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Will the Financial Crisis Have a Lasting Effect on Unemployment?¹

Thank you very much for this opportunity to speak to the Booth School San Francisco alumni club and the CFA Society. To those of you who attended the University of Chicago, I want to note two proofs of your brilliance. First, you went to one of the very best schools in the United States for studying business and economics. And, second, in light of the images we've seen of snowbound cars on Lake Shore Drive, you had the good judgment to move to my home state of California, where we trade off the occasional earthquake for balmy winters.

This evening I'm going to offer my thoughts about the economy and talk about Federal Reserve policy during this period of recovery. I will also address several topics that have made it particularly challenging for monetary policy at this juncture. These include the question of whether the current very high level of unemployment is primarily cyclical or structural. That is, does the current 9 percent unemployment rate mostly reflect weak demand in the economy or, alternatively, strong labor-market frictions that make it harder than usual to match jobs and workers. The answer to that question is vital in determining the noninflationary level of unemployment. I should stress that these remarks represent my own views and not necessarily those of my Federal Reserve colleagues.

Let me start by noting that the economic news has been quite encouraging. The nation's output of goods and services is now growing at a respectable pace, which is a great relief given

¹ I would like to thank Mary Daly, Rob Valletta, and Sam Zuckerman for assistance in preparing these remarks.

that we are less than two years away from the worst financial crisis and recession of the post-World War II era. Inflation-adjusted real gross domestic product grew at a 3.2 percent annual rate in the final quarter of 2010, up from a 2.6 percent pace in the preceding period. Our forecast at the San Francisco Federal Reserve Bank is that the expansion will continue to gain steam, with real GDP growing about 4 percent this year and 4½ percent in 2012. We appear to be in a period of sustained recovery in contrast with the on-again, off-again expansion we experienced for more than a year after the recession ended in the summer of 2009. What's more, the expansion is now being led primarily by solid growth of private-sector demand rather than government stimulus.

Household spending is on the rise, reflecting growing consumer confidence, improvements in credit availability, and the rebound in wealth brought by a resurgent stock market. Real personal consumption expenditures rose at a 4.4 percent annual rate in the fourth quarter of 2010, the fastest growth in five years. The upward trend is visible in sales of autos and light trucks, which were up 17 percent in January from a year before. Consumer spending represents about 70 percent of GDP, so the return of shoppers to the malls and showrooms is critical to the recovery of the broader economy.

In addition, businesses have stepped up their outlays for equipment and software. Inflation-adjusted spending in this category rose more than 16 percent last year. The rise in consumer and business spending has given a big boost to the manufacturing sector, where output rebounded in January by nearly 13 percent from its low in June 2009. Still, despite these large gains, the manufacturing capacity utilization rate was 74 percent in January, well below its longer-run trend value of around 80 percent. That's testimony to the depth of the hole that this sector fell into at the low point of the recession and how far we have yet to go to fill that hole.

However, some sectors are not rebounding at all. Construction remains dormant, with neither residential nor nonresidential building showing any signs of life. Single-family housing starts are running at just above a 400,000 annual rate, one-third the pace that prevailed before the housing boom of the 2000s. Vacancies of all kinds of structures—homes, retail, offices, and industrial—remain elevated. Given the massive overbuilding in these sectors during the boom years and the financial problems still plaguing real estate, I expect it will be many years before we see a full recovery in construction. Meanwhile, we are unlikely to get much of a boost to growth for the next few years from government spending. The impetus to economic activity from federal fiscal stimulus will wane over the next few years. And state and local governments are cutting back spending and raising taxes, which restrains the economic recovery.

Given how far we fell, it will take several years before the economy returns to full health. Nowhere is that more evident than in the labor market. A staggering 8.7 million payroll jobs were lost during the recession and early stages of the recovery. So far, we've managed to gain back only about 1 million jobs. The 9 percent January unemployment rate was down just over a percentage point from its recent peak. We project that from here it will creep down in a disappointingly slow fashion to about 7½ percent toward the end of 2012. We don't expect a return to full employment until around 2014.

This brings me to the question of inflation. It seems that every day there is a new story about rising prices, whether for copper, corn, or oil. There's no question that it costs a lot more to fill the gas tank than it did a year ago. According to the U.S. Labor Department, gas prices rose over 13 percent in the 12 months ending in January of this year. Many other commodity prices have soared. That sort of thing may prompt you to raise your eyebrows when Fed officials like me say we don't see an inflationary surge on the horizon. It's not that we're unaware of the rise

in commodity prices. We eat and buy gas just like everyone else. We know very well that those higher prices reduce the discretionary spending of households, especially those with limited incomes, and can slow overall economic growth. Still, the fact remains that, despite higher commodity prices, inflation remains very low and I expect it to stay low for the next few years. Over the past year, overall inflation was around 1.2 percent as measured by the personal consumption expenditures price index. Core inflation, which excludes food and energy prices, was around 0.7 percent, its lowest level in many decades.

How can I reconcile this apparent contradiction? Recall that inflation measures the rate of change of prices. For inflation to stay high, there must be a general and persistent tendency of prices to rise rapidly, not just a one-time increase. Commodity prices tend to fluctuate up and down depending on supply and demand, and in that sense the changes are typically neither general nor persistent. We saw that when the huge jump in oil and other commodity prices in 2007–08 reversed in 2009. Today, strong growth in Asia and bad harvests in various parts of the world are driving up prices of many foodstuffs. And turmoil in the Middle East and North Africa has driven up the price of oil, as well as market expectations regarding oil prices over the next few years. But supply and demand will adjust, and I don't expect rapid increases in food and energy prices to continue year after year. This view is supported by prices in futures markets which suggest that, with regard to oil, market participants see prices increasing this year, but flattening in 2012.

There has been speculation that rising commodity prices will fuel a surge in the cost of finished goods. But it's important to remember that labor compensation, not raw commodities, is by far the largest cost category for businesses. While it's true that rising agricultural prices drive up the cost of food and rising oil prices drive up the cost of energy, the effects on other consumer

prices are relatively muted. Raw materials and energy account for a relatively small and declining share of the total cost of providing goods and services in the U.S. economy. A careful accounting shows that agricultural commodities comprised only 1.3 percent of costs of personal consumption expenditures in 2010. And fuel commodities accounted for 3.8 percent of personal consumer expenditures.² Why are these shares so low? One reason is that purchases of services, which use relatively little in the way of commodity inputs, make up two-thirds of consumption spending. And in the manufacturing sector, most of the “value added” in the U.S. economy comes from using technology, capital, and labor to transform raw commodities into highly valuable final products, such as aircraft, automobiles, and computers.

So, then, what’s happening with labor costs? With the weak economy and very high levels of unemployment, wage growth has been tepid. Last year, for workers in the nonfarm business sector, compensation per hour, including benefits, rose 1½ percent. Productivity rose slightly faster, so unit labor costs actually fell a bit in 2010 after plummeting 3½ percent in 2009. Given the enormous slack in labor and product markets, we forecast that labor costs will grow only modestly and that inflation will continue to be low. Specifically, we see higher energy prices boosting the overall personal consumption expenditures price index inflation rate to about 1.5 percent this year. But then, with energy prices expected to rise only modestly next year, we expect the overall inflation rate to settle down to about 1 percent in 2012, as continued slack in labor and goods markets offsets the pass-through effects of higher commodity prices onto core prices. Importantly, unlike the 1970s, when run-ups in food and energy prices fueled a wage-price spiral of rising inflation, inflation expectations today remain well anchored and we see no signs of such “second-round” effects of higher commodity prices on wages and prices.

² See Hobijn (2008).

To understand Fed policy at this point, you have to look at this whole picture. We have good GDP growth, but a yawning shortfall of employment and output from potential levels. Congress has charged the Fed with dual objectives: maximum employment and stable prices. We are far from the first, as I shall explain in some detail. Regarding the second, most participants in the Federal Open Market Committee, the Fed's policymaking body, see inflation of 2 percent as being most consistent with price stability.³ The territory we're in now is well below that 2 percent figure. So, we are far off on our price stability objective as well.

In response to the worsening economy and the financial crisis, the FOMC pushed its main policy rate, the federal funds rate, essentially to zero late in 2008. Interest rates can't go below zero, something economists refer to as the zero lower bound. So the Fed has turned to another option to add additional stimulus—the purchase of longer-term securities. From late 2008 through early 2010, the Fed bought \$1.7 trillion in longer-term Treasury securities, and debt and mortgage-backed securities issued by Fannie Mae, Freddie Mac, and Ginnie Mae. In November last year, we announced our intention to purchase an additional \$600 billion in longer-term Treasury securities by the middle of 2011, which we are proceeding to do.

Some commentators have suggested that the large-scale asset purchase program represents some kind of radical departure for the Fed. But the fact is that the program is the pursuit of monetary policy by other means. The fed funds rate is the interest rate banks charge each other for overnight loans. The level of fed funds ripples through the financial system and affects medium- and longer-term interest rates, other asset prices, and ultimately the economy. The Fed's purchases of longer-term securities have similar and, in some ways, even more direct effects. By boosting demand for longer-term securities, Fed purchases push down rates at the

³ In January 2011, 12 of the 18 FOMC participants indicated a longer-run PCE price index inflation rate projection of 1.9–2.0 percent, while the remaining six participants indicated projections between 1.5 and 1.8 percent. See Figure 2C, Federal Open Market Committee (2011).

longer end of the yield curve compared with where they would be otherwise. And those lower rates help ease overall credit conditions, boost asset prices, and stimulate economic activity. Recent research estimates that these lower rates will raise the level of real GDP almost 3 percent and create an extra 3 million jobs by the second half of 2012 relative to what would happen if the Fed hadn't launched this program.⁴ These estimates are subject to a great deal of uncertainty, but I think it's pretty clear that the asset purchases have helped speed the recovery and reduce the risk of sustained deflation.

I promised earlier to explain how the Fed thinks about the question of "maximum employment." So, what exactly does this phrase mean? Maximum employment doesn't mean the situation that prevails when the highest possible number of workers is holding jobs. Instead, economists think of maximum employment in terms of the level of unemployment that creates neither upward nor downward pressure on inflation—in other words, an equilibrium unemployment rate. The phrase "natural rate of unemployment" is sometimes used to refer to this supposedly "ideal" unemployment rate. The concept of natural rate is similar to an acronym some of you may remember from your econ classes, the NAIRU, which stands for the non-accelerating inflation rate of unemployment.

Before the recent recession, a typical estimate of the natural rate was 5 percent. Now some economists argue that today's 9 percent unemployment rate may be close to the natural rate, what you might call the "new normal." Those who hold this view believe that recent shocks to the economy have altered the job market in such a way that higher rates of unemployment are structural rather than cyclical in nature. Proponents of the structural argument reject the idea that today's high unemployment stems from a shortfall of demand for labor associated with an unusually severe business cycle downturn. If that were true, then we would already be at

⁴ See Chung et al. (2011a, b).

maximum employment and the Fed would not be falling short on its maximum employment objective. It would also follow that there would be no downward pressure on inflation from slack in labor markets.

I think it's correct that a number of factors associated with the crisis and recession have temporarily boosted the natural rate of unemployment somewhat. But, I don't agree that the natural rate is currently anything near 9 percent. In fact, I think that today's unemployment rate is far above the natural rate.

Economists at the San Francisco Fed have examined this question closely and have concluded that the "normal" or "natural" rate of unemployment likely has increased, but much less than the rise in the actual unemployment rate. Our estimate is that, since 2007, the natural rate has climbed as much as 1.7 percentage points to 6.7 percent.⁵ We further conclude that much of this increase is temporary. Here's the relevance of this research for monetary policy: Even with this temporarily elevated natural rate, the current unemployment rate, and unemployment rates forecast for the short and medium term, imply that the labor market will have considerable slack for years. As I noted earlier, we don't see a return to full employment until 2014. And that means we think there won't be upward pressure on wages and prices from tight labor and goods markets for some time.

The level of the natural rate of unemployment is important, so I'd like to explain how we arrived at our view. Of course, the natural rate is not directly observable. In a survey, you can ask someone if they have a job or if they've searched for work. But you can't ask them whether they are structurally unemployed. So economists rely on other information to infer the natural rate's level and whether it is shifting. An important source of information is movement in a relationship economists call the Beveridge curve. The Beveridge curve represents the usually negative

⁵ See Weidner and Williams (2011).

correlation between the unemployment rate and the job vacancy rate. This relationship is not surprising—unemployment generally falls as employers step up recruiting efforts. During 2010, job vacancies did indeed rise, indicating an improving labor market. But, the increase was not matched by the normal decline in the unemployment rate. That suggests that the Beveridge curve might have shifted in such a way that a given level of job vacancies is now associated with a higher unemployment rate. That kind of shift is consistent with greater labor market friction so that there is less efficiency in matching workers with jobs. In turn, greater difficulty matching workers and jobs would suggest that the natural rate of unemployment has risen and that there isn't so much slack in the labor market.

San Francisco Fed researchers have recently examined other labor market indicators, such as worker and employer perceptions of how hard it is to find or fill jobs, and the willingness of workers to quit jobs.⁶ Like the job vacancy data, these also imply less labor market slack than one would expect based on the unemployment rate.

These unusual patterns in the Beveridge curve and other labor market indicators raise the possibility of a pronounced shift from previous labor market norms. However, although these data provide tantalizing clues, we can't definitively use them to calculate how much the natural rate of unemployment has increased. History shows that the Beveridge curve is prone to shifts that don't necessarily imply a similarly sized increase in the natural rate. The Beveridge curve shifted rightward about 4 percentage points between the 1960s and the 1980s and then shifted back 2.5 percentage points between 1984 and 1989. Based on other evidence, the variation in the natural rate over this period was much smaller than these movements in the Beveridge curve would suggest. Ultimately, figuring out the factors driving movements in the Beveridge curve and their likely impact on the natural rate are empirical problems.

⁶ See Daly et al. (2011).

So, let's roll up our sleeves and get empirical. Economists have cited three possible reasons why the natural rate of unemployment may have risen since the start of the recession. Beginning in mid-2008, eligibility for unemployment benefits was extended in several increments above the normal 26 weeks, reaching a potential maximum of 99 weeks by late 2009. This program has helped buttress consumer spending and it certainly has eased the hardship of joblessness for many households. At the same time, extended benefits have reduced the incentive of eligible workers to look for work or accept job offers, which may raise the unemployment rate. Research suggests that these extensions have boosted the natural rate of unemployment by about three-quarters of a percentage point, an effect that will go away after the extended benefits program expires.

A second explanation for a higher natural rate is that the degree of mismatch between job seekers and potential employers has increased. The mismatch argument is predicated on imbalances in labor supply and demand across industry sectors, geographic areas, or skill groups. Thus, unemployed construction workers may not qualify for available jobs in health and education. Or unemployed individuals in Nevada may be underwater on their mortgages and unable to sell their homes, which might keep them from taking jobs in Utah. One way to assess such imbalances in the labor market is to compare employment growth, unemployment rates, the rate at which job vacancies are filled, and employee quit rates across industries and geographic areas. But when we do this, we find more similarities than differences across industry sectors and regions. That suggests labor market mismatch has had only modest effects on measured unemployment.

The best way to assess whether some sectors or regions face meaningful labor shortages is to look at wages, which according to supply and demand should rise more rapidly in tight

sectors. But there is little evidence indicating that wages are growing faster in fast-expanding industry sectors than in stagnant or shrinking sectors. In fact, wage growth is modest across the board, even for newly minted college graduates, whose adaptability and geographic mobility reduce their exposure to structural imbalances.

A third explanation for a higher natural rate is related to the big increase in long-term unemployment over the past few years. Workers who are unemployed for extended periods often experience higher future rates of unemployment as their skills deteriorate and their attachment to the labor market frays. This phenomenon, known as hysteresis, has been a problem in European countries with very generous unemployment benefits. But research shows that it has been far less of an issue in the United States. What's more, hysteresis probably reflects factors we've already taken into account—extended unemployment benefits and job mismatches—and may not be an independent contributing factor.

Adding all this up suggests that the natural rate of unemployment has risen from something around 5 percent in 2007 to perhaps as high as 6.7 percent now. About half of that 1.7 percentage point rise appears to be associated with the extension of unemployment insurance, which will go away when extended benefits expire. The remainder is probably associated with the severe shocks that hit certain areas of the labor market, such as construction. Those effects are likely to take several years to dissipate. It is important to stress that all of these measures are uncertain and economists will need to keep adjusting estimates.

That brings me back to monetary policy. If the natural rate of unemployment is something like 6.7 percent, then we are about 2.3 percentage points above the level of unemployment at which the labor market would start to overheat and push inflation too high. Based on our forecast, it will probably take quite some time before we can put all those people to

work and before we see wage and price pressures emerging from tight labor and product markets. With inflation low and considerable slack in labor markets, monetary policy will likely remain accommodative for an extended period, as reiterated in the most recent FOMC statement.

However, it's important to recognize that even the best forecasts can be wrong. The FOMC regularly reviews its forecasts and policy actions in light of new information. I want to emphasize that, when the right time comes, the Fed will reduce monetary stimulus. A great deal of thought has gone into designing the proper ways to unwind the measures now in place. I'm confident we'll be able to do so successfully and maintain price stability.

Thank you very much.

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