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POLICY MATTERS

Janet Yellen on Inflation

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Federal Reserve (Fed) officials determine the appropriate stance of monetary policy based on their outlook for employment and inflation. To some extent their outlook is based on developments in the latest economic data. To a much larger extent, however, their outlook reflects the Fed's own models, either explicit or implicit, about how the US economy works, as well as the Fed's view on the broader trends affecting the US economy, such as changes in technology and the impact of globalization. In order to anticipate changes in Fed policies, investors must not only monitor the incoming data, but must also understand what factors are influencing the Fed's outlook.

Fortunately, the increased transparency from Fed officials has made this somewhat easier in recent years. In particular, Fed Chair Janet Yellen has been exceptionally clear in describing her outlook for inflation. Given the centrality of the inflation outlook to the Fed's decisions, and not to mention her outsized influence on the Federal Open Market Committee (FOMC), Yellen's views are important and worth examining in detail.

This paper examines the major thrusts of Yellen's recent arguments, including that:

1. Slack in the labor market will continue to limit wage inflation
2. A tightening labor market may not lead to sharply higher inflation because the link between unemployment and inflation may be weaker than previously thought ("the Phillips curve may flatten out")
3. Globalization has put downward pressure on labor compensation and inflation
4. Productivity has room to increase, which will put further downward pressure on inflation
5. As long as expectations remain anchored, the impact of energy and commodity prices on inflation will likely be transitory

Yellen makes a compelling case that inflation will remain low, even as the recovery continues and labor markets heal. In this sense, Yellen's views are consistent with our own. More importantly, as long as Yellen's outlook is that inflation will remain low, she will likely advocate for accommodative policy and will be reluctant to tighten monetary policy pre-emptively.

1. Slack in the labor market will continue to limit wage inflation

> *"Unemployment is still elevated, underemployment and long-term unemployment remain significant concerns…and by any measure there remains substantial slack in the labor market"*
> *~Janet Yellen, March 19, 2014*

In her first speech as Fed Chair Janet Yellen argued that there is a substantial amount of slack in the US labor market. In support of her position,Yellen cited a number labor market statistics, including the large number of workers that report they are "underemployed," the extraordinarily high share of the unemployed that have been out of work for more than 27 weeks (see Exhibit 1), the low levels of job turnover, and the falling participation rate.

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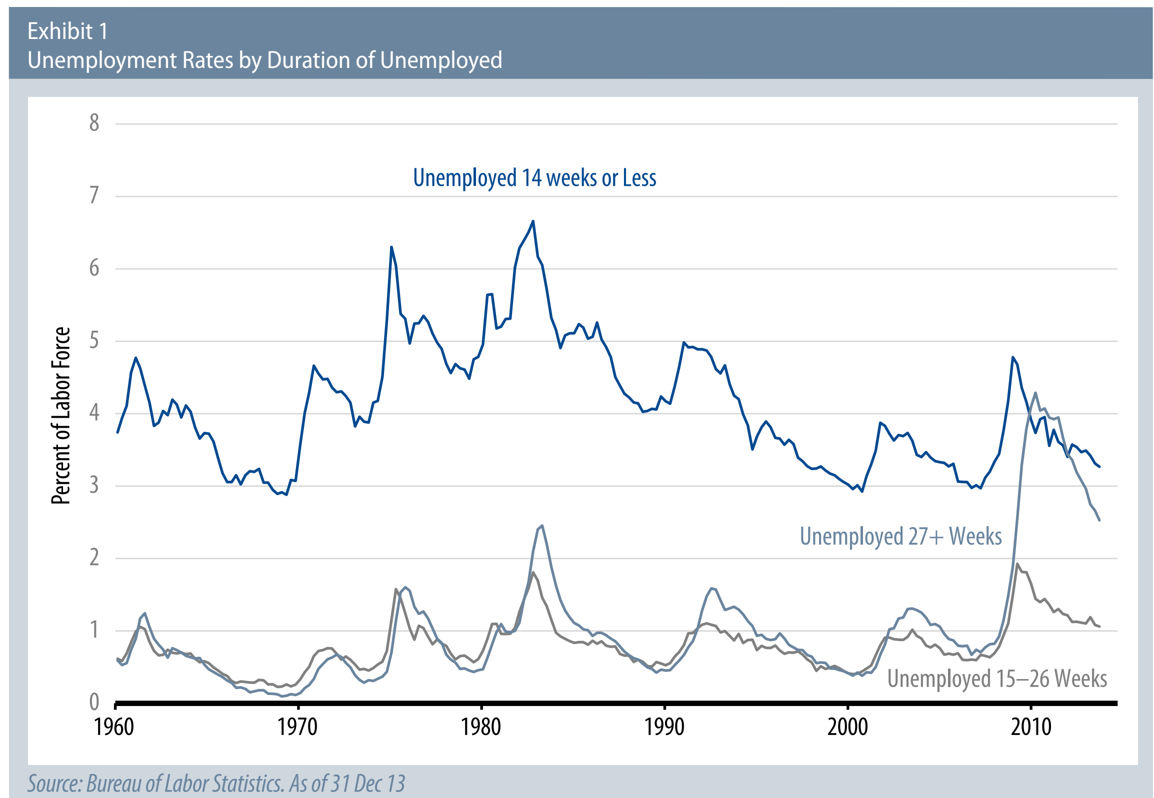
Exhibit 1
Unemployment Rates by Duration of Unemployed



Source: Bureau of Labor Statistics. As of 31 Dec 13

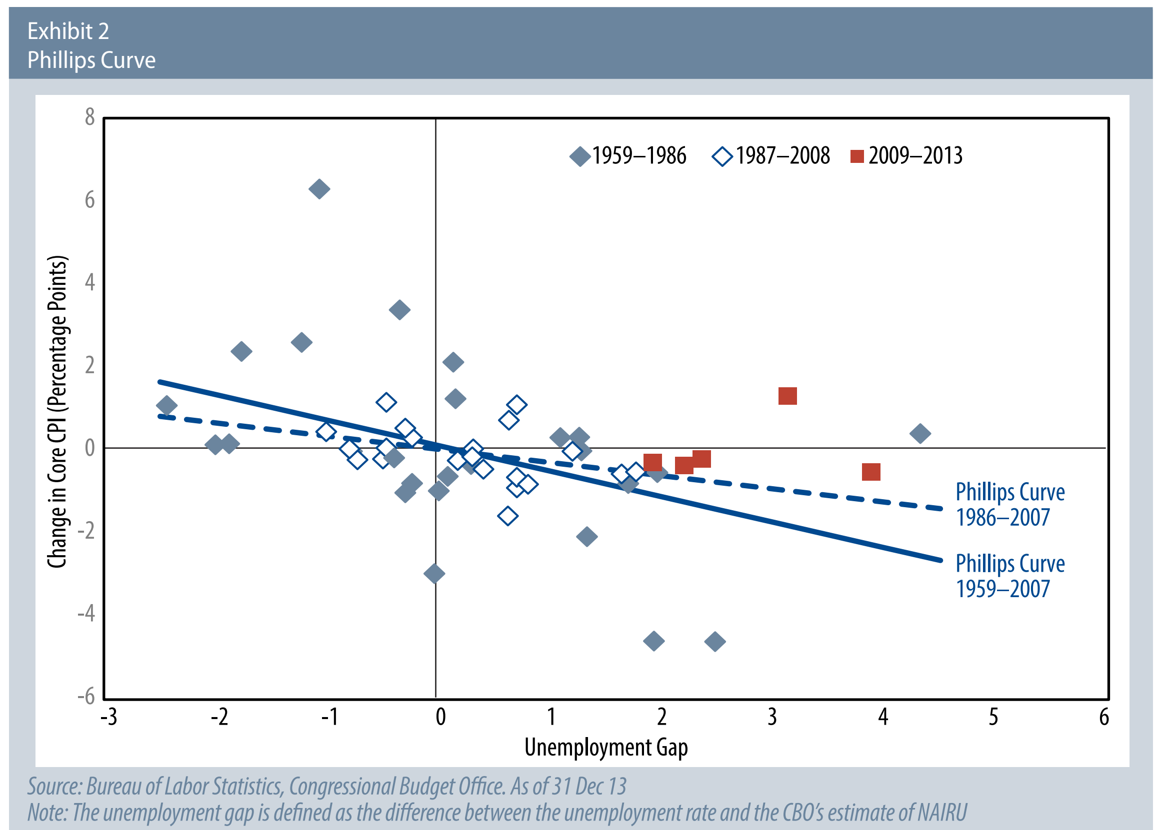
Yellen's emphasis on slack in her first speech as Fed Chair was not an accident. According to Yellen, understanding the amount of slack in the economy "is one of the most important questions that my Federal Reserve colleagues and I consider when making monetary policy decisions." Her emphasis on slack is appropriate: as long as there is slack in the economy, Yellen argues, wages are unlikely to accelerate, inflation will remain low, and the Fed will remain accommodative.

2. A tightening labor market may not lead to sharply higher inflation, because the link between the unemployment and inflation may be weaker than previously thought ("the Phillips curve may flatten out")

> *"However, substantial cross-country evidence suggests that, in low-inflation environments, inflation is notably less responsive to downward pressure from labor market slack than it is when inflation is elevated. In other words, the short-run Phillips curve may flatten out" ~Janet Yellen, June 6, 2012*

The relationship between unemployment and inflation is central to Yellen's outlook. The normal relationship, which is commonly referred to as the Phillips curve, is that inflation rises when unemployment is low and that inflation falls when unemployment is high. Exhibit 2 shows this relationship for a few different time periods. In the sample that includes the 1970s and 1980s, this relationship looks quite robust: a decrease of 2 percentage points in unemployment would increase inflation by 1 percentage point. However, as is apparent in the chart, this estimate is heavily influenced by a few outlying points, which correspond to the sharp increases in inflation in the 1970s (while unemployment was low) and then sharp reversal in inflation as Volcker tightened policy in the early 1980s (while unemployment was high). Excluding the 1970s and 1980s significantly reduces the sensitivity of inflation to unemployment. Moreover, recently this relationship looks even less robust, as inflation has not fallen as much as might have been expected given the unusually high rate of unemployment.

Exhibit 2
Phillips Curve



Source: Bureau of Labor Statistics, Congressional Budget Office. As of 31 Dec 13
Note: The unemployment gap is defined as the difference between the unemployment rate and the CBO's estimate of NAIRU

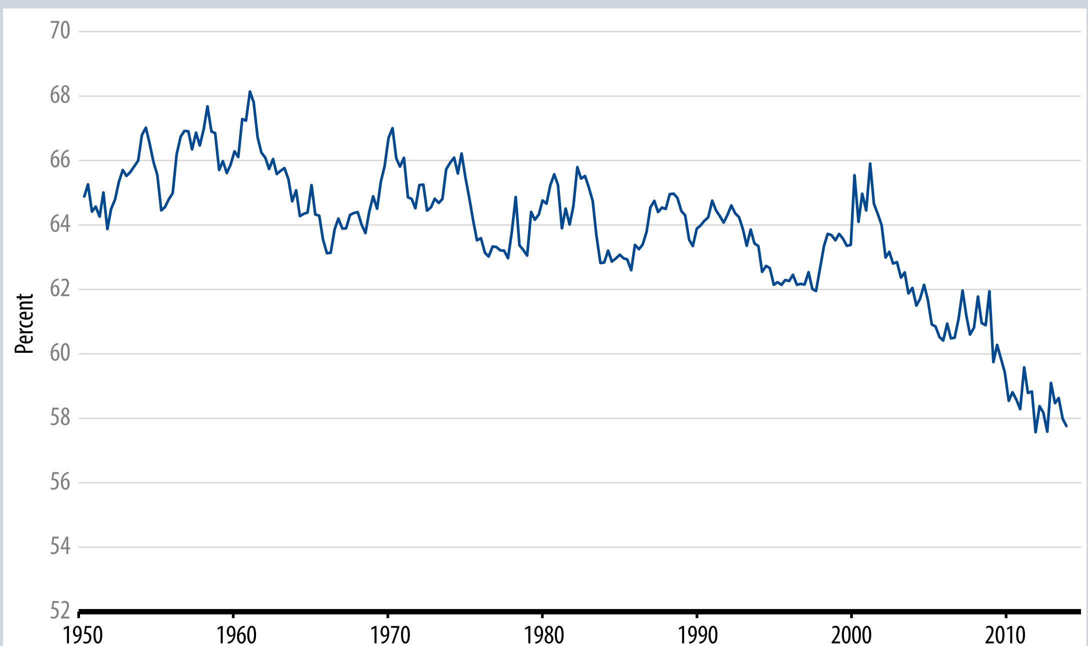
As Janet Yellen argued in a 2012 speech, recent experience suggests that the link between unemployment and inflation may be weak in the current environment ("the Phillips curve may flatten out"). One theoretical justification for this change in the Phillips curve is that anchored inflation expectations have reduced the volatility of inflation. This point is potentially very important for Yellen's inflation outlook. If she is correct, then a tightening labor market will not necessarily lead to a rapid increase in inflation. That is not to say that the labor market doesn't matter for inflation, but instead that the sensitivity of inflation to the labor market is generally lower than previously thought, and therefore the risks of a rapid increase in inflation are also lower than previously thought.

3. Globalization has put downward pressure on labor compensation and inflation.

> *"Wage growth for most workers was modest for a couple of decades before the recession due to globalization and other factors beyond the level of economic activity, and those forces are undoubtedly still relevant" ~Janet Yellen, March 31, 2014*

Slack in the labor market is not the only reason why wage growth was been slow. Exhibit 3 shows that labor's share of output in the US had been falling for a number of years before the recession reduced it even further. As Yellen noted in a recent speech, globalization is likely contributing to this long-term trend. As emerging markets have become increasingly connected to the global economy, the surplus labor in those countries has started to compete with US workers, thereby reducing the bargaining power of US workers and consequentially reducing their share of output. Unsurprisingly, labor's share has seen the sharpest declines in industries and occupations that are more exposed to competition from imports (e.g. manufacturing).

Exhibit 3
Labor Share of Output in Nonfarm Business Sector



Source: Bureau of Labor Statistics. As of 31 Dec 13

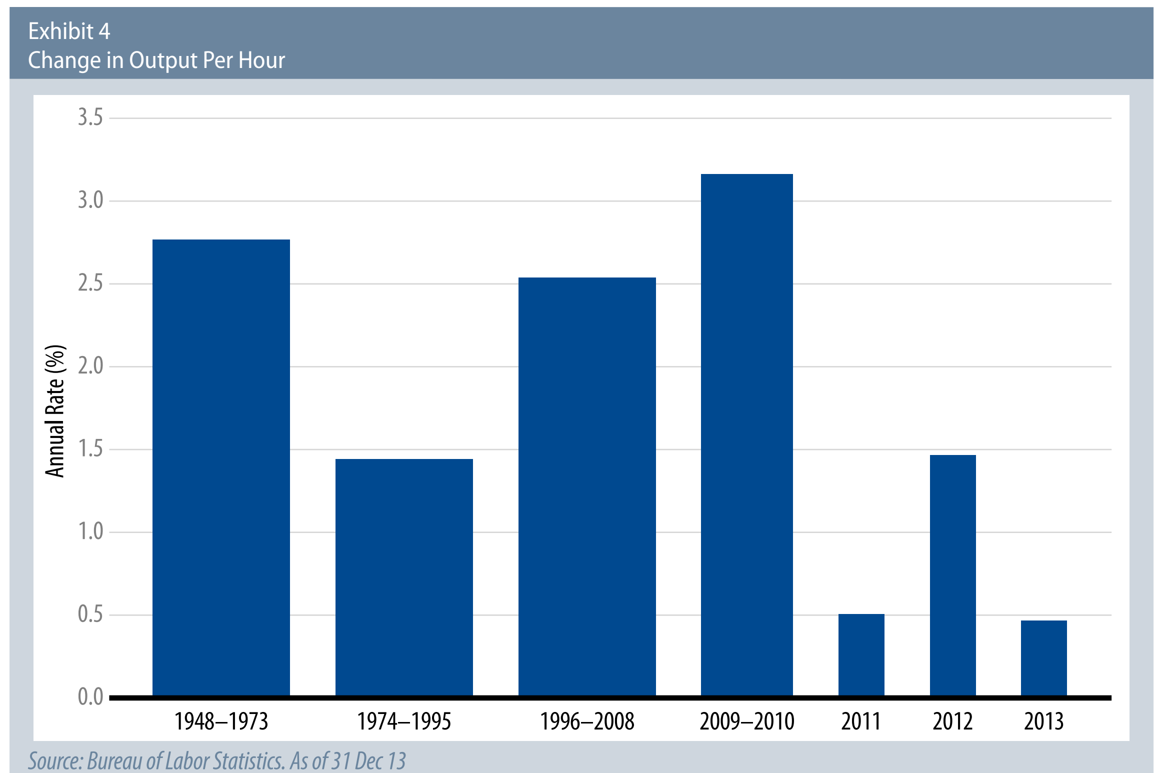
It is difficult for price increases to be sustained without a corresponding increase in labor income. Intuitively, if labor income growth doesn't keep up with price increases, then goods will become increasingly unaffordable, which in turn will force a reduction in consumption and ultimately a slowing in economic activity. The long-term trends in labor compensation—including the downward pressure due to globalization—are unlikely to reverse in the near future, and accordingly will continue to limit the amount of inflation that can be sustained by the US economy. These long-term trends in labor compensation are very likely part of Yellen's outlook for continued low inflation.

4. Productivity has room to increase, which will put further downward pressure on inflation

> *"If productivity accelerates or decelerates, we could see inflation start to fall or rise relative to the rate that prevails today" ~Janet Yellen, February 18, 2005*

Improvements in labor productivity have been notably slow during the current recovery. Over the past three years labor productivity has grown below 1% at an annual rate, a pace which is less than half of its long-run average. While there is precedence for shifts in productivity growth—productivity growth slowed in the 1970s and 1980s before picking up again in the 1990s—the recent sluggishness appears to be an outlier. The Fed's models likely forecast that productivity growth will accelerate back toward its longer run average over the coming years.

Exhibit 4
Change in Output Per Hour



Source: Bureau of Labor Statistics. As of 31 Dec 13

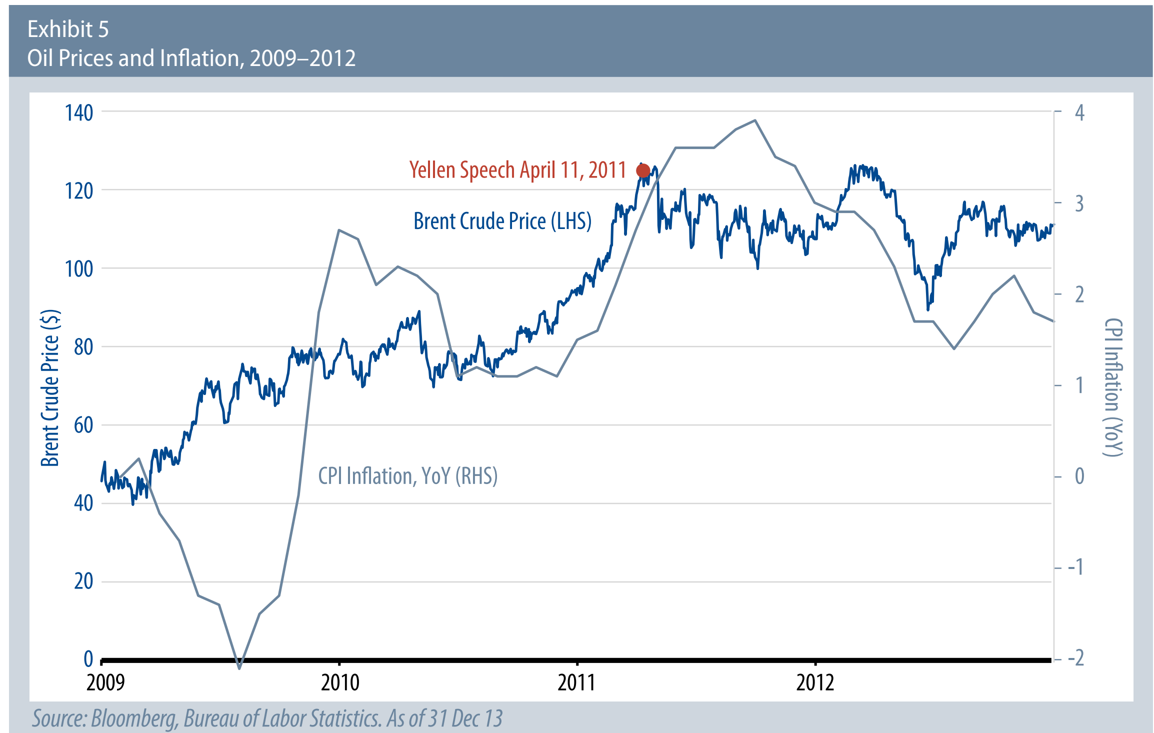
Standard economic models, which are consistent with Yellen's previous quote, predict that improvements in labor productivity will put downward pressure on inflation. This is because improvements in productivity will reduce unit labor costs, and some of the cost savings will be passed onto consumers through lower prices. Therefore, to the extent that the Fed expects an improvement in productivity growth, that likely corresponds to lower inflation in its forecast.

5. As long as expectations remain anchored, the impact of energy and commodity prices on inflation will likely be transitory

> *"Critically, so long as longer-run inflation expectations remain stable, the increases seen thus far in commodity prices and headline consumer inflation are not likely, in my view, to become embedded in the wage and price setting process and therefore are not likely to warrant any substantial shift in the stance of monetary policy" ~Janet Yellen, April 11, 2011*

Inflation increased sharply in 2011. Headline CPI inflation reached 3.9% in September 2011 after being as low as 1.1% less than a year prior. The increase in inflation was largely due to an increase in oil prices, although "core" inflation accelerated as well. Yellen, then Vice Chair of the FOMC, argued strongly that the increase in inflation in 2011 was transitory and did not represent a shift in the wage and price setting process. In the same speech Yellen said that her outlook was for inflation to remain "subdued for some time." In the event, Yellen's forecast was proven correct, and inflation fell as soon as oil prices stopped increasing. (As an aside, not everybody agreed with Yellen's forecast at the time. In fact, the European Central Bank tightened monetary policy in 2011, reflecting more concern among European policymakers that the increase in inflation would not prove transitory.)

Exhibit 5
Oil Prices and Inflation, 2009–2012



Source: Bloomberg, Bureau of Labor Statistics. As of 31 Dec 13

Yellen's forecast in 2011 relied heavily on the observation that longer-run inflation expectations remained constant even as inflation was increasing. Given the success of her forecast in 2011, she is likely to be still looking to inflation expectations in forming her outlook today. As there have been no noticeable changes in inflation expectations recently (indeed, inflation expectations have been remarkably stable throughout the recovery period), this is likely another reason for Yellen to expect continued stability in inflation. Perhaps more importantly, the stability of inflation expectations may give Yellen some confidence that upside surprises in inflation are more likely than not to prove transitory.

Conclusion

Yellen has argued that inflation is likely to remain low. This is only partly due to her assessment that there is substantial slack in the labor market. In addition to slack in the labor market, Yellen has argued that the reduced sensitivity of inflation to changes in unemployment, the trend of declining labor compensation, a forecast for productivity increases, and the stability of inflation expectations all contribute to an outlook for low inflation.

We think that many of Yellen's arguments have merit, and investors should examine each one carefully. In addition, understanding Yellen's outlook will help investors look through the inevitable ups and downs in the higher frequency data and better anticipate the direction for Fed policy. Simply put, as long as Yellen maintains her outlook for continued low inflation, she will likely be slow to tighten monetary policy, even if the incoming inflation data were to move around somewhat.

Finally, it should be emphasized that none of Yellen's arguments is impervious to change. Investors need to continuously monitor the latest research on these issues, including on the broader trends such as technology and globalization, and be alert to signs that the Fed's view is shifting. As Yellen herself said recently, *"Monetary policy will be geared to evolving conditions in the economy, and the public does need to understand that as those views evolve, the Committee's views on policy will likely evolve with them."*

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