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Remarks on Monetary Policy

Remarks by

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Thanks for the opportunity to speak to you today. In these brief remarks, I will discuss the progress of the economy and the path forward for monetary policy.¹ The current expansion is almost six years old and is now one of the longest since World War II. While the pace of improvement has at times been frustratingly slow, by some measures the recovery is now well advanced. By other measures, there is still room for improvement. Assessing the scope for further improvement will be important in judging the appropriate path for monetary policy.

After its most recent meeting in March, the Federal Open Market Committee (FOMC) modified its forward guidance to say that an increase in the target range for the federal funds rate will be appropriate when the Committee has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. Such an increase could come as soon as the June FOMC meeting. The timing of liftoff and the pace of subsequent rate increases will depend on incoming data and on realized and expected progress toward our congressionally mandated goals of stable prices and maximum employment. Monetary policy works with long and variable lags, so rate increases need to begin well before we reach those goals.

Let us turn to the two main economic conditions for liftoff that the Committee articulated. We have already seen a great deal of progress in the labor market, and I expect that progress to continue. Despite slowing in March, job creation has been particularly strong over the past two years. The unemployment rate has declined from 10 percent in October 2009 to 5.5 percent in March 2015, a level that is not far above

¹ The views I express here today are mine alone and not necessarily those of any other member of the Federal Open Market Committee.

many estimates of its natural rate. But the unemployment rate probably understates the amount of slack still remaining in the labor market. The labor force participation rate continues to be unusually low, suggesting that potential workers may be waiting on the sidelines for further improvements in job opportunities and wages. The number working part time who want full-time jobs also remains elevated. The low level of wage increases also suggests additional slack.

The Committee said that it will want to be reasonably confident that inflation will move back to 2 percent over the medium term. On a 12-month basis, headline inflation in February, as measured by the personal consumption expenditures price index, stood at 0.3 percent; meanwhile, core inflation, which excludes volatile energy and food components, was 1.4 percent. These low current readings are partly a consequence of two transient shocks--the dramatic decline in oil prices and the effect of the appreciation of the dollar on import prices. Before those shocks, both headline inflation and core inflation were running at about 1.5 percent. When the effects of these shocks pass, I expect that inflation will return roughly to those earlier levels and then rise gradually to our 2 percent objective over the medium term as labor and product markets tighten further. Despite the current low inflation readings, survey-based measures of inflation expectations in the United States have been stable. However, market-based readings on inflation compensation have declined significantly since mid-2014. I view this decline as more likely reflecting movements in risk premiums and other transitory factors, rather than shifts in longer-term inflation expectations. Still, it will be important to keep an eye on the performance of inflation breakevens.

I expect that economic conditions will support the first rate increase later this year. I do not expect that such an increase or the associated market reaction will materially restrain the progress of the economy. From a macroeconomic perspective, the precise timing of liftoff is less important than the path of subsequent additional rate increases. My view is that, if the economy continues on its expected path, it will be appropriate for a time to increase rates fairly gradually. Of course, if the economy improves faster or inflation increases more than expected, it will be appropriate to raise rates faster. And if economic performance disappoints or inflation remains lower than expected, it will be appropriate to delay liftoff or raise rates more slowly thereafter.

There are several reasons why it may be appropriate to raise rates somewhat gradually, including the proximity of the zero lower bound for interest rates and continuing economic headwinds in the wake of the crisis.² I would like to explore a rationale that has received somewhat less attention, which is the unusually high level of uncertainty today about capacity measures such as the natural rate of unemployment.³ Uncertainty about the precise level of these indicators becomes more important for policy as the expansion continues and the economy approaches its potential, defined as the level of output that is consistent with stable prices.

² See Janet Yellen (2015), “Normalizing Monetary Policy: Prospects and Perspectives,” speech delivered at “The New Normal Monetary Policy,” a research conference sponsored by the Federal Reserve Bank of San Francisco, San Francisco, March 27, www.federalreserve.gov/newsevents/speech/yellen20150327a.htm.

³ The natural rate of unemployment can be thought of as the unemployment rate at which the labor market is at its long-run equilibrium and inflation is stable. We cannot directly observe the natural rate but must infer it based on the performance of wages, prices, and labor market indicators. Most FOMC participants estimate that the longer-run normal rate is currently in the range of 5.0 to 5.2 percent. Confidence intervals around statistical estimates of the natural rate are routinely estimated to be quite wide. For example, Staiger, Stock, and Watson estimate a 95 percent confidence range around the natural rate to extend nearly 1½ percentage points on either side of the point estimate. See Douglas Staiger, James H. Stock, and Mark W. Watson (1997), “How Precise Are Estimates of the Natural Rate of Unemployment?” in Christina D. Romer and David H. Romer, eds., *Reducing Inflation: Motivation and Strategy* (Chicago: University of Chicago Press).

All else equal, a decision to return interest rates to more-normal levels implies that the economy is nearing its capacity. The financial crisis did significant damage to the productive capacity of our economy, and the damage was of a character, extent, and duration that cannot be fully known today. Given this uncertainty, it is even more difficult than usual to assess how much slack remains. It seems plausible that at least part of this supply-side damage could be reversed if the economy enjoys a period of sustained growth.⁴ To encourage that outcome, as monetary policymakers consider removing accommodation, we should look for a little more proof than usual that labor markets are tightening or other supply-side constraints are binding. Of course, if the effects of the crisis prove difficult to reverse and, as a result, inflation pressures do emerge, the Federal Reserve will use its tools to contain them.

Let us take a brief look at the implications of severe financial crises for economies generally. Studies document that severe financial crises around the world have typically left behind large and sustained reductions in the level of output.⁵ The recent crisis is no exception, and figure 1 shows such an effect for the U.S., U.K., euro-area and Canadian

⁴ See, for example, Laurence M. Ball (2014), "Long-Term Damage from the Great Recession in OECD Countries," NBER Working Paper Series 20185 (Cambridge, Mass.: National Bureau of Economic Research, May); and Robert E. Hall (2014), "Quantifying the Lasting Harm to the U.S. Economy from the Financial Crisis," NBER Working Paper Series 20183 (Cambridge, Mass.: National Bureau of Economic Research, May).

⁵ See Robert F. Martin, Teyanna Munyan, and Beth Anne Wilson (2014), "Potential Output and Recessions: Are We Fooling Ourselves?" IFDP Notes (Washington: Board of Governors of the Federal Reserve System, November 12), www.federalreserve.gov/econresdata/notes/ifdp-notes/2014/potential-output-and-recessions-are-we-fooling-ourselves-20141112.html; Carmen M. Reinhart and Kenneth S. Rogoff (2009), *This Time Is Different: Eight Centuries of Financial Folly* (Princeton: Princeton University Press); Valerie Cerra and Sweta Chaman Saxena (2008), "Growth Dynamics: The Myth of Economic Recovery," *American Economic Review*, vol. 98 (March), pp. 439-57; and Davide Furceri and Annabelle Mourougane (2009), "The Effect of Financial Crises on Potential Output: New Empirical Evidence from OECD Countries," OECD Economics Department Working Papers 699 (Paris: Organisation for Economic Co-operation and Development, May), available at www.oecd.org/eco/theeffectoffinancialcrisesonpotentialoutputnewempiricalevidencefromoecdcountries.htm. For a different view, see Christina D. Romer and David H. Romer (2015), "New Evidence on the Impact of Financial Crises in Advanced Countries," NBER Working Paper Series 21021 (Cambridge, Mass.: National Bureau of Economic Research, March).

economies since 2008. The underlying pattern is an interesting one. Economists and policymakers have tended at first to view a decline in output as a cyclical shock to demand and to realize only gradually over time that a crisis has done substantial and lasting damage to the productive capacity of the economy.⁶ As a result, estimates of the gap between actual and potential output often narrow over time, partly through higher actual output but also through lower estimates of potential. For example, figure 2 shows that the Congressional Budget Office has made a series of downward revisions to its estimates of potential output in recent years.⁷

This supply-side damage has typically appeared both in the labor market and in the capital stock.⁸ Long spells of unemployment cause skills to atrophy and make it more difficult for workers to find new jobs, raising the natural rate of unemployment for those who do remain in the labor force and causing others to throw in the towel and drop out. Extended periods of weak demand appear to cause companies to invest less in plant and technology, which slows the growth of the productivity of the workforce. The number of new business formations declines sharply, perhaps because of reduced credit availability, which may depress hiring, productivity, business innovation, and hence trend output.⁹

⁶ For example, Martin, Munyan, and Wilson show that estimates of potential output generated by common filtering techniques tend to revise down following recessions as actual output grows slower than its pre-recession trend; see Martin, Munyan, and Wilson, “Potential Output and Recessions,” in note 5. In other words, looking backward with many years of hindsight at the evolution of output following a financial crisis, the negative effect on potential output is clearer than it is when estimating the level of potential output in real time immediately following the crises. As an example of this type of exercise, see Furceri and Mourougane, “Effect of Financial Crises on Potential Output,” in note 5.

⁷ See Congressional Budget Office (2014), *Revisions to CBO’s Projection of Potential Output since 2007* (Washington: CBO, February), www.cbo.gov/sites/default/files/45150-PotentialOutput.pdf.

⁸ See Dave Reifschneider, William Wascher, and David Wilcox (2013), “Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy,” Finance and Economics Discussion Series 2013-77 (Washington: Board of Governors of the Federal Reserve System, November), www.federalreserve.gov/pubs/feds/2013/201377/201377abs.html; and Hall, “Quantifying the Lasting Harm to the U.S. Economy,” in note 4.

⁹ For evidence regarding the link between fewer start-ups and lower job growth, see Ryan Decker, John Haltiwanger, Ron Jarmin, and Javier Miranda (2014), “The Role of Entrepreneurship in U.S. Job Creation

Corporate spending on research and development has also been strongly procyclical, which may have similar effects.¹⁰

Turning to the recent U.S. experience, many economists now estimate that substantially more than half of the shortfall in gross domestic product relative to its pre-crisis trend represents a reduction of potential output and not just a shortfall in demand.¹¹ U.S. labor force damage likely accounts for some part of the shortfall.¹² The greater part appears to have resulted from lower trend labor productivity due to reduced capital investment and “multifactor productivity,” which is often thought of as capturing the effects of technological innovation.¹³ The employment rebound suggests that strong measures--such as those the Fed took during and after the crisis--can prevent even sharp job losses from becoming permanent. But the productivity slowdown suggests that monetary policy cannot, by itself, avert all of the damage.

and Economic Dynamism,” *Journal of Economic Perspectives*, vol. 28 (Summer), pp. 3-24. For an estimate of how the latest recession affected aggregate trend productivity growth in the United States, see Reifschneider, Wascher, and Wilcox, “Aggregate Supply in the United States,” in note 8.

¹⁰ See Gadi Barlevy (2005), “Why Don’t Recessions Encourage More R&D Spending?” Chicago Fed Letter 220 (Chicago: Federal Reserve Bank of Chicago, November), www.chicagofed.org/digital_assets/publications/chicago_fed_letter/2005/cflnovember2005_220.pdf; and Diego Comin and Mark Gertler (2006), “Medium-Term Business Cycles,” *American Economic Review*, vol. 93 (June), pp. 523-51.

¹¹ See Congressional Budget Office, *Revisions to CBO’s Projection of Potential Output*, in note 7; Hall, “Quantifying the Lasting Harm to the U.S. Economy,” in note 4; Ball, “Long-Term Damage from the Great Recession,” in note 4; and Reifschneider, Wascher, and Wilcox, “Aggregate Supply in the United States,” in note 8.

¹² There is considerable debate about how much of the decline in the employment-to-population ratio and labor force participation has been due to the recession, how much of that decline is reversible, and, relatedly, how much of the decline would have occurred regardless in the absence of a recession. For the argument that much of the decrease in labor force participation would likely have occurred even in the absence of the recession, see Stephanie Aaronson, Tomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher (2014), “Labor Force Participation: Recent Developments and Future Prospects,” *Brookings Papers on Economic Activity*, Fall, pp. 197-275, available at www.brookings.edu/about/projects/bpea/papers/2014/labor-force-participation-recent-developments-and-future-prospects; for the argument that most of the decline is related to the severity of the recession and is likely reversible, see Christopher J. Erceg and Andrew T. Levin (2013), “Labor Force Participation and Monetary Policy in the Wake of the Great Recession,” IMF Working Paper 13/245 (Washington: International Monetary Fund, July), available at www.imf.org/external/pubs/cat/longres.aspx?sk=41133.0.

¹³ See Reifschneider, Wascher, and Wilcox (2013), “Aggregate Supply in the United States,” in note 8.

This consideration raises the question I mentioned a moment ago. Should we think of this supply-side damage as permanent or temporary? In many previous episodes around the world, post-crisis reductions in output have proved permanent. Nonetheless, it seems plausible that at least part of the damage can be reversed. As business confidence improves, employers may be more willing to take a chance on someone with an extended spell of unemployment. A stronger job market and rising wages may encourage more potential workers to join the labor force.¹⁴ Over a longer period, stronger demand can produce higher capital investment, driving higher productivity. A long expansion could also produce higher productivity as companies strive to get more out of every dollar of capital and hour of work and as the strong economy encourages entrepreneurship and innovation.

To give us the best chance to recover lost ground, we need policies that support labor force participation, business and household confidence, hiring and investment, and productivity growth--policies, I hasten to add, that are, for the most part, outside the remit of the Federal Reserve. Monetary policy also has a role to play by continuing to support the expansion as long as inflation expectations remain stable and realized inflation stays close to our 2 percent objective. Indeed, in the current circumstances, accommodative policy may not only help restore some of our economy's potential, but should also help return inflation to our 2 percent objective more expeditiously.

There is no risk-free path for monetary policy. The biggest risk of tightening too early or too fast is that the economy may weaken more than expected, forcing the central bank to reverse course. The record of central banks lifting off from the zero lower bound

¹⁴ In fact, as the recovery has progressed, the labor force participation rate and other broad indicators have moved back toward their longer-run trends.

suggests caution in this regard. A second risk is that we could prematurely truncate the process of healing damage from the crisis, thereby ensuring that the admittedly severe cyclical effects become permanent.

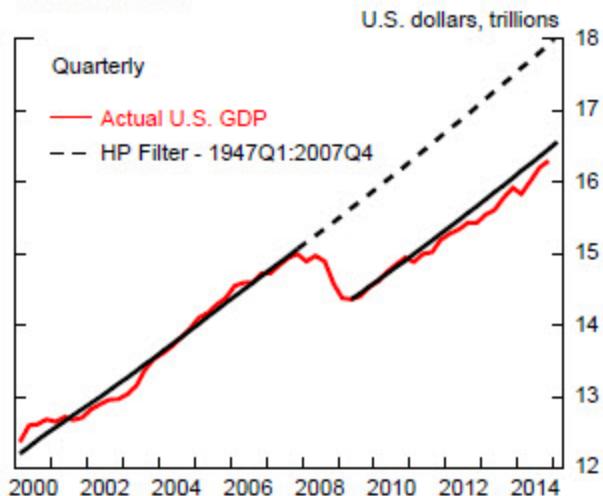
Overly accommodative monetary policy also poses risks. First, the economy could overheat, and rising inflation could require the Committee to raise rates faster, which--if overdone--could produce a damaging recession. For now, I would be more concerned with a second risk, which is that more-accommodative policy could lead to frothy financial conditions and eventually undermine financial stability. While I do not see a troubling buildup of these risks today, tighter monetary policy might eventually be necessary if such risks do appear.

Conclusion

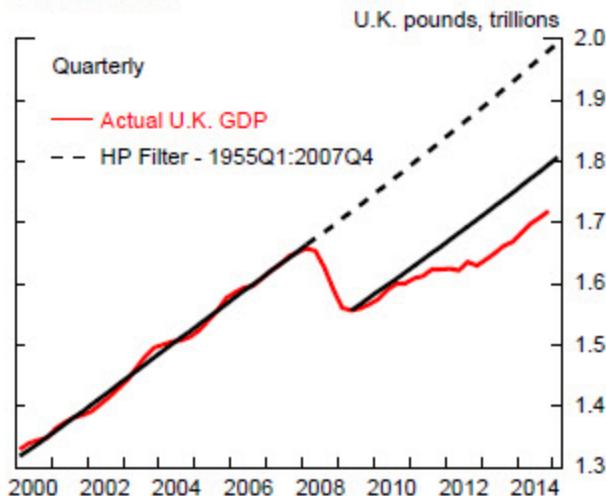
To wrap up, with the support of extraordinary monetary accommodation, our economy has made substantial progress. As the FOMC moves to return monetary policy to a more normal footing, it makes sense to me to move fairly gradually as long as the incoming data evolve about as expected. Doing so would, among other benefits, give our economy the best chance to make up lost ground.

Figure 1: Real GDP and Its Pre-Crisis Trend

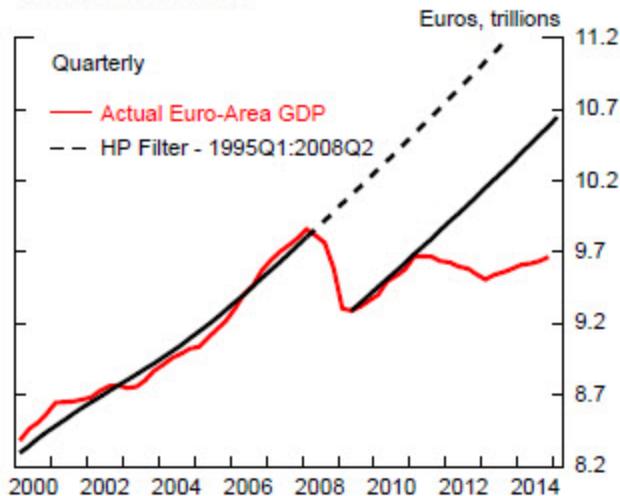
U.S. Real GDP



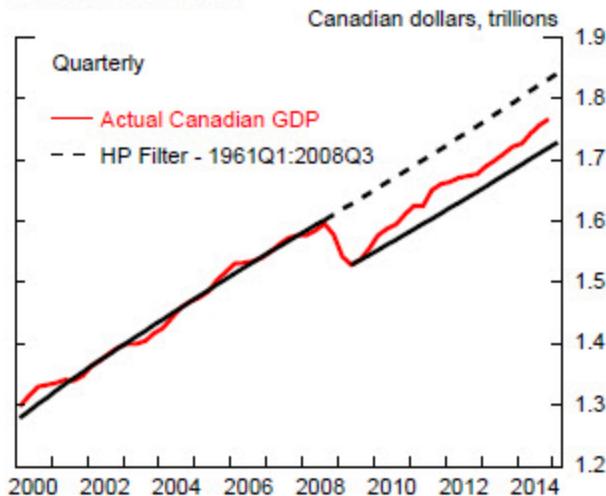
U.K. Real GDP



Euro-Area Real GDP

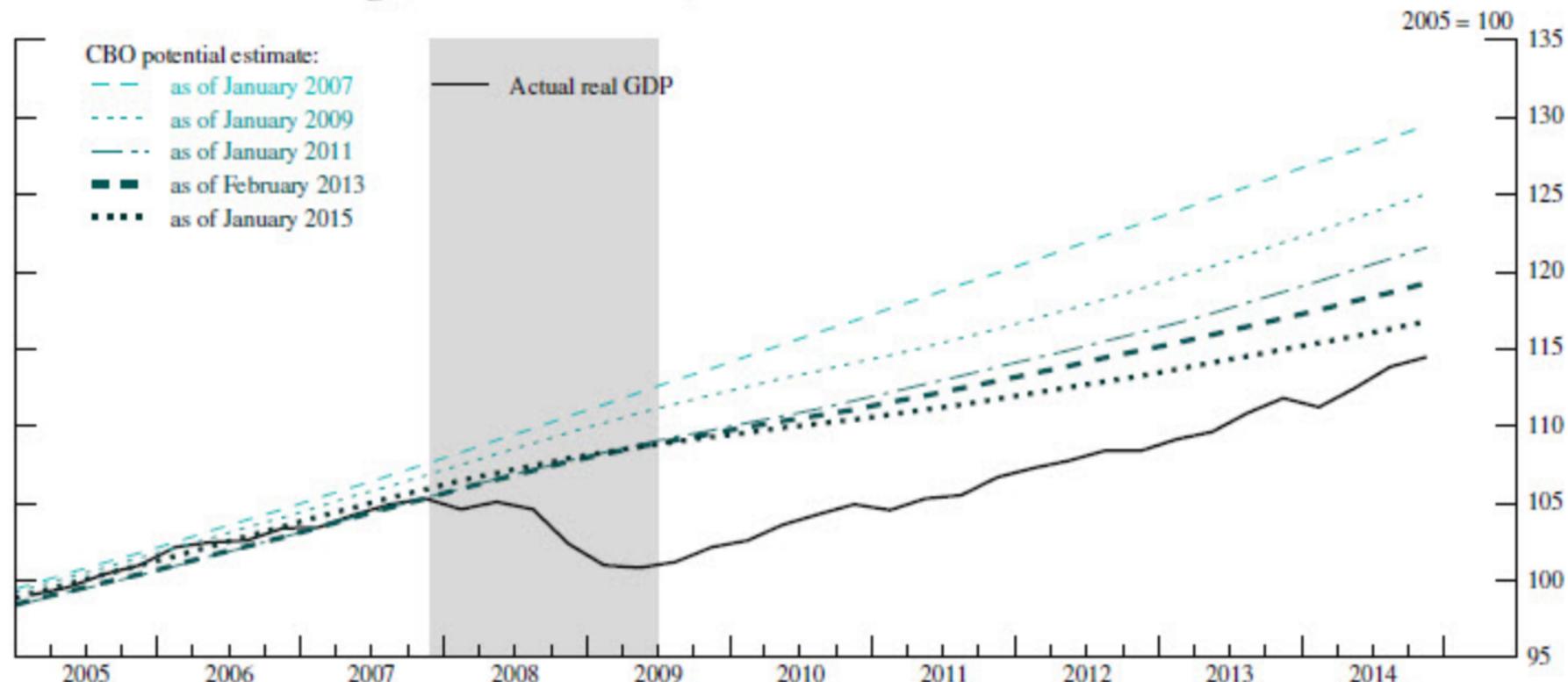


Canadian Real GDP



Source: Robert F. Martin, Teyanna Munyan, and Beth Anne Wilson (2014), "Potential Output and Recessions: Are We Fooling Ourselves?" IFDP Notes (Washington: Board of Governors of the Federal Reserve System, November 12), www.federalreserve.gov/econresdata/notes/ifdp-notes/2014/potential-output-and-recessions-are-we-fooling-ourselves-20141112.html.

Figure 2: Real GDP and CBO Estimates of Potential GDP



Note: Because the data for real gross domestic product (GDP) have been revised and rebased over time, real GDP is normalized to 100 in 2005 and the Congressional Budget Office's (CBO) potential output series are normalized to reflect the CBO's estimated output gap in 2005. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.

Source: Congressional Budget Office (2015), "The Budget and Economic Outlook: 2015 to 2025," report (Washington: CBO, January), www.cbo.gov/sites/default/files/cbofiles/attachments/49892-Outlook2015.pdf and subsequent budget projections available on CBO's Budget and Economic Outlook Updates webpage at www.cbo.gov/about/products/RecurringReports#1.