and bonds. While 9/11 likely was a factor in the shift of some of these capital flows,³² it is impossible from the data alone to separate out the effects of the attacks from other events that might have caused investors to pare back their accumulation of some dollar-denominated securities. In addition, foreign capital flows around the world generally fell in terms of volume in 2001.³³ The attacks of September 11 added to existing concerns about the course of the economy over the next year. Following the attacks:

- Currency traders quickly forged a voluntary “gentleman’s agreement” not to profit from the event, which helped stabilize the value of the dollar, measured against a broad range of currencies.

²⁷ *Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2001; Preliminary Global Data*. Bank for International Settlement, October 2001. p. 2-4. A copy of the report is available at: [<http://www.bis.org/press/p011009.pdf>]

²⁸ Defined as foreign exchange transactions in the spot and forward exchange markets and foreign exchange swaps.

²⁹ Defined as transactions in foreign reserve accounts, interest rate swaps, cross currency interest rate swaps, and foreign exchange and interest rate options.

³⁰ *The Foreign Exchange and Interest Rate Derivatives Markets Survey: Turnover in the United States*. The Federal Reserve Bank of New York, April, 2001. p. 1. A copy of the report is available at: [http://www.newyorkfed.org/pihome/triennial/fx_survey.pdf]

³¹ These results were derived at the 95% confidence level for monthly data from January 2000 through September 2001.

³² Phillips, Michael M., Michael R. Sesit, and Silvia Ascarelli, Foreign Investors, Jittery Over Holdings, Begin Pulling Some Funds From the U.S. *The Wall Street Journal*, September 26, 2001. p. B 14.

³³ *Global Financial Stability Report: Market Developments and Issues*, September 2002. International Monetary Fund, Washington, DC, 2002, pp. 20-27.

By September 14, however, the agreement had faltered as currency speculators began driving down the value of the dollar.³⁴

- The Federal Reserve, concerned about the prospects of a panic in international financial markets, coordinated actions among central bankers and financial ministers around the globe to ensure the smooth operation of the international financial markets. These actions included an infusion of liquidity by the Federal Reserve and the European Central Bank and coordinated intervention in the foreign exchange markets on at least two occasions by the Federal Reserve, the European Central Bank, and the Bank of Japan to support the value of the dollar.³⁵ Federal Reserve officials also signaled to U.S. banks that they would suspend temporarily some U.S. bank regulations in order to provide U.S. credit markets with needed liquidity, adding to other efforts to stem market uncertainty concerning liquidity and settlement problems associated with the Bank of New York.³⁶ Two weeks after the attacks, the dollar had declined 3% against the euro and 3.6% against the yen as foreigners' demands both for dollars and for some U.S. financial assets waned.
- The Bank of Japan intervened in foreign currency markets on five instances between September 11 and September 27 by buying dollars to stop the rise in the value of the yen. These efforts were undermined partially by Japanese firms that were repatriating some U.S. holdings to shore up their cash balances to meet financial reporting deadlines on September 30.³⁷
- The Federal Reserve lowered key interest rates by one half a percentage point on September 17 and on October 2: the one-point drop in rates left the federal funds rate at 2.5 % and the bank discount rate at 2.0%, the lowest those rates had been since 1962. The drop in rates on September 17 was followed by other central

³⁴ Downey, Jennifer, and Grainne McCarthy, Dollar Movement Is Limited on Decision by Traders Not to Overact to Attacks. *The Wall Street Journal*, September 13, 2001. p. C 2.

³⁵ Ip, Gregg, G. Thomas Sims, and Paul Beckett, Fed Pumps Cash to Bank System to Help Meet Spiking Demand. *The Wall Street Journal*, September 13, 2001. p. C-1.; Ip, Gregg, and Paul Beckett, Fed Acts to Bolster Banks at Home and in Europe. *The Wall Street Journal*, September 14, 2001. p. A 2.; Hardy, John, Dollar Rises on More Central Bank Intervention. *The Wall Street Journal*, September 28, 2001. p. C 13; Ip, Greg, and Jim VandeHei, Economic Front: How Policy Makers Regrouped to Defend the Financial System. *The Wall Street Journal*, September 18, 2001. p. A 1; Cool Heads at the Central Banks. *Financial Times*, October 1, 2001. p. 2.

³⁶ Raghavan, Anita, Susan Pulliam, and Jeff Opdcke, Team Effort: Banks and Regulators Drew Together to Calm Markets After Attack. *The Wall Street Journal*, October 18, 2001. p. A 1.

³⁷ Zaun, Todd, Japan Steps in Again to Damp Yen, Ease Lot of its Exporters. *The Wall Street Journal*, September 26, 2001. p. A 10; Hardy, John, Dollar Rises on More Central Bank Intervention. *The Wall Street Journal*, September 28, 2001. p. C 13.

banks, including the European Central Bank, the Bank of Canada, and the Swedish central bank.³⁸ The Swiss central bank lowered its interest rates to stop the Swiss franc, which had been targeted by some investors fleeing from dollars, from appreciating further. The following day, the Bank of England cut interest rates by one-quarter of a percentage point. At the European Central Bank's bi-monthly meeting on September 27, the Bank decided to keep its interest rates unchanged at 3.75%. A similar action by the Bank on October 25 sparked a large sell-off of corporate stocks in Europe and strengthened foreign demand for dollar-denominated assets.³⁹

Panic selling of dollar-denominated assets did not occur, as some had feared, following 9/11 attacks. In many respects currency and financial markets remained more steady than many had expected and regained their pre-attack levels within weeks. By mid-October, investors had discounted the effects of the attacks and had turned firmly toward the dollar, which recovered its pre-9/11 rates against the yen and the euro.⁴⁰ While some foreigners reduced their dollar asset holdings immediately following the attacks due to concerns about the safety and profitability of such investments,⁴¹ other investors showed continued interest in dollar-denominated assets. Issues of high quality, investment grade corporate bonds and auctions for Treasury securities after 9/11 went smoothly with strong sales pushing up prices of benchmark 10-year Treasury securities.⁴² Initially, this demand stemmed from expectations that the Federal Reserve would lower key benchmark interest rates by another one-half percentage point on October 2. The price of a bond is inversely related to the interest rate, so lowering interest rates raises the price, making the bond more valuable. On October 4, the Treasury Department took the unprecedented move of holding an unscheduled auction of 10-year Treasury bonds to avert a breakdown in one part of the financial markets that had been disrupted by the terrorist attacks from spilling over to other markets.⁴³

The lack of action by the European Central Bank in lowering key interest rates and poor economic performance of other economies further strengthened foreign demand for dollar-denominated assets. In addition, the events of 9/11 demonstrated that in times of crisis, investors still seem to prefer the U.S. dollar-denominated bond market to its euro counterpart. During the three weeks following the attacks, not a

³⁸ Sesit, Michael, and Michael Williams, Europe, Canada Reduce Rates After Fed's Cut; Japan Sells Yen. *The Wall Street Journal*, September 18, 2001. p. A 14.

³⁹ Karmin, Craig, Frustrated Investors Trigger Massive Stock Sale As Europe's Central Bank Leaves Rates Unchanged. *The Wall Street Journal*, October 26, 2001. p. C 11.

⁴⁰ McCarthy, Grainne, Dollar Climbs Against Euro and the Yen. *The Wall Street Journal*, October 12, 2001. p. C 13.

⁴¹ McGee, Suzanne, and Kara Scannell, Trying Hard, A Few Companies Raise Cash. *The Wall Street Journal*, September 28, 2001. p. C 1;

⁴² Parry, John, New Signs of Economic Weakness and Abatement of Price Pressures Set Stage for Treasury Rally. *The Wall Street Journal*, September 28, 2001. p. C 15.

⁴³ Ip, Greg, Treasury Sale Averts a Crisis in 'Repo' Market. *The Wall Street Journal*, October 5, 2001. p. C 1.

single corporation sold a bond in euros, while issues of corporate bonds in the U.S. market fell only a third below its average. A report by the European Commission states that the shift toward dollar-denominated assets in times of crisis reflects “the relative strength and resilience of the U.S. dollar as a financing currency in volatile market conditions.”⁴⁴

Options and Implications for U.S. Policy

The September 11 attacks dealt a major challenge to the U.S. economy and to policymakers around the world. Financial and foreign exchange market activities were slightly out of the norm the first few weeks following the attacks, but actions by the Federal Reserve and by other central banks helped head off a financial panic and a loss of confidence by ensuring that the financial system was supplied with liquidity through coordinated actions. Central bank coordination in times of crises is not uncommon, but the speed with which the coordination was reached and the aggressiveness of the banks to stem any loss of confidence in the financial system are unusual. The high level of coordination among central banks likely demonstrates the lessons they learned and the techniques they developed by addressing other financial crises over the last two decades. It likely also demonstrates the recognition that national economies have become highly interconnected and that a shock to one creates spillover effects onto other economies and markets.

The highly developed and broad-based nature of the U.S. financial system proved that it could weather one of the worst blows in decades. Not even the aggressive actions by the Federal Reserve, however, could anticipate or forestall all of the potential repercussions. The Federal Reserve, for instance, performs a number of functions that, although not readily apparent to most market participants, are essential to the smooth operating of the system by providing for the timely settlement of market transactions and for sufficient financial resources, or liquidity. Disruptions to this process can create additional, and potentially serious, problems in other financial markets that are not apparent at first glance. The crisis also demonstrates that the financial markets are highly efficient at processing information, a phenomenon which aids in spreading both good and bad news quickly. As a result, the markets absorbed the impact of 9/11 quickly and likely moved on in a short time to assess the economic effects of other economic events and other economic news. This means that the overall course of the U.S. economy, rather than 9/11 likely determined the flows of capital into and out of the United States through the remainder of 2001.

The fiscal stimulus provided to the economy by additional federal government spending, combined with the measures taken by the Federal Reserve to lower interest rates, are the most important U.S. policy factors affecting the flows of capital into and out of the United States. The Federal Reserve moved aggressively following the terrorist attacks to reassure investors and to demonstrate the strength of the U.S. economic system. Congressional actions to reinforce that approach appear to have had a similar reassuring impact on foreign investors, currency traders, and the

⁴⁴ Sims, G. Thomas, In Crisis, Bond Investors, Issuers Seem to Prefer to Deal in Dollars. *The Wall Street Journal*, October 23, 2001. p. C 16.

domestic economy. Such actions included the \$40 billion Emergency Supplemental Appropriations for reconstruction and defense (P.L. 107-38, September 18, 2001), and \$15 billion to aid the airline industry.

Financial Markets⁴⁵

The Setting

The destruction of the World Trade Center forced a suspension of financial activity in lower Manhattan, the world's leading financial center. Despite the terrible human losses, and the considerable damage to physical and electronic infrastructures, all the major financial markets were back in operation by September 17. Some—notably the government bond market and the futures markets—continued to face capacity constraints, but by September 24, normal hours and trading volumes had resumed.

Financial Infrastructure. The electronic infrastructure that supports the financial markets—computer systems that execute, process, and record billions of transactions daily and telecommunications networks that link investors, markets, and financial institutions—suffered severe damage, but a massive repair effort—organized and carried out by private telecommunications and financial firms with little government assistance—ensured that the markets and banking system were not paralyzed. Most affected financial firms had backup data recording systems (partly as a result of Y2K initiatives). Many firms had to improvise to provide office space and electronic connections for their workers, and were generally successful in doing so. In the aftermath, private firms worked to improve their emergency preparedness, but changes tended to be incremental—for example, there was no mass movement of financial firms and institutions away from lower Manhattan.

Securities Markets. The attack halted all trading in stocks and bonds. Trading in U.S. Treasury bonds—which are important benchmarks for interest rates—resumed on September 13, with an abbreviated trading session ending at 2 p.m. Over the next week, volume in the Treasury market was well below normal levels: several major government bond dealers were in the World Trade Center, including Cantor Fitzgerald, the market leader. To help alleviate capacity problems, the Securities and Exchange Commission (SEC) on September 19 amended its rules to allow bond traders five business days to process trades, rather than the usual two. On September 20, normal trading hours resumed.

The stock exchanges reopened on September 17, after the longest suspension of trading since the Great Depression. Amid fears of a market crash, the Federal Reserve lowered the federal funds rate from 3.5% to 3.0% on the morning of the reopening. The SEC suspended rules that restrict when firms can buy back their own shares. Despite these regulatory actions to support the market, major U.S. stock indices plunged on that day. The Dow Jones Industrial Average fell a record 685

⁴⁵ Prepared by Mark Jickling, Government and Finance Division.

points, or 7%, while the NASDAQ and S&P 500 indexes recorded similar percentage drops. (Measured in percentage terms, however, the Dow's fall was far short of the record for the worst day, which was the 23% drop on October 19, 1987.)

Stock prices continued to fall during the rest of September, but returned nearly to pre-attack levels by mid-October. Short-term volatility is not the same as panic; SEC Chairman Harvey Pitt observed that investors appeared to be trading on fundamentals—the prospects for the real economy—rather than on emotion.

Commercial Banking. The commercial banking system suffered some disruptions, but there was no nationwide interruption of the flow of credit. In the immediate aftermath, the processing of checks, credit cards, and other payments slowed to almost a halt upon the shutdown of air traffic, which carries much of the paperwork for these currency substitutes. Delays in the payments system caused very large balance sheet imbalances at several major banks, but quick regulatory action preserved confidence in the banking system. The Federal Reserve declared that it would provide liquidity for banks, while the Federal Deposit Insurance Corporation reaffirmed that it would insure the safety of their deposits. These agencies, with the Office of the Comptroller of the Currency and the Office of Thrift Supervision, asked banks to work with customers affected by the terrorism, not only in the affected locations, but nationwide in light of electronic and physical (mail) disruptions to flows of payments and receipts.

Banks borrowed extensively from the Federal Reserve's lending facility (the discount window) to carry uncleared payments. Although prominent banks are in the affected areas, nearly all these banks keep assets and liabilities in other locations and have back-up record keeping. Some foreign banks found their U.S. activities suspended, but do not appear to have suffered large losses. Normal operations resumed for much of commercial banking within a week of the attack.

Conclusion. The Asian financial crisis of 1997-98 alerted regulators to the global danger posed by sudden drops in the value of financial assets in particular countries or regions, and the possibility that local disruptions could trigger a worldwide financial meltdown. Y2K preparations addressed the possibility of a massive failure of the financial system's electronic infrastructure. With the World Trade Center attack, both these threats emerged simultaneously, but the resulting disruptions were less severe and prolonged than most observers would have predicted under such unimaginable conditions. The response to the attack demonstrated that the financial sector's ability to recover from catastrophe is robust, while government agencies – notably the Federal Reserve – used their existing tools effectively to prevent panic in the markets. In the financial sphere, the private and public responses to 9/11 do not suggest that either new regulatory powers or greater government involvement in emergency planning are needed.

Sectoral, Industry, and Geographical Effects

The Airline Industry⁴⁶

The Setting. The airline industry continues to struggle in the wake of 9/11. Although passengers are returning, the industry is still operating at well below its historical levels. This is obviously affecting the industry's profitability. US Airways has filed for Chapter 11 bankruptcy and United is suggesting that it may file this fall. Among major airlines, only Southwest was profitable in 2001, and Southwest was the only major carrier still showing a profit halfway through 2002. Industry losses were at record levels in 2001 and these losses are continuing into 2002. There is, therefore, considerable concern that the airline industry as we have known it over the last few years is likely to go through a period of major structural change.

In September 2001, Congress and the Bush Administration moved swiftly to provide the airline industry with federal financial support. The Air Transportation Safety and System Stabilization Act (Stabilization Act)(P.L. 107-42) signed into law on September 22, 2001, gave the airlines access to up to \$15 billion in short-term assistance. The first \$5 billion provided direct aid to pay for industry losses associated with the results of the World Trade Center and Pentagon attacks. Access to the remaining \$10 billion in the form of guaranteed loans is subject to stringent requirements promulgated by the Office of Management and Budget. Thus far, of this \$10 billion, \$545 million in loans has been approved and another \$900 million has received tentative approval.

Current Situation. A year after the attack, significant numbers of airline employees remain laid-off or may yet be subject to layoffs. A few airlines have started to recall employees and increase flights, but only minimally so far. As many as 1,000 aircraft operated prior to 9/11 remain parked in the Arizona desert and are in storage for at least the near future. The actions of the airlines are obviously affecting related industries. Boeing and its subcontractors have laid-off significant numbers of employees and production of new aircraft has been reduced. Airline service providers, such as caterers and airports, as well as the travel industry, also are experiencing revenue losses.

According to the Air Transport Association (ATA), the airlines lost approximately \$1.4 billion in revenue during the four-day shutdown of the national aviation system in the immediate aftermath of 9/11. Since service resumed, they have continued to lose money as significant numbers of travelers avoid flying, opting instead to use other means of transportation or to just stay home.

The airline industry was in financial trouble before the attacks. Most Wall Street analysts were projecting an overall financial loss for the industry in the range of \$1-\$2 billion for 2001. Industry losses for the full year were instead over \$7 billion (were it not for the assistance provided by the Stabilization Act the losses could have

⁴⁶ Prepared by John W. Fischer, Resources, Science, and Industry Division.

been in the range of \$11 billion). Although the magnitude of losses has eased as we go further into 2002, most major airlines remain unprofitable.

The Policy Response. The federal government does not typically provide any financial assistance as a result of an airline accident. The events of 9/11, however, were extraordinary. The coordinated actions of terrorists leading to the destruction and loss of life on four aircraft, and widespread destruction and loss of life on the ground, had no precedent in aviation history. These actions were clearly beyond the scope of any policy consideration ever envisioned by the United States. As a result, new thinking about the exposure of the airline industry, and other industries, to terrorism was required, leading to the Stabilization Act.

As mentioned earlier, the Stabilization Act provides the airline industry with several different forms of assistance. Most important among these was immediate access to cash assistance. The Act provided \$5 billion in direct aid to the airlines, \$500 million of which was reserved for cargo airlines. The funds were made available on the basis of each airline's share of industry traffic measured by available seat miles prior to September 11. Payments from this program could not exceed the direct and incremental losses suffered by an airline since 9/11. As of July 2002, \$4.3 billion of these funds had been distributed to eligible airlines.

The Act also provides the aforementioned \$10 billion in guaranteed loans for the industry. This program is designed to provide longer term stability to the industry and make it more credit worthy in private markets. The distribution of these loans is controlled by an "air transportation stabilization board" (ATSB) consisting of the Secretaries of Transportation and Treasury, the Chairman of the Federal Reserve, and the Comptroller General (nonvoting). Application and other operating procedures for this program were in accordance with guidance provided by the Office of Management and Budget. The Board appears to have considerable discretion as to how funds from this program will be distributed. All loan applications for this program were required by June 28, 2002.

Thirteen airlines applied for the loan program. At the time of this writing, one airline, America West, has received \$380 million in loan funds. An additional loan of \$900 million for US Airways has been tentatively approved, pending the airlines finalization of a business plan compatible with ATSB conditions, and with the bankruptcy court. The loan applications of several airlines including Vanguard, Frontier Flying Service (this is not Frontier Airlines, which also applied for a loan), National and Spirit have been denied by the ATSB. Vanguard partially as a result of this decision has filed for bankruptcy and ceased operating.

Another important element of the Stabilization Act was a provision extending war risk insurance to the industry for 180 days, which has since been extended several times. Most airlines were about to lose their existing private market war risk coverage, which would have forced them to stop flying. By stepping in, the federal government essentially provided gap insurance, with the hopes that the regular private insurance market will become available in the months ahead.

Lessons Learned. There was consensus after 9/11 that the industry needed immediate help in the short term and that this could best be handled by direct

assistance. Even with legislation in place, the issue of how this aid is being distributed remains an issue a year later. This is because of a clear desire amongst policymakers to limit aid to a level needed to stabilize the industry, but not to pay for losses incurred by the industry before September 11 which could mean subsidizing some uncompetitive companies. Further, there is concern that the industry remain competitive after its financial stabilization. This means that any aid distribution scheme should ensure that a sufficient number of airlines survive the current turmoil.

Airline industry financial results in the first and second quarter of 2002 have been dismal, with a few notable exceptions (Southwest, Airtran, Jet Blue). The US Airways bankruptcy filing in August 2002 and United Airlines announcement that it might file for bankruptcy this fall are seen by many industry observers as only precursors of additional future bad news. It now appears, that the events of September 11 changed the airline industry in some fundamental ways that are not yet fully understood. Business travel, the most profitable part of the industry's customer base, seems to be greatly reduced. There are numerous explanations for this. Absent so far, however, is a market based solution for the industry's longer term profitability issues.

We have long since learned that there is a fine line between providing assistance to an industry and intervening in its business activities. The airline industry was once highly regulated. There are concerns that too much federal intervention could be a start down the path to new forms of government regulation. This would be true if the government were to involve itself in industry business practices. There is a real concern that the loans being provided by the ATSB could distort the industry by keeping otherwise incapable competitors in the marketplace for an extended period of time. In the process it is quite possible that these airlines actions, e.g. fare sales, will have negative implications for airlines that did not receive federal loans. The question still to be answered, therefore, is whether the federal response to 9/11 will contribute to a healthy competitive airline industry or whether it will instead contribute to several additional years of industry financial turmoil.

The Insurance Industry⁴⁷

The insurance industry was profoundly affected by 9/11, because of both the cost and the unanticipated nature of the event. The industry has long been able to cope with natural disasters: a long history of such disasters provides experience for insurance companies in setting rates. Thus, insurance rates and the reserves held by companies have been based on and provisions made for such disasters. Even natural disasters can prove to be much larger than anticipated and strain the financial resources of insurance companies. Hurricane Andrew in 1992, for example, resulted in some \$19 billion in claims, threatened the financial solvency of several insurance companies, and resulted in a major increase in insurance rates in areas affected by hurricanes. While this sum was large, it is dwarfed by the events of 9/11. Total insured losses for life, property, and business interruption are not yet known with precision, but current estimates are that payouts will be at least \$40 billion and could

⁴⁷ Prepared by the Banking, Insurance, Securities and Macroeconomic Policy Section. Government and Finance Division.

be substantially higher. Moreover, there is no historical precedent for these attacks, leaving the industry vulnerable in setting insurance premiums and making provisions for reserves that would be needed to pay off claims in the event of any future attacks.

Terrorism and the Industry. Terrorism on the scale of 9/11 raises a major issue for the insurance industry. It is not so much whether insurers have the financial flexibility and capital strength to pay claims arising specifically from 9/11, but whether there exist sufficient data, cost and risk models to underwrite and price insurance against future attacks. Beyond some scale, terrorist attacks take on the characteristics of war, an “uninsurable” risk because of its size, scope, and unpredictability. The current unwillingness of the industry to provide unlimited terrorism coverage has led some observers to suggest a possible need for some form of federal backstop. Thus far, the industry has balked at providing the same, undifferentiated coverage as was available prior to 9/11 because of the difficulty of spreading the risk. The traditional method of spreading risk in the industry is for primary insurers to be underwritten by reinsurance firms, but after 9/11 major reinsurers announced that they would no longer cover acts of terrorism in their reinsurance contracts with primary insurers. Reinsurance is generally written on a one-year basis, and approximately 70% of commercial reinsurance policies in effect on 9/11 expired December 31, 2001. Without reinsurance, or facing stiff premiums for reinsurance, primary insurers cut back on their coverage. The unavailability of terrorism risk insurance could impede lenders in financing commercial property acquisitions and new construction, with potentially adverse consequences for the economy.

What began as a bleak picture of the industry’s financial health brightened as 2002 progressed. An increase in reinsurance rates and an increased demand for insurance in light of 9/11 have improved near-term earnings for the industry. Reinsurers have raised approximately \$30 billion in new capital since 9/11. Moreover, the rise in reinsurance premiums could also cause primary insurance companies to consider alternatives for spreading risk, including such innovative capital market alternatives – developed following Hurricane Andrew – as “catastrophe bonds,” which allow insurance risks to be spread over a much deeper market of bond holders. This could, of course, change dramatically were the U.S. to experience another round of costly terrorist attacks.

The dire picture also painted for commercial properties and industries that could not acquire terrorism insurance has brightened. While some primary coverage insurers have dropped their terrorism coverage and others have increased premiums considerably for commercial clients, and home and auto owners, not all of the increases are due to terrorism risks, but rather to the normal market cycle that is related, in part, to alternative investment earnings. For the most part banks have not stopped financing projects for clients who lack terrorism insurance, but have increased fees in areas or for projects where the risk of terrorism is thought to have increased. Other lenders appear not to have tightened credit for the vast majority of projects. Nevertheless, there are areas and certain high profile projects (e.g., trophy properties, theme parks, key infrastructure, sports stadiums, etc.) for which terrorism insurance apparently cannot be acquired at any price. As with the financial health of the industry, should the United States experience additional costly terrorist attacks, it might be impossible to acquire insurance against terrorism.

Faced with reinsurance renewals in January 2002 that excluded terrorism, and with no federal backstop for future losses, primary insurers petitioned their respective state regulators to exclude terrorism coverage from the policies they sold. Such exclusion would allow the insurers to separately price and sell (or decline to sell) insurance riders specifically for major terrorism attacks. The most common approach taken by the regulators excludes terrorism as a covered event only if total losses from an event exceeded \$25 million, if at least 50 persons were killed or seriously injured, or if the event involved nuclear, biological, or chemical materials. In addition, multiple but related incidents occurring within a 72-hour period are considered to be a single event for purposes of the exclusion. Most states, the major exceptions being New York and California, approved this exclusion. In making the decision to exclude terrorism from regular coverage, state regulators had to balance the interests of businesses in need of insurance simply to operate, and primary insurers whose solvency position could be jeopardized if forced to cover losses from future terrorist acts.

Financial Position of the Industry. The insured losses of 9/11 raise two key issues for the industry: solvency and liquidity. There is a general consensus that the industry as a whole can absorb the ultimate costs of 9/11 (i.e., that it will not reduce the industry as a whole to insolvency) and that it will not create liquidity problems for the vast majority of insurers.

Solvency. The U.S. insurance system at this time is strongly capitalized and can fulfill its obligations without a threat to the stability of the overall system (this also appears to be true of individual firms in the U.S. industry at this time). In 2000, the property and casualty industry had \$318.7 billion in surplus. Most insurance analysts would agree that insured losses from a catastrophe would have to exceed \$50 billion before they would challenge a substantial number of insurer's claims-paying ability. Nonetheless, terrorist attacks in the future on this scale could severely compromise the solvency of the industry, even despite rising capital in 2002.

Liquidity. Insurers had \$921 billion in total assets in 2000. Of this amount, some \$48.4 billion (5%) was held in cash and short-term investments that companies could quickly liquidate to pay claims, while \$769 billion consisted of long-term bonds (63%) and stocks (19%). Despite a declining stock market, the heavy weighting toward bonds – which have been increasing in value – provides some assurance that any need to sell longer term assets to gain further liquidity would be possible without realizing financial losses.

Remaining Issues. Historically, insurers have always excluded certain kinds of risk from insurance coverage, either because not enough is known about the risk to quantify it and price it, or because the risk involves such scale that no insurer could presume to charge enough to afford a payout. War is considered to be the classic case of these problems occurring together. Terrorism, beyond some point in size or repetition, would likewise be considered an “uninsurable risk.” Thus there have been calls for the government to assist the industry: first, to cover a risk that the private sector cannot; and second, to assist the economy – including the insurance industry. A question related to the possibility of federal intervention to provide a terrorism backstop or outright disaster assistance remains: at what point is terrorism no longer an insurable risk?

Agriculture and Food Sector⁴⁸

The Setting. Prior to the September 11 terrorist attacks, the farm economy was beginning to recover from several years of low prices and depressed exports. Like other parts of the U.S. economy, in the days following the attacks the agriculture sector experienced some initial shocks, but USDA and private sector agricultural economists predicted that the adverse impacts from the immediate problems – such as delays and losses in shipping perishable commodities by air, the halt of commodities futures trading – would be largely transitory. In the longer term, the global macroeconomic situation has greater influence on the financial health of the farm sector. Farm income is highly dependent upon the value of farm exports (domestic demand for agricultural products is relatively constant) and upon the cost of inputs (e.g., fuel and fertilizer). Changing geopolitical developments that followed 9/11 did inject a significant amount of uncertainty into any predictions about the behavior of world markets and their effects on the U.S. farm sector's longer term financial health.

The anthrax attacks that followed upon the heels of the 9/11 events had a far more dramatic and immediate effect, not upon the agriculture economy *per se*, but upon the realization that U.S. farms and the food supply are highly vulnerable to bioterrorism – intentional contamination by organisms or chemicals injurious to crop, animal, or human health. Virtually all of the actions on agricultural issues taken after 9/11 focused on this aspect of the autumn 2001 crises.

Actions Undertaken and Policy Response. Congress did not directly address the issue of protecting the farm sector economy from potential losses due to terrorism in its deliberation of the 2002 farm bill⁴⁹, which was halted briefly when 9/11 occurred. Nonetheless, when bill debate resumed in the House in October 2001, some supporters of the bill alluded to the need to protect the economic health of the farm sector to ensure the security – in terms of abundance – of the U.S. food supply. The Farm Security and Rural Investment Act of 2002 (P.L. 107-171) provides several kinds of income and price support protection to producers of the major U.S. commodity crops (wheat, feed grains, cotton, rice, soybeans, and minor oilseeds), and also to peanut, dairy, and sugar producers. The Act also reauthorizes and expands USDA programs to promote agricultural exports.

Shortly after 9/11, in the aftermath of the anthrax attacks, legislators' preeminent concern became the vulnerability to bioterrorism of agriculture's natural resource base, the U.S. food supply, and agricultural research facilities and plant and animal disease collections. Section 7221 of the 2002 farm act authorizes the appropriation of such sums as necessary for: (1) a competitive grants program to construct and upgrade the security of facilities conducting counterterrorism research

⁴⁸ Prepared by Jean M. Rawson, Resources, Science, and Industry Division.

⁴⁹ A farm bill is a collection of new laws and amendments to longstanding laws, that sets the overall direction of federal food and farm policy for a specified number of years. Farm bills typically contain not only commodity price and income support provisions, but also provisions on agricultural trade, conservation, and domestic food assistance, among many other things.

at public colleges and universities; and (2) research and Extension Service activities to improve bioterrorism prevention, preparedness, and response.

Federal food safety regulatory agencies took action immediately to improve the protection of the food supply. USDA's Animal and Plant Health Inspection Service (APHIS) increased the inspection staff at U.S. ports of entry by 350 and added 20 veterinarians to imported and domestic disease surveillance and control programs.⁵⁰ APHIS also stepped up the agency's smuggling interdiction activities and made \$1.5 million in grants available to states specifically to help them plan their response to potential foreign animal disease outbreaks. The Department's meat and poultry inspection agency, the Food Safety and Inspection Service (FSIS) placed the agency's 7,600 inspectors on high alert to look for ante-mortem and post-mortem irregularities in meat animals and poultry, conducted mock exercises to improve response time and communication in emergency situations, and worked with slaughtering and processing firms to improve the security of both the physical plant and the workforce.⁵¹ USDA's in-house research agency, the Agricultural Research Service (ARS) took steps to increase biosecurity systems at its 104 laboratories nationwide, particularly the Plum Island Foreign Animal Disease Diagnostics Lab (Greenport, NY), and the National Veterinary Services Lab in Ames, Iowa. ARS and APHIS operate these labs jointly.

The Department of Health and Human Services' (DHHS) Food and Drug Administration (FDA) began to hire 400 additional employees for inspecting imported foods; 151 laboratory analysts; 84 compliance officers; and 38 risk assessors to improve FDA's speed and efficiency in responding to possible bioterrorism threats.

In January 2002, President Bush signed a bill (P.L. 107-117) that made available the second half (\$20 billion) of the emergency defense funding appropriated after the September 11 attacks (P.L. 107-38). P.L. 107-117 provided a total of \$328 million to USDA for antiterrorism efforts, of which \$113 million went to ARS for research; \$119.1 million to APHIS for strengthening border control; \$15 million to FSIS for making the meat and poultry supply more secure; \$81 million to the Office of the Secretary for upgrading facility and operational security of USDA facilities, and \$151.1 million to FDA for a wide range of counter-terrorism activities related to food. Subsequently, the President signed an FY2002 emergency supplemental appropriation (P.L. 107-206, enacted in August 2002), which contains an additional \$25 million for upgrading the APHIS/ARS animal disease lab in Ames, Iowa.

⁵⁰ APHIS is charged with protecting U.S. agriculture against accidental introductions of plant pests and animal diseases through inspection of craft, cargo, and passengers at U.S. ports of entry. APHIS also is responsible for establishing quarantines, controlling the interstate commerce of regulated articles, and directing and coordinating eradication efforts with state and federal agencies inside areas of quarantine.

⁵¹ FSIS is responsible for ensuring the safety of meat and poultry products, provides continuous inspection at meat and poultry slaughtering operations, makes daily visits to processing firms to verify the performance of their plant and on-line sanitation processes, and makes visits to foreign countries to assure that their inspection systems are at least equal to ours before they are permitted to export meat and poultry to the United States.

Separately, the recently enacted Public Health Security and Bioterrorism Response Act of 2002 (P.L. 107-188, enacted in June 2002) provides FY2002 authority for the supplemental appropriations to USDA made in P.L. 107-206, and authority for appropriation of such sums as are necessary in FY2003 through FY2006 for food safety and protection activities (among many other provisions). P.L. 107-188 specifies that appropriations in the out-years are for the Secretary to use to: (1) support ARS, APHIS, Forest Service, and federal-state cooperative research on bioterrorism prevention, preparedness, and response; (2) strengthen coordination with U.S. intelligence agencies; and (3) develop an early warning surveillance system for agricultural bioterrorism. The Act also makes a number of major changes in FDA's regulatory authority over food, particularly imports. (For more information on food safety and protection, see CRS Issue Brief 10099, *Food Safety and Protection Issues in the 107th Congress*, and Issue Brief 10082, *Meat and Poultry Inspection Issues*.)

The House bill that currently reflects the President's decision to create a Department of Homeland Security (H.R. 5005) would transfer the APHIS border inspection function and employees to the new department's Office of Border and Transportation Security. The bill also would put the Plum Island Foreign Animal Disease Diagnostics Laboratory in the new department. The Senate proposal, S. 2452, differs from the House bill in that it would transfer all of APHIS's Pest and Disease Exclusion program area (which includes other activities beside border inspection), but not the Plum Island lab. (For more information on APHIS and Homeland Security Department issues, see CRS Report RL31466, *Homeland Security Department: U.S. Department of Agriculture Issues*.) H.R. 5005 and S. 2452 do not contain any other food safety related provisions, but Homeland Security Director Tom Ridge testified in March 2002 that the Administration is considering reorganizing or consolidating all federal agencies having food safety responsibilities (about 12 in all) in order to improve not only food safety, but food protection in the post-9/11 era.

Looking Ahead. The main lesson learned from the events of autumn 2001 was that the financial health of the agricultural sector, the income of the Nation's farmers, and the safety and availability of food are dependent upon the proper functioning of an enormous number of separate entities or factors – the crop and livestock sectors; the transportation system; the food manufacturing industry; the food safety regulatory agencies; and global trade, politics, and economics, just to name a few. Disruption of any one of these by terrorism could have serious consequences. The most frequently cited example is the foot-and-mouth disease outbreak in England, which inflicted economic damage on the tourism industry and agricultural trade, as well as on the entire farm sector.

Despite the steps taken by the food safety and agriculture related agencies in the immediate aftermath of the 2001 attacks, the prevailing opinion among those most involved is that much remains to be done. The task of protecting thousands of open-air, biological enterprises, like cattle feedlots, or putting inspectors at all the points where, for example, foot-and-mouth disease organisms could be brought into the country, is daunting, and 100% effectiveness is impossible. Therefore, many policymakers view preparedness and response as the best place to focus improvements and funding.

This focus, however, rekindles debates that have been going on for years, if not decades. Some food safety analysts and policymakers have long argued that: (1) the highly disparate inspection approaches of the two major regulatory agencies, FDA and FSIS, should be made more consistent; (2) funding for inspection should be allocated on the basis of analyses of risk to human health from various pathogens; (3) the responsibility for food safety at least should be vested in one federal office that can coordinate the programs of the 12 agencies that now hold pieces of this responsibility; and (4) a single food safety office should administer a unified budget for all the agencies and programs involved. Going a step further, the General Accounting Office (GAO) has long argued that the food safety agencies should be consolidated and their statutes rewritten to address current problems (e.g., invisible microscopic pathogens rather than obvious physical defects in foods) and emerging technologies to control them (e.g., rapid diagnostic tests, irradiation).⁵² Several Members of Congress share this view. Industry representatives have argued that the statutes should be changed before any physical consolidation is considered.

These arguments essentially focus on one approach to better communication and coordination among the many food safety related agencies. After 9/11, when both the government and U.S. public were looking for ways to make immediate improvements in food protection as well as safety, several policymakers maintained that poor communication, not organizational structure, was the biggest obstacle to better coordination. They held that a shared information database and tracking system, particularly between FDA, FSIS, APHIS, and the U.S. Customs Service, could vastly improve the agencies' abilities to track and deter problems in both domestically produced and imported foods. Congress provided authority for the beginnings of such a system in the recently enacted bioterrorism act (P.L. 107-188). If the Administration proceeds with its stated intention to address food safety and protection issues in regard to homeland security, reaching a consensus could be a lengthy process.

Small Business⁵³

The Setting. The 9/11 attacks dislocated, disrupted or destroyed nearly 18,000 businesses—the vast majority being small businesses—in and around New York City's World Trade Center (WTC) complex.⁵⁴ Economic disruption quickly spread to countless firms across the United States. In the aftermath of the attacks, the U.S. Small Business Administration (SBA) continues to help small firms by means of an assortment of long-standing loan and managerial assistance programs.

⁵² See *Food Safety and Security: Fundamental Changes Needed to Ensure Safe Food*. GAO Report GOA-02-47T. October 2001.

⁵³ Prepared by Bruce Mulock, Government and Finance Division.

⁵⁴ "World Trade Center Disaster: Final Action Plan for New York Business Recovery and Economic Revitalization." Empire State Development in cooperation with New York City Economic Development Corporation. January 30, 2002, p. 2. (Hereafter cited as the New York State Action Plan). [www.empire.state.ny.us/wtc/grant/ActionPlan/actionplan.pdf], visited May 1, 2002.

Although researchers are paying increased attention to the long-term effects of disasters and the factors that affect the ability of a community to recover, there has been little systematic research on recovery processes and outcomes. In particular, “the processes and outcomes associated with the recovery of private businesses have almost never been addressed in the disaster recovery literature.”⁵⁵ Despite the paucity of research and analysis concerning the effects of disasters on small businesses, several key findings emerge:⁵⁶

- Compared to large firms, small ones seem to be particularly vulnerable to disaster impacts and losses. Small businesses tend to have inadequate cash reserves, are less able to raise capital, and generally are unprepared to cope with disasters and their effects.
- Small firms forced to temporarily close typically face immediate cash flow problems and, thus, need to resume quickly operations in order to remain viable. The longer it takes business enterprises to recover, the larger the impact on the revenue-generating power of local governments because local jurisdictions depend on sales and property taxes. Prolonged business disruptions have the potential for jeopardizing community-financed services such as public works and economic development initiatives.

Actions Undertaken. Following the terrorist attacks on the World Trade Center the SBA dispatched employees from its headquarters and regional offices to augment its staff in New York City. Experienced SBA loan officers were made available in Disaster Recovery Centers located throughout the disaster area to assist business owners and individuals.⁵⁷

The SBA has worked in partnership with the Federal Emergency Management Agency (FEMA), the American Red Cross, and other federal, state and local agencies in support of the New York City Mayor’s Office of Emergency Management (NYOEM) to assist the residents of New York City who were stricken by the terrorist attacks.

The agency offers both Physical Disaster Loans to repair or replace disaster-damaged property and Economic Injury Disaster Loans (EIDL) to cover operating expenses businesses could have afforded to pay if the disaster had not occurred. SBA physical disaster assistance is not limited to small firms; the agency makes such loans to businesses of all sizes, nonprofit organizations, homeowners, and renters.

⁵⁵ James M. Dahlhamer and Kathleen J. Tierney, “Winners and Losers: Predicting Business Disaster Recovery Outcomes Following the Northridge Earthquake.”[<http://www.udel.edu/DRC/preliminary/243.pdf>], visited April 29, 2002.

⁵⁶ *Ibid.*

⁵⁷ Testimony of Hector Barreto, Administrator of the U.S. Small Business Administration, before the House Small Business Committee, December 4, 2001. [<http://www.house.gov/smbiz/hearings/107th/2001/011206b/barreto.html>], visited June 11, 2002.

As of September 30, 2002, the SBA had approved 5,254 loans in connection with the attacks on the World Trade Center, for a total of \$435 million (average size loan: approximately \$82,900). In Virginia, SBA had approved 132 loans, including those for businesses at Ronald Reagan National Airport, for \$16.6 million in connection with the attack on the Pentagon (average size loan: approximately \$125,800).

The federal government has also provided financial assistance to small businesses in and around the WTC in the form of Community Development Block Grant (CDBG) funds. As part of the \$40 billion emergency appropriation (P.L. 107-38) passed by Congress and signed by the President in September 2001, \$700 million in special CDBG funds were provided to the state of New York for use by the Lower Manhattan Development Corporation. On January 10, 2002, the President signed the FY2002 Defense Appropriations bill which included an additional \$2 billion in special CDBG funds⁵⁸ for New York City's economic recovery (part of roughly \$20 billion appropriated pursuant to the attacks on the WTC).⁵⁹

In addition to the Physical Disaster and EIDL programs, the agency also administers a Military Reservists EIDL program. The purpose of the MREIDL program is to provide funds to eligible small businesses to meet the ordinary and necessary operating expenses they could have met, but are unable to meet because of essential employees being "called up" to active duty as military reservists.

SBA officials administratively widened access for Economic Injury Disaster Loans effective October 22, 2001. Previously, only businesses located in declared disaster areas were eligible for the EIDL program. Under the new regulations, EIDL assistance has been made available nationwide to eligible small businesses that have suffered substantial economic injury as a direct result of the September 11th attacks or a federal action taken in response to the attacks. EIDLs provide eligible firms with the working capital needed to pay ordinary and necessary operating expenses that they would have been able to pay had the disaster not occurred. Nationwide, SBA had approved 4,495 Expanded Economic Injury Disaster Loans for \$505 million (average size loan: approximately \$112,347).⁶⁰

⁵⁸ CDBG funds are generally used to help build low-income housing. P.L. 107-38 allowed HUD to waive certain requirements, or promulgate alternative requirements. U.S. Dept. of Housing and Urban Development, "Statutory and Regulatory Waivers Granted to New York State for Recovery from the September 11, 2001 Terrorists Attacks," *Federal Register*, vol. 67, no. 18, Jan. 28, 2002, p. 4164.

⁵⁹ Details on how the \$2.7 billion in total CDBG funds are being allocated, including funding for small businesses, is available in a letter to New York City Council Member Helen Sears from the City of New York, Independent Budget Office [<http://www.ibo.nyc.ny.us/iboreports/CDBGLetter.pdf>], visited May 1, 2002.

⁶⁰ By way of comparison, in response to California's Northridge earthquake in 1994, SBA made 51,688 loans to homeowners and renters totaling \$1.167 billion, and 13,328 loans to businesses totaling \$6.545 billion. And, specifically in terms of loans made in response to terrorism, SBA made 172 loans for \$10.4 million for the Oklahoma City bombing, and nine loans for \$512,400 for the World Trade Center bombing in 1993. The latter are the only

(continued...)

Nevertheless, despite the efforts of SBA staff and other federal officials, some argue that small businesses—especially those directly affected by the attack on the World Trade Center— have received little or no financial aid.⁶¹

General complaints about federal financial assistance for small businesses reportedly include:

- Insufficient federal financial assistance to fully satisfy the damages that occurred.
- To a large degree, those who needed grants and loans the most have received the least.
- Delays by agencies have intensified the bitterness many small businesses feel toward the government. With every additional month they are forced to wait for help, more face the prospect of closing down permanently. Of these many mall-business owners are angry not only about the amount of aid they have received but also about what they view as the government’s almost Orwellian logic of determining how the money will be distributed.
- The continual questioning of their motives by those who sit on the other side of the desk, processing their claims and applications.

Complaints specifically in connection with the Small Business Administration include:

- The SBA’s requirement for collateral, usually a home, hasn’t worked well in New York City, where relatively few business people own their homes. For those who do, they are faced with the difficult decision of whether to put them at risk.
- The SBA requirement stipulating that any money a business receives from its insurance company or as a grant must be turned over immediately the agency to pay down the loan precludes companies assembling a survival package from multiple sources.
- “The SBA isn’t geared up, in terms of their legislative mandate or their way of life, to support this kind of disaster,” according to Carl Weisbrod, president of the Alliance for Downtown New York, a business-advocacy group.

⁶⁰ (...continued)

loans made by the agency in response to terrorism prior to 9/11.

⁶¹ For one of the most comprehensive treatments of the inadequacy of the federal response to New York City’s small businesses, see: Sarah Bartlett, “Letter From Ground Zero,” *Inc. Magazine*, September 2002, p. 58-62. Note: All of the following bulleted items are included in the article.

Looking to the Future. Congress has long recognized the primacy of local and state responsibility for disaster recovery assistance to businesses; the federal role has consistently been viewed as supplemental.⁶² The potential for future attacks, however, raises questions about the possibility of the federal government needing to assume a far greater role. Presently, the SBA is generally regarded as the federal agency primarily responsible for helping small businesses recover from the physical damage and economic injury associated with terrorist attacks.

Reports indicate that, to some degree, SBA demonstrated flexibility in responding to 9/11. The agency exercised its administrative authority to expand eligibility for Economic Injury Disaster Loans (EIDL) to small businesses nationwide, not just in declared disaster areas.⁶³ Nevertheless, despite the agency's half century of disaster assistance experience, the nature and magnitude of the consequences of possible future terrorist attacks—including those involving weapons of mass destruction (WMD)—raise questions about the sufficiency of the SBA's role and authority.

Scenarios of devastating attacks also lead to the broader question of what would constitute a comprehensive federal response. Should the economic development role of the federal government be limited, as has been suggested, to rebuilding infrastructure, or should it be interpreted far more broadly? In a largely free market economy, would a large-scale federal role in assisting small businesses be necessary for the economic revival of a city or area that had suffered devastation from weapons of mass destruction?

New York City's Budget⁶⁴

The Setting. Areas struck by disasters or terrorist acts typically experience a decline in economic activity immediately. The drop in economic activity leads to reduced tax revenue for the local governments in the affected area. However, local government obligations persist and may actually increase, particularly in the period immediately following the attack. The unexpected loss of revenue coupled with the increased financial burden of responding to a terrorist act or natural disaster often leads local governments to request assistance from both the state government and the federal government. Based on estimates detailed below, New York City experienced a drop in gross city product (GCP) of approximately \$19.4 billion in FY2002 and a corresponding drop in tax revenue of just over \$2 billion. The scope of the federal government's response to such economic strains on local governments, and in particular New York City after 9/11, is the issue addressed in this section.

⁶² U.S. Congress, House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, *Federal Cost of Disaster Assistance*, hearings, 105th Cong., 2nd sess., Mar. 26, 1998 (Washington: GPO, 1998), p. 86. Prepared statement of Judy A. England-Joseph, Director, Housing and Community Development Issues, Resources, Community, and Economic Development Division, United States General Accounting Office.

⁶³ A fact sheet on SBA's expanded EIDL program is available at: [<http://www.sba.gov/news/current01/economicinjuryfactsheet.html>], visited May 23, 2002.

⁶⁴ Prepared by Steven Maguire, Government and Finance Division.

Local Economic Impact. According to estimates by the New York City Comptroller, the 4-year gross city product (GCP) loss from the 9/11 attacks “. . . is \$82.8-\$94.8 billion.” Of that total loss, \$27.3 billion is for the last 3 months of 2001 and all of 2002. In all likelihood, the long-run economic impact of the terrorist attack on New York will be determined by the size and distribution of the government subsidies intended to encourage development in the New York metropolitan area. The provisions offered by the federal government can be divided into two broad categories, (1) financial aid to reimburse local expenditures on emergency response and (2) economic redevelopment assistance for rebuilding. The first would alleviate the short-run strain on the local government budget generated by the attacks and the second is more focused on minimizing the long-run local economic effects.

Tax Revenue Loss. According to the estimates of a variety of budget analysts, tax revenue in New York City dropped considerably after 9/11. However, the exact amount of the revenue loss is still uncertain. Soon after the attacks, in an October 4, 2001 press release, The New York City Comptroller, William C. Thompson, Jr., estimated that tax revenues in FY2002 would be “. . . \$738 million less than currently projected,” as a result of the attacks.⁶⁵ Since that announcement, there has been some debate over how much the revenue loss is directly attributable to the terrorist act and that which is the result of the coincident decline in the national economy.

In a letter dated April 18, 2002, the Federal Reserve Bank of New York seemed to agree with the revenue loss estimates of the Comptroller, noting that the “New York City Comptroller’s initial estimate of the attack-related tax revenue losses to the city, on the order of \$600 million in the fiscal year ending in June [2002], appears reasonable; a similar amount is expected to be lost in the next fiscal year [2003].”⁶⁶

In a letter dated May 23, 2002, the Deputy Mayor for Economic Development and Rebuilding, Daniel Doctoroff, provided an assessment of the immediate financial needs of New York City. The letter was sent to the Federal Emergency Management Agency (FEMA) to outline the uses for the federal funds that had been appropriated to FEMA. In the letter, the Deputy Mayor included tax revenue loss estimates directly related to the terrorist attacks.⁶⁷ The Deputy Mayor suggested that of the available FEMA appropriation, \$451 million should be used to reimburse the city for

⁶⁵ New York City Comptroller, “Trade Center Attack Could Cost City Economy More Than \$100 Billion Over 2 Years: City Will Need Additional Federal Aid To Recover,” press release, Oct. 4, 2001. The press release is available at the following website: [http://comptroller.nyc.gov/press/2001_releases/print/01-10-064.shtml].

⁶⁶ From the document accompanying a letter from William J. McDonough, President, Federal Reserve Bank of New York, letter to The Honorable Carolyn B. Maloney, New York, April 18, 2002, p. 7.

⁶⁷ Daniel L. Doctoroff, Deputy Mayor for Economic Development and Rebuilding, letter responding to a FEMA request for an outline of the “City’s priorities for the use of FEMA funds,” May 23, 2002. In the same letter, the Deputy Mayor provided a less detailed estimate of the change in forecast revenue before and after the attack of \$3.1 billion. The estimate does not clearly disentangle the effects of the general slowdown in the economy and the direct effects of the attacks.

revenue losses in FY2002 and \$199 million for FY2003. Reimbursement for the tax revenue losses were identified by the Deputy Mayor as “New York City’s most immediate need.”⁶⁸

In a July 26, 2002 response to a congressional request, the GAO offered that the New York City budget office estimate of \$1.6 billion in lost tax revenue in FY2002 and \$1.4 billion in FY2003 “. . . appear to reasonably approximate the impact of the terrorist attacks on tax revenues.”⁶⁹ In the same letter, the GAO also generally agreed with the state budget office estimate of state tax revenue losses of \$1.6 billion in FY2002 and \$4.2 billion in FY 2003. It is unclear why these estimates of the tax revenue loss from the respective budget offices are significantly larger than earlier estimates.

On September 4, 2002, the New York City Comptroller released a revised estimate of the tax revenue loss in FY2002 that could be attributed to (1) the terrorist attacks and (2) the economic slowdown.⁷⁰ The comptroller estimates that in FY2002, New York City lost \$2.015 billion of tax revenue because of the attacks and \$519 million because of the economic slowdown. For FY2003, the comptroller estimated that the revenue loss resulting from 9/11 would be \$928 million. In both fiscal years, the loss in personal income tax revenue represents the largest contributor to the tax revenue loss. The estimates for FY2002 seem to rely on the assumption that the city was rising out of recession in the first quarter of FY2002 which began July 1, 2001, before 9/11. Thus, by that assumption, most of the decline in tax revenue after 9/11 could be attributed to the terrorist attacks, not the recession.

Actions Undertaken. The following section provides a brief overview of the federal response to 9/11. The focus is on the New York City Government because the two other local governments affected by the events of 9/11, Arlington County, VA and Somerset County, PA, were not as severely affected as New York City. The federal aid to New York City has principally come in three phases with additional assistance possible. Generally, federal expenditures have been dedicated to reimburse the New York City government for response and clean-up expenditures and to revitalize Lower Manhattan. In some cases, the economic redevelopment expenditures by the federal government may substitute for what the City would have been responsible for in the absence of the federal funds.

Phase 1, September 19, 2001 (P.L. 107-38): Emergency Appropriations. Soon after the attack, Congress passed the Emergency Supplemental Appropriations Act for Recovery from and Response to Terrorist Attacks on the United States which appropriated \$40 billion to be used for the

⁶⁸ Daniel Doctoroff, Deputy Mayor for Economic Development, letter to Brad Gair of FEMA, Table 2: Revenue Losses Caused by 9/11, May 23, 2002, p.4.

⁶⁹ U.S. General Accounting Office, “Impact of Terrorist Attacks on Tax Revenues,” GAO letter report, GAO-02-882R, (Washington: July 26, 2002), p. 2.

⁷⁰ William C. Thompson, Comptroller, City of New York, “One Year Later: The Fiscal Impact of 9/11 on New York City,” September 4, 2002.

response.⁷¹ The Act was broadly worded to give the executive branch flexibility to address the immediate needs of the areas attacked, particularly New York City. The New York City Independent Budget Office (IBO) estimated that approximately \$11.2 billion of the \$40 billion emergency supplemental was directed to New York City response and recovery efforts.

The Federal Emergency Management Agency (FEMA) controlled \$6.35 billion, which has been and is currently being allocated to individuals and families. The emergency appropriation also provides aid to businesses through Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program. The CDBG program's primary purpose is economic development through reduced rate loans for economically distressed areas. FEMA has also paid for the cleanup of the WTC site with a part of the \$6.3 billion. The IBO estimated that \$2.7 billion has been appropriated for the CDBG program for New York City.

The IBO also identified several other categories of appropriations for the remaining \$2.15 billion of the \$11.2 billion that was spent in New York City. Included in this group is federal spending on: transportation (\$390 million); repair and relocation of federal offices (\$265 million); aid to individuals (\$259 million); SBA loans (\$150 million), assistance to hospitals (\$140 million) and local counter-terrorism activities (\$81 million). Federal spending on transportation, public health, and local counter-terrorism activities likely substituted for, or augmented, city and state government expenditures.

Phase 2, March 9, 2002 (P.L. 107-147): Economic Stimulus Package.

Economic Stimulus Package The terrorist attack coincided with a general slowdown in the national economy. Some analysts argue that the terrorist attacks, along with apparent corporate accounting misdeeds, exacerbated and already slowing economy. In response to the apparent slowing economy, Congress crafted an economic stimulus package, the "Job Creation and Worker Assistance Act of 2002." The Act was intended to have the dual purpose of boosting the national economy and helping New York City recover and rebuild.

The specific provisions for New York City are listed below along with the Joint Committee on Taxation's (JCT) estimate of the federal revenue loss:

- An expansion of the Work Opportunity Tax Credit (WOTC) for certain employers in New York City (\$631 million);
- A 30% bonus depreciation for property placed in service in the Liberty Zone (\$1.6 billion);
- Expanded authority for New York City to issue up to \$8 billion of tax-exempt private-activity bonds and to advance refund outstanding bonds (\$2.2 billion);

⁷¹ For more details on the legislation, see CRS Report RL31187, *Combating Terrorism: 2001 Congressional Debate on Emergency Supplemental Allocations*, by Amy Belasco and Larry Nowels.

- And other business tax provisions designed to encourage new capital investment in New York City (\$950 million).

Unlike the appropriations in Phase 1, Phase 2 focuses more on the long-term economic recovery of lower Manhattan. Geographically targeted incentives, like those found in Phase 2, are often criticized by economists as shifting investment and growth from one area to another without an overall improvement in the broader national economy. While federal expenditures and lost federal tax revenue do not create new growth and economic vitality nationwide, they may be effective tools to achieve other policy goals. As for the New York City budget, the only relief may be higher tax revenues generated in the future from the private investment in the City induced by the federal incentives.

Phase 3, August 2, 2002 (P.L. 107-206): Supplemental Appropriations. This supplemental appropriation is a mix of aid for individuals and businesses that were directly affected by the attacks and to the city and region generally for repair of infrastructure damaged by the attacks. Specifically, the four specific appropriations are (cost, citation):

- Funds from the federal Highway Trust Fund for any project on a Federal-aid highway related to the New York City terrorist attack, most likely reconstruction of the West Side Highway (\$167 million, 116 Stat. 882);
- Capital investments grants to Amtrak from the Federal Railroad Administration to “replace, rebuild, or enhance the public transportation systems serving the Borough of Manhattan, New York City, New York” (\$1.8 billion, 116 Stat. 883);
- Additional funds for community development through the Lower Manhattan Development Corporation for “assistance for properties and businesses (including the restoration of utility infrastructure) damaged by, and for economic revitalization directly related to, the terrorist attacks . . .” (\$783 million, 116 Stat. 889); and
- Additional funds for FEMA to carry out the provisions of the Stafford Act provided that FEMA “recognize those people who were either directly employed in the Borough of Manhattan or had at least 75 percent of their wages coming from business conducted within the Borough of Manhattan as eligible for [rent and mortgage payment] assistance...” (\$2.7 billion, 116 Stat. 894).

The third phase blends assistance for rebuilding critical City infrastructure, such as roads and utilities, with grants and loans to individuals and businesses. The infrastructure spending, it is hoped, will lay the foundation for future economic growth. The loans and grants to businesses and individuals are designed to lure them back into Lower Manhattan or if still present, to remain. The infrastructure spending financed by the federal government may have been financed from state and local

revenues if not for the federal contribution. Given the tight New York City budget, the loans and grants may not have been offered without federal assistance.

In addition, New York City has received a commitment from FEMA and the Federal Transit Administration (FTA) to allocate \$4.55 billion for a proposed intermodal transit hub in Lower Manhattan. The source funding for the transit hub is uncertain, though it is likely from a mix of existing appropriated federal funds. FEMA's commitment to the transit hub is unusual as noted in the agency's press release announcing the commitment:

Typically, FEMA's Public Assistance program reimburses disaster-related losses and damages on individual projects. Recognizing the interdependence of lower Manhattan's bus, subway, rail, ferry and walkways, FEMA broadly interpreted its guidelines to allow maximum flexibility to support lower Manhattan's transportation needs as it recovers from the attack.⁷²

Thus, the federal response has had two general themes, (1) to reimburse New York City for emergency expenditures directly related to the attacks and (2) to reinvigorate the New York City economy with economic development incentives. In the first case, the federal government assists the local government directly. In the second, the local government is helped indirectly through federal funds that may have otherwise been the responsibility of the state and local governments. Also, any additional economic development spurred by federal expenditures may generate tax revenues in the future for New York City. There has not been a direct federal transfer dedicated to reimbursing New York City for lost tax revenue.

Looking to the Future. In the future, should the federal government replicate its response to major terrorist attacks in a manner similar to the 9/11 response? In conclusion to a February, 2002 testimony, Director of the New York City Independent Budget Office (IBO) Ronnie Lowenstein stated that: "Our disaster relief needs are being met; the need now is for economic recovery and rebuilding."⁷³ In the same testimony, IBO Director Lowenstein described the purpose of federal aid "...as serving two broad purposes: First, for disaster relief and assistance, including security and antiterrorism needs, and second, for economic recovery and rebuilding.

There has not been a federal program implemented to replace lost tax revenue. Even though many of the federal assistance programs have clearly helped New York City meet fiscal obligations through expenditure reimbursement, the revenue component of the New York City budget has not been addressed. In a possible future disaster on the scale of 9/11, Congress may be called upon to consider revenue

⁷² Federal Emergency Management Agency, Press Release No.: FEMA-1391-DR-NY-PR-137, *FEMA and FTA Announce Aid to Revamp Transportation Network for Lower Manhattan*, August 12, 2002, available at:[<http://www.fema.gov/diz01/d1391n137.shtm>].

⁷³ Testimony was before the Joint Hearing of the City Council Finance, Lower Manhattan Redevelopment, and State and Federal Legislation Committees. The City of New York Independent Budget Office, Director Ronnie Lowenstein, February 11, 2002, p. 5, available at the following website, [<http://www.ibo.nyc.ny.us/>]. This may not represent the opinion of all those in or about ground ground zero that were affected by 9/11. For some dissenting views, see the section above on small business.

replacement as a legitimate response to the unavoidable fiscal strains disasters place on local budgets.

The rebuilding of Lower Manhattan with the assistance of the federal government indirectly helps the city budget through reconstructing the City's lost tax base. However, the federal revenue for New York City economic development incentives come at the expense of other federal spending priorities. Thus, even though New York City will likely be better off with the additional federal spending for economic development, other federal spending will have to be reduced, taxes increased, or more debt issued. If policy makers believe the benefit of economic development in New York City outweighs the costs, then the second purpose of federal aid suggested by the IBO Director is justified.

However, some have argued that rebuilding or replacing the lost office space that resulted from the attacks may not be justified. Two Harvard economists have stated the opinion that

The World Trade Center was a heavily subsidized project meant to prop up a declining region. As such, the prices in New York after the bombing may very well not justify reconstruction on a large scale.⁷⁴

They also question whether aid designed to spur development in lower Manhattan is warranted stating that government subsidies for rebuilding the site, regardless of the level government providing the subsidies, "...are unlikely to be an efficient use of funds."⁷⁵

As of this writing, it is not clear whether all the office space lost in the attacks will be replaced. Several designs to do so became quite controversial when presented to the public. Many critics argued for a plan with less commercial space than the World Trade Center.

Layoffs and Unemployment Benefits⁷⁶

The Setting. The events of 9/11 immediately affected the U.S. labor market. The displacement of workers posed financial difficulties for job losers with little other income, particularly if their jobless spells were lengthy. Increased unemployment also meant less revenue for the federal government at a time of unexpected spending needs (e.g., due to military action in Afghanistan), and for state governments, some of which were grappling with tight budgets.

The repercussions from 9/11 were overlaid on a labor market weakened by the recession that began in March 2001, with the unemployment rate already above the 3.9% low reached during the 1990s economic expansion. During the first 8 months

⁷⁴ Edward L. Glaeser and Jesse M. Shapiro, "Cities and Welfare: The Impact of Terrorism on Urban Form," *Journal of Urban Economics*, vol. 51, no. 2, March 2002, p. 214.

⁷⁵ Edward L. Glaeser and Jesse M. Shapiro, "Cities and Welfare: The Impact of Terrorism on Urban Form," *Journal of Urban Economics*, vol. 51, no. 2, March 2002, p. 214.

⁷⁶ Prepared by Celinda Franco and Linda Levine, Domestic Social Policy Division.

of 2001, companies had announced their intention to lay off a record high of more than one million employees. The number of workers separated from payrolls as a result of large-scale layoffs that actually occurred also climbed markedly in the months leading up to September.⁷⁷ However, the industries that most often laid off workers due to the recession (e.g., computer and other manufacturers as well as telecommunications and other internet-related enterprises) were not those most adversely affected by the terrorist attacks. Similarly, the impact of the recession and terrorist attack were concentrated in different geographic areas.

Employers reported that between September 15, 2001 and March 30, 2002 they called 462 extended mass layoffs⁷⁸ that were directly or indirectly attributable to the attacks.⁷⁹ Almost 130,000 employees lost their jobs in these actions, with 9 out of 10 let go within 2 months of the attacks.⁸⁰ The air transportation industry laid off 38% of these employees, and the accommodations (hotel and motel) industry, 23%. Although employers in 33 states called terrorist-related layoffs, the majority of events and worker displacement occurred in just five states (i.e., California, Nevada, Illinois, New York, and Texas).

Actions Undertaken. The federal-state Unemployment Compensation (UC) program has been in place since 1935 to provide a financial cushion for jobless workers. Historically, while the UC program has been supplemented from time to time by other programs that provide payments to those out of work, the precipitating event for congressional action related to worker displacement typically has been a broad-based recession. This once again proved to be the case.

Immediately after 9/11, Congress introduced legislation that would have provided additional assistance only to those workers displaced from jobs in certain industries as a result of the terrorist attacks and subsequent security measures.⁸¹ However, the recession focused congressional attention on legislation that would temporarily extend benefits for all individuals who exhausted their 26-week limit of regular UC benefits. The Temporary Extended Unemployment Compensation

⁷⁷ *The Challenger Employment Report* and the U.S. Bureau of Labor Statistics' (BLS) series on extended mass layoffs as shown in CRS Report 30799. *Corporate Downsizing and Other Mass Layoffs*, by Linda Levine.

⁷⁸ BLS defines extended mass layoffs as separation actions involving at least 50 employees and lasting longer than 30 days.

⁷⁹ BLS data on extended mass layoffs attributable to the terrorist attacks as shown in CRS Report 31250. *Layoffs Due to the September 11, 2001 Terrorist Attacks and the Worker Adjustment and Retraining Notification Act (WARN)*, by Linda Levine. **Note:** Given the few, if any, additional separation actions and worker displacements after March 30, 2002 that resulted from the terrorist attacks, BLS has stopped publishing data separately on this "non-natural disaster," which was a reason for publishing extended mass layoff data that was added due to September 11.

⁸⁰ Left uncounted on any systematic basis are those employees who were furloughed a few at a time or whose hours were cutback as a result of the terrorist attacks.

⁸¹ Information on these proposals can be found in CRS Report 95-742, *Unemployment Benefits: Legislative Issues in the 107th Congress*, by Celinda Franco.

(TEUC) program was included in the Job Creation and Worker Assistance Act of 2002 (P.L. 107-147), which was enacted on March 9, 2002.⁸² The TEUC program provided up to 13 weeks of federally funded extended benefits to eligible workers in all states who had exhausted their regular UC benefits. P.L. 107-147 also provided 13 weeks of extended benefits beyond the initial 13-week extension for UC exhaustees in “high-unemployment” states (i.e., those with an insured unemployment rate (IUR) of at least 4%).⁸³

For persons who are not eligible for regular UC benefits, there already exists Disaster Unemployment Assistance (DUA), which are payments to those whose employment or self-employment is lost or interrupted as a direct result of a major disaster. (Unauthorized aliens are not eligible for benefits under UC or DUA). DUA benefits are wholly federally financed through the Federal Emergency Management Agency (FEMA). DOL regional offices oversee the program, and it is administered by the same state agency that administers the UC program. The DUA weekly benefit amount and duration are the same as under the UC program.⁸⁴

DUA benefits have been available to workers who were unemployed as a direct result of 9/11 in New York City and Northern Virginia. On March 20, 2002, Congress passed a bill (H.R. 3986, P.L. 107-154) extending the duration of DUA benefits from 26 to 39 weeks. This 13-week extension of DUA only applied to workers unemployed as a result of 9/11. According to the Department of Labor, 3,210 eligible individuals in New York received DUA benefits totaling \$12,554,733, and 541 eligible individuals in Virginia received DUA benefits totaling \$294,847, as of August 2002.

Looking to the Future. Should another terrorist attack occur that disrupts the employer-employee relationship, the Congress might turn once again to the UC and DUA systems. Such factors as how widespread the problem is across industries or geographic areas, how many employees are affected, and how long the employment disruption is expected to last could affect whether policymakers seek to modify the two programs and whether they believe additional measures are necessary.

⁸² For more information on the TEUC program, see CRS Report RL31277, *Temporary Programs to Extend Unemployment Compensation*, by Jennifer Lake.

⁸³ The TEUC trigger of 4% IUR differs from the triggers used in the permanent Extended Benefits (EB) program under which states trigger the EB program with 5% or 6% IUR, or 6.5% total unemployment rate. Another important difference in the two programs is that TEUC is fully federally funded, while the EB program is half state and half federally funded.

⁸⁴ Further information on the program is available in CRS Report RS21023, *Disaster Unemployment Assistance (DUA)*.

Public Finances of the United States: Patriot Bonds⁸⁵

The Setting. After 9/11, policymakers in the United States were confronted with the issue of financing unanticipated expenditures for recovery and terrorism response activities.⁸⁶ Because of apparent similarities with past extraordinary expenditure needs, such as the military buildup for World War II, several proposals emerged for a similar financing mechanism: war bonds. As with war bonds issued in the 1940s, a new version of war bonds would be one of many debt instruments available to the U.S. Treasury that could be used to finance deficit spending.

Actions Undertaken. In response to the terrorist attack, several lawmakers introduced legislation that would have authorized the Treasury to offer an updated version of war bonds. Before any of the proposals could become law, the Treasury recognized bipartisan congressional interest in creating a new version of war bonds and responded by introducing “Patriot Bonds” based on the existing Series EE savings bond program. On December 11, 2001, the United States Treasury began offering Patriot Bonds [<http://www.publicdebt.treas.gov/sav/savpatriotbond.htm>]. These bonds are Series EE Savings Bonds with “Patriot Bond” and a profile of Thomas Jefferson featured on the saving certificate.

Brief History of Savings Bonds. On March 1, 1935, the first savings bonds (Series A) were issued to provide a savings instrument for small savers and to lower interest costs to the Treasury by expanding the potential market for Treasury securities. It was scheduled to expire in April, 1941, but President Roosevelt and Congress agreed that month to extend the program and rename the current Series E bonds “Defense Savings Bonds.” After the attack on Pearl Harbor in December, 1941, Defense Savings Bonds were renamed War Bonds. The Treasury sold \$54 billion in war savings bonds from May, 1941 through December, 1945, a period when defense expenditures totaled \$261 billion.

Series EE bonds were introduced in January, 1980. While there have been some changes over time in their interest rate formula, the current bonds pay interest at the time of redemption at a rate based on 90% of the average yields on Treasury securities maturing in 5 years over the preceding 6-month period. Taxes owed may be deferred until redemption or paid as interest accrues. Proceeds from the sale of war bonds, Series EE bonds, or Patriot Bonds have always been included in general revenues, and not earmarked explicitly for a designated category of expenditures.

Policy Analysis. Some proponents of Patriot Bonds claimed that the new bonds would allow citizens to “invest” in recovery and terrorism response activities, and perhaps allow the Treasury to issue debt at lower interest rates than would otherwise be possible. Proponents suggested that the goal of the new bonds would be “. . . to develop a way for patriotic Americans to contribute directly to the effort

⁸⁵ Prepared by Steven Maguire, Government and Finance Division.

⁸⁶ For more on the financial obligation of the U.S. government for past wars see: CRS Report RS21013, *Cost of Major U.S. Wars and Recent U.S. Overseas Military Operations*, by Stephen Daggett and Nina Maria Serafino.

to rebuild the broken and to retaliate against . . . international terrorism.”⁸⁷ Those who thought Patriot Bonds were unnecessary argue that new savings bonds would not likely produce any interest savings, would not be earmarked for defense spending, and would not add anything that is not already available.

The debt and net fiscal position of the federal government would be roughly the same whether the debt for additional defense spending were Patriot Bonds or Treasury bonds. However, mainstream macroeconomics suggests that debt finance would stimulate aggregate demand in the short run and reduce economic growth in the long run by “crowding-out” private investment through higher interest rates or a larger international trade deficit. The mainstream analysis assumes private saving would remain unchanged. An alternative option would be to finance these unanticipated expenditures with higher taxes. This option would have a negligible effect on the economy because greater government spending—and thus aggregate demand—would likely largely offset the contractionary effects that higher taxes would have on private spending.

Looking to the Future. The policy question is: “In the future, should the federal government introduce new saving instruments to finance unexpected increases in defense expenditures?” If the Patriot Bond designation induced more U.S. savings bond purchases, then some may consider the program a success. If the additional Patriot savings bond purchases came from existing planned saving and substituted for other Treasury securities, the cost of issuing federal debt may have actually decreased slightly after the introduction of Patriot Bonds. In addition, if Patriot Bond purchases were financed with lower private consumption, then the bonds reduced the cost of issuing federal debt further because the savings rate increased. A higher savings rate, all else equal, exerts downward pressure on interest rates.

As of this writing, it is difficult to evaluate the impact of the Patriot Bond on savings rates, although, the Treasury does track the monthly sales of savings bonds. In the 3 months after the terrorist acts in September 2001, Series EE savings bonds sales fluctuated dramatically. In October of 2001, before the Patriot Bond designation was introduced, sales of Series EE bonds spiked to \$973 million, almost three times the October 2000 sales level of \$334 million. In November 2001, sales dropped to \$194 million only to rise to \$489 million in December 2001, the month Patriot Bonds were first available. For the first 6 months of 2002, monthly Patriot Bond sales averaged \$444 million. Total sales for January through June in 2002 were higher than the same period in 2000 and 2001, though less than sales in 1999.

The terrorist acts, and other macroeconomic factors, likely caused the fluctuations as many investors were initially uncertain about how the United States economy would respond to the attacks. However, the introduction of the Patriot Bond designation, though perhaps providing a sense of participation in the “war effort” for those who purchased them, did not seem to have a significant effect on the net fiscal position of the U.S. In addition, the relatively small volume of savings

⁸⁷ Sen. Mitch McConnell, remarks in the Senate, *Congressional Record*, daily edition, vol. 147, September 19, 2001, p. S9485.

bond debt relative to total Treasury debt (as of March 2002, savings bonds comprised about 3.2% of total debt outstanding) weakens any effect the Patriot Bond program could have had on federal interest costs and borrowing.

Conclusions

It is by no means possible to put together an exhaustive list of conclusions from the discussion above. Those that follow are at best selective and tentative in nature, as the full implications of 9/11 have yet to be drawn.

Among the major conclusions is that 9/11 is more appropriately viewed as a human tragedy than as an economic calamity. Notwithstanding their dire costs in human life, the direct effects of the attacks were too small and too geographically concentrated to make a significant dent in the nation's economic output. September 11 did not trip a fragile economy into recession. The economy was already in its third consecutive quarter of contraction even though the data showing this were not available until a later time. Moreover, the contraction in the U.S. was coincident with the slowdown in economic growth of the major economies, the first time this had occurred in 25 years. Thus, many of the factors associated with the world slowdown, such as rising unemployment and falling confidence may have been wrongly attributed to 9/11. In the final analysis it may be difficult to separate the effects of the terrorist attacks from the then on-going recession. Individuals may continue to assert that various economic events were caused by 9/11 when, in fact, they were not.

There is, of course, the possibility that, but for the timely and decisive action by the Federal Reserve in concert with other major central banks, the effects of 9/11 on both the U.S. and world economies would have been quite different. In this context it should not be overlooked that markets have powerful mechanisms and incentives to overcome negative shocks. This was typified by the action of individuals in the financial sector to restore their institutions to a normal state of function as quickly as possible. For many observers this has re-validated the wisdom of having a central bank capable of exercising a large amount of discretion.

Although the attacks were unique in American history, several existing government programs and agencies were successfully modified in a short time to cope with the economic ramifications. Successfully modified programs or agencies include FEMA, unemployment programs, monetary policy, and programs to help small businesses, although not to the total satisfaction of the latter. In the case of the financial industry, preparations for Y2K left the industry well prepared to cope with the loss of data and infrastructure in wholly unintended ways. Undoubtedly, much was learned by the affected agencies that will be useful if similar tragedies were to occur in the future. Fiscal policy also responded, but far more slowly than monetary policy initiatives. In the case of the airlines, new legislation was quickly implemented to cope with their special problem. A fiscal response to the threat posed to the insurance industry by terrorism remains in debate. There also remains a largely state issue that has federal consequences in the face of terrorism. Many states operate under balanced budget requirements. Expenditures to remediate the

adverse effects of terrorism as well as the destruction of a part of a state's tax base can throw state budgets into deficit and inflict additional hardships on a state's taxpayers as legislatures comply with constitutional requirements to balance budgets. As a result of 9/11, the budget of the state of New York was pushed into deficit forcing some difficult choices on the legislature and, arguably, constraining the ability of the state to address the special needs of New York City. This experience may well lead to future congressional consideration of the appropriate federal role in assisting states, regions, and cities adversely affected by terrorism.

In an important sense 9/11 does mark the end of an era, for it reveals that the United States is vulnerable to attacks on its home soil. One of the major modes of transportation became a vehicle for attacking symbols of America. The attackers were able to board these planes with weapons that were not then deemed to be contraband. But the net effect has been devastating for the passenger airline industry even with the government aid that has been forthcoming. It is now doubtful that the industry will survive in its present state.

In addition to the airline industry, 9/11 had led to the recognition that the nation's food supply may be vulnerable to biological attack, our cities to bio-terrorism, and that American ports could serve as entry points for weapons of mass destruction. This vulnerability has had several effects. First, it has led to a reallocation of national resources toward the production of greater security. This will temporarily affect the growth of productivity adversely, the major factor providing the growth of per capita income. Second, it has and will likely continue to change the business structure of the United States and, to some degree, the structure of other economies as well over the longer run. How Americans spend their leisure time has been changed by 9/11. This may be temporary or longer lasting. This change affects their spending and with it the structure of the industry supplying goods and services for leisure.

Third, the vulnerability of the U.S. to terrorism raises new questions about risk – and the role of government in protecting against risk – in a capitalist economy. The risk posed by terrorism is unlike the risk faced by a typical business firm or household. Unlike a natural disaster, the lack of historical examples makes future risks largely unpredictable. Therefore, businesses cannot fully plan ahead to safeguard against its effects. Unlike a natural disaster, it is a risk addressed by the security that government provides for its citizens. When this security fails or is breached, it can have devastating consequences for selected business firms, geographical areas, and elements in the population. 9/11 had a severe effect on New York City, the airlines industry, and especially the insurance industry. While the latter appears to be able to withstand the claims due to 9/11, it is doubtful if it could withstand several attacks with the consequences of 9/11. Traditionally, there has been an understanding that certain risks, such as war, could not be handled by market mechanisms and required government involvement. The government is now trying to determine the point when terrorism stops being an insurable risk and begins to look more like war. At present, the situation is ambiguous. Private insurers are still willing to insure most firms and projects against terrorism, but some “trophy” projects that make likely targets have not been able to acquire insurance. That is apparently because insurers do not know how to price such risks and insureds may prefer to “self insure” rather than pay very high premiums. This effect would be

stronger if firms should think that the federal government is implicitly willing to compensate them in the event of a catastrophe. In this context, the terrorism insurance bills before Congress would seek to make explicit what is now implicit by defining the point past which the government would provide insurance because the private market no longer can. In the absence of such legislation, large or ostentatious projects may continue to have difficulty getting coverage, and as a result fewer such projects may be built in the future. Conversely, legislation could increase the “moral hazard” problem present in the terrorism insurance market: if the federal government steps in to protect against calamitous losses, more trophy projects that make attractive targets will be built. For safety reasons, it can be argued, government may have to assume a role in pricing such that the cost to the private owners of building these types of properties reflects the costs to society.