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## Fiscal Uncertainty and Economic Activity

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*The recovery in the United States continues to be held back by a number of other head winds, including still-tight borrowing conditions for some businesses and households, and—as I will discuss in more detail shortly—the restraining effects of fiscal policy and fiscal uncertainty.*

—July 18, 2012, Ben S. Bernanke

Over the past six years, policymakers and business leaders alike have seen the U.S. economy buffeted by larger-than-usual uncertainty about fiscal policy. As illustrated by a number of prolonged struggles at all levels of government in recent years, there is little consensus among policymakers about the fiscal mix and timing going forward. Will government spending rise or fall? Will taxes rise or fall? Which ones? And when will it happen?

One notorious example of this uncertainty is the October 2013 federal government shutdown. Other cases include the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, which was signed into law just before expiration of both the Bush tax cuts and extended federal unemployment benefits; the discussion surrounding the federal debt limit in 2011, which was followed by the U.S. sovereign debt being downgraded by S&P; and the starkly different platforms in the 2012 presidential election.

Businesses appear to have been aware of this uncertainty. In the Philadelphia Fed's July 2010 Business Outlook Survey, 52 percent of the firms that saw demand for their products fall cited "increased uncertainty about future tax rates or government regulations" as one of the reasons. Likewise, fiscal uncertainty has, in recent years, been repeatedly mentioned by respondents to the Fed's Beige Book. And the uncertainty measures created by Baker, Bloom, and Davis (2011) suggest that, in recent years, uncertainty about fiscal policy has been greater than uncertainty about monetary policy.

In our research, we investigate whether increased uncertainty about fiscal policy has a detrimental impact on economic activity. The analysis has two steps.

We first estimate the empirical behavior of U.S. fiscal policies, explicitly allowing for time-varying volatility in this behavior, holding the rest of the behavior constant. We refer to this behavior as "fiscal rules." In particular, we estimate fiscal rules for capital income taxes (those on interest, dividends, and capital gains), labor income taxes, consumption taxes, and government expenditure as a share of output. We interpret changes in the volatility of our estimated fiscal rules as representing variation in fiscal policy uncertainty. A key feature of our fiscal rules is that we distinguish between changes in the level of taxes

or expenditure and changes in uncertainty about taxes or expenditure. Thus, we can consider changes in fiscal uncertainty that do not have a contemporaneous effect on taxes or government expenditure as a share of output.

An important characteristic of our fiscal rules is that the uncertainty is about temporary changes in fiscal policy only. This is a deliberate choice since work by Bi, Leeper, and Leith (2013), amongst others, suggests that uncertainty about permanent changes in policy has important effects on economic activity. We investigate a different question: the response of the economy to a temporary increase in fiscal policy uncertainty (such as increased uncertainty over whether the federal government will hit its debt ceiling).

In the second part of our research, we feed our estimated rules for fiscal policy into a standard model of the overall economy. We use a “New Keynesian” model so we can examine the role of fiscal uncertainty in a framework where monetary and fiscal policy have their “usual” effects; this allows us to compare the impact of fiscal uncertainty with the impact of policies such as lower interest rates. This kind of model is consistent with important properties of U.S. business cycles (Christiano, Eichenbaum, and Evans (2005)). The model serves as a starting point both for analyzing the effects of fiscal uncertainty and for outlining—through counterfactuals—some of the implications for monetary policy.

We estimate the model to match observations of the U.S. economy. We then examine what the model implies about the economy’s response to an increase in uncertainty about capital income taxes. Specifically, we assume that the economy is temporarily subjected to higher fiscal uncertainty, but that the processes for taxes, government spending, and uncertainty follow their historical behavior.

Our main results are as follows.

First, we find a considerable amount of time-varying volatility in the empirical behavior of taxes and government spending as a share of U.S. output.

Second, we show that in the model, fiscal uncertainty reduces economic activity: output, consumption, investment, and working hours drop when uncertainty spikes and then stay low for several quarters. The reason, in the model, is as follows. On the one hand, because prices are rigid in the short run in Keynesian models, prices do not fully accommodate the drop in demand triggered when increased uncertainty generates “precautionary” reductions in demand. On the other hand, increased fiscal uncertainty leads firms to raise their prices above the level they would otherwise pick. This is because, in these

models, a too-low price reduces profits more than a too-high price, so increased uncertainty combined with costs of adjusting prices nudge firms to err in the direction of higher prices. We provide evidence of this mechanism by showing empirically that output, work hours, consumption, and investment fall; while markups rise after increased fiscal uncertainty.

Third, we show that in this model, increased uncertainty about the capital-income-tax rate of the magnitude that occurs roughly every 10 years has about the same impact in lowering output as a 30-basis-point increase in the federal funds rate (the interest rate on short-term borrowing between banks, and the key target of current monetary policy).

Fourth, when the economy has very low nominal interest rates (known as the zero lower bound, or ZLB), as is the case for the U.S. now, the effects of the same-sized increase in fiscal uncertainty are particularly large: in our experiment, output drops 1.7 percent and investment drops 7.9 percent. That is because at the ZLB the real interest rate cannot fall to ameliorate the contractionary effect of increased fiscal uncertainty, as happens when the economy is outside the ZLB.

This last result is especially interesting because some commentators argue that policy uncertainty cannot be important when the economy is at the ZLB. Our analysis suggests, in contrast, that *because* the economy is at the ZLB, fiscal uncertainty is especially important.

Our results are especially interesting in relation to U.S. experience during the Great Recession. In that period, episodes such as the debt-ceiling debates plausibly generated increased fiscal-policy uncertainty. So, our results are consistent with the view that such uncertainty played a significant role in the magnitude and persistence of the Great Recession. This in no way rules out other factors, such as financial frictions generated by the crisis, but our results do argue for a broader perspective in explaining the Great Recession and in drawing appropriate policy conclusions.

## NOTE

This Research Brief is based on Fernández-Villaverde, Guerrón-Quintana, Kuester, and Rubio-Ramírez (2013), available at <http://economics.sas.upenn.edu/~jesusfv/fiscaluncertainty.pdf>. All works cited are provided therein. Any views expressed are those of the authors and do not necessarily coincide with those of the Federal Reserve Banks of Atlanta or Philadelphia, or the Federal Reserve System.