May 10, 2016

U.S. INFLATION HAS TURNED THE CORNER

Highlights

- The wheels of higher trend inflation have been set in motion. Since hitting a trough early this year, oil prices have risen over 70%. The high-flying dollar has also come down from the stratosphere with the trade-weighted dollar falling 6% from its peak.
- With energy prices no longer dragging on inflation and the dollar's impact fading, the outlook for price growth will increasingly depend on its core drivers within the domestic economy.
- Despite the headlines, wage pressures have been building, evidenced most clearly in median wage growth of employed workers, which have been growing by over 3.0% for the past year. Wages are likely to continue to accelerate. Intentions to raise wages have moved back to pre-recession levels and tend to lead actual wage increases by roughly a year.
- With continued tightening in the labor market, there is risk that inflation not only reaches the Fed's 2% target, but overshoots. Such an event could be the catalyst the Fed needs to speed up the hiking cycle – something that current market pricing has yet to discount.

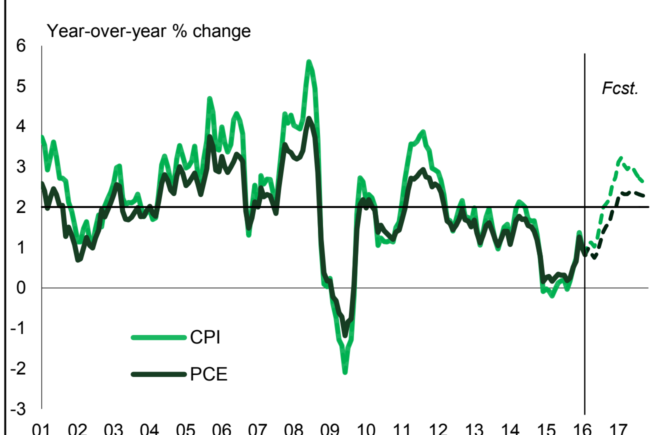
Low inflation has been a consistent element of the U.S. economic outlook. With the exception of a short period in early 2012, inflation has run below the Fed's target of 2.0% since the end of the Great Recession. Whether measured by the commonly-cited consumer price index (CPI) or the Fed's preferred price index for personal consumption expenditures (PCE), inflation is currently running below 1.0% (Chart 1).

Two of the factors that have weighed most significantly on inflation – the price of oil and the value of the U.S. dollar – have reversed course over the last few months. Since hitting a trough of $26 in early February, the West Texas Intermediate (WTI) benchmark has risen over 70% to around $45. And, from its peak in late January, the trade-weighted U.S. dollar has depreciated by over 6%.

The rise in energy prices will begin to show up in headline inflation immediately in the months ahead. We expect WTI to range between $50 and $60 through 2017 (see our recent report). This will add over 1.0 percentage points to CPI inflation by the first quarter of 2017, likely bringing the headline rate north of 3.0%. Much of this is already baked in. Even if the price of oil simply remains at its current level, it will add around 0.5 percentage points to CPI inflation.

Volatility in energy prices notwithstanding, a bigger question is whether inflation will begin to move up on a broader trend basis. In all likelihood it will. While the dollar may regain some of the ground lost in the first quarter, it is unlikely to appreciate far beyond its recent peak. As the dollar stabilizes, the drag on core inflation of roughly 0.3 percentage points will dissipate.

CHART 1: U.S. CONSUMER PRICE INFLATION



Source Bureau of Labor Statistics, Bureau of Economic Analysis
Forecast by TD Economics

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This should start to show up in the second half of this year.

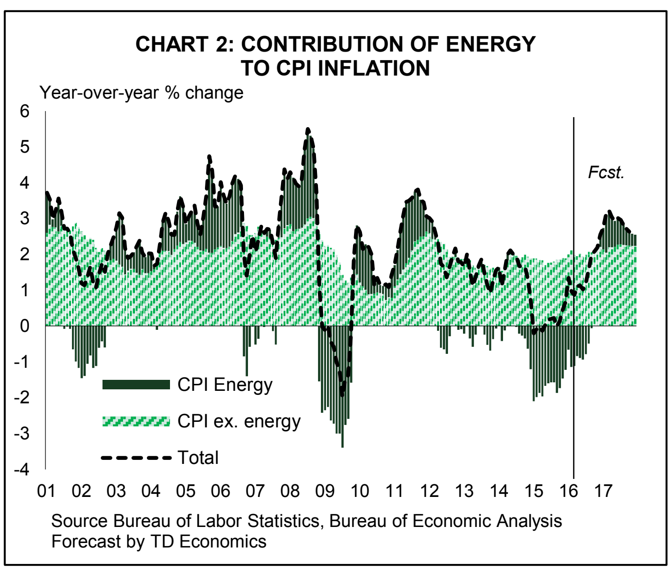
The other element to watch is the labor market. The improvement in the labor market to date is already putting upward pressure on wage growth. This is likely to show up in consumer price inflation over the next year.

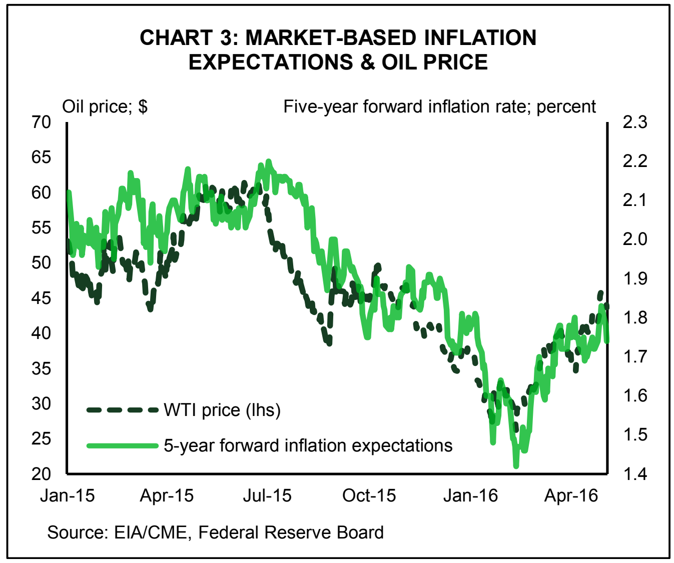
In short, the wheels of higher trend inflation are in motion. With ongoing tightening in the labor market, there is risk that inflation not only reaches the Fed's 2% target, but overshoots. Such an event could be all the catalyst the Fed needs to speed up the hiking cycle – something that current market pricing has yet to discount.

Energy price headwind will become a tailwind

By far the biggest weight on inflation over the past year has been the free fall in the price of energy. At its peak in in September of 2015, the energy price sub-index within CPI subtracted 1.9 percentage points from inflation and single-handedly brought the index into negative territory. The drag from energy prices has diminished since then. In March – the most recent month of data – the drag has been cut in half to just over 1.0 percentage points (Chart 2).

By the fall of this year the rebound in energy prices will begin adding to inflation. This would occur even if prices were to remain where they are today at around $45 a barrel. However, further gains in the price of oil are likely as supply is cut back and global growth continues. From a quarterly average of $33 in the first quarter of 2015, we expect the price of WTI to hit an average of $50 by the fourth quarter of this year and rise further to $55 by the final quarter of 2017. On a year-over-year basis, this represents a 60% increase in the price of oil by the first quarter of 2017.





Given the historical relationship between oil prices and consumer prices, this is likely to lead to a near-20% rise in the energy component of CPI. With energy representing 6.6% of the total CPI basket, this will add over a full percentage point to inflation. Energy prices play a smaller role in PCE. The share of the PCE basket devoted to energy is just 3.7%, a little over half its weight in CPI. Still, energy will add 0.6 percentage points to PCE inflation by the first quarter of 2017.

Higher energy prices should shore up inflation expectations

Beyond the impact on headline inflation, falling energy prices appear to have been a factor weighing on expectations for future inflation. A large body of research suggests that inflation expectations are an important driver of inflation. As such, the seeming downward trend in inflation expectations has been a worrying phenomenon.

Oil price and five-year forward inflation expectations have moved in tandem over the past several years (Chart 3). As oil prices have risen, so too have market-based measures of inflation expectations. As the price of energy rises further, inflation expectations are likely to continue to drift toward their longer-run average, limiting any further downside risk to the inflation outlook.

Energy prices are excluded from the core measure of inflation along with food prices due to their higher volatility. By lowering business input costs, lower energy prices may eventually reduce other consumer prices, but empirical evidence suggests that this passthrough is relatively minimal and has fallen over time. This likely reflects the well-anchored nature of inflation expectations, but may also reflect the fact that as energy prices fall, households use the savings to purchase other goods and services, thereby limiting downward pressure on non-energy prices.

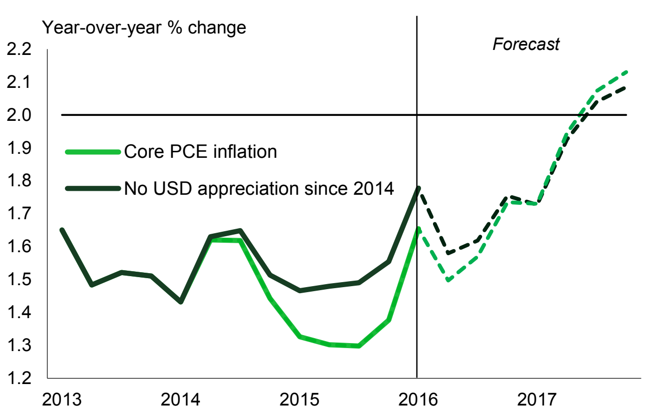
Core inflation will move higher as dollar comes off the boil

Another potential influence on trend inflation is the value of the dollar, which puts downward pressure on the price of all imported goods. However, the passthrough from the dollar to import prices is exceedingly muted. Due to the dollar's position as the primary global reserve currency, an estimated 95% of foreign goods sold in the United States are already priced in dollars. These goods do not meaningfully change when the dollar rises against foreign currencies.[1]

The passthrough from import prices to consumer prices is even smaller since the majority of consumer goods and services are not imported and because some of the adjustment is absorbed by changes in the profit margin of producers and retailers. As a result, despite the fact that the trade-weighted dollar has risen close to 20% over the past two years, our analysis finds that this has cut just 0.3 percentage points from consumer price inflation on an annual basis (Chart 4).

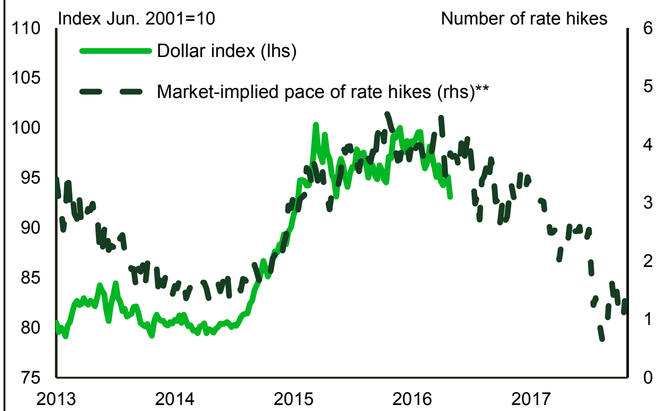
Given lags in the relationship with prices, the past appreciation in the dollar will continue to weigh on inflation through the third quarter of this year, but beyond that, the dollar's ascent and its impact on inflation will wane. With a slower pace of rate hikes from the Federal Reserve, monetary policy divergence will become less and less of a story for the dollar going forward and likely give way to the broader improvement in commodity prices (Chart 5).

CHART 4: CORE PCE INFLATION WITH & WITHOUT DOLLAR APPRECIATION



Source Bureau of Labor Statistics, Bureau of Economic Analysis
Forecast by TD Economics

CHART 5: U.S. DOLLAR & MARKET EXPECTATIONS FOR RATE HIKES



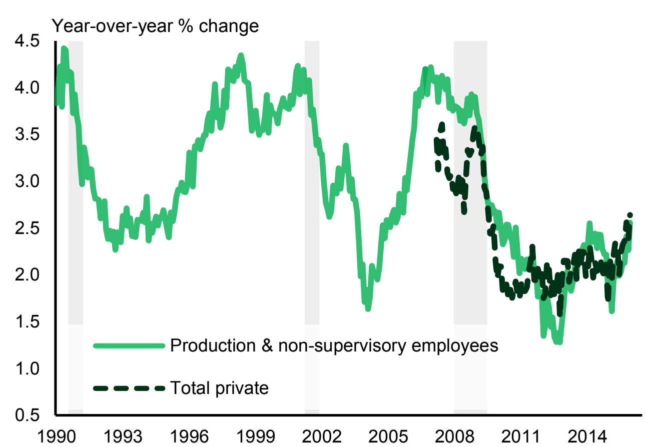
Source: Bloomberg, Wall Street Journal
*DXY. **Morgan Stanley implied pace of rate hikes ahead 18 months

A tightening labor market still matters

With energy prices no longer dragging on inflation (or expectations), and the dollar's impact fading, the outlook for price growth will increasingly depend on its core drivers within the domestic economy. While the persistence of low inflation has brought the historical relationship between economic slack and price growth into question, in our estimation, the relationship (known as the Phillip's curve) remains important. Holding other elements constant, as slack diminishes, inflation tends to rise.

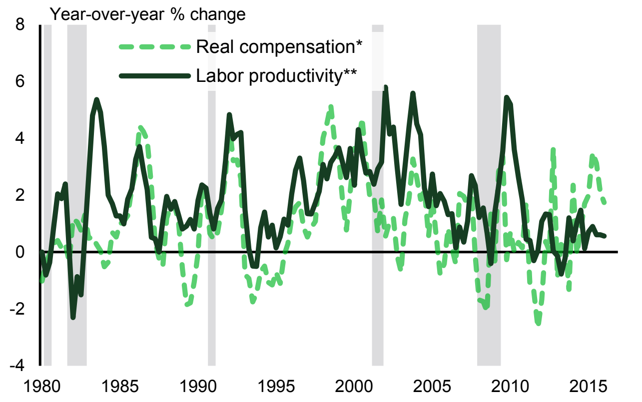
One of the factors that has brought the Phillip's curve into doubt is the seeming lack of progress in wage growth over the past several years. Up until recently, average hourly earnings growth had been relatively flat around 2.0%. In April, average hourly wage growth accelerated to 2.5% from

CHART 6: AVERAGE HOURLY EARNINGS



Source: Bureau of Labor Statistics

CHART 7: REAL COMPENSATION & LABOR PRODUCTIVITY



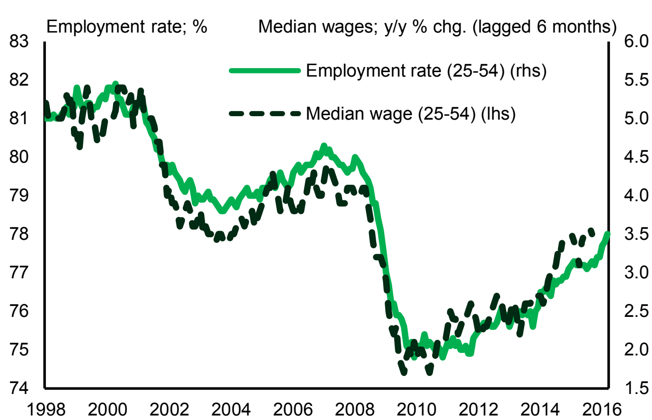
*Compensation per hour non-farm business sector deflated by CPI
**Output per hour worked.
Source: Bureau of Labor Statistics

its year-ago level(Chart 6 previous page).

Aggregate wages are influenced by trends in labor productivity as well as changes in the composition of earners. Labor productivity has slowed considerably since the end of the recession. Real output per hour in the nonfarm business sector (the standard measure of labor productivity) declined outright in the last quarter of 2015 and the first quarter of 2016 and was up just 0.6% on a year-over-year basis (Chart 7).

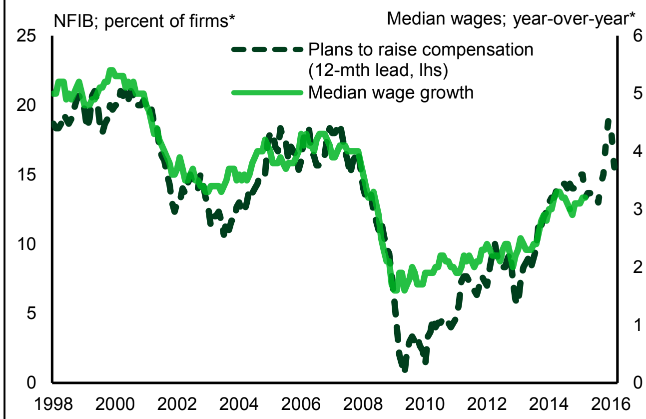
Population aging is also likely weighing on aggregate wage metrics. Income levels peak in mid-life and fall as older workers cut back on hours or leave the workforce entirely. As a result, wage growth appears lower in an era of population aging than it would if the composition of the workforce were held constant.

CHART 8: WAGE GROWTH & EMPLOYMENT RATE (CORE WORKING-AGE POPULATION)



*Three month moving average.
Source: Atlanta Fed, Bureau of Labor Statistics

CHART 9: SMALL BUSINESS WAGE EXPECTATIONS & WAGE GROWTH



*Three month moving average.
Source: Atlanta Fed, National Federation of Independent Business

In order to gauge the cyclical drivers of wage growth it is useful to control for changes in the composition of workers. The Atlanta Fed does this in their wage tracker that shows the median growth in wages among the population of workers employed twelve months earlier. This median wage metric has been trending up noticeably over the past year. For people in the core working age population (25 to 54), the movement up has tracked closely the rise in the employment-to-population ratio with a lag of about six months (Chart 8).

Unsurprisingly perhaps, we find that intentions to raise compensation among small businesses also lead changes in median wages by six to twelve months. Wage expectations among employers have been moving higher on a trend basis since the end of the recession and finally reached a pre-crisis average at the beginning of 2015. As such, it is not surprising that median wage growth finally stabilized above 3% in the second half of 2015 and appears likely to continue to move higher over the next year (Chart 9).

Inflation is likely to move higher as full employment approaches

The acceleration in wage growth signals that the labor market is moving toward full employment. There are two ways that a tighter labor market may lead to higher inflation. The first is by raising producer costs. The logic is that higher wage pressures may initially cut into firm operating margins, but once they become more-or-less permanent, firms will pass these along to consumers.

The jury is still out on the importance of this channel. Recent research suggests that once accounting for changes in resource utilization (that is, the gap between actual and full employment), wage growth appears to have limited effect on consumer price growth, at least more recently.[2] Still, this result depends on the period studied and the wage metric that is examined. Our estimates suggest that median wages do play a role. When corporations face higher wages, operating margins are reduced for three to four quarters before costs are passed along to consumers. Given that wage pressures have already surfaced in first quarter corporate earnings, this could start showing up in consumer prices by the end of this year.

The second channel through which a tighter labor market raises inflation is by raising aggregate demand relative to supply, (which is ultimately determined by trend growth in the labor force and productivity). Given population aging, as long as job growth exceeds 100k a month, the labor market will continue to reduce excess capacity. With the economy pushing 150k to 200k jobs a month, a significant dent in lingering labor market slack is likely to be made this year. The combination of higher wages and full employment will provide support to consumer spending, further pulling up inflation as higher paid consumers are willing and able to pay more for goods and services.

Bottom line

Inflation has turned a corner. The bulk of the fall in inflation over the past year has been due to declining energy prices and a high-flying U.S. dollar. With energy prices on the mend and the dollar stabilizing, inflation will turn higher. As long as the price of oil continues its recent upward trend, inflation as measured by the CPI index is likely to head north of 3.0% by the first quarter of 2017. The Fed's preferred metric, will not rise as fast due to a lower weighting in energy, but it is likely to eclipse the 2.0% mark.

Core inflation is also likely to trend up. The improvement in the labor market is now showing up in wage growth, a story that should continue to play out over the next several months. The math would tell us that by early 2017, we will start seeing trend inflation moving toward the Fed's 2.0% target. Once we have verification that inflation is near target, market based measures of future inflation should pick-up along with the probability of Fed rate hikes. Markets and the Fed have been cautious, using a wait-and-see approach with inflation due to years of disappointing results. But, the drivers of inflation are now all moving in the same direction – higher – giving us confidence that the Fed will soon have the evidence necessary to continue policy normalization.

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ENDNOTES

1 Humpage, O. F., & Stehulak, T. (2015). "Exchange-Rate Pass-Through and US Prices," Cleveland Federal Reserve 2015 Economic Trends, https://www.clevelandfed.org/newsroom-and-events/publications/economic-trends/2015-economic-trends/et-20150324-exchange-rate-pass-through-and-us-prices.aspx.

2 Peneva, Ekaterina V. and Jeremy B. Rudd (2015). "The Passthrough of Labor Costs to Price Inflation," Finance and Economics Discussion Series 2015-042. Washington: Board of Governors of the Federal Reserve System, http://www.federalreserve.gov/econresdata/feds/2015/files/2015042pap.pdf.