The Fiscal Multiplier*

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Extended Abstract

How does an increase in government spending affect output, employment and investment? This classic question has been addressed in numerous empirical and theoretical papers with a renewed interest in the aftermath of the Great Recession.

The effects of government spending on output are usually summarized as the fiscal multiplier which describes the percentage increase in output in response to a one percent increase in government spending. Despite the importance of this research question no consensus on the size of the multiplier has been reached and findings come with a lot of uncertainty (see Ramey (2011) for a survey).

Most of the empirical studies use aggregate data to measure the strength of the fiscal multiplier, which range from around 0.6 to 1.8, although "reasonable people can argue, however, that the data do not reject 0.5 or 2.0" (see Ramey (2011)). Another more recent strand of the literature looks at cross-state evidence and typically finds larger multipliers. However, as Ramey (2011) and Farhi and Werning (2013) have pointed out correctly, the size of the local multipliers found in those studies may be not very informative about the magnitude of aggregate multipliers. For example the local multiplier could be 1.5 whereas the aggregate multiplier is 0.

Furthermore, "the fiscal multiplier" is not a single number—as its size depends very much on how it is financed (debt, distortionary taxation, reduction of transfers), how persistent fiscal policy is, what households and firms expect about future policy changes, and whether spending is increased or transfers are directed to low-income households. Important details which are hard to control for in empirical studies.

As a response to the difficulties faced in empirical work, a more theoretical approach has emerged which computes the fiscal multiplier in New Keynesian models with sticky prices and sticky wages. In a theoretical model it is easy to control for all details of the fiscal policy which are important to assess its efficacy, overcoming the difficulties one faces in empirical work.

One of the main limitations of the New Keynesian models used thus far for policy analysis is that the households in the model economies are representative agents. The households behave exactly like permanent-income households—as a result there is no heterogeneity in the marginal propensity to consume (MPC). Further, the MPC in response to temporary

shock is small, which stands in the face of the findings of a large empirical literature that has documented substantial MPC heterogeneity and large consumption responses to transitory income and transfer payments.

In this paper we build on this insight and extend the standard Bewley-Imrohoroglu-Huggett-Aiyagari model to include New-Keynesian style nominal price rigidities. Introducing incomplete markets allows the model to match the rich joint distribution of income, earnings and wealth. Further, such heterogeneity is crucial in generating a realistic distribution of MPCs.

While allowing for heterogeneity will overcome one shortcoming over the existing theoretical literature, a second problem was pointed out by Cochrane (2015). He studies fiscal policy in new-Keynesian models during a liquidity trap and shows that the policy predictions depend strongly on the choices made by the researcher to select a specific equilibrium. Depending on these choices, the fiscal multiplier can be arbitrarily large or even negative. The root of this problem is clear. The price level is indeterminate and therefore the researcher has to select one equilibrium where at the same time a continuum of other choices with very different policy predictions are possible. This renders this class of models not very useful for a policy analysis.

To overcome this second challenge, we leverage the insight of Hagedorn (2016) who shows that incomplete markets combined with nominal policy rules delivers a globally determined price level—so that the researcher does not have to pick a specific equilibrium. Instead the price level is uniquely determined by policy. This determinacy result enables the researcher to study arbitrary policies and how they affect the economy, including a constant nominal interest rate that would lead to indeterminacy in the standard approach.

Thus, our paper will be the first to quantify the size of the fiscal multiplier in the presence of significant household heterogeneity and a uniquely determined pricel level. Further, using an incomplete markets model also allows for a meaningful analysis of transfer multipliers, which is an important objective as many stimulus policies take the form of transfers and not an increase in spending. We also use the theoretical model to compute the welfare consequences of temporary increases in government spending and in transfer payments. This exercise is potentially more interesting than in a complete markets environment since the welfare gains of high MPC households may outweigh the losses of low MPC (rich) households.

References

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