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A View of the Economic Crisis and the Federal Reserve's Response[1]

Thank you very much. I'm very glad to be here before this thoughtful and engaged audience to talk about the economy and the Federal Reserve's response. The Fed has faced extraordinary challenges over the past two years and these challenges continue as this very painful recession grinds on. I don't have to tell you how difficult these times have been for the American people. You are reminded of it every time you look at your retirement portfolio or hear about rising foreclosures and plunging home values. Your businesses may be squeezed as customers retreat and credit remains scarce. You may have seen colleagues get pink slips or you yourselves may be struggling to find a job. I'm happy to offer some good news: We've seen encouraging signs lately that the economy is poised to turn the corner. But as California's 11.5 percent unemployment rate attests, we still find ourselves slogging through the starkest economic landscape most of us have known in our lifetimes.

For economic policymakers, this crisis has been like a hundred-year flood—a disaster of the highest order which has put us on a continuous emergency footing. That is especially true at the Federal Reserve—the institution where I serve as one of 12 regional bank presidents—which is charged with promoting maximum employment and controlling inflation. Later in my talk, I'll describe how we've responded to what not so long ago seemed perilously close to financial and economic meltdown. For now, all I'll say is that, in the face of unprecedented challenges, we've

[1] I would like to thank John Williams and Sam Zuckerman for assistance in preparing these remarks.

developed a number of creative programs far beyond the confines of our usual focus on interest rates to make sure that everything that reasonably could be done to get the economy turned around is being done.

I want to start by discussing where the economy has been and where I see it going over the next few years. As always, my comments represent my own views and not necessarily those of my colleagues in the Federal Reserve System. To understand where we're headed, it's useful to review how we got to the present situation. I think it's helpful to divide the recent turmoil, like a play, into three acts. I hope the curtain is now rising on the final act, one defined by economic recovery.

The first act began early in the new century, amid a frenzied housing boom and a mortgage market where loans were available to just about everyone on unbelievably generous terms. Interest rates were unusually low, partly because of a huge supply of foreign savings that flooded the U.S. market and partly because the Fed promoted very low interest rates after the tech bubble burst to prevent deflation.[2] With money so cheap, investors borrowed to the hilt and took ever-greater risks in search of higher returns.

It may be that investors—and regulators too—got overly complacent. Many had come to believe that the new and mind-bendingly complex forms of financial engineering that had swept Wall Street virtually guaranteed the safety of banks and investment firms. A new era had dawned: financial innovation and sophisticated risk management had changed the rules. What's more, the business cycle had been tamed. For two decades, recessions had been rare and mild.

[2] See Bernanke (2005) for a discussion of the global influences on interest rates. See Taylor (2009) for a critical evaluation of U.S. monetary policy during this period.

This whole process fed on itself. In the housing market, loan standards became increasingly lax. Investors had an insatiable appetite for securities created from home loans, buying them by the truckload from the institutions that made the loans, even though they offered returns just a shade higher than ultra-safe U.S. Treasury securities. These risky practices spread far beyond the subprime mortgage market where they were most visible, reaching into all kinds of credit products around the world.

This brings us to the second act of the play. House prices leaped higher every year, thanks to this frothy financial market. But they couldn't go up forever. Once they started to fall in 2006, loan delinquencies surged and the sophisticated financial engineering collapsed. The financial system spread those losses like a runaway infection. Banks and investment firms around the world saw the value of their housing-related investments plummet, in some cases threatening their solvency. The financial engineering was so unfathomable that it was nearly impossible to identify which institutions were safe and which were in jeopardy. That prompted financial firms to hunker down and avoid lending money to anybody.

This all came to a head last fall. The weakest links in the financial chain were unable to borrow the money they needed to meet day-to-day obligations—a classic liquidity crisis. And when the venerable Wall Street firm Lehman Brothers collapsed, the system broke down entirely. The financial markets that banks and businesses rely on to fund daily operations froze up. The value of investments held by financial institutions plunged as everyone tried to sell whatever they could to raise cash. Even the most solid institutions feared for their lives.

Such a breakdown of the financial system had the direst implications for the broader economy, threatening to choke off credit to households and Main Street businesses. For

Congress, the Fed, the Treasury Department, and the Federal Deposit Insurance Corporation, it was a signal to take emergency steps to keep credit flowing to the economy. Congress approved the TARP program and it was quickly used to provide capital to banks. And the Fed created never-before-seen programs to stabilize money market mutual funds and the short-term commercial paper market. In addition, the Fed and Treasury jointly intervened to support important institutions whose collapse was judged to threaten the entire financial system.

I am not going to go into detail about the alphabet soup of Fed programs created during this period. But I want to stress that these policies—in some cases improvised in very short order—did succeed in averting a full-blown meltdown. The panic of 2008 subsided. Increasingly, banks and corporations have been able to raise funds on reasonable terms. Confidence in the financial system is slowly returning.

Still, our brush with financial collapse came at great cost. As financial institutions struggled to survive, they cut back on lending. And private securitization markets seized up entirely. These are markets in which a variety of types of loans, including auto, student, credit card, Small Business Administration, jumbo mortgage, and commercial real estate loans, are packaged as securities and sold to investors. The resulting massive credit crunch caused the economy to nosedive in the final quarter of last year and the first quarter of this year. Job losses reached more than 700,000 per month and the unemployment rate skyrocketed to levels not seen since the early 1980s, reaching 9.4 percent in May. Some 6 million jobs vaporized during the recession. Each of these was once held by a real human being, who likely depended on that paycheck to pay the mortgage, buy the groceries, and put gas in the car. The loss of these jobs is an immense tragedy. We should never forget that this awful recession is a flesh-and-blood thing that robs our families, neighbors, and friends of their livelihood.

Earlier I described some of the emergency measures the Fed has taken to prop up the financial system. Now I'd like to talk about the policies we've adopted to fight the recession directly. Our policymaking body is called the Federal Open Market Committee, or FOMC. It consists of the presidents of the Fed's regional banks, like me, plus the governors of the Federal Reserve Board in Washington, including Chairman Ben Bernanke. Traditionally, our main monetary policy tool is the federal funds rate, which is what banks charge each other for overnight loans. We control this rate by pumping cash into the banking system or withdrawing it. This is a powerful tool because the interest banks pay to borrow determines what they charge for loans and ultimately works its way through to the rates businesses and households pay for credit. This December, we cut the federal funds rate essentially to zero—an extraordinary step on its own—and we've said repeatedly that low rates would likely be warranted "for an extended period." As a result, many other interest rates in the economy are at very low levels. Other major central banks have taken similar steps.

Still, given the depth of the crisis we've faced, a near-zero federal funds rate hasn't been enough to turn the economy around. So we've developed a variety of alternative ways to stimulate the economy. For example, we've become a major buyer of securities issued by the giant mortgage companies Fannie Mae and Freddie Mac, a move that has helped push conforming mortgage interest rates to near-record low levels—a support to the housing sector, which is under tremendous duress. In addition, the FOMC launched a program to purchase large quantities of longer-term Treasury debt, to help bring down corporate bond and other rates that are linked to Treasury yields. In total, the FOMC has committed up to $1.75 trillion—that is, trillion with a "T"—for these asset purchases by the end of this year.

The Fed and other government bodies have also worked hard to put our banking sector on a more secure footing. The recent stress tests of the 19 largest U.S. banks provided a thorough evaluation of their financial health and capital needs. Since these tests, many banks have raised capital or issued debt without FDIC guarantees—a very encouraging sign.

In addition, the Fed and Treasury Department jointly developed the Term Asset-Backed Securities Loan Facility, or TALF, program to help revive vital securitization markets. Securitization is one of the great financial innovations of the last generation, greatly expanding the market for these loans and reducing their cost compared with the days when banks and other front-line lenders had to keep such credits in their own portfolios. There's no question that securitization of certain types of loans like subprime mortgages contributed to the crisis. But we must not throw out the baby with the bath water. Securitization markets will continue to play a major role in our financial system. As I mentioned, in the midst of the financial storm late last year, these markets froze up entirely, with the exception of the market for mortgage-backed securities issued by Fannie Mae and Freddie Mac. That made it tough, if not impossible, for ordinary people to borrow to buy a car, pay college tuition, or finance a business. Restoring securitization markets to health is one of the key challenges we face. Our TALF program got off to a slow start, but is now clearly helping to bring rates down and increase the issuance of a wide range of securitized loan products.

We now come to the present—the third act—in which the economy hopefully recovers. Right now, we're like a patient in intensive care whose condition has stabilized and whose fever is just starting to come down. We're just completing the sixth quarter of recession, but the pace of decline has slowed markedly. The news during the past few months has been encouraging. Even though house prices are continuing to fall in most markets, housing sales and new

construction appear to have stabilized. Consumers have recovered some spirit and their spending has also stabilized, thanks in part to government stimulus programs. Payrolls are still shrinking at an awful pace, but the momentum of job losses has slowed considerably in the past two months.

Financial markets are in much better shape today than we ever would have dreamed six months ago. Investors have gone from disregarding risk, to being paralyzed by it, to once again being willing to take on a reasonable bit. The stock market has rallied and investor appetite for corporate bonds and other assets has rebounded, restoring access to capital for healthy companies. Even so, I am concerned that mortgage rates, which have risen of late, could place a drag on a still very sick housing market, potentially driving home prices still lower and pushing more borrowers into foreclosure. The recent run-up in oil prices may also reflect greater confidence in the global outlook. But it too is troublesome because it impedes recovery by forcing consumers and businesses to pay more for gas and energy, thereby reducing their ability to buy other goods and services.

Still, I expect the recession will end sometime later this year. That would make it the longest and probably deepest downturn since the Great Depression. Growth will come from a variety of sources. One is federal government spending resulting from the stimulus program passed by Congress earlier this year. This package provides tax cuts that leave more cash in consumers' pockets, as well as direct government spending increases that add to payrolls and boost economic output. But it will take more than fiscal policy to really get the economy moving forward.

Fortunately, some sectors are poised to rebound. For example, the auto industry has cut back production so far that inventories have begun to shrink—even in the face of historically weak demand for motor vehicles. As the economy stabilizes, just slowing the pace of this inventory shrinkage will boost gross domestic product, or GDP, which is the nation's total output of goods and services. This story holds through broad sectors of the economy, where cautious consumers and businesses have cut back on purchases of durable goods, such as computers and appliances. Eventually, old and broken-down goods will need to be replaced, and the resulting demand will add to economic growth.

The housing sector too will eventually rise from the ashes. Home construction has fallen dramatically over the past few years as the nation works off the massive overbuilding of the boom years. But, once this adjustment is complete, housing construction will need to increase significantly just to keep pace with the growth in the number of households. Finally, the vicious cycle of tight credit and a weak economy can turn into a virtuous cycle. Once the economy starts growing and jobs and income are increasing, fewer borrowers will default and lenders will be willing to increase the supply of credit.

I don't like taking the wind out of the sails of our economic expansion, but a few cautionary points should be considered. I expect the pace of the recovery will be frustratingly slow. It's often the case that growth in the first year after a recession is very rapid. That's what happened as we came out of a very deep downturn in the early 1980s. Although I sincerely wish we would repeat that performance, I don't think we will. In past deep recessions, the Fed was able to step on the accelerator by cutting the federal funds rate sharply, causing the economy to shoot ahead. This time, we already have our foot planted firmly on the floor. We can't take the federal funds rate any lower than zero. I believe that the Fed's novel programs are stimulating

the flow of credit, but they simply aren't as powerful levers as large rate cuts, so this time monetary policy alone can't power a rapid recovery.

History also teaches us that it often takes a long time to recover from downturns caused by financial crises.[3] In particular, financial institutions and markets won't heal overnight. Our major banks have made excellent progress in establishing the capital buffers needed to continue lending even through a downturn that is more serious than we anticipate. But they are still nursing their wounds and credit will remain tight for some time to come.

I also think that a massive shift in consumer behavior is under way—one that will produce great benefits in the long run but slow our recovery in the short term.[4] American households entered this recession stretched to the limit with mortgage and other debt. The personal saving rate fell from around 8 percent of disposable income two decades ago to almost zero. Households financed their lifestyles by drawing on increasing stock market and housing wealth, and taking on higher levels of debt. But falling house and stock prices have destroyed trillions of dollars in wealth, cutting off those ready sources of cash. What's more, the stark realities of this recession have scared many households straight, convincing them that they need to save larger fractions of their incomes. In the long run, higher saving promises to channel resources from consumption to investment, making capital more readily available to retool industry and fix our infrastructure. But, in the here and now, such a rediscovery of thrift means fewer sales at the mall, and fewer jobs on assembly lines and store counters.

[3] See Reinhart and Rogoff (2009) for evidence on this issue.
[4] See Glick and Lansing (2009) for a discussion of household deleveraging.

A fourth factor that could slow recovery is the unprecedented global nature of the recession.[5] Neither we nor our trading partners can count on a boost from strong foreign demand. Finally, developments in the labor market suggest it could take several years to return to full employment. During this recession, an unusually high proportion of layoffs have been permanent as opposed to temporary, meaning workers won't get called back when conditions improve. Also, we've seen an unprecedented level of involuntary part-time work, such as state workers on furlough a few days per month. Those workers are likely to return to full-time status before new workers are hired. To summarize, I expect that we will turn the growth corner sometime later this year, but I am not optimistic that the economy will spring back to normal anytime soon. What's more, I expect the unemployment rate to remain painfully high for several more years.

That's a dreary prediction, but there is also some risk that things could turn out worse. High on my worry list is the possibility of another shock to the still-fragile financial system. Commercial real estate is a particular danger zone. Property prices are falling and vacancy rates are rising in many parts of the country. Given the weak economy, prices could fall more rapidly and developers could face tough times rolling over their loans. Many banks are heavily exposed to commercial real estate loans. An increase in defaults could add to their financial stress, prompting them to tighten credit. The Fed and Treasury are providing loans to investors in securitized commercial mortgages, which should be a big help. But a risk remains of a severe shakeout in this sector.

Let me now turn to an issue that has lately garnered a great deal of attention—inflation. Just a short time ago, most economists were casting a wary eye on the risk of deflation—that is

[5] See IMF (2009) for a discussion of the global economic outlook.

that prices might drop, perhaps falling into a downward spiral that would squeeze the life out of the economy. Now, though, all I hear about is the danger of an outbreak of high inflation.

I'll put my cards on the table right away. I think the predominant risk is that inflation will be too low, not too high, over the next several years. I take 2 percent as a reasonable benchmark for the rate of inflation that is most compatible with the Fed's dual mandate of price stability and maximum employment. This is also the figure that a majority of FOMC members cited as their long-run forecast for inflation, according to the minutes of the committee's April meeting.

First of all, this very weak economy is, if anything, putting downward pressure on wages and prices. We have already seen a noticeable slowdown in wage growth and reports of wage cuts have become increasingly prevalent—a sign of the sacrifices that some workers are making to keep their employers afloat and preserve their jobs. Businesses are also cutting prices and profit margins to boost sales. Core inflation—a measure that excludes volatile food and energy prices—has drifted down below 2 percent. With unemployment already substantial and likely to rise further, the downward pressure on wages and prices should continue and could intensify. For these reasons, I expect core inflation will dip to about 1 percent over the next year and remain below 2 percent for several years.

If the economy fails to recover soon, it is conceivable that this very low inflation could turn into outright deflation. Worse still, if deflation were to intensify, we could find ourselves in a devastating spiral in which prices fall at an ever-faster pace and economic activity sinks more and more. But I don't view this as likely. The vigorous policy actions of the Fed and other central banks, combined with sizable fiscal stimulus here and abroad, have sent a clear message

that deflation won't be tolerated. Based on measures of inflation expectations, the public appears confident that the Fed will adopt policies that will maintain a low, positive rate of inflation. Evidently, the credibility that the Fed and other central banks have built over the past few decades in bringing inflation down has spilled over into a belief that we won't allow inflation to get too low either. This does not mean that a short episode of deflation couldn't occur, but it makes a prolonged and devastating deflationary spiral less likely.

None of what I just said will satisfy those who worry about inflation. Indeed, if you listen to popular business news channels, you might hear a drumbeat of concern that the Fed could let inflation get too high. Those who hold this view point to the rise in Treasury yields and commodity prices this year as signs that runaway inflation is on the horizon. They muster three arguments. The first is that the Fed has pumped up the money supply and expanded its balance sheet to fund its financial rescue programs, potentially igniting inflation. The second is that the Fed runs the risk of repeating the errors of the 1970s by focusing on mistaken views of economic slack rather than rising prices. The third is that large fiscal budget deficits will create higher inflation. I take all of these concerns very seriously and will address each in turn.

First, I'll talk about the Fed's balance sheet. As I discussed earlier, the Fed has taken a number of strong steps to avert a financial and economic meltdown, and to support the flow of credit. These policies have caused the assets on the Fed's balance sheet to more than double, from under $900 billion at the start of the recession to over $2 trillion now. This expansion is largely financed by increases in bank reserves, that is, surplus cash that banks deposit with us. Some worry that the Fed's balance sheet expansion is pumping money into the economy and will be inflationary. But, as I will explain in a moment, we have the tools needed to tighten policy and head off future inflation. There is also some concern that the Fed could be trapped by

conflicting goals if, at some point, a growing economy requires a higher federal funds rate, before credit markets are fully healed. Finally, some worry that the Fed may lack the political will to tighten policy when the time comes.

I will be the first to say that it is always difficult to get monetary policy just right. But the Fed's analytical prowess is top-notch and our forecasting record is second to none. The FOMC is committed to price stability and has a solid track record in achieving it. With respect to our tool kit, we certainly have the means to unwind the stimulus when the time is right. Many of the special programs we developed to provide emergency credit to the financial system are already tapering off as market conditions improve. Many of the assets that we have accumulated during the crisis, such as Treasury and mortgage-backed agency securities, have ready markets. And the Fed can push up the federal funds rate by raising the rate of interest that we pay to banks on the reserve balances they have on deposit with us—authority that was granted to us by Congress last year. An increase in the interest rate on reserves will induce banks to lend money to us rather than to other banks and borrowers, thereby pushing up the federal funds rate and other rates charged to private borrowers throughout the economy. The ability to pay interest on reserves is an important tool because, as I mentioned, it's conceivable that, even if the economy rebounds nicely, the credit crunch might not be fully behind us and some financial markets might still need Fed support. This tool will enable us to tighten credit conditions even though our balance sheet wouldn't shrink.

Let me turn to the second concern, that we could have a rerun of the stagflation of the 1970s. Some economists have argued that the Fed misjudged how low the unemployment rate could go without igniting inflation and, as a result, lowered the federal funds rate too far for too

long, an overly accommodative stance that contributed to runaway prices.[6] This is an issue we have studied in great depth, looking at a wide range of data sources and using a variety of techniques to estimate slack in labor and product markets. Not surprisingly, these estimates vary. But they all plainly show that labor and product markets are currently operating well below the levels that would trigger inflation. We must beware of overconfidence that we have too precise a handle on these questions. But, to me, the evidence is clear that the economy has substantial slack and we are far from the kinds of unemployment rates that would make inflation a danger.

The third concern is that big federal budget deficits might eventually be inflationary. In my years of teaching at Berkeley, I regularly lectured on the relationship between fiscal deficits and inflation. A glance at history shows that many countries with massive structural deficits and without an independent central bank turned to the printing press to pay off their debts. That's a recipe for high inflation and, in some cases, hyperinflation.

But I don't believe the United States faces that threat. Looking back in history, runaway fiscal deficits have often been accompanied by high inflation.[7] But, since World War II, such a relationship has only held in developing countries.[8] In countries with advanced financial systems and histories of low inflation, no such connection is found.

So where exactly do the dangers with fiscal deficits lie? To answer that question, it's important to distinguish between cyclical deficits and long-run or structural deficits. The recent sharp rise in the federal deficit in large part stems from the government's appropriate response to

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[6] See, for example, Orphanides (2002).
[7] See Sargent (1982) for a discussion of the fiscal sources of high inflation.
[8] See Fischer et al. (2002) and Catao and Terrones (2005) for analysis of the relationship between deficits and inflation in the post-World War II period.

a severe recession and financial crisis. These near-term cyclical deficits vastly overstate the problem of ongoing structural deficits. But the United States does have a large structural budget deficit, and it will remain when the economy finally recovers. To a great extent, the structural budget gap reflects demographic shifts resulting in an aging population coupled with a chronic escalation in health-care costs. The issue of rising entitlement and health-care spending is not new. In fact, I spent many of my waking hours grappling with these problems a decade ago when I chaired the Council of Economic Advisers in the Clinton administration.

It is essential that we come to grips with structural budget deficits, but *not* because such deficits will cause inflation. It's because large, sustained structural deficits vacuum up savings that could be put to more productive uses. Once the economy is back on track, these deficits will make capital more expensive for private borrowers, crowding out the investments that are essential to boost productivity and fuel growth in real wages and living standards.

Consider the case of the large deficits in the United States in the 1980s. We did not see a run-up in inflation then. On the contrary, the deficits soared just as inflation was coming down. Those deficits did, however, contribute to higher interest rates, which made education and investment more expensive. Japan provides another example. Japan has run very large fiscal deficits through much of the past two decades, yet its problem is persistent deflation—precisely the opposite of inflation.

Finally, there's the matter of whether the Fed's resolve is firm enough to tighten policy when the time comes to do so. Let me be unequivocal. The Fed is committed to doing everything in its power to foster recovery while maintaining price stability. When it's necessary to withdraw the extraordinary stimulus we have put in place, we won't hesitate. The Fed was

created as a politically independent central bank, and that tradition is deeply embedded in our culture and practice. We have worked closely with the Treasury and other agencies during this crisis, and it was appropriate to do so. But, in our conduct of monetary policy, we are guided solely by our statutory mandates of maximum employment and price stability. In March, the Treasury Department and the Fed signed an accord reaffirming our independence in setting monetary policy.

In sum, although I take these concerns about inflation seriously, I do not believe that there is a real threat of high inflation in the current situation. Monetary policy fosters inflation when it loosens financial conditions enough to create excess demand for goods and services. What could be clearer than the fact that right now we need more demand—not less—to offset the slack in labor and product markets?

If anything, I'm more concerned that we will be tempted to tighten policy too soon, thereby aborting recovery. That's just what happened in 1936 when, following two years of robust recovery, the Fed tightened policy because it was worried about large quantities of excess reserves in the banking system. The result? In 1937, the economy plunged back into a deep recession.[9] Japan too learned that hard lesson in the 1990s, when both monetary and fiscal policies were tightened in the mistaken belief that the economy was rebounding.

These episodes teach us a valuable lesson that we should heed in the present situation. Let this not be another 1937, but a time when policymakers have the wisdom and patience to nurse the economy back to health. And, when the economy does come back, let it be built on a foundation of sound private investment and sustainable public policies. Only then can we be

[9] See Friedman and Schwartz (1963), Romer (1992), and Orphanides (2004) for analysis of the events of 1936 and 1937. See Ahearne et al. (2002) and the references cited therein for a detailed account of Japan's economy during the 1990s.

confident that we can escape destructive boom-and-bust cycles and build a more permanent prosperity. Thank you very much.

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