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## **Making Sense of Monetary Policy**

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**FEDERAL RESERVE BANK OF CHICAGO**

The views expressed today are my own and not necessarily  
Those of the Federal Reserve System or the FOMC.

# Making Sense of Monetary Policy

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President and Chief Executive Officer  
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Thank you, Greg, for that kind introduction. It is a pleasure to be here.

Before offering my perspective on the U.S. economy and monetary policy, let me emphasize that the views that I am presenting today are my own and not necessarily those of the Federal Open Market Committee (FOMC) or my other colleagues in the Federal Reserve System.

## **Dual Mandate**

As you know, the Fed has a dual mandate from Congress to encourage conditions that foster both maximum employment and price stability. The FOMC conducts monetary policy with these objectives in mind. In normal times, the FOMC operates by appropriately setting the federal funds rate, which is the interest rate on overnight loans between banks. Other actions may be taken during unusual times, such as those we faced in the past several years.

Regardless of the economic environment in which we operate, it is vital that the Fed communicate its strategies as clearly as possible. This issue of transparency in conducting monetary policy is not new. To paraphrase John Adams, "All the perplexities, confusion and distress in America arise ... from the downright ignorance of the nature of coin, credit and circulation." For an institution that is so closely scrutinized, the Fed still strives to find ways to better communicate its views. Chairman Bernanke's recent press conference is an example of this.

As we navigate the coming quarters and contemplate altering the stance of monetary policy someday, clear communication will play an even more important role. I am reminded of a story. In 1981 James Tobin won the Nobel Prize in economics for his contributions to portfolio selection theory. At a news conference, when asked to explain the sophisticated models underlying his analysis of risk and return in layman's terms, the Nobel Laureate succinctly stated, "Don't put all your eggs in one basket." He managed to condense a large body of complex work into language that most people could understand.

I hope I can be as clear today in offering my viewpoints on the economy and monetary policy.

So, where do we stand relative to our dual mandate of maximum employment and price stability?

## **Recent Developments in Economic Activity**

Let me start with a discussion of output growth and employment. Following a deep and lengthy recession, the U.S. economy is now on firmer footing. There are many reasons to be optimistic. Over the past three months, job growth has averaged 233,000 per month, up from an anemic 104,000 over the previous three months. The unemployment rate has fallen from 9.8 percent last November to 9 percent in April. The improving jobs picture supports household income and with it household spending. Furthermore, low interest rates and higher saving have helped shore up household balance sheets, although net worth is still far below where it was prior to the recession. Businesses' balance sheets have improved as well—indeed, the improvements here have been more dramatic, and many firms now hold ample cash reserves. In addition, those looking for external funding can obtain low-cost financing from capital markets, and the availability and terms of bank lending have improved notably from crisis levels. Business investment in equipment and software has been robust, and the hesitancy businesses have shown in hiring is slowly giving way to plans for moderate employment growth. Manufacturing is particularly strong, reflecting in part the solid demand for capital goods from both here and abroad. On the policy front, monetary policy remains accommodative and, on the fiscal side, payroll tax reductions and tax incentives for investment expensing help support business spending.

Nonetheless, areas of weakness remain. Both residential construction and commercial construction remain at very depressed levels of activity. Although improving, access to credit remains limited and may still constrain some borrowers. State and local governments are making deep cuts in spending as they struggle to balance their budgets. Higher energy prices represent a reduction in domestic purchasing power for both households and businesses—I will speak more about the impact of rising energy and commodities prices later. And the recent natural disaster in Japan may negatively affect certain segments of the U.S. economy that rely on Japanese imports. Indeed, in April we saw parts shortages arising from the earthquake triggering a drop in motor vehicle production in the U.S.

So, given these upside and downside risks to economic activity, what is my outlook for growth?

## **Forecasts for Output and Unemployment**

At our FOMC meetings, my colleagues and I discuss recent developments and provide forecasts for key measures of economic activity. These forecasts are reported four times a year; the most recent ones were released just after our April meeting. Most of the projections for real gross domestic product (GDP) growth in 2011 were in the range of 3.1 to 3.3 percent. This is down about half a percentage point since our January projections were made. But the revision is largely due to a weak first-quarter GDP number, which in turn appears to have been substantially influenced by transitory factors such as the timing of weak defense spending. Growth is expected to pick up as we move forward, with most forecasts for 2013 falling between 3.5 and 4.3 percent.

Despite these clear signs of progress, the roughly 3.75 percent growth we anticipate for the next couple years is too low to generate swift relief in the labor market. Simple calculations that relate real GDP growth to changes in the unemployment rate suggest this growth would reduce the unemployment rate by roughly three-quarters of a percentage point a year. Of course this calculation is based on historical averages and may not be a good approximation in the current economic environment for a number of reasons.<sup>1</sup> Nevertheless, with the current unemployment rate standing at 9 percent, these calculations suggest that it could take quite some time for the unemployment rate to return to the 5.25 to 5.5 percent range that most FOMC participants see as being consistent with our dual mandate in the long run. Indeed, my colleagues project the unemployment rate will still be relatively high—in the range of 6.8 to 7.2 percent—at the end of 2013.

Such a forecast for moderate real GDP growth and its implications for slow improvement in the labor market lead me to believe that accommodative monetary policy continues to be warranted to address this part of our dual mandate.

### **Inflation**

Now let me turn to the inflation component of our dual mandate. Before discussing the outlook, let me start with some basics that should help clarify my reasoning. At the risk of sounding like an economics professor (which I was), inflation is defined as a continuing increase in the general level of prices of all goods and services in the economy.

There are two important elements to this definition. First, inflation is broad-based. It is a tendency for the prices of most goods and services to rise more or less in concert. And second, inflation is a continuing increase in the price level over time: A one-off increase in the price level *is not* inflation. Price *increases* have to be sustained.

As corporate treasurers, you examine the yield curve to get an idea of how the market foresees developments in short-term rates continuing into the future. For example, events may reduce the slope of the yield curve by moving short-term rates up much more than longer-term rates. This would mean markets are not expecting the higher level of short-term rates to be sustained—they are not building in a change in the level of the yield curve. We policymakers face a similar puzzle in weighing the impact of inflationary developments today: We must evaluate the near-term influence and consider whether the entire path of future inflation also has been altered. Are we just seeing a change in the slope, or are we seeing a change in the level of inflation? Keep these ideas in mind as I turn to a discussion of the recent run-up in gasoline and commodities prices.

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<sup>1</sup> Structural factors, such as extended unemployment insurance benefits, may keep the unemployment rate elevated for quite some time.

## Global Commodities Markets

The surge in prices paid at the pump and the headlines of rising food prices are striking. Such increases put a dent in consumers' purchasing power, and many households have had to make difficult adjustments.

What accounts for these sharp price increases? The markets for oil and commodities are global. Changes in demand and supply originating in far-off places have an immediate impact on prices everywhere. There is swelling demand from developing countries for food to feed an increasingly middle-class population, as well as increasing demand for industrial commodities to build infrastructure. At the same time, demand from rebounding economies is picking up. On the supply side, unique events have temporarily constrained output for many products. Drought in Russia and flooding in Australia have decreased global food supplies. And fear that turmoil in oil-producing countries may restrict the flow of petroleum has helped push up the price of crude oil.

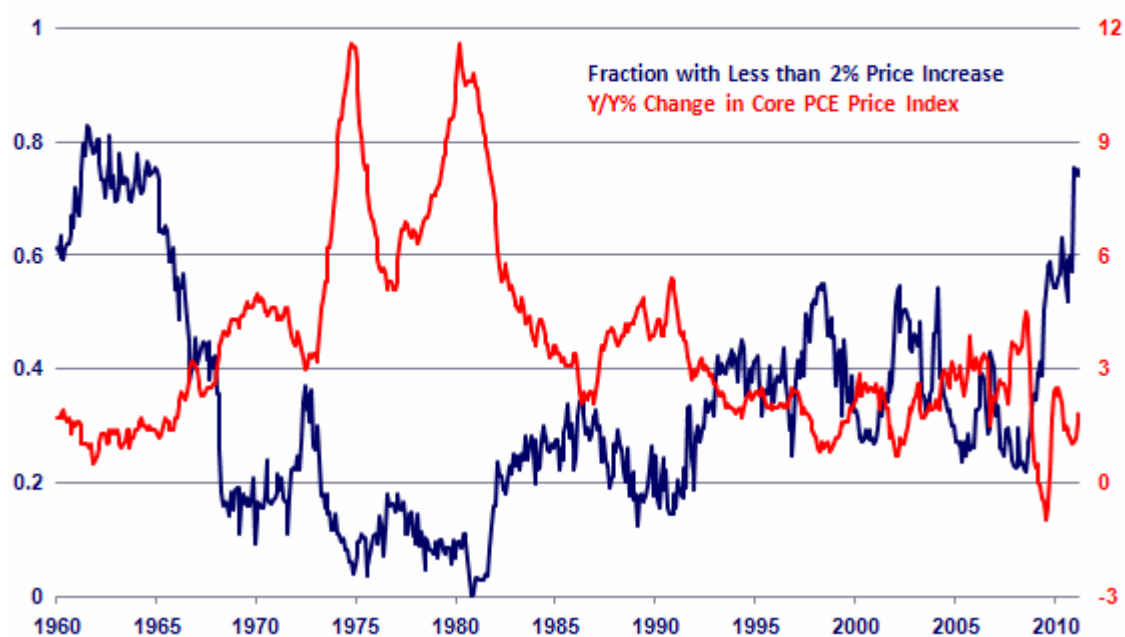
## Relative Price Changes

These price increases have resulted in painful budget decisions for many households. But it is a mistake to point to an extraordinary rise in the price of any particular good—such as gasoline—and extrapolate that price increase as having broader inflationary relevance.

Figure 1

### Fraction of Consumer Expenditures with Less than 2% Price Increase

Based on the twelve-month change in the total PCE price index; in percent



Although gasoline and food prices dominate the headlines, the chart shows that almost 80 percent of the goods and services consumers purchase have had price increases of less than two percent over the past year. This is the highest percentage of expenditures with under 2 percent inflation since the mid-1960s, when total consumer inflation was a mere 1.5 percent. Furthermore, in periods of high inflation, one observes a large fraction of prices increasing more than two percent. That does not appear to describe the current situation.

The increase in the price of a single item makes it more expensive relative to all other goods and services—what economists call a change in a relative price. This is far different from the concept of inflation as a continuing increase in *average* prices. Indeed, changes in relative prices provide important signals to market participants, encouraging consumers to find ways to economize and giving suppliers an incentive to increase production. Moreover, in such cases, there is not a direct role for monetary policy: Monetary policy cannot affect the scarcity of resources that relative prices reflect.

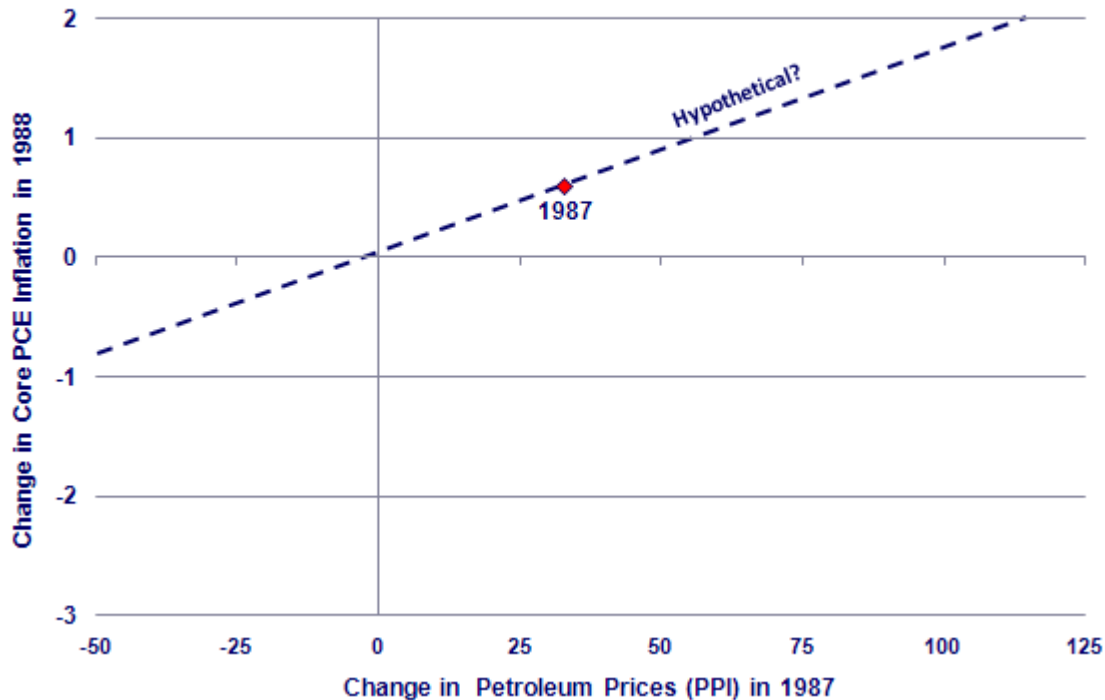
### **Limited Role for Relative Price Changes to Generate Inflation**

To be sure, such relative price movements could evolve into sustained price increases for a broader base of goods and services—that is, they could possibly generate inflation. Historical evidence suggests that rising commodity prices will generate inflation only if certain conditions prevail: price increases have to be sustained; commodities have to account for a large share of costs of production or wages have to increase in tandem with commodity prices; and consumer demand has to be firm enough that firms are able to pass through higher production costs to consumers. Given the historical evidence and the current state of the economy, I don't think those conditions exist today. Therefore, I believe the impact of rising commodities prices on inflation will be limited.

Let me briefly elaborate on each of these points.

Figure 2

## Higher Inflation Sometimes Follows an Oil Price Jump

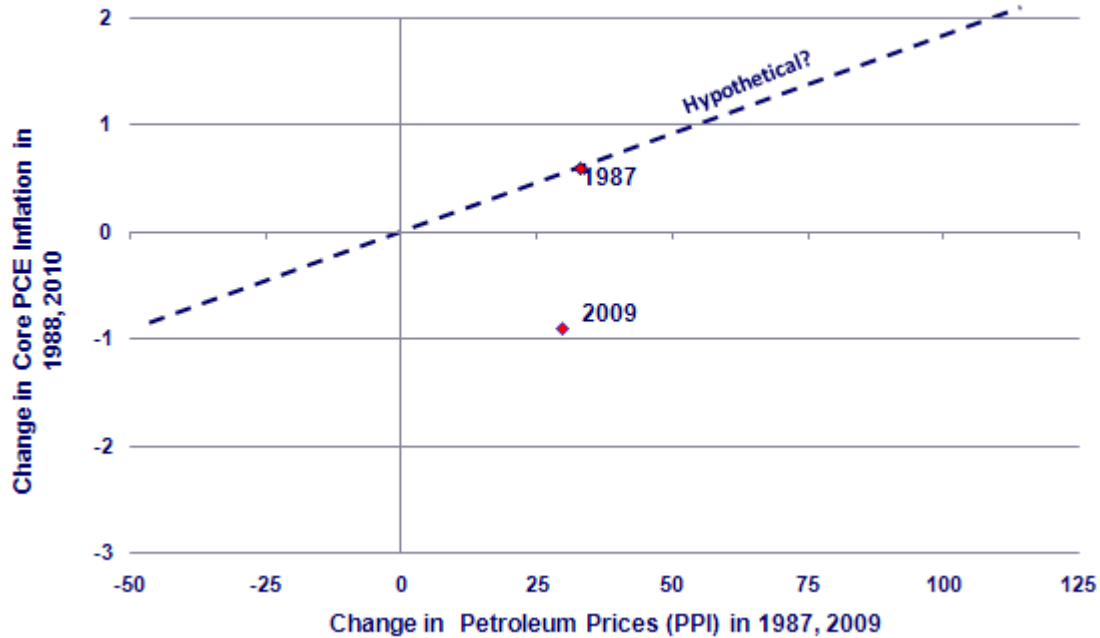


This chart shows the change in petroleum prices in a given year on the horizontal axis and the change in core inflation as measured by Personal Consumption Expenditures (PCE) Price Index the following year on the vertical axis. Core PCE inflation is a general measure of inflation that the FOMC tends to focus on. It has the benefit of stripping out the volatile food and energy components, leaving broad underlying trends. Each point on the graph represents a single year between 1981 and 2010.

Most people seem to think that higher petroleum prices in one year are followed by higher prices for many goods and services the following year. And this certainly was the case in 1987, when petroleum prices rose about 30 percent. This rapid increase was followed by an increase in core PCE inflation of 0.6 percentage point in 1988. But this relationship between petroleum prices and subsequent inflation does not hold true at other times. In fact, there is very little evidence of petroleum price increases foretelling inflation.

Figure 3

## Lower Inflation Sometimes Follows an Oil Price Jump

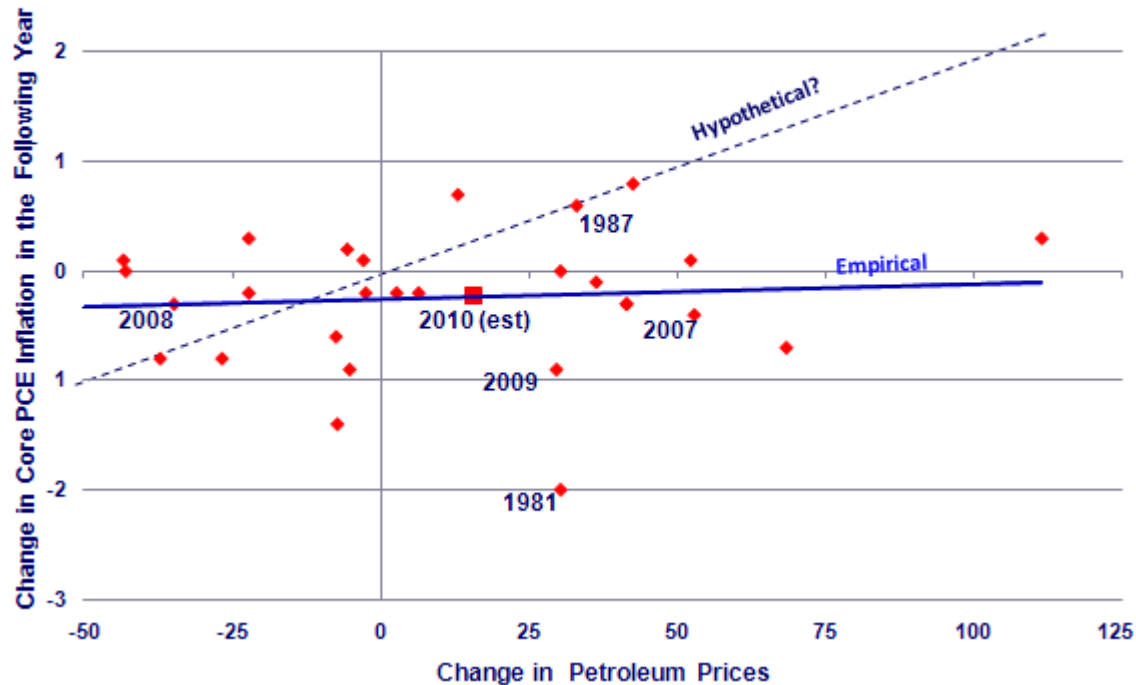


Consider 2009—a year in which we again had rapid oil price increases of about 30 percent. In the following year, rather than rising, core inflation actually declined 0.9 percentage point in 2010. History offers no clear patterns: Oil price increases are just as likely to be followed by lower core inflation in the coming year as they are to be followed by higher inflation.



Figure 4

## Very Weak Relationship between Oil Price Increases and Subsequent Changes in Core PCE Inflation



In the chart this is shown by the solid regression line that describes the average relationship between the data. Rather than being positively sloped—indicating increasing oil prices are on average associated with increasing core inflation in the following year, the regression line is almost flat—indicating there is little systematic relationship between these data.

In addition, petroleum prices are quite volatile. For example, by the end of 2007 the price of West Texas Intermediate crude was just over 51 percent higher than it had been a year earlier. But the following year, all of that price increase was reversed. And think about the past few weeks: Oil prices fell about \$15 per barrel in a matter of days early in May and have stayed down since then.

## Wage–Price Dynamics

What about commodities in general? Although they are quite important for some products, commodities only contribute a minor portion to the total cost of bringing most items to market. And for commodity cost increases to influence consumer prices, firms must be able to pass cost increases on to customers. In today's economy with many sectors still experiencing lax demand, many firms may not be able to pass on these cost increases. Instead, rising input costs will put a squeeze on their profit margins. Indeed, when talking about costs of production, the most important by far is the compensation paid to labor. In 2009, U.S. businesses spent about \$480 billion on energy inputs, \$250 billion on primary metals, and about \$7.8 trillion on labor. That same year a *Wall Street Journal* blog stated that in 2008, the purchasing power of the dollar had decreased by more than 95 percent since 1913.<sup>2</sup> In isolation the fact that the price level is about 20 times higher now than it was just before World War I is quite disturbing. But it is important to remember that wages have more than kept pace so that the standard of living far exceeds 1913 levels. In fact, personal income is now 20 times higher since just 1967, at the height of the Vietnam War. The point is that over long periods of time wages and prices both tend to trend up.

On this point, an economist I know talks about having received a nickel as a weekly allowance. (This is obviously a long time ago. My kids would have scoffed at the idea of a nickel.) Each week this future economist would take her nickel and head to the local candy store to purchase a particular candy bar that cost exactly 5 cents. One week she was stunned to find the same candy bar—which only a week earlier had cost a nickel—now cost a dime. Realizing that she would need to consume less or earn more, she asked her parents to double her allowance. Fortunately for her, her parents agreed. Had they not, she would have cut her consumption in half.

Indeed, when we have seen large and sustained bouts of inflation in the U.S., they have been accompanied by large and sustained increases in labor costs. It's what we used to refer to as a "wage–price spiral" during periods of high inflation in the 1970s and 1980s. But the interactions between wages, prices, and inflation are complicated. A wage–price spiral—or the lack of one—reflects interactions from both the cost and demand sides. With regard to demand, suppose prices rise but consumers' incomes do not. In order to maintain their consumption, they must lower saving (which may include spending out of assets). There is a limit to how much they would be willing to do so. To use an analogy, fires require oxygen to burn. Without it, the fire dies out and the damage is limited. So without rising wages and incomes, price increases may be difficult to sustain—and sustainability is an important aspect of inflation. But if wage growth keeps up with price increases, there is no such offsetting influence on demand. Furthermore, unless accompanied by gains in productivity, there is a corresponding increase in firms' costs of production.

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<sup>2</sup> David Wessel, 2009, "Wessel answers questions on potential bubbles, Paulson's conflicts, more," *Real Time Economics: Economic insights and analysis from The Wall Street Journal*, blog, August 10, available at <http://blogs.wsj.com/economics/2009/08/10/wessel-answers-questions-on-potential-bubbles-paulsons-conflicts-more/>.

So what are the prospects for wages and labor costs? As I have already outlined, I believe there is substantial slack in labor markets. High unemployment, low labor force participation, and the large number of people working part time for economic reasons suggest weak overall labor demand. This is translating into very small increases in wages and salaries; as measured by the U.S. Bureau of Labor Statistics' Employment Cost Index, they rose just 1-1/2 percent for the past year and are nearly the lowest recorded increase since the series began in 1983. At the same time, though slowing some recently, productivity growth generally has been fairly well maintained. Consequently, we are not seeing upward pressure on prices coming from labor costs, and modest wage growth may also be a dampening influence on demand and consumer prices.

### **Inflation Outlook**

Under the forecasts for output and unemployment I just discussed, I expect significant resource slack to remain in the economy for some time to come, and I also am expecting that slack to exert an important downward influence on inflationary pressures.

Most of us on the FOMC have said that a PCE inflation rate of about 2 percent is consistent with our price stability mandate. Yet, core inflation—as measured by the change in the index over the past year—has been running well below this 2 percent rate for about two years. It has been under 1 percent for the past several months, and even total inflation for the past 12 months has just reached 1.8 percent.

Some of the recent readings on core measures have been somewhat higher than they were just a few months ago. The new information has caused me to bump up my personal forecast for core inflation in the near term. And while I think food and energy prices will push the total PCE index up faster this year—maybe to about a 2 to 2-1/2 percent rate—I do not see total inflation running very far from core for very long. In our most recent forecasts, FOMC participants' projections were for total PCE inflation to fall in the 2 to 2-3/4 percent range in 2011 and the 1-1/2 to 2 percent range in 2013. My own forecasts are closer to the bottom of these ranges.

### **Risks to Inflation Outlook**

I am constantly assessing my inflation forecast against the incoming data. Developments that would cause me to change my view would be much stronger growth in real GDP than predicted in current forecasts, strong improvements in the labor market, and evidence that wage pressures on labor costs were starting to build. And as I just noted, today, there is no evidence of such pressures.

Another thing that would make me reassess my inflation outlook would be if medium-term inflationary expectations were to rise. Future inflation is determined in part by *expectations* of future inflation. Expectations of future inflation are an important element in businesses' and households' planning for the future. Right now, professional forecasters' expectations of long-run inflation are in the neighborhood of 2 percent. Such expectations are factored into current spending and investment decisions and the wage setting process. But if some surprise event were to lead to higher expected inflation, businesses and households would internalize this new belief and take actions

consistent with it. These actions would, in turn, put actual inflation on a higher path. If inflation expectations were to start to creep up because of rising commodity prices or any other factor, the FOMC would consider this important development and act accordingly to keep inflation expectations well grounded.

To recap, current measures of underlying inflation are subdued and are running lower than what the FOMC judges to be consistent with long-run price stability. To be sure, we see some increase in headline inflation due to higher food and energy prices, but we do not expect these to materially boost underlying inflationary trends. Moreover, existing resource gaps are still exerting countervailing downward pressure on inflation. We will continue to pay close attention to the evolution of inflation and inflation expectations, and we will adjust policy if developments move our forecast to rates incompatible with our inflation mandate.

### **Monetary Policy**

Slow progress in closing resource gaps and a medium-term outlook for inflation that is too low lead me to conclude that substantial policy accommodation continues to be appropriate. This accommodative policy will foster a return of economic conditions consistent with our dual mandate. We are providing this accommodation in two ways. The first is our commitment to keep short-term nominal policy rates low for an extended period. The FOMC's policy statements have been very clear on this and have included this characterization for the federal funds rate since March 2009. The second is our large-scale asset purchase programs (LSAP) through which, by June, we most likely will have purchased all told \$2.35 trillion of long-term Treasury and government-sponsored enterprise (GSE) issues. These purchases are aimed at directly influencing longer-maturity interest rates. They also play an important and useful communications role—they signal our commitment to keep short-term rates low for an extended period of time.

### **Conclusion**

In closing, monetary policy evolves as economic circumstances change. It is vital that we evaluate the impact of new information on our forecasts and reassess the stance of monetary policy as circumstances warrant. Contemplating such adjustments in advance will help prepare us for the eventual time when a change in the stance of monetary policy will be necessary. Despite recent improvements to the outlook, we are not yet at that point. At that time, communication and transparency will be even more essential.