

**The Outlook for the Economy and Monetary Policy:
Low-Frequency Policymaking in a High-Frequency World**



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**New York Association for Business Economics
New York, NY**

April 1, 2016

Introduction

Good afternoon. I thank Ellen Zentner and the New York Association for Business Economics for the invitation to speak to you today. I believe that one of the important responsibilities of a Federal Reserve policymaker is to share his or her economic perspectives with the public. Congress has wisely given the Fed independence in making monetary policy decisions in pursuit of our statutory goals of price stability and maximum employment. I say “wisely” because a body of research and practical experience both here and abroad show that when central banks formulate monetary policy free from short-run political interference, the policy is more effective and yields better economic outcomes. But to preserve that independence, the central bank must be held accountable for its policy decisions. And a key component of that accountability involves policymakers providing information to the public on their evaluation of economic conditions, their outlook for the economy, and the rationale for their decisions.

At its March meeting, about two weeks ago, the Federal Open Market Committee made one of those decisions: it decided to maintain the target range for the federal funds rate at $\frac{1}{4}$ to $\frac{1}{2}$ percent. The FOMC also released a new set of economic projections, something that it does four times a year. Today, I plan to discuss my outlook for the economy and monetary policy. In doing so, I realize I am going against the teachings of Laozi, the 6th century BC Chinese philosopher, who said, “Those who have knowledge, don’t predict, and those who predict, don’t have knowledge.” However, I take my inspiration from a more modern thinker, Henri Poincaré, the 19th century French mathematician, who said, “It is far better to foresee even without certainty than not to foresee at all.” Before I discuss what I foresee, I should remind you that the views I’ll present are my own and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

The Economic Outlook

Despite the gyrations in financial markets at the start of the year, the underlying fundamentals of the U.S. economy remain sound. I expect the economy to grow at a moderate pace of 2.25 to 2.5 percent this year,

slightly above its longer-run trend and sufficient to generate further job gains and a further reduction in the unemployment rate this year. I anticipate that inflation will continue to move gradually up toward our target of 2 percent over time. In my view, it will be appropriate for monetary policymakers to continue to gradually reduce the level of accommodation this year.

In putting together my forecast for the March FOMC meeting, I incorporated the new information we had received since the December FOMC projections. I know that many people in this room have to forecast at a much higher frequency than four times a year. Let me assure you that policymakers are also constantly assessing incoming information for its implications for the outlook and risks around the outlook. This information includes the official statistical releases and the reports we garner from talking to our boards of directors, advisory councils, and other contacts in our regions. It is important that our policy be “data-dependent,” meaning that policy should depend on how economic and financial conditions evolve, to the extent that those conditions have implications for the medium-run outlook and risks around the outlook.

The focus is on the medium-run outlook because that’s the time horizon over which monetary policy affects the economy. But we live in a high-frequency world. Measures of stock market volatility, like the VIX, attest to that. The market gyrations at the end of last year and the beginning of this year were notable. The declines in global equity markets partly reflected market participants’ reassessment of the outlook for global growth, as well as their views on how effective policy actions taken abroad will be. Over the past month or so, we’ve seen some stability return to financial markets. Volatility has declined, stock prices have risen, and credit risk spreads on corporate bonds have narrowed. As a result, on balance, financial conditions are only slightly more restrictive than they were in December.

While less volatile than financial market indicators can be, economic data can also vary quite a bit from month to month. “Data-dependent” policymaking does not mean that policy will react to every short-run

change in the data – that would be a mistake. One of the challenges for monetary policymakers is making low-frequency policy in a high-frequency world. We need to extract the signal about where the economy is headed from economic and financial market information that can often be noisy.

My own forecasts tend to have some consistency over time because I try to stay focused on underlying fundamentals and the medium-run outlook. That said, I have made some changes to my outlook since December. Most of the changes have to do with my longer-run projections. In particular, the cumulative evidence since I last adjusted my longer-run projections has led me to slightly move down my estimates of longer-run growth, the longer-run unemployment rate, and the longer-run fed funds rate, each by 25 basis points. My longer-run growth and unemployment rate estimates had been on the high side of FOMC projections. Of course, it's important to remember that because of the considerable uncertainty around estimates of potential growth, the natural rate of unemployment, and the equilibrium real interest rate, the differences across FOMC participants' longer-run estimates are not statistically significant, nor are the 25-basis-point reductions I made to my own estimates. Nonetheless, I wanted to recognize that the moderate growth of around 2 percent that we've seen during the expansion has been sufficient to generate a significant fall in the unemployment rate, while inflation has remained low. That combination of moderate growth, continued improvement in labor markets, and low inflation persuaded me that it was time to take the evidence on board and to move my estimates of the longer-run values down a bit. I now project longer-run growth at 2 percent, the longer-run unemployment rate at 5 percent, and the longer-run fed funds rate at 3.25 percent.

Economic Growth

In terms of the forecast, as I've mentioned, I anticipate that growth will pick up to a 2.25 to 2.5 percent range this year. That is slightly lower than my last forecast and reflects both the weakness we saw in the fourth quarter, which suggests that the economy entered 2016 with a little less momentum, and slightly tighter financial conditions, which partly reflect somewhat slower growth abroad. So far, the information

we have suggests that growth in the first quarter will remain near the fourth quarter's pace of around 1.5 percent, but there is still more information coming in.

Consumer spending, which makes up about two-thirds of output, has been one of the economy's strengths, although it too has shown month-to-month volatility that we need to smooth through.

Consumer spending has been buoyed by continued improvement in household balance sheets; growth in personal income, reflecting the progress in labor markets; and lower oil prices, as well as highly accommodative monetary policy that has kept borrowing rates low. The drop in gasoline prices from \$3.36 per gallon in 2014 to \$2.42 per gallon in 2015 saved the average household about \$700. The U.S. Energy Information Administration now forecasts that gasoline prices will average \$1.89 per gallon this year, which would mean another \$400 in cost savings for the average household. I believe we are seeing a positive effect on spending from lower gasoline prices. Auto sales were particularly strong over the past year, hitting a new record of 17.5 million; many of these were SUVs and other larger vehicles. Instead of spending it, some households may be choosing to save some of the windfall from lower gas prices – we've seen the savings rate rise. Or they may be using it to pay down debt. Either way, the improvement in balance sheets will help support future consumption.

The housing sector has also shown steady improvement, and I expect that to continue. Total sales of new and existing homes have been rising slowly over the past few years. Existing home sales have made considerable progress in approaching the average level seen before the run-up during the housing bubble, while new home sales still have some ways to go to reach that milestone. Housing starts have been moving up but are still below the levels consistent with projections of household formation over the longer run, and in some markets, the supply of housing hasn't kept up with demand. So there is some chance we will see an acceleration in construction this year. Mortgage rates are low, but households are being appropriately careful in not taking on more mortgage debt than they can handle, and banks are lending to those with good credit quality. House prices have been rising at a 5 to 6 percent pace, on a

national level. This has allowed households to rebuild some of the housing equity they lost during the housing bust, another factor that will support consumer spending going forward.

While residential investment has been improving, business fixed investment remains weak. The sharp drop in oil prices since mid-2014 has benefitted consumers but has weighed heavily on firms in the drilling and mining sector, on their suppliers, and on regions whose economies depend on the energy sector. Firms tied to the sector have responded by cutting jobs and reducing investment. Some firms may face bankruptcy or will need to merge. In the face of low oil prices, I expect this sector to feel continued pressure.

Manufacturers and other firms exposed to U.S. trade have also had to operate in a very challenging environment. The dollar has appreciated around 20 percent since mid-2014. This appreciation has been a considerable drag on U.S. export growth and on manufacturing output. We can expect the dollar to remain strong because real growth in the U.S. is expected to exceed growth abroad, and interest rates in the U.S. are expected to be higher than those in our major trading partners for some time to come. However, the rate of appreciation of the dollar has slowed, so the direct effect on U.S. net exports will likely lessen over time. Indeed, after last year's deceleration in manufacturing output, several surveys suggest that manufacturing activity may be stabilizing. These include the national survey conducted by the Institute for Supply Management, as well as the regional surveys conducted by the Dallas, New York, Philadelphia, and Richmond Federal Reserve Banks.

As this review suggests, some parts of the economy are doing better than others. But the message I take from U.S. economic performance is that despite financial market volatility, despite the pain inflicted on the energy sector from falling oil prices, and despite the relatively weak growth abroad, the U.S. economy has proven to be remarkably resilient.

Labor Markets

Strong evidence of this resiliency is seen in labor markets. The unemployment rate is now about half of what it was at its peak of 10 percent in October 2009. Over the past two years, we've also seen significant improvement in other measures of the under-utilization of labor. The share of workers who are working part-time but who would prefer to work full-time has declined significantly, as has the number of people who have only been looking for work sporadically or who have been discouraged from looking at all because they don't think they'll find a job. Since its low point last September, the labor force participation rate has risen by half of a percentage point and is now at a level consistent with estimates of its longer-run trend.¹

Payroll job growth has averaged more than 200,000 jobs per month over the past two years. And while there have been ups and downs in the monthly reports – as there always are – I think it is notable that even as output growth slowed during the fourth quarter of last year, firms continued to add workers to their payrolls at a very good pace. The data from the Bureau of Labor Statistics' Job Openings and Labor Turnover Survey, or JOLTS, show that some dynamism is returning to the labor market.² The rate of job openings is stronger than during the previous expansion, and both the hiring and quit rates have risen to levels suggesting that firms are looking to hire and workers are confident enough to be looking for better jobs.

Wage acceleration typically lags the improvement in labor markets, and this time is no different. Average hourly earnings have only slowly accelerated over the past few years, and the employment cost index,

¹ See Stephanie Aaronson, Tomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher, "Labor Force Participation: Recent Developments and Future Prospects," *Brookings Papers on Economic Activity*, Fall 2014, pp. 197-255.

² Note that John Haltiwanger argues that there has been a longer-run decline in labor market fluidity. See John Haltiwanger, "Top Ten Signs of Declining Business Dynamism and Entrepreneurship in the U.S.," paper written for the Kauffman Foundation New Entrepreneurial Growth conference, August 2015.

which measures total compensation, has risen at about 2 percent a year over the past three years. Some of the anecdotal reports suggest that wage pressures may be building. We have heard for some time from employers in our region that it has been hard to find workers with the necessary skills in certain higher-skilled occupations, including information technology, health care, and specialized construction. Firms have had to increase wages and benefits and offer and sweeten retention packages for these types of workers. But we are now hearing increasingly from firms across the service sector that they are having difficulty finding workers in lower-skilled and less-specialized occupations, like bank tellers and retail staff. As labor markets continue to tighten, I expect to see wages accelerate somewhat.

I do not want to underestimate the difficulty that many workers have had during the recession and slow recovery, and that many continue to have. For example, in my region, those who have lost jobs in the mining, oil, and gas sectors in Appalachia and eastern Ohio have been slow to find new work because the economies in those areas are not well-diversified. I believe there are longer-run workforce development issues affecting U.S. labor markets, and the deep recession and slow recovery have exposed and exacerbated these problems. As a country, we need to ensure that people can enter and remain productive members of the labor force to raise our standard of living and make us more competitive in the global economy. The question is how to do that. I do not believe monetary policy would be effective in addressing these longer-run problems. More than that, trying to rely on it to do so is counterproductive because it takes the focus off of programs and policies that can help to prepare and sustain workers in the modern workforce. So from the standpoint of what monetary policy can do, the totality of the evidence suggests to me that the economy is basically at the Fed's mandated monetary policy goal of maximum employment. However, I do believe that government policy and programs, such as educational assistance and retraining programs, have a role to play in addressing these long-run labor force challenges and it should be brought to bear.

Inflation

Price stability is the other part of the Fed's dual mandate. Inflation has been running below the Fed's goal of 2 percent for quite some time. Low inflation partly reflects the effects of earlier declines in the price of oil and other commodities since mid-2014, as well as the appreciation of the dollar, which has held down the prices of nonpetroleum imports into the U.S. But the most recent data have been somewhat encouraging and in accord with the pattern anticipated by the FOMC. As oil prices and the dollar have shown some stability of late, the headline and underlying measures of inflation have moved higher. And these moves are not just one month's data. Headline and core inflation, as measured by the year-over-year changes in the underlying indices, have been moving up over the past year. Headline PCE inflation has risen to 1 percent from 0.2 percent at the start of last year, and core PCE inflation is 1.7 percent, compared to 1.3 percent a year ago. Core CPI inflation is now above 2 percent. The Cleveland Fed's median CPI inflation rate is 2.4 percent and it, too, has been rising over the past year.

Stable inflation expectations are an important component of inflation dynamics. In my view, inflation expectations have been relatively stable, even in the face of sizable declines in energy prices. Market-based inflation compensation, which measures the difference in yields between nominal Treasury securities and Treasury inflation-protected securities, has fallen by more than the survey measures of inflation expectations. But movements in inflation compensation have been highly correlated with changes in oil prices, and in this period of heightened market volatility and flight-to-quality flows into U.S. Treasury securities, I take less of a signal about inflation expectations from the market-based measure of inflation compensation. Various models suggest that the movements in inflation compensation more likely reflect changes in liquidity premia and inflation risk premia rather than changes

in inflation expectations.³

Based on the evidence at hand, if the real side of the economy continues to perform consistent with my projections, I expect inflation to remain low this year but to gradually move back to our goal of 2 percent over the next couple of years. And I will continue to monitor all of the measures of inflation and inflation expectations to assess whether this forecast is on track.

Risks to the Forecast

Of course, we have to recognize that the economy rarely evolves exactly as expected. The world is a dynamic place and the economy is hit by shocks, both positive and negative. So any economic forecast is surrounded by fairly wide confidence bands, and mine is no exception. I see risks on both the downside and the upside around my forecast. If the dollar were to appreciate more than I've assumed, perhaps because of weaker growth abroad, or if there were a significant further decline in oil prices rather than a stabilization, then growth and inflation could be lower than in my baseline forecast. The actions taken by several foreign central banks to increase monetary accommodation to further support their economies may help to mitigate some of this risk.

³ The Cleveland Fed publishes estimates of inflation expectations and the inflation risk premium based on a model that incorporates survey measures of inflation expectations as well as market data on nominal Treasuries and inflation swaps. The 5-year/5-year-forward measure of inflation expectations has been relatively stable and near 2 percent. The data are available at www.clevelandfed.org/en/our-research/indicators-and-data/inflation-expectations.aspx. For a discussion of this model, see Joseph Haubrich, George Pennacchi, and Peter Ritchken, "Inflation Expectations, Real Rates, and Risk Premia: Evidence from Inflation Swaps," *The Review of Financial Studies*, 25, 2012, pp. 1588-1629. See also the Atlanta Fed's macroblog discussion by Nikolay Gospodinov and Paula Tkac, "Are Long-Term Inflation Expectations Declining? Not So Fast, Says Atlanta Fed," January 15, 2016. The authors conclude that long-run inflation expectations remain stable and that the large correlation of market-based inflation compensation and oil prices is due mainly to the liquidity premium on TIPS. These conclusions are based on a model described in Nikolay Gospodinov and Bin Wei, "Forecasts of Inflation and Interest Rates in No-Arbitrage Affine Models," Federal Reserve Bank of Atlanta, Working Paper 2016-3, February 2016, and Nikolay Gospodinov and Bin Wei, "A Note on Extracting Inflation Expectations from Market Prices on TIPS and Inflation Derivatives," Federal Reserve Bank of Atlanta, November 2015.

Because inflation has been undershooting our goal for some time, many people have quite reasonably been focusing on the downside risks to inflation. But it is also good to keep in mind that, according to analysis by the Cleveland Fed staff, over the last 15 years historical forecast errors from several highly regarded inflation forecasting models have skewed to the upside; that is, the models have tended to underestimate actual inflation.⁴ While the steep declines in oil prices have kept inflation low, in the current environment, low oil prices also pose an upside risk to inflation over the medium run. They may spur stronger-than-expected consumer spending, and this, combined with accommodative monetary policy, could lead to a faster increase in inflation than forecasted.

The intense volatility in financial markets that we saw at the end of last year and the beginning of this year has subsided. But were it to intensify and be sustained, this could lead to a broader pullback in risk appetites among investors, businesses, and consumers, which could dampen the U.S. economy. I note, though, that even during the recent turbulence we did not see this. Focusing too much on signals from market volatility is also a risk, as messages from the market can turn around quickly. It could be that if markets remain relatively stable, businesses may begin to feel more secure and investment spending may pick up more than expected. The resiliency of the U.S. economy throughout turbulent times is worth remembering as we aim to set monetary policy that will promote our longer-run goals of maximum employment and price stability.

Monetary Policy

Given actual and expected economic performance, the risks around the outlook, and the progress toward our policy goals, my assessment at this time is that it will be appropriate to continue to gradually reduce

⁴ Models whose forecast errors skew to the upside include the Faust and Wright inflation-expectations gap model and the Stock and Watson unobserved components model. See Jon Faust and Jonathan H. Wright, "Forecasting Inflation," in *Handbook of Economic Forecasting*, Graham Elliott and Allan Timmermann, eds., Amsterdam: Elsevier Press, vol. 2A, 2013, pp. 2-56, and James H. Stock and Mark W. Watson, "Why Has U.S. Inflation Become Harder to Forecast?" *Journal of Money, Credit and Banking*, supplement to vol. 39, no. 1, February 2007, pp. 3-33.

the degree of accommodation this year. Gradual normalization means that monetary policy will remain accommodative for some time to come, providing support to the economy and insurance against downside risks. I think that's appropriate given some of the forces still affecting our economy – for example, slow growth abroad, appreciation of the dollar, somewhat more restrictive financial conditions, and the continued rebalancing of supply and demand in the energy sector.

As I mentioned earlier, at our March meeting the FOMC maintained the target range for the federal funds rate at $\frac{1}{4}$ to $\frac{1}{2}$ percent. I did not dissent from that decision. Even though I expect it will be appropriate to continue on the path of normalization this year, I recognized that the data we had on the first quarter were limited. I agreed that a reasonable case could be made to wait until more information could be gathered and assessed to see if they confirm that the economy is evolving as anticipated – namely, resumption of the moderate growth trajectory, with continued improvement in labor markets and inflation on track for a gradual return to 2 percent.

I do not think the FOMC is behind the curve, but while there are risks to moving too soon, there are also risks to waiting too long to take the next steps on the normalization path given the lags with which monetary policy affects the economy. We live with uncertainty and one could always make the case that we should wait to act until we gather more information. But waiting until every piece of data lines up in the correct way means waiting too long and risks having to move rates up more aggressively in the future, with negative impacts on our economy. Similarly, forestalling rate increases for too long in light of financial market volatility that doesn't affect the outlook may simply produce more volatility in the future if we find ourselves having to increase rates more aggressively than anticipated to achieve our goals.

Of course, the actual path the fed funds rate will follow will depend on economic developments and how they affect the outlook. As we've seen over this expansion, things can take unexpected turns, and we want policy to appropriately react to changes in the medium-run outlook. The policy path I foresee as

appropriate today is slightly more gradual than the path I foresaw in December, partly because of the slight downward revision to my growth forecast but mainly because I now estimate a lower longer-run equilibrium interest rate. But these are small changes. The important point is that the economy has shown considerable resiliency, and in my view, the outlook and risks around the outlook will likely support gradual reductions in the degree of accommodation this year.

The FOMC's Summary of Economic Projections

As indicated in the March Summary of Economic Projections, or SEP, the other FOMC participants also currently anticipate that it will be appropriate for the funds rate to move up gradually over time, with the median path across participants now slightly shallower than in December. A lot of media commentary has focused on this somewhat flatter policy path. To my mind, this change in the path is an excellent illustration of how our policy is data dependent. There were slight reductions in the participants' economic projections between December and March, reflecting incoming economic information including weak fourth quarter U.S. growth, lower estimates of global growth, volatility in financial markets, and somewhat tighter financial conditions. Each participant took these developments into account when revising his or her projections and the policy path the participant thought was appropriate to achieving those outcomes. Because there is uncertainty around each participant's projections of growth, the unemployment rate, and inflation, there is also uncertainty around the appropriate policy path. Thus, no one should read the median path in the SEP as a promised policy path. Policy is not on a pre-set course; the actual path of the fed funds rate will depend on the economic outlook and risks around the outlook. But the median policy path and changes in that path over time help to illuminate participants' reaction functions – how participants believe policy should systematically respond to changes in economic conditions that affect the outlook.

I believe the discipline of forecasting how the economy might evolve over the medium run and the uncertainty around the forecast is an essential part of the framework for setting monetary policy. It

provides a useful methodology for avoiding too much focus on short-run changes in the economic data or volatility in the markets. It allows us to do low-frequency policymaking in a high-frequency world. It forces us to consider how changes in the economic and financial data may or may not change the medium-run outlook, the risks around the outlook, and the appropriate policy path. It is the construct through which our policymaking can be made systematic, yet responsive to the evolution of economic conditions. The outcome of this process – the projections of economic outcomes and the policy paths thought appropriate to achieve those outcomes – is summarized in our SEP four times a year, allowing the public to better understand how the assessments of the economy and monetary policy are evolving. I view this as essential transparency, which is why I believe the SEP continues to be an important part of FOMC communications.