Monetary Policy and the Economy
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Introduction
Good afternoon. It is a pleasure to be here to talk with you about the economic outlook and to offer my thoughts on current monetary policy. We come together at an opportune time. The economic recovery has gradually been gaining traction over the past year, noticeably so more recently. The Fed has been sensitive to these developments and their implications for future policy action, as evidenced by the FOMC’s post-meeting communiqués, including the one released last Tuesday. The employment report released on Friday provided a welcome indication that the one crucial, and heretofore elusive, aspect of the recovery - healthy employment growth - may now be in place.

If the economy evolves as I expect over the next year or so - with output growth somewhat above its long-run potential, job growth sufficient to put us on a course toward full employment, and inflation low and stable - then I expect we will be moving the federal funds rate up at a measured pace, as the FOMC indicated. But the precise course the Fed takes in moving monetary policy to a more neutral stance depends on the course the economy takes in moving to a path of sustained economic expansion. As we go forward, we will continue to evaluate new developments and adjust our policy stance accordingly.

Regardless of the path we choose, I believe our actions will be more effective if we clearly communicate to the marketplace both our assessment of economic conditions and the current focus of our concerns. In this spirit, I will take this opportunity today to share with you my own thoughts about the near-term economic outlook, some of the risks surrounding that outlook, and the appropriate conduct of monetary policy in this context. I will begin with the near-term outlook.

The outlook for the economy
As I said at the outset, economic performance has improved considerably over the past year, and I believe we are on track for solid growth this year and next. I expect real GDP to grow between 4 and 5 percent, somewhat above its long-run potential. Demand will continue to be driven by the revival in business investment spending and healthy growth in consumer spending. Meanwhile, on the supply side, the outsized productivity growth of the past few years will recede, and employment will increase at a pace strong enough to significantly reduce the slack in labor markets. The improving job market, in turn, will reinforce growth in consumer spending, so that the expansion becomes truly self-sustaining. As the economy approaches its long-run potential, inflationary pressures may increase, but with this convergence coming gradually and inflation expectations well-contained, I expect inflation to remain at an acceptable level.

As this process unfolds, monetary policy can proceed from its current very accommodative position to a less accommodative and, ultimately, neutral stance, at a measured pace. Indeed, if the economy performs as I have outlined, such adjustments in the stance of monetary policy will be essential to forestalling any significant increase in inflation, and thereby laying the groundwork for a long expansion.

The likely course of monetary policy
It is worth emphasizing that the monetary policy adjustment I am talking about does not represent a shift from stimulative to restrictive monetary policy. As long as the level of interest rates is relatively low, monetary policy is stimulating more rapid growth in spending. So, moving along a path from the current federal funds rate to a neutral federal funds rate simply represents a gradual reduction in the degree of stimulus.
In principle, the degree of stimulus would diminish to zero - the Fed would move monetary policy to neutral - just at the point when the economy settles on to its long-run sustainable growth path, much like a boat gliding to a stop alongside a pier. However, we know that monetary stimulus affects the economy with a lag. So, to be more precise, the Fed would want to move monetary policy to neutral several quarters before the economy settles on to the sustainable growth path - again, to extend the metaphor, much as the captain cuts the engines once the boat has enough momentum to glide to the pier.

Metaphors are helpful, but overly simplistic. In reality, the course the Fed takes in moving monetary policy to a neutral stance will depend on the course the economy takes in moving to a path of sustained economic expansion.

If the recovery evolves along the path I have just outlined in a relatively smooth fashion, then I expect we will be moving the federal funds rate up gradually. But the economy rarely, if ever, evolves as smoothly as we forecast. Its dynamics are complex, and events we cannot now foresee will undoubtedly come into play. So we will be watching developments closely and adjusting our policy stance accordingly. If the employment gains should diminish and they seem to be materializing too slowly, we may find we need to slow the pace at which we remove our monetary accommodation. If inflationary pressures seem to be accumulating, we may find we need to quicken our pace.

If we cannot specify the precise path monetary policy will take, can we say anything about where it will end up? Put another way, when the economy settles onto a path of sustained expansion - as I believe it will over the course of the next year or so - what will the federal funds rate be? Frankly, I do not know.

History tells us that a neutral fed funds rate includes a positive real rate of interest as well as an expected inflation component, but it offers us little else as a guide to its exact value going forward. Both theory and practice tell us that the federal funds rate consistent with a neutral monetary policy will vary over time, depending on economic circumstances. Indeed, in the context of a dynamic economy, a neutral monetary policy - that is, a policy that supports sustained growth at the economy's potential - may not be represented by a single interest rate. It may be more constructively thought of as a time-path of interest rates that depends on the evolution of the economy's various sectors.

Some alternative scenarios

I consider my baseline scenario for the economy and monetary policy to be relatively likely and reasonably attractive. But policymakers must consider the possibility that less benign scenarios could develop, and we must be prepared to adjust our actions accordingly. Let me talk in more detail about the two alternative scenarios that concern everyone most - sub-par job growth and heightened inflationary pressures - and offer some thoughts on appropriate monetary policy responses.

In the scenario I laid out, employment gains are large enough to move the economy in the direction of full employment. That is, employment gains are large enough to absorb new entrants into the labor force as well as to begin reabsorbing those who lost their jobs through the cycle.

But generating adequate employment growth has been a constant concern since this recovery began two and a half years ago. As we are all well aware, payroll employment showed an unprecedented pattern of decline during much of the recovery, and we did not see consistent gains in payroll employment until last fall. Indeed, it is only in the past several months that we have seen signs that employment gains are moving into the acceptable range.

We cannot yet dismiss the possibility that job growth will prove inadequate, even if my expectations for real output growth are realized. Productivity growth could remain so strong that firms continue to supply the additional output without adding the projected number of workers.

Economists realize that the annual rates of productivity growth that we have seen over the past several years reflect a combination of trend and cyclical factors. However, we have no reliable way to sort out the proportions of trend and cyclical factors involved, or to predict the pace at which the cyclical factors will dissipate. Moreover, the cyclical component of productivity growth is usually attributed to firms' reticence to
add employees until they are certain that the demand increases they are seeing are permanent. Uncertainties surrounding the outlook seem to have been particularly large in this recovery. This being the case, firms' confidence in the future may be particularly susceptible to unexpected shocks over the next year or so.

A back-of-the-envelope calculation suggests that for real growth of 4-1/2 percent to generate 150,000 to 200,000 jobs per month, as per the consensus forecast, productivity growth will have to slow to 2-3/4 or 3 percent this year. That is not much above most estimates of trend productivity growth. So if trend productivity growth turns out to be somewhat higher than most estimates, or if the cyclical component does not dissipate quickly, job growth could fall below projections.

From the monetary policy perspective, if employment growth falls short of my expectations, and the present degree of slack in the labor market persists, then I believe it would be appropriate for the Fed to maintain a more stimulative monetary policy by slowing the pace of its shift toward neutrality.

Having discussed a scenario in which employment gains fall below my expectations, I want to turn to a discussion of a scenario in which inflationary pressures exceed my expectations. Containing inflationary pressures at this stage in the business cycle is critical to the Fed's success in establishing a stable price environment for the long term.

As I said at the outset, my expectation is that the modest pace of the ongoing recovery will keep inflation at an acceptable level. Consumer price inflation (CPI) should stay close to 2 percent at an annual rate and somewhat lower for the core CPI and the personal consumption expenditures (PCE) deflator. I believe that the preponderance of evidence and analysis is consistent with this view. But we must guard against over-confidence, as the dynamics of the inflation process are not well understood. We must watch incoming price data closely and take care in assessing the degree of inflationary pressure on the economy.

The notion that there is significant slack in the economy, and hence little in the way of near-term inflationary pressure, is supported by traditional "gap" models of inflation. In such models, inflation moves in response to some measure of the gap between actual demand and potential supply.

Consider the current so-called output gap, measured in terms of real GDP. The recent recession and relatively sluggish recovery have left the level of real GDP well below most measures of potential GDP, creating a negative gap, and thus indicating there is downward pressure on inflation. Gap-type measures based on the capacity utilization rate and the unemployment rate also indicate there is considerable slack in the economy.

Yet, I think it is important to recognize the possibility that rapid technological change may be undermining the reliability of these measures as indicators of the degree of slack in the economy.

For instance, some estimates of potential GDP are based on assumptions about productivity growth, and so, given the current uncertainty surrounding the trend growth rate in productivity, measures of the output gap must be taken with even more than the usual grain of salt.

Similarly, the current capacity utilization rate indicates that a significant proportion of the nation's capital stock is "offline" and available for use. But with the recent pace of technological change, a disproportionate share of that stock may be obsolete. If so, the true degree of slack in industrial capacity, and hence the downward pressure on inflation, may be overstated.

Also, the current unemployment rate seems indicative of a slack labor market. But with the recent pace of technological change, it may be that a disproportionate number of those unemployed will need to re-train and develop new skills in order to qualify for available jobs. To the extent that structural unemployment has risen, the degree of slack in labor markets, and hence the downward pressure on inflation, may be overstated.

In short, there are good reasons not to treat gap-type measures as precise gauges of the degree of slack in the economy. Nonetheless, the sense I take away from looking at these measures is that there is likely
sufficient slack to keep inflation from increasing significantly for some time, if the expansion proceeds at the pace I envision.

Gap-type models of inflation highlight another reason to believe that the current recovery is less likely to accelerate inflation, namely, the recovery's gradual nature. As these models indicate, inflation is not a process that suddenly switches on when we use up all the available slack in the economy. Inflationary pressures build as the economy approaches its full capacity. Bottlenecks develop in certain sectors as they expand, and prices in those sectors begin to rise. To the extent that those price increases can be passed on, this translates into a general price rise.

The advantage of approaching full employment gradually is that it gives sectors time to expand their production and their capacity for future production more efficiently. Thus, bottlenecks are less likely to arise, and costs of production are less likely to escalate. This, in turn, creates less inflationary pressure in the economy.

A second consideration suggesting the current recovery may generate less inflationary pressure is an aspect of the economy that traditional gap-type models do not capture - the fact that we now operate in a more global economy. Gap models focus on the gap between domestic supply and demand conditions, but the reality is that, today, U.S. firms compete with firms around the world in the markets for materials and for final goods and services. U.S. workers compete with workers around the world for positions in a widening array of occupations and industries. This globalization of the marketplace and the increased degree of competition that it brings, is an additional source of price and wage discipline on the U.S.

Most recently, we have been made very much aware of the global nature of commodity markets. Strong demand emanating from more rapid economic growth around the world, particularly in China, has contributed to higher global prices for commodities like oil, steel, and copper. I should also note that a decline in the value of the dollar has contributed as well. Some have pointed to this as an example of globalization increasing inflationary pressures in the U.S. But I am wary of that argument. For commodity prices to increase the rate of inflation on a sustained basis, they would have to rise continuously and represent a significant component of the total cost of final goods and services. In fact, commodity price pressure is rarely sustained and often reversed, and commodities represent a relatively small share of final product costs.

From my perspective, the most significant risk of increased inflationary pressure is not from these price movements but from the dynamics of the labor market and the role of inflation expectations. Labor costs are far and away the largest contribution to final cost of products. Over the long run, product prices and unit labor costs move together. Over the course of the past several years, the dynamic of this relationship has been working to drive inflation down. Strong growth in labor productivity, combined with relatively modest compensation growth in a weak labor market, has reduced the growth in unit labor cost. Going forward, this dynamic will be reversed. As productivity growth slows and the labor market strengthens, some bargaining power will shift back to workers. So unit labor cost will be on the rise, and that means upward pressure on inflation.

How much pressure is not entirely clear. After all, not all of the recent slowdown in unit labor cost growth translated into lower price inflation. Some went into improving firms' profit margins. So as the process reverses, some of the acceleration in unit labor cost could come at the expense of those margins, rather than in the form of higher inflation. How this plays out could very well hinge on the expected level of inflation.

Inflation expectations tend to be self-actualizing, to some extent. When people expect a particular rate of inflation, they tend to behave in ways that bring it about. I have spoken about the interplay of actual and expected inflation in the past, and a number of my colleagues have recently made note of it as well. The point I want to emphasize today is that maintaining low and stable inflation expectations is crucial to establishing a stable price environment, and inflation expectations may be particularly susceptible to a shift as the wage-price dynamics evolve over the next phase of this cycle. So it is important that our monetary policy strategy focus on keeping inflation expectations well-contained.
To do so, the first order of business is to make sure we take the steps necessary to keep inflation itself well-contained. Unless employment growth or price inflation persistently falls below projections, the Fed should pursue a policy of steadily moving toward monetary neutrality.

Beyond this, the Fed must carefully monitor existing measures of inflation expectations as it proceeds on its path toward monetary neutrality. Two good examples of the latter are the Philadelphia Fed’s Survey of Professional Forecasters and the measure of long-term inflation expectations implied by movements in Treasury indexed yields. While the former has remained stable, the latter has shown some substantial movement. In mid 2003 the expectation from treasury inflation-protected securities (TIPs) stood at 1.5 percent, but recently it has ratcheted up to 2.5 percent, the current level in our SPF. These measures of inflation expectations clearly are worth watching as the expansion progresses.

Finally, the Fed should continue to communicate the rationale for its policy actions clearly to both the financial markets and the public at large. In the end, this reinforces our commitment to low inflation and enhances our credibility. It will also engender the kinds of market responses that make the task of maintaining low inflation easier.

**Changing the stance of monetary policy**

Before closing, I want to address the concern recently expressed about the unusually accommodative policy stance the Fed has taken in this cycle. Some have noted the substantial effect this has had on some sectors of the economy, notably financial markets and home sales, and expressed concerns that the Fed's moves toward a more neutral policy may cause significant disruptions in these sectors going forward, perhaps even jeopardize the recovery itself.

As you all can appreciate, counter-cyclical monetary policy seeks to stabilize overall demand growth by moving short-term interest rates. Naturally, the most significant impact of these policy actions will be registered in those sectors that lie along the path between short-term interest rates and final demand: financial markets and the interest-sensitive spending categories. Precisely how this plays out depends on economic circumstances. For example, in the most recent cycle, aggressive interest rate cuts by the Fed could not stimulate a resurgence in businesses' investment spending until their adjustments to the previous investment boom were complete and uncertainties clouding the outlook were removed. On the other hand, the Fed's interest rate cuts were able to stimulate consumer spending generally, and home purchases in particular, because people saw the low rates as providing an extraordinary opportunity to make purchases they were hoping to make at some point. Put another way, the underlying growth in demand for housing was there, based on demographic factors and so forth, and the low interest rates tapped into that ready demand.

As the Fed moves toward higher short-term interest rates, the interest-sensitive sectors will be the most affected. But again, how they respond, will depend on the circumstances. Interest rates will be higher, but income, employment, wealth positions, and near-term growth prospects will all be stronger. Looking longer term, demographics will continue to support the demand for housing, and the efficiency gains offered by new technology will still support strong business investment spending. So I believe that our monetary policy actions will cause adjustments to the pace of spending in these categories, but not dramatic shifts.

The recently expressed concerns about "excessive risk taking" in financial markets are, at bottom, concerns that when interest rates start to rise, there will be substantial revaluations of financial assets. Stock- and bond-holders will experience unexpected losses in wealth, and financial disruption could follow. I am not convinced by these arguments. I believe that financial markets have been anticipating rising interest rates and the stronger economy that will accompany those rates. Current asset prices should reflect those expectations, and there is evidence that they do. One need only look at the current shape of the yield curve. Volatility will remain, but we live in a volatile time. The best the central bank can do is attempt to deliver appropriate monetary policy for the times and communicate freely with the markets that seek to understand its perception of the current state of the economy and its likely path of action.

**Conclusion**
With this let me conclude. As I have indicated today, I see the next year or so as a critical time for the economy and for the Fed. Simultaneous achievement of two fundamental goals - full employment and price stability - is within reach. Part of the formula for success is for the Fed to execute a properly paced shift from monetary stimulus to monetary neutrality.

If the economy evolves as I expect over the next year or so - with output growth somewhat above its long-run potential, job growth sufficient to put us on a course toward full employment, and inflation low and stable - then I expect we will be moving the federal funds rate up at a measured pace, as the FOMC indicated.

Of course, the precise path the Fed takes in moving monetary policy to a neutral stance depends on the course the economy takes in moving to a path of sustained economic expansion. We must take care not to get ahead of the recovery and disrupt its pattern. At the same time, we must take care not to fall behind in containing inflationary pressures and thereby undermining the sustainability of the expansion. Finding the right balance is the challenge. Nonetheless, after several years of disappointing economic performance, and with the prospect of better times on the horizon, it is a welcome one.