

For Release on Delivery  
8:45 a.m., EST  
October 29, 2003

Attack at the Economic Heart of America:  
What 9/11 Taught the United States about Its Economic Security

Remarks by

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to the

Homeland Security Conference

Virginia Military Institute  
Lexington, VA

October 29, 2003

It's a great pleasure to have this opportunity to speak at VMI.<sup>1</sup> I graduated many years ago from that "other school" down the street. Moreover, at that other school I was a member of the Sigma Nu fraternity, which was founded at VMI shortly after the Civil War, in 1869. So while I didn't attend VMI, I'm far from a stranger to this distinguished institution, which has contributed so greatly to the strength and security of the Commonwealth and the nation. One of the purposes of this conference is to affirm the Institute's commitment to America's current, high priority effort to increase homeland security. It's hard to imagine a more worthy objective, and I am privileged to participate.

By now, the observation that the September 11 terrorist attacks changed the world — and especially the United States — forever has become a cliché, but it's quite literally true. Prior to 9-11, most Americans had assumed that we were relatively insulated from terrorism. To be sure, Oklahoma City and the first World Trade Center bombing in 1994 had showed us that significant incidents on U.S. soil were possible. But the risk of brazen attacks on the scale of 9-11 were, I believe it's fair to say, largely discounted.

My assignment this morning is to consider the effects of the attacks on the economy. Those of you who follow Federal Reserve monetary policy even cursorily know that currently we are trying to be more "transparent": more open and forthcoming about our policy actions and our expectations regarding future actions. In that spirit, let me confess that I am not an expert on the economic consequences of terrorism. But I have experienced — and continue to experience every day — some of these consequences from the vantage point of a Fed policymaker. I have therefore read and reflected a lot on this subject, and I hope some of the thoughts I'm going to share with you will be useful.

I'll begin by looking at the broader impacts of the attacks on the overall economy, both near-term and longer-term. Then I'll narrow the focus to the effects I think I understand best — in the banking and financial sectors of the economy.

### Broader Macroeconomic Effects

It is obviously essential to discuss the economic effects of 9-11 in terms of time frames. There were immediate, short-term impacts, and there have been and will continue to be intermediate- and longer-term impacts, and these two kinds of impacts are different. Before I discuss some of these effects, let me just say that I'm always more than a little uncomfortable talking about the economic costs of 9-11 and its effect on economic growth, conventionally defined, as though it were possible to calculate in cold numbers the true cost of this enormous atrocity. Please understand that when economists like me talk about the economic consequences of these events, we do so in the spirit of people walking respectfully through the hallowed ground of a national cemetery.

The 9-11 attacks had substantial short-term effects on U.S. economic activity, and they were obviously negative. To appreciate these effects clearly, it is helpful to recall the economy's position in a business cycle context at the time the attacks occurred. After four years of very strong growth in GDP and jobs in the late 1990s, the economy slowed sharply in the second half of the year 2000 and began contracting in early 2001. Business investment, which had accelerated rapidly in the late nineties, especially in computing and telecommunications equipment, fell markedly from the middle of 2000 through the summer of 2001, immediately prior to the attacks. Employment had peaked later than investment, in March 2001, but had declined by 808,000 jobs by August of that year.

In early September, however, tentative signs were emerging that suggested the economy might be stabilizing. Consumer spending had moved higher in August, and the decline in new orders for nondefense capital goods — a key advance indicator of business equipment investment — appeared to be moderating. The attacks abruptly interrupted this incipient recovery in economic

activity. They sharply increased uncertainty regarding near-term economic prospects as households and business firms assessed the implications of the changed environment. In this situation, many households — riveted to media reporting in the aftermath of the attacks and apprehensive about their job security and personal security — held off on discretionary consumption spending. Similarly, business firms deferred committing to new investment outlays while they awaited a better read on the likely course of demand for their products and services. This business caution, understandably, was reinforced by sharp increases in property and casualty insurance premiums, and increased risk premiums in capital markets. This abrupt curtailment of household and business demand for goods and services naturally provoked a marked softening in job markets. The average monthly decline in employment accelerated from 150 thousand jobs from March through September to 300 thousand jobs from September through the remainder of the year.

Beyond these immediate aggregate effects, the attacks, as you are no doubt well aware, had especially negative consequences for particular sectors of the economy and industries. Outside of the financial sector, which I'll address in more detail in a few minutes, the most noticeable effects stemmed from the disruption of airline services. Leisure travel was hit particularly hard; the hospitality, entertainment and tourist industries experienced sizable increases in cancellations and reductions in new bookings. Business travel also fell off, as conferences were cancelled or postponed and firms had an incentive to make greater use of video and teleconferencing as an alternative to in-person meetings. Stiffer airport security and the increase in the perceived risk of air travel raised the implicit cost of airline service and sharply reduced demand. Traffic was more than 20 percent below year earlier levels in October; it had been 4 percent above year earlier levels in August. As a result, airline orders for new aircraft plummeted.

The effects I've just listed were mainly on the demand side of the demand-supply equation, and are fairly well known. Some of the supply-side impacts were less visible. The grounding of air flights immediately following the attacks delayed deliveries of materials and other inputs, which

significantly disrupted production in industries and companies that had adopted tight just-in-time supply chain practices. Apart from air shipments, heightened border-crossing restrictions raised the cost and uncertainty of ground supply deliveries across the Canadian and Mexican borders. U.S. auto manufacturers are especially dependent on these shipments; consequently, they were forced to cut back production.

In sum — again — the short-term economic effect of 9-11, hardly surprisingly, was a sharp drop in economic activity. A little more than two years after the attack, however, the longer-term impact appears more muted. The attacks clearly deepened the recession that began in March 2001 and ended in November of that year. But, within weeks of the attacks, the economy began to revive. After declining for three consecutive quarters, real GDP rose at a 2¾ percent annual rate in the final quarter of 2001 and at a 5 percent rate in the first quarter of 2002, and the recovery has continued since then, albeit sluggishly and with continued job losses.

The upturn — at least in GDP — reflected in significant part the reaction of ordinary households, private businesses and public policymakers to the immediate consequences of the attacks. Policymakers, for their part, reacted swiftly and constructively. The Fed provided substantial emergency liquidity to financial markets in the days following the attacks, and I'll come back to that. We also accelerated the longer-term easing of monetary policy we had begun in January of that year. On the fiscal side, within a week of the attacks Congress provided approximately \$50 billion of emergency relief to the local areas and industries most directly affected, such as lower Manhattan and the airlines. In the private sector, the auto companies quickly recognized the potential damage that prolonged weak demand might do to their industry and in October began offering the rich sales incentive programs that, with the aid of an extraordinarily enthusiastic consumer response, have put a sizable number of new domestic-make cars on American highways. The airlines, making the most of a challenging situation, adjusted capacity by reducing flights and mothballing airplanes in the desert. Thousands of other businesses, large and small, have made similar if less draconian adjustments. Much has been

made — appropriately — of the remarkable resilience of the U.S. economy in the wake of 9-11. Clearly, our economy's ability to adjust flexibly to shocks like these attacks is the crucial element in this resilience.

All told, then, from our perspective here this morning in late 2003, the intermediate-term effects of the terrorist attacks on the economy resemble those of a very large natural disaster, like an earthquake: a relatively modest reduction in the nation's huge stock of wealth and in current productive activity, but little discernible reduction in our potential long-term growth. It is true, as I noted earlier, that the current recovery has been sluggish, and the lingering effects of the attacks — lost output due to airport delays, for example — may be playing a role in this. But there are plenty of other suspects in the case of the sluggish recovery such as the sharp reversal of what many believe was excessive investment in technology in the late nineties, the associated break in the stock market, and the Enron, World Com and other recent corporate governance scandals, to name a few. And in any case, the recovery appears now to be accelerating. GDP grew at a 3¼ percent rate in the second quarter of this year — above earlier expectations — and its pace appears to have quickened to about a 5½ percent rate in the third quarter. And there are at least a few preliminary signs that the weakness in the job market is abating. Finally, the estimated total direct cost, public and private, of increased homeland security in fiscal year 2003 is only a little over one-half of one percent of GDP.

At this point, some of you may be thinking: this guy is pretty complacent about all this. If he's right, why are we bothering to have this particular session of this conference? Let me assure you that I am not complacent — far from it. What I've been describing is the economic fallout from one particular terrorist event. That's worth doing, as a starting point, since 9-11 is by far the most important of a limited number of data points we have regarding the economic dimensions of recent terrorism. But it is obviously only a starting point. What if these attacks had been followed in quick succession by further substantial attacks? What if this particular attack had been even more extensive and destructive than it was? Rather than complacent, my instinct is that the economic

consequences of the 9-11 attacks could have been significantly worse than they were and that — again, in a narrow economic sense — we were “fortunate” that they were not.

I’ll return to this theme in my concluding comments. Meanwhile, I may be able to convey a little of the basis for my instinct by describing the impact of 9-11 in the banking and financial sectors of the economy, with which I am more directly familiar.

### Effects on Banking and Financial Markets

Like everyone in this room, I expect, I recall vividly how I learned about the attacks on the fateful morning they occurred. My assistant, Mary Lucas, came into my office and told me that an airliner had hit one of the Trade Center buildings, and I needed to watch the CNN coverage. My first thought, before the second plane hit, was that it was a terrible accident. Thus began the busiest and most hectic week I’ve experienced in my years at the Fed, but much less hectic and challenging than the week many of my Fed colleagues experienced, especially those at the New York Fed and at the Fed’s headquarters in Washington, and, of course, thousands of others in both the public and private sectors. I’ll focus especially on the Fed’s role in managing the crisis, for two reasons. First, that’s what I know about from my own experience; second, our role was a central one — appropriately, since we are the nation’s central bank. In addition to my own recollections, I’ve drawn on a very useful retrospective speech delivered at Vanderbilt earlier this year by Roger Ferguson, who was the Fed’s Vice Chairman on 9-11, as he is today.

Banking and financial markets were hit especially hard by the 9-11 attacks because of the concentration of so much financial activity near the Trade Center site in lower Manhattan. Banking and financial markets play a role in the broader economy analogous to the role of the circulatory system in the human body. Consequently, the strains that the attacks produced in these markets immediately after they occurred presented a serious risk to the overall economy. Because the Fed has supervisory responsibility for a significant part of the banking system, operates the nation’s electronic inter-bank payments system, known as “Fedwire,” and is the ultimate source of liquidity in the U.S. financial system, we are generally regarded as primarily responsible for maintaining

America's financial stability, especially in a crisis. On 9-11, therefore, the Fed immediately began to play a principal role in managing the financial dimensions of the crisis.

Again, the attack on the Trade Center dealt a serious blow to the nation's financial system. The collapse of the Towers disabled an adjacent Verizon facility responsible for 40 percent of the phone lines in lower Manhattan. Several major securities dealers in the critical U.S. government securities market had offices in the Towers, particularly Cantor Fitzgerald, which lost nearly 700 employees. Further, one of the main clearing and settlement banks supporting that market experienced communications and payments disruptions that were not fully resolved for several days following the attacks. In this situation the government securities market closed until Thursday the 13<sup>th</sup>. The stock market also closed and remained closed until Monday the 17<sup>th</sup>, and there were disruptions in the commercial paper and other markets.

Confronted with this crisis, our highest priority at the Fed was to ensure that the banking system was supplied with adequate liquidity. Borrowing a metaphor from Governor Ferguson's Vanderbilt speech, liquidity is the "oil lubricating the engine of capitalism to keep it from burning itself out." (Parenthetically, with Chairman Greenspan and then New York Fed president Bill McDonough in Europe, and all of his Federal Reserve Board colleagues away from Washington at the time of the attacks, responsibility for leading the Fed through the crisis fell to Governor Ferguson. Working closely with Fed people across the country, but especially at the New York Bank, he discharged this responsibility with distinction.) Not surprisingly, the demand for liquidity skyrocketed on the 11<sup>th</sup> and in the days immediately following the attacks. Many institutions were operating from back-up sites, and while substantial contingency testing had occurred in the run-up to Y2K, some banks nonetheless had difficulty making their communications links with principal payments systems and counterparties fully functional. In a couple of key cases, banks were unable to make outgoing payments expeditiously. These banks therefore accumulated huge balances in their reserve accounts with the Fed. Correspondingly, other banks dependent on



these payments to meet their own obligations, had big negative balances in their accounts — hence the sharp increase in liquidity demand.

Extending Governor Ferguson’s analogy, it was critically important for the Fed to provide this liquidity lubricant; otherwise, the financial engine would seize up. Eventually, many businesses outside the financial sector and consumers would have been unable to obtain funds needed to meet their obligations, and the cascading effect could have caused the broader economy to seize up. Faced with this risk, our first step, just after noon on the 11<sup>th</sup>, was to issue a brief statement that the Fed was open, operating, and prepared to provide liquid funds to banks through our discount window. This was an instance where words — credible words — were as important as action. The statement signaled markets that we would provide liquidity through the window liberally, in whatever amount was required to meet the additional demand generated by the crisis.

We did this, through several channels. Depository institution borrowing at the window surged to a record \$45 billion on the 12<sup>th</sup> before receding later in the week. In subsequent days we also provided even larger amounts of funds through so-called open market operations, carried out by the New York Fed, through purchases of U.S. government securities in the open market. These operations augment liquidity since we pay for our purchases by crediting banks’ reserve accounts at the Fed. At a more detailed level, we also supplied funds via the check services we provide banks, by crediting the accounts of the banks presenting checks to us for collection even where we were unable to collect the funds from payor banks due to transportation disruptions and other operational problems. Finally, at the international level, we established temporary swap arrangements totaling \$88 billion with the Bank of England, the European Central Bank and the Bank of Canada so that private foreign banks could obtain dollars more readily to meet the demands of their customers. Beyond these actions aimed at supplementing the total supply of liquidity, we worked closely with individual banks and public entities to address bottlenecks that were impeding the flow of liquidity, and we encouraged banks and other key financial market

institutions — “badgered” might be a more descriptive term — to remain open or reopen whenever possible.

These actions of the Fed, in conjunction with numerous actions by bankers and others outside the Fed aimed at the same result, succeeded in averting a broad financial meltdown, for which we can all be grateful. And the intermediate-term market disruptions due to the attacks appear to be slight. As with the macroeconomic fallout from the attacks, however, the absence of more persistent negative impacts from the attacks is no basis for complacency. The short-term effects in markets reveal a number of vulnerabilities, which, on another day, might have made matters much worse.

Many of these vulnerabilities were at an operational level. Some institutions, for example, had located backup sites near their primary facilities, since they didn’t anticipate a broader disturbance that would make both sites unavailable. Also, economies of scale in back-office processing have led to the concentration of clearing and settlement operations in a handful of entities that serve as market utilities. The associated cost reductions have contributed greatly to the dramatic recent advances in the capabilities of our financial system, but the concentration has also increased the vulnerability of important segments of the financial system to a single disruptive event, which underlines the special need for effective contingency planning by these entities. Finally, the attacks reminded us once again of the crucial role that telecommunications facilities play in supporting financial markets and payments systems. The attacks revealed that these facilities were operationally far less diversified than many had assumed. Market participants in lower Manhattan, for example, believed they had bought redundancy by contracting with several communications vendors; on that fateful Tuesday they discovered that many of these providers routed messages through the same Verizon office.

We at the Fed are working actively with banks and other market participants to address these kinds of issues, and, more generally, to help strengthen business continuity and contingency planning in the financial sector. We are also continuously seeking ways to increase our own

confidence that we will be able to meet, quickly, increased liquidity needs that may arise from future terrorist attacks, to prevent the perpetrators from achieving their goals by destabilizing our financial system.

### Some Conclusions and the Challenge Ahead

To my mind, this review of the economic and financial effects of the 9-11 attacks suggests two broad conclusions. First, and most obviously, the U.S. economy is so large, so dynamic, and so agile that it was able to absorb the 9-11 attacks with only limited longer-term consequences for either financial markets or the general economy. This is an encouraging conclusion. And it has important practical implications, since it suggests that business firms, financial institutions and individual Americans can commit to longer-term investments with a considerable degree of assurance that the terrorist threat to the economy can be broadly contained. Indeed, this assurance is a prerequisite for such investment, without which the economy would lose its vitality.

The second conclusion, though, as I've already suggested, is that we should not take excessive comfort from the first, relatively favorable conclusion. In stating that conclusion, I chose my words carefully: I referred to a "considerable degree of confidence" that the economic risk from terrorism can be contained — not absolute assurance. Again, if the financial system and the economy had been forced to absorb additional attacks before the short-run disruptions resulting from the 9-11 attacks had begun to wane, the damage could have been greater and more prolonged. And building on my discussion of the fallout in financial markets, significant problems at a few additional strategically important communications facilities could have impeded the flow of the additional liquidity the Fed was providing. To my mind this implies that, going forward, our efforts to counter the economic risks from terrorism must be aggressive and as dynamic as the risk itself. Market participants, the Fed, and supporting utilities must be constantly evaluating risks, identifying vulnerabilities, and correcting them. This obviously needs to happen here in Virginia and elsewhere in our region. Needless to say, the Richmond Fed is eager to contribute in any way we can.

One final comment. While the economy was in the latter stages of a recession when the planes crashed into the buildings in New York and Washington, and the field in Pennsylvania, it was a relatively mild recession as recessions go. Moreover, economic conditions were relatively favorable in some respects. In particular, inflation was low — only about 2 percent at an annual rate. Largely because of this, long-term interest rates were also low. And the banking system was generally profitable and healthy — much stronger than it had been at the end of the previous recession in the early 1990s, when the savings and loan crisis produced a severe credit crunch. Imagine how the economy might have reacted to 9-11 if inflation and interest rates had been at the double-digit levels of the early 1980s, with all the risk such conditions would have implied even before the attacks hit.

The lesson is that, in addition to what it can do to manage a terrorist crisis by providing liquidity during the crisis, the Fed can also mitigate such crises even before they occur by maintaining credibility for low and stable inflation, and the foundation such credibility provides for financial stability, in our ongoing conduct of monetary policy. Let me tell you that we are absolutely committed to doing precisely that.

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<sup>1</sup> I wish to thank my colleague Jeffrey M. Lacker for his assistance in preparing these remarks.