The Economy and Monetary Policy

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Introduction

I thank David Kotok and his colleagues at the Global Interdependence Center for giving me the opportunity to speak with you this morning about economic developments and monetary policy. I am very happy to be here – and not just because I left single-digit temperatures in Cleveland. No, it's because at each GIC program I've attended over the years – and there have been many – I've always walked away with some new insight or perspective with which to view the economy and policy. The GIC's Central Banking Series is an important forum for discussing economic matters of global interest, and I am privileged to say that today's talk is my second in the series. Last March, at the GIC's program with the Banque de France, I spoke about the journey from extraordinary monetary policy back to ordinary monetary policy. Today, I will update you on the progress that's been made on that journey and my outlook for the economy and monetary policy. As always, the views I'll present today are my own and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

Recent Monetary Policy Actions and Communications: Steps on the Normalization Path

At its January meeting, the FOMC decided to maintain the target range of the federal funds rate at ¼ to ½ of a percent. I supported this decision because I believe that policy, for the time being, is well-calibrated to the economic outlook and the risks around that outlook. The current target range had been set in December when the FOMC implemented its first change in the policy rate in 7 years and the first rate increase in 9 ½ years. I supported that decision as well. December's increase in the rate from essentially zero recognized the considerable progress the economy has made since the Great Recession, which officially ended more than six years ago, as well as the FOMC's outlook that the economy will improve further, supported by monetary policy that continues to be quite accommodative. The rate increase in December was a step on the path toward more normal policy, a journey that arguably began in October 2014 when the FOMC ended its third large-scale asset purchase program, also known as quantitative easing, or QE3.

The Committee has indicated that, in setting policy, it assesses both realized and expected progress toward the FOMC's statutory objectives of maximum employment and price stability. The policy decisions in December and January represented the outcomes of such an assessment, which encompasses a wide range of economic information – the official economic statistical releases and financial market indicators, as well as the information I and other FOMC participants garner by speaking with contacts in our regions. When the FOMC says its decisions are "data-dependent," I view this as shorthand for this more comprehensive process of parsing economic and financial information to evaluate current economic conditions, and then determining what that information implies about the medium-run economic outlook and the risks around that outlook. The medium run is the relevant time horizon for monetary policy because it takes time for monetary policy to have an effect throughout the economy.

The Evolution of Forward Guidance Toward Data Dependency

I don't view this "data-dependent" approach to policymaking as something new. Instead, I view it as a step on the journey back from extraordinary to more ordinary monetary policymaking. You will recall that one of the policy tools the FOMC used during the recession and early part of the recovery was explicit forward guidance. That guidance changed over time. It began as qualitative guidance offered in December 2008 when the FOMC indicated that weak economic conditions were likely to warrant exceptionally low levels of the fed funds rate for "some time." This changed to calendar-date guidance in August 2011 when the FOMC said that it anticipated an exceptionally low fed funds rate at least through mid-2013. Guidance based on economic thresholds was offered in December 2012 when the Committee said that it anticipated that the 0-to-¼ percent target range for the fed funds rate would be appropriate at least as long as the unemployment rate remained above 6½ percent, inflation between one and two years ahead was projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continued to be well anchored. A year later, in December 2013, the FOMC blended state-contingent forward guidance with an element of calendar-date forward guidance, indicating the information it would consider in determining how long to maintain highly accommodative monetary policy as well as an assessment that it would likely be "well past the time that the unemployment rate declines below 6½ percent, especially if projected inflation continues to run below the Committee's 2 percent longer-run goal."

In March 2014, the FOMC abandoned quantitative thresholds and moved toward the type of forward guidance we have today, which links the path of policy to the Committee's assessment of both realized and expected progress toward its dual-mandate objectives. The guidance continued to provide a time element by indicating it was likely that liftoff would not occur for "a considerable time after the asset purchase program ends."

After the purchase program ended, using it as a benchmark for guidance became less salient. In January 2015, the FOMC replaced this benchmark and simply said it judged it could be patient in beginning to normalize policy. In March, the FOMC fine-tuned this by stating the two criteria it would use to assess when it would be appropriate to make the first fed funds rate increase. These criteria were further improvement in the labor market and reasonable confidence that inflation would move back to its 2 percent objective over the medium term. Since December's liftoff, the Committee has continued to indicate that the path of policy will depend on progress toward our goals, and that while the actual path policy takes will depend on the economic outlook as informed by incoming data, the Committee's current assessment is that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate.

This evolution in the FOMC's forward rate guidance represents a return to more normal times. While explicit forward guidance was used as a policy tool during the recession and early in the recovery, in more normal times, away from the zero lower bound, I believe forward guidance should be viewed more as a communications device. But this step back from explicit guidance poses a challenge for the FOMC for at least two reasons. First, market participants tend to like more explicit statements and less uncertainty. Yet, it's appropriate for monetary policy to respond to economic developments, whether foreseen or not. Second, while before the Great Recession, the public had a pretty good sense of how monetary policy would respond to economic developments, there is likely less clarity about the Fed's so-called reaction function now. After the great inflation of the 1970s, the FOMC became more predictable and systematic in how it reacted to changes in economic activity and inflation.[1] As a result, explicit forward guidance was rarely used. But the Great Recession required the Fed to behave in a way quite distinct from its past behavior, and consequently, there is less understanding about how policymakers are likely to react to incoming economic information than there was earlier.

Thus, in my view, an important goal of FOMC communications is to explain the rationale of our decisions to the public so they will have a sense of how policy is likely to change, in response not only to expected changes in economic conditions but also to unforeseen changes in conditions. I believe that the FOMC statements have been evolving along these lines, although there are likely further steps we could take to provide more information about the conditions we systematically assess in calibrating the stance of policy to the economy's actual and anticipated progress toward our dual-mandate goals. In addition to the policy statement, I believe the FOMC's Summary of Economic Projections (SEP) can be helpful in illuminating the FOMC's reaction function.

The Summary of Economic Projections

FOMC policymakers provide funds rate projections in the SEP that represent their views of appropriate policy – the renowned dot plot – as well as projections of economic growth, the unemployment rate, and inflation that are conditional on their policy path. It's important to note that the policy paths in the SEP are not policy forecasts, unlike interest rate projections in private-sector forecasts. Nonetheless, because there is uncertainty around the outlook, there is also uncertainty around the FOMC's policy path. If the economy's evolution turns out to be different from what we currently anticipate, our policy path may well have to deviate from our current expectation. The policy paths in the SEP should be expected to change

[1] For a discussion, see John B. Taylor, "Monetary Policy During the Past 30 Years with Lessons for the Next 30 Years," luncheon address at the Cato Institute's 30th Annual Monetary Conference on Money, Markets and Government: The Next 30 Years, Washington, D.C., November 15, 2012.

over time as the outlook changes. I don't view this as problematic – we want policy to respond appropriately to changes in the outlook. Thus, the actual path normalization takes could very well turn out to be either less gradual or more gradual than what we anticipate it to be today.

The last SEP projections were released in December; the next set of projections will be released at our March FOMC meeting. The evolution of the dot plot in the SEP over meetings to come will provide the public with information on how participants think monetary policy should appropriately respond to changes in the outlook that reflect economic developments. I think the SEP will be particularly helpful in March given the global economic and financial developments we've seen since our last set of projections.

The FOMC's policy statement in January made it clear that the Committee is closely monitoring these developments and is assessing their implications for the labor market and inflation, and for the balance of risks to the outlook. I certainly will use the time between now and the March meeting to continue to gather information from contacts in the Fourth Federal Reserve District about economic developments affecting businesses, customers, and households; to look at the details of the official economic statistical releases and financial market indicators; and to consider the results from the economic models and forecasts developed by the Cleveland Fed's staff as well as those of other economists. I will walk into the March FOMC meeting with my own assessment of the medium-run outlook for the U.S. economy and risks around the outlook, but I will want to hear the views of others around the table who may or may not share my views based on their own analysis. By design, the discussions at FOMC meetings contain a mosaic of economic information and analysis from all parts of the country. This regional information, along with national data and analysis, plays an important role in setting national monetary policy. The economic developments we've seen since the beginning of the year will be part of the discussion, so let's turn to those now.

The Economy

According to the first estimate, real GDP growth slowed considerably in the fourth quarter of last year, to an annualized growth rate of only 0.7 percent, down from an average pace of about 3 percent in the second and third quarters. A decline in net exports and a reduced pace of inventory investment were the main drags on growth last quarter, but nonresidential investment also declined. In contrast, consumer spending and residential investment held up well. So, one question is whether the softness seen last quarter will persist. Another question is whether the recent financial market volatility and decline in oil prices are signaling a material change in the medium-run outlook.

Market Volatility

The declines in global equity markets since the beginning of the year partly reflect market participants' reassessment of the outlook for growth in China and their views on whether policy actions undertaken by Chinese policymakers will be effective in fostering growth there. China is undergoing a longer-run structural transition from an economy driven by trade to one more dependent on domestic consumption growth, and these kinds of structural changes can be challenging and long lasting. Over the past couple of decades, we have seen some of those challenges play out on a much smaller scale at the regional level in the U.S. as industrial states have transitioned from manufacturing-based economies to more diversified economies.

As it relates to U.S. growth, the direct trade ties between the U.S. economy and China are not very strong: Exports to China represent 7 to 8 percent of total U.S. exports and total U.S. exports are about 12 to 13 percent of U.S. GDP. So the direct effect of trade with China on U.S. output is small. Of course, some U.S. industries and regions of the country are more exposed to international developments via trade than others, and because many emerging economies are considerably more dependent on trade with China, the implications of developments in China for the global economy need to be considered.

In addition to the decline in stock prices, we have seen another sharp decline in oil prices since the beginning of the year. In part, this reflects the same reassessment of global growth prospects affecting the stock market. But supply-side factors are also very important. Worldwide oil inventories remain high and oil production has not been as responsive as one might have thought, given the declines in oil prices seen over the past 18 months. This means that oil prices are likely to remain lower for longer than previously anticipated, as it is taking longer for supply to rebalance with demand.

At this point, I see the market volatility and sharp drop in oil prices as posing risks to the forecast, but I believe it is premature to conclude they necessitate a material change in my modal economic outlook. While there is a possibility that a steeper, more persistent drop in equity markets could lead to a broader and more persistent pullback in risk-taking and credit extension, with spillovers to the broader economy, so far we have not seen this. Solid labor market indicators, including strong payroll growth, and healthy growth in real disposable income suggest that underlying U.S. economic fundamentals remain sound. I continue to monitor developments, but until I see further evidence to the contrary, my current expectation is that the U.S. economy will work through this episode of market turbulence and the soft patch of economic data to regain its footing for moderate growth, even as the energy and manufacturing sectors remain challenged.

Consumer Spending, Housing, and Credit

Consistent with this view, January’s advance retail sales report suggests that consumer spending, which makes up about two-thirds of output, started the year on a strong note, rebounding from a somewhat softer reading in December. Sales gains were broad-based, including those of motor vehicles, which have been particularly strong over the past year. The relative strength in the consumer sector shouldn’t be too much of a surprise because it is based on sound economic fundamentals. Consumer spending has been buoyed by continued improvement in household balance sheets, growth in personal income, which reflects the progress in labor markets, and lower oil prices.

Amidst highly volatile markets, stock prices were little changed, on net, in 2015, and are down since the start of this year. But the cumulative increase in stock prices since the financial crisis ended is still significant. Similarly, house prices have been rising at a 5 to 6 percent pace over the past couple of years, allowing households to rebuild their housing equity. Housing has been slowly recovering for some time. Housing starts remain below the levels consistent with projections of household formation over the longer run. Mortgage rates are low but households are being careful in not taking on more mortgage debt than they can handle, and banks are lending to those with good credit quality. These factors are supportive of housing continuing to make a positive contribution to growth and of households continuing to build their housing equity.

In the aggregate, households lost $13 trillion in net worth during the Great Recession, but the deleveraging that households undertook, coupled with the cumulative increase in stock and house prices over the expansion, means that households have recovered that loss and have added an additional nearly $18 trillion in net worth to their balance sheets.

Bank balance sheets have also improved considerably, and lending, which supports economic growth, is rising. The proportion of loans that are nonperforming, delinquency rates, and default rates have all been declining and, outside of the real estate portfolio, are back to pre-crisis levels. At the same time, capital ratios and loan-loss reserves are rising, so that banks generally are in a considerably better position to handle future losses should they arise. Although risk premia have increased, especially on higher-yield bonds, credit for higher-quality borrowers remains available to support growth.

The fact that consumer lending is rising is an indication that, in general, consumers are feeling pretty positive about their earnings prospects. This is a very reasonable view, reflecting the cumulative progress that has been made in the labor market.

Labor Markets

It is good to remember how far we have come. Over the past six years, the unemployment rate has been more than halved, falling from a high of 10 percent in October 2009 to 4.9 percent in January. Other measures of underutilization of labor have also improved significantly over the past few years, although they are not quite back to pre-recession levels. These measures include the long-term unemployment rate, as well as the unemployment rate that includes discouraged workers and part-time workers who would rather work full-time. Nonfarm payrolls are now more than 4 ¾ million above their previous peak before the Great Recession. Last year, the economy added about 2 ¾ million jobs, an average pace of nearly 230,000 per month. Solid labor market performance continued into this year. Firms added 151,000 jobs in January. While this was somewhat fewer than the average monthly increase last year, it is considerably more than the 75,000 to 120,000 jobs per month that economists currently estimate would be enough to keep the unemployment rate constant. I continue to expect that growth this year will be sufficient to generate some further improvement in labor markets. I wouldn't be surprised if the pace of job gains slowed somewhat, based on demographics and the stage of the business cycle, but the gains should be strong enough to put additional downward pressure on the unemployment rate and support broader acceleration in wages.

I do not want to underplay the significant longer-run challenges the country faces in the labor market. Unemployment rates among minorities have been chronically higher than those for whites. The structural transition of our economy from one based on traditional manufacturing to one encompassing high-tech manufacturing and services has also created demand for different skill sets, thereby requiring workers to increase their human capital.[2] The difference in wages between those with a college degree and those without, the so-called skill premium, has widened substantially over time, more than doubling since the

[2] For further discussion, see Loretta J. Mester, "Community Development and Human Capital," remarks at the 2015 Policy Summit on Housing, Human Capital, and Inequality, sponsored by the Federal Reserve Banks of Cleveland, Philadelphia, and Richmond, Pittsburgh, PA, June 19, 2015.

1970s.[3] This skill premium is inducing people to increase their skills, often taking on student debt to do so. Enrollments in college are near historic highs, but non-completion rates are also quite high.[4] So while the proportion of 25-year-olds with college degrees has moved up from 25 to 30 percent over the past 15 years, by this metric, the U.S. is now ranked only 12th among developed nations.[5]

These developments pose difficult challenges. As a country, we need to ensure that people can enter and remain productive members of the modern labor force, to raise our standards of living and to 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 and leaning on it to try to do so can be counterproductive. It takes the focus off of programs and policies that are better suited to addressing these issues. From the standpoint of what monetary policy can do, in my view the totality of evidence suggests that the economy is at or very nearly at the Fed's mandated monetary policy goal of maximum employment. However, I do believe there is a role for government policy and that it should be brought to bear on these challenges. There is evidence of positive externalities from education. Less-educated workers appear to benefit in the form of higher wages from working in areas populated with more-educated workers.[6] And cities with more highly educated populations experience lower unemployment rates, higher productivity growth, and higher growth in entrepreneurship than what would have been

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[3] Median hourly wages for those with a bachelor's degree are now about 80 percent higher than wages for high school graduates. (See Jonathan James, "The College Wage Premium," Federal Reserve Bank of Cleveland *Economic Commentary*, August 2012.) Over a lifetime, in present value terms, a college graduate can expect to earn nearly twice as much as a high school graduate. (See Kartik Athreya and Janice Eberly, "The College Premium, College Noncompletion, and Human Capital Investment," Federal Reserve Bank of Richmond Working Paper 13-02R, February 2015.)

[4] According to data from the National Center for Education Statistics, only about 55 percent of students who start college earn bachelor's degrees within five years. (See Digest of Education Statistics, table 302.60 for enrollment rates (http://nces.ed.gov/programs/digest/d13/tables/dt13_302.60.asp) and table 326.10 for completion rates (http://nces.ed.gov/programs/digest/d13/tables/dt13_326.10.asp).)

[5] See p. 57 of Robert J. Gordon, "Secular Stagnation: A Supply-Side View," *American Economic Review: Papers and Proceedings* 5, May 2015, pp. 54-59.

[6] Enrico Moretti estimated spillovers from college education by comparing wages for similar individuals who work in cities that differ by the proportion of college graduates in their labor force, being careful to consider unobserved differences in the individuals and the cities. He found that each percentage point increase in the share of college graduates between 1980-1990 was associated with 1.6 percent higher wages of high school graduates and 0.4 percent higher wages of college graduates. See Moretti, "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data," *Journal of Econometrics* 121, 2004, pp. 175-212.

predicted by considering only the educational levels of individuals.[7] The positive externalities suggest we are under-investing in education from society's viewpoint and that appropriately constructed government policies and programs can be a valuable investment for the country to undertake.

Oil Prices

In addition to improved balance sheets and earning prospects, lower oil prices are a third factor that will continue to support consumer spending in the U.S., even as it continues to weigh heavily on the U.S. energy and manufacturing sectors. 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 forecasts that gasoline prices will average $1.98 per gallon this year, which would mean another $300 in cost savings for the average household. Households may be choosing to spend some of this gain – we've seen this already in high sales of SUVs and other larger vehicles – or they may be choosing to save some of this gain – we've seen the savings rate rise – and these savings will help support future consumption.

Of course, there is a downside to the lower energy prices, too, for both growth and inflation. The drop in oil and other commodity prices has weighed heavily on firms in the drilling and mining sector, and on their suppliers, and these firms have responded by cutting jobs and reducing investment. Some firms may face bankruptcy or will need to merge. I expect firms in these sectors to face 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 more than 20 percent since mid-2014, reflecting the expectation that real growth in the U.S. will continue to be stronger than growth abroad, as well as projected interest rate differentials between the U.S. and foreign economies. A stronger dollar means better terms of trade for U.S. consumers and businesses, which is a positive for a growing economy in the longer run. But in

[7] See Edward L. Glaeser, Giacomo A.M. Ponzetto, and Kristina Tobio, "Cities, Skills, and Regional Change," *Regional Studies* 48, 2014, pp. 7-43, and the discussion in Lisa Nelson and Francisca Richter, "The Prospects of Non-College Bound Workers in the Fourth District," Federal Reserve Bank of Cleveland *A Look Behind the Numbers*, February 2014.

the near term, this appreciation has been a considerable drag on U.S. export growth. Should economic growth in our trading partners weaken, this would put further strains on U.S. exports. I expect that net exports will be a negative influence on real GDP growth for some time to come.

Inflation

The latest round of oil price declines means headline inflation will remain lower for longer than I previously thought. Inflation has been running below the Fed's 2 percent goal for quite some time. Headline inflation, measured by the year-over-year change in the price index for personal consumption expenditures, was 0.6 percent in December, and core inflation, which excludes food and energy prices, which tend to be volatile, was 1.4 percent. Low inflation partly reflects the effects of declines in oil prices and other commodity prices since mid-2014, as well as the appreciation of the dollar, which has held down the prices of nonpetroleum imports into the U.S.

While headline inflation is likely to remain low in the near term, I still think a reasonable forecast is that inflation will gradually return to 2 percent over the medium run. I can point to a couple of things to support this view. First, measures of underlying inflation, like the core, the trimmed mean, and the Cleveland Fed's median CPI, are higher than headline inflation. They have remained relatively stable despite the continuing sharp drop in the prices of oil and other commodities and the appreciation of the dollar we've seen over the past 18 months.

In my view, longer-run inflation expectations, an important factor in the inflation forecast, have also been relatively stable, even in the face of sizable declines in energy prices, which, according to analysis by the Cleveland Fed staff, account for much of the movement in longer-run inflation expectations.[8] I take less of a signal from the downward moves in market-based measures of inflation compensation, because

[8] See Randal J. Verbrugge and Amy Higgins, "Do Energy Prices Drive the Long-Term Inflation Expectations of Households?" Federal Reserve Bank of Cleveland *Economic Trends*, March 24, 2015.

estimates suggest that these more likely reflect changes in liquidity premia and inflation risk premia rather than changes in inflation expectations.

Oil prices cannot continue to decline indefinitely, nor can the dollar continue to appreciate forever. At some point, both will regain some stability and the effect of previous changes on inflation will dissipate. In fact, we saw those dynamics play out toward the end of last year when oil prices and the value of the dollar had begun to stabilize, and the underlying inflation measures began to firm. When oil prices and the dollar both regain some stability, and with inflation expectations remaining stable and economic growth continuing, it is reasonable to expect that inflation will move back slowly to 2 percent; it just might take a bit longer now, given the most recent decline in oil prices.

Monetary Policy

Of course, going forward, it will be important to continue to monitor inflation developments, in particular inflation expectations, as well as economic developments both here and abroad. We want to set the path of policy based on an outlook informed by economic developments, a path that will best achieve our longer-run objectives of maximum employment and price stability. Given my outlook that the economy will work through this rough patch and resume a trajectory of moderate growth, with continued improvement in labor markets and a gradual return of inflation to 2 percent, I believe the appropriate policy path will involve gradual reductions over time in the extraordinary level of accommodation that was necessary to address the Great Recession. Even as policy gradually normalizes, it will likely need to remain accommodative for some time to come, given some of the forces still impacting our economy – for example, slow growth abroad, dollar appreciation, more restrictive financial conditions, and the continued rebalancing of supply and demand in the energy sector.

The actual path the fed funds rate will follow will depend on economic developments and how they affect the outlook. As we've seen, things can take unexpected turns. Our economic forecasting models are, by necessity, simplifications. The economy is dynamic and can be hit by various shocks that might lead to changes in the medium-run outlook for employment and inflation to which policy would want to respond in a systematic fashion in order to promote maximum employment and price stability.

It is good to remember that confidence bands around economic forecasts tend to be wide. I wish we were able to forecast with more precision – economists are working on it – but unfortunately the state of the science, or perhaps I should say the state of the art, isn't there yet. For example, averaging across several models, the 70 percent confidence interval around a forecast of CPI inflation one year out is about plus or minus 1 percentage point; the confidence band around a forecast of short-term interest rates one year out is of similar magnitude. When the FOMC releases its projections, some observers tend to focus on the dispersion across FOMC participants. But this dispersion is actually pretty modest compared to the uncertainty around the projections.

But just because we cannot forecast the future with as much precision as we'd like does not mean the exercise is without value. The discipline of forecasting how the economy might evolve over the medium run and assessing the uncertainty around the forecast is an essential part of the framework for setting monetary policy. It provides a useful methodology to help policymakers avoid focusing too much on short-run changes in the economic data or volatility in the markets. It forces one to consider how those 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 changes in economic conditions. The outcome of this process is communicated in our Summary of Economic Projections (SEP), which is why I view the SEP as an important part of FOMC communications, one that will continue to serve us well as we continue on the journey toward more normal monetary policy.