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Monetary Policy in a Time of Uncertainty

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There are many sources of uncertainty affecting the trajectory of the U.S. economy and, by extension, the appropriate path of monetary policy. In particular, there has been speculation about significant changes to fiscal policy of late, although the magnitude, composition, and timing of any fiscal changes are as yet unknown and will depend on the incoming Administration and the new Congress as well as the vicissitudes of the budgeting process. Even once any changes are enacted, uncertainty will remain about their effects on the overall economy. It thus seems possible that monetary policy could be affected for some time by uncertainty surrounding fiscal policy and its effects on the economy.<sup>1</sup>

### **Macroeconomic Outcomes Are Difficult to Predict**

Before I turn to the possible effects of fiscal policy, it is helpful to remind ourselves of the immense uncertainty that accompanies any attempt to forecast future economic developments. Many possible surprises could materially affect the future path of the U.S. economy, such as shocks to the price of oil, the foreign economic outlook, the rate of productivity growth, the sentiment of households and businesses, financial stability, and fiscal policy, to name a few. The resulting uncertainty makes it difficult to predict the future path of activity, unemployment, and inflation.

By statute, the Federal Reserve is mandated to conduct monetary policy to promote the long run goals of maximum employment and stable prices. In today's framework, the Federal Open Market Committee (FOMC) has defined stable prices to mean 2 percent inflation. The FOMC adjusts the stance of policy in light of incoming economic information and its implications for the outlook. Uncertainty about future

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<sup>1</sup> These remarks represent my own views, which do not necessarily represent those of the Federal Reserve Board or the Federal Open Market Committee.

employment and inflation naturally translates into uncertainty about the path of future monetary policy.

One useful measure of uncertainty is the magnitude of forecast errors, or the extent to which macroeconomic outcomes have differed from professional economic forecasters' expectations.<sup>2</sup> Over the past 30 years, outside forecasts of the unemployment rate four quarters ahead have missed the actual unemployment rate by more than 3/4 percentage point in either direction one-third of the time. Since notable departures from forecast values of unemployment and inflation occur with some frequency, it should not be surprising that the associated forecasts of interest rates have a similar track record. One-third of the time over the past 30 years, outside forecasts of the level of short-term interest rates four quarters ahead have been above or below the actual level by more than 1-1/4 percentage points.<sup>3</sup> Thus, it is important to keep in mind that all macro forecasts and projections of monetary policy are subject to considerable uncertainty, as they are based on information at a point in time, and actual developments could well evolve much differently.

### **Fiscal Policy Considerations**

Among the many factors that can affect the aggregate economy and, by extension, monetary policy, a possible shift in fiscal policy has attracted the attention of both economic forecasters and financial markets of late. Among forecasters surveyed by Blue Chip Economic Indicators, for 2017, 44 percent indicated that they had raised their forecast of inflation and 47 percent had raised their forecast of gross domestic product

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<sup>2</sup> The analysis of forecast errors presented here uses data from 1986 to 2015 from the Federal Reserve Bank of Philadelphia's November Survey of Professional Forecasters. For more on the construction of forecast errors, see Reifschneider and Tulip (2007) and Board of Governors (2014).

<sup>3</sup> The short-term interest rate used in this analysis is the three-month Treasury bill rate.

(GDP) growth because of the recent U.S. election results, although on average forecast changes were modest. Markets have also reacted, and many have interpreted these changes as reflecting expectations of more expansionary fiscal policy in the coming years than previously expected.

In thinking about fiscal scenarios, forecasters have several historical episodes on which to draw. For example, following the 1980 elections, tax cuts were enacted, and defense spending rose. Federal fiscal deficits, adjusted for the cyclical state of the economy, increased by roughly 2-1/2 percentage points of GDP from the period before the elections to six years following the elections, federal debt held by the public increased from about 25 percent of GDP to nearly 40 percent, and the current account deficit widened.<sup>4</sup> Following the 2000 elections, similar fiscal changes resulted in an increase in the fiscal deficit of close to 3 percentage points of GDP over the first six years of the new Administration on a cyclically adjusted basis. Of course, there are important differences in today's conditions relative to these historical settings, including the economy's cyclical position, current and projected levels of indebtedness, the relative position of the global economy, and monetary policy settings.

As of today, there is substantial uncertainty about the magnitude, timing, and composition of any possible change in the stance of fiscal policy. It is instructive to contemplate the important dimensions along which fiscal policy and its effects might vary as well as their implications for monetary policy. In addition to the critical size and

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<sup>4</sup> Annual data on cyclically adjusted federal deficits can be found in table C-2 of the Congressional Budget Office (2016, p. 126) report *The Budget and Economic Outlook: 2016 to 2026*. The analysis takes a three-year centered moving average of the CBO's estimates of the cyclically adjusted federal deficit, which can be quite volatile from year to year, and compares this average for the year prior to the new Administration to the average in the sixth year of the new Administration.

timing issues, there are four key dimensions: (1) the composition of policy changes and their relative effects on aggregate demand and aggregate supply, (2) the distance of the economy from full employment and 2 percent inflation, (3) the divergence in the cyclical position of the U.S. economy relative to foreign economies, and (4) the amount of fiscal policy space.

Different types of policies can generate very different economic responses and have implications regarding both the amount of aggregate economic stimulus per fiscal dollar and also whether the effect is predominantly to raise aggregate demand or also to expand the supply potential of the economy. Generally, fiscal stimulus that expands spending and investment directly or is targeted to households and businesses that have the greatest propensity to spend rather than save can be expected to generate the largest response in aggregate demand.<sup>5</sup>

Focusing first on policies that affect only aggregate demand, temporary demand-based fiscal expansions can speed recovery when the economy is some distance from full employment and target inflation, particularly if conventional monetary policy is constrained by the effective lower bound. But when the economy is either close to or at full employment and inflation is converging to or at its target, additional fiscal demand will more likely result in inflationary pressures. Thus, fiscal expansions that affect only aggregate demand and are enacted when the economy is near full employment and 2 percent inflation are relatively less likely to sustainably boost economic activity and relatively more likely to be accompanied by increases in interest rates.

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<sup>5</sup> For example, see table 3 in the Congressional Budget Office (2015, p. 6) report *Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2014*.

The current nominal neutral interest rate--or the level of the federal funds rate that is consistent with output growing close to its potential rate with full employment and stable inflation--is quite low at present.<sup>6</sup> Adjusting for inflation, most estimates of the neutral rate are currently close to zero, compared with about 2 percent for the quarter-century prior to the financial crisis.<sup>7</sup> A low neutral rate implies that conventional monetary policy has less room to respond when the economy is hit by adverse shocks. With conventional monetary policy constrained in the vicinity of the lower bound, it is more difficult for the economy to recover and for inflation to move back to target.<sup>8</sup>

Policies that persistently raise aggregate demand alone can lift the neutral rate, but that may come at substantial cost. Because these policies do not affect the economy's long-term growth potential but do result in persistent fiscal deficits, they can lead to substantial increases in the debt-to-GDP ratio. The greater space for monetary policy to respond to adverse shocks provided by a higher neutral rate comes at the expense of reducing the space for fiscal policy to stabilize the economy in the event of future adverse shocks.

In this regard, it matters importantly whether increased fiscal deficits predominantly raise aggregate demand or also expand the supply potential of the economy more broadly. Changes in fiscal policy that raise the level or growth rate of productivity or that induce greater labor force participation and higher levels of skill and

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<sup>6</sup> See Brainard (2015).

<sup>7</sup> See Laubach and Williams (2015). For the most up-to-date Laubach-Williams estimates of the natural rate of interest, a concept closely related to the neutral rate, see [www.frbsf.org/economic-research/files/Laubach\\_Williams\\_updated\\_estimates.xlsx](http://www.frbsf.org/economic-research/files/Laubach_Williams_updated_estimates.xlsx). Also see the most recent median estimates of the real neutral rate from the New York Federal Reserve Bank's Survey of Primary Dealers ([https://www.newyorkfed.org/markets/primarydealer\\_survey\\_questions.html](https://www.newyorkfed.org/markets/primarydealer_survey_questions.html)) and Survey of Market Participants ([https://www.newyorkfed.org/markets/survey\\_market\\_participants.html](https://www.newyorkfed.org/markets/survey_market_participants.html)). For estimates of the real neutral rate based on the Summary of Economic Projections, see Bongard and Johannsen (2016).

<sup>8</sup> For an analysis of macroeconomic behavior near the zero lower bound, see Evans and others (2015).

education in the workforce raise the nation's productive capacity and result in more sustainable increases in output and living standards. The higher productivity and workforce levels engendered by these policies would likely increase investment opportunities and raise expectations of future income growth, sustainably boosting the levels of investment and consumption and, as a result, the longer-run neutral rate. Such policies are more likely to be sustainable because the boost to GDP that they provide continues to accumulate over time, limiting increases in the debt-to-GDP ratio and preserving fiscal space.

In addition, the effects of fiscal policy depend importantly on the relative strength of the broader global economy. In recent years, major foreign economies have been contending with a deficiency of domestic demand. At a time when the U.S. economy has made important progress on employment and inflation, in both Europe and Japan output or inflation, or both, remain well below desired levels. As a result, forecasters expect short-term yields in these economies to remain near zero for years to come. Moreover, growth in many emerging market economies, including importantly China, has slowed in recent years, and financial conditions in some emerging economies appear fragile. Against the backdrop of deficient demand abroad, if more expansionary fiscal policy here at home raises expectations of a growing divergence between the United States and other economies, upward pressure on the exchange rate will likely result, as we have seen recently with the renewed increase in the dollar. The result could be cross-border spillovers from the increase in U.S. domestic demand, reducing the effect on U.S. real activity and inflation and potentially contributing to external imbalances. In the past few years, the effect on the dollar of increased expectations about divergence between U.S.

and foreign interest rates has been especially strong.<sup>9</sup> The nearly 20 percent increase in the dollar over 2014 and 2015 coincided with falling real exports and import prices in the United States. Net exports subtracted more than 1/2 percentage point from GDP growth in both 2014 and 2015, while falling non-oil import prices likely subtracted 1/4 percentage point from the annual rate of core inflation.<sup>10</sup>

Finally, the trajectory of federal government debt relative to GDP and views regarding the debt's sustainability can also influence the effects of fiscal policy. Research suggests that increases in the debt-to-GDP ratio cause long-term interest rates to rise.<sup>11</sup> All else being equal, higher long-term interest rates reduce spending on interest-sensitive goods, possibly damping the direct effect of fiscal expansion on economic activity. The experiences of foreign economies suggest that the relationship between debt and interest rates is complex and likely non-linear, with the influence of greater debt on interest rates rising as the debt-to-GDP ratio reaches a trajectory at which investors have concerns about its sustainability. In this light, it is notable that the current ratio of debt to GDP is substantially larger than it was preceding the fiscal expansions in the early 1980s and early 2000s and has already been projected to increase further based on demographic trends.<sup>12</sup>

### **Guideposts for Monetary Policy**

With any future change in fiscal policy quite uncertain, monetary policy will be guided by the current state of the economy, the underlying momentum of economic

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<sup>9</sup> See Cucuru (forthcoming).

<sup>10</sup> For estimates of the effect of exchange rate changes on inflation and GDP growth, see Gruber, McCallum, and Vigfusson (2016).

<sup>11</sup> See Laubach (2009) and Engen and Hubbard (2005).

<sup>12</sup> I am referring to the level of federal government debt held by the public.



activity and inflation, the level of the neutral rate, and the balance of macroeconomic risks. In recent quarters, the data have painted a consistent picture of a resilient and gently improving U.S. economy. Following a year in which the unemployment rate remained stable while labor force participation increased, we have seen in the past quarter a further reduction in the unemployment rate. Overall, I am pleased to see that full employment is within reach and could prove sustainable with the right policy mix. Payroll growth has remained sufficiently strong to continue eroding slack, increasingly along margins that had previously seemed stubbornly elevated--including the long-term unemployed, those on the margins of the labor force, and most recently those who are working part time but would prefer full-time work. Moreover, wage growth appears to be picking up gradually in a further sign that slack continues to be taken up. While the employment cost index was up only 2.3 percent over the 12 months ending in September, still well below pre-crisis norms, average hourly earnings have accelerated more noticeably, increasing by 2.9 percent on a 12-month basis in December. Even so, some slack may remain: Relative to pre-crisis levels, the prime-age employment-to-population ratio remains low and the share of employees working part time for economic reasons remains elevated.

Following a long period of stubbornly below-target inflation, I have been encouraged by recent signs of gradual progress toward our inflation target, as the effects of earlier dollar appreciation and oil price declines appear to be waning. Over the 12-month period ending in November, core personal consumption expenditures prices increased 1.6 percent. This rate is still noticeably below 2 percent, but it is up

1/4 percentage point from a year earlier.<sup>13</sup> In addition, market measures of longer-run inflation compensation based on nominal and inflation-protected Treasury yields have improved about 40 basis points relative to the very depressed levels prevailing through much of the preceding year, although, even with this increase, inflation compensation remains well below historical norms.

In sum, the economy continues to make gradual progress toward our goals. How quickly remaining slack is utilized and inflation returns to target depends on future growth in activity. Real GDP appears to have increased by about 2 percent last year, the same pace as the year before. Consumer spending has been relatively robust--rising at more than a 3 percent annual rate in the three months ending in November--but business fixed investment has been sluggish--increasing only 1-1/2 percent in the third quarter--and has changed little, on net, since the middle of 2014. However, measures of both business and consumer sentiment have moved up noticeably recently, potentially signaling a stronger pace of investment and consumer spending in the months ahead. Meanwhile, changes in financial conditions have been somewhat offsetting since early November, with equity prices rising 7 percent, while 10-year Treasury yields are up 50 basis points, and the dollar is up 4 percent. Based on recent spending indicators, we might expect progress to continue to be gradual and steady. However, if fiscal policy changes lead to a more rapid elimination of slack, policy adjustment would, all else being equal, likely be more rapid than otherwise, with the conditions the FOMC has set for a

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<sup>13</sup> Oil is an important input in the production and distribution of many consumer goods and services, such as transportation services. As a result, when the price of oil drops, production costs decline, and at least some of these cost reductions are typically passed on to consumers over time in the form of lower prices.

cessation of reinvestments of principal payments on existing securities holdings being met sooner than they otherwise would have been.

When the economy eventually returns to full employment and 2 percent inflation, the appropriate level of the federal funds rate will depend on the level of the neutral rate, which is expected to move up only modestly in coming years from its current low level.<sup>14</sup> On the one hand, if progress on employment and inflation occurs more quickly than I anticipate, foreign risks recede, and the fiscal impulse rises, the neutral rate might rise more rapidly. On the other hand, global economic conditions may somewhat offset the effect on the neutral rate. With weak domestic demand abroad, further tightening of financial conditions through the exchange rate could lead to some spillover of demand across borders, weighing on U.S. exports, investment, and manufacturing activity and potentially constraining the neutral rate.

Finally, how strongly monetary policy should react to signs of further progress toward full employment and 2 percent inflation naturally depends on the balance of risks. Given the recent improvement in unemployment and inflation and the possibility of increased fiscal stimulus, risks in the domestic economy are closer to being balanced than they have been for some time. While great uncertainty regarding the path of fiscal policy and its economic effects will remain for some time, with the economy getting closer to full employment, the prospect of a material increase in fiscal stimulus over a sustained period could reasonably be expected to shift somewhat greater probability toward

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<sup>14</sup> Of course, the neutral rate is not directly observable, and we will only be able to gauge its level by observing the momentum of economic activity and the extent to which the momentum is putting upward pressure on resource constraints and inflation. The median FOMC participant's estimate of the longer-run real neutral rate in the December 2016 Summary of Economic Projections was 1 percent. The median projected level of the real neutral rate at the end of 2019 in the December 2016 New York Federal Reserve Bank's Survey of Market Participants was also 1 percent.

stronger inflation outcomes. But risks outside our borders are still tilted to the downside. In particular, despite recent progress, policy space in Japan and the euro area is perceived to be very limited, and the euro-area banking sector remains fragile. Downside risks are also present in emerging market economies such as China, which faces capital outflow pressures and high and rapidly growing corporate indebtedness. With a low U.S. neutral rate, conventional U.S. monetary policy does not have as much room as it did prior to the financial crisis to counter adverse shocks from abroad.

## **Conclusion**

Speculation has increased of late about the possibility of a significant fiscal policy shift on the horizon. The effects will depend on the timing, magnitude, and composition of the policies, the extent to which the policies boost aggregate supply relative to aggregate demand, the cyclical position of the economy, and the responses of the dollar and longer-term interest rates, given the fragile global economic environment and projections for the U.S. debt-to-GDP ratio. Against this uncertain backdrop, monetary policy will continue to be guided by actual and expected progress toward our goals, the level of the neutral rate, and the balance of risks. A gradual approach will remain appropriate as long as inflationary pressures remain muted, the economy remains short of our objectives, the neutral rate remains low, and downside risks from abroad remain, although this will depend on the fiscal trajectory, as it evolves, and its uncertain effects on the economy and financial markets.

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