

Can Uncertainty Explain the Heterogeneous Output Effects of Fiscal Adjustments?

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Abstract

In this paper I analyze possible explanations of the heterogeneous output effects of fiscal adjustment plans. To reach this goal several steps are needed. The first step is the measurement of fiscal consolidations. In practice, fiscal consolidations are usually implemented through a set of multi-year actions. This set of actions generates interactions between the spending and revenue components as well as between the unexpected component (announced upon implementation at time t) and the expected component of a plan (implemented at time t but announced in previous years or/and announced at time t to be implemented in the future). Therefore, I start by constructing a database of fiscal plans for the U.S. using quarterly data.

Next, I incorporate fiscal plans into a vector autoregression model to track dynamics and interdependencies between the variables of interest, to capture expectational effects and, most importantly, to explain the heterogeneity of the output effects of fiscal adjustments.

I consider three ways in which a fiscal consolidation that is mainly implemented through tax hikes can affect output differently from one that is mainly based on expenditure cuts. The first way is by reducing or increasing the amount of distortions in the economy; the second way is by inducing a response of monetary policy that in turn effects output; the third way is by changing the level of uncertainty in the economy, which in turn affects output. The first way captures a direct effect of fiscal adjustment plans on output, while the second and third capture indirect effects. The direct effect can be measured simply by projecting the output growth on the current and past values of the exogenous fiscal

adjustments¹. To measure the indirect effects one needs to consider the other endogenous variables such as the monetary policy variables and the uncertainty variables.

The intuition for the direct effect goes as follows: taking into account the fact that tax-based policies are distortionary, an increase in distortionary taxes produces negative effect on output growth. Expenditure-based policy, per se, does not create an effect. This can be due to the fact that more than sixty percent of U.S. expenditure cuts are reduction in transfers and the other forty percent are reduction in government consumption and investment, see Alesina et al. (2015).

The intuition in the case of monetary policy is rather straightforward. The difference between the output effects of tax-based fiscal adjustments and expenditure-based fiscal adjustments could be due to a more contractionary monetary policy in the case of tax-based plans and less contractionary or expansionary monetary policy in the case of expenditure-based plans.

The intuition for uncertainty goes as follows: after applying tax-based fiscal adjustment plans, higher uncertainty leads to an increase of the risk premium, which causes an increase in the cost of financing. Higher cost of financing of firms leads to a reduction in investment and, consequently, to a decrease in output growth. Following the previous logic, expenditure-based policy, per se, does not create an effect, however, through the government budget constraint expenditure cuts today might be considered as a future decrease in taxes.

In this study I am interested in two types of uncertainty. First type is economic policy uncertainty that makes an economy to be unresponsive, creating a so-called "caution effect" and "wait-and-see effect". Importantly, Bloom (2009) shows that due to investment irreversibility, in periods of higher uncertainty firms take the "wait-and-see" position, which decreases investment and, in turn, output growth. Moreover, Baker, Bloom and Davis (2015), by constructing the economic policy uncertainty measure, show that the drop and recovery in production are due to economic policy uncertainty.

The second type of uncertainty reflects financial market distortions. According to Gilchrist, Sim and Zakrajšek (2014), increases in uncertainty lead to a significant widening of credit spreads and a decline in output through a drop in the investment component of aggregate demand. Moreover, Gomes and Schmid (2010), within a general equilibrium

¹It is worth noticing that while the direct effect works through two channels, a wealth and a substitution effect, I do not distinguish between them.

framework with heterogeneous firms and an endogenous default, show that credit risk premium plays an important role in the cost of capital and it appears to be a link between credit, equity markets and macroeconomic aggregates; moreover, credit risk premium movements provide an amplification mechanism for macroeconomic fluctuations. Further, I call the first type of uncertainty a traditional uncertainty and the second type - financial market uncertainty.

The main empirical findings of the paper goes as follow. Estimation of the baseline specification confirms that there is a heterogeneous response of output depending on the policy applied. In particular, output drops after using tax-based fiscal adjustment plan and close to zero in the case of expenditure-based plan. Moreover, baseline specification suggests no significant difference in responses of monetary policy variables no matter which type of plan was used. However, there is a strong heterogeneity in responses of both uncertainty proxies: increase in uncertainty after tax-based plan and decrease or no change of uncertainty after expenditure based plan. Between the two competing channels (monetary policy and uncertainty), uncertainty is the one that may explain the heterogeneity. To see how much of the effect is due to a particular channel, I use the methodology of the counterfactual experiment that allows to isolate different indirect effects. Without indirect monetary policy channel the output response to both tax-based and expenditure-based fiscal adjustment plans is similar to the baseline specification. The same happens with economic policy uncertainty proxy. In contrast, without indirect financial uncertainty effect the response of output to tax-based fiscal adjustment plans is much smaller. These results suggest that going deeper and distinguishing between the two types of uncertainty, the one that matters more is the financial market uncertainty.

This paper is related to a growing literature examining the transmission mechanism linking policy and the real economy. Bekaert, Hoerova and Duca (2013) provide the first dynamic model of links between risk, uncertainty and monetary policy, using a simple vector-autoregressive framework. I differ from these articles in many aspects. Most importantly, I focus on fiscal policy, precisely on fiscal consolidation, while Bekaert, Hoerova and Duca (2013) examine the effects of monetary policy on economic performance. Moreover, I link fiscal policy and economic activity as in Bachmann and Sims (2012). While these researches focus only on the government expenditure side of fiscal policy, abstracting from the revenue side, my work explicitly considers both expenditure and tax components of fiscal policy.