Government Spending, Distortionary Taxation and the International Transmission of Business Cycles

María Pía Olivero
Drexel University

Abstract

We study the international transmission of aggregate TFP shocks by introducing demand-side shocks to government spending into an otherwise standard DSGE two-country, two-good model. In the model the substitutability in consumption between private and public goods works to limit international risk sharing. Further, the distortive taxation used to finance the provision of public goods works to increase the correlation of employment, investment and output across countries relative to standard models that lack this friction. In the quantitative analysis we can bring the predictions of the theory closer to the observed properties of the data on the comovement of macroeconomic variables between the United States and other OECD countries. We are also able to provide a potential explanation to some of the puzzles in the international RBC literature, as identified by Backus, Kehoe and Kydland (1992). The topic we study is fundamentally relevant and timely at a time when the crisis in the United States has spread to several other countries in the developed world, forcing governments to engage in active fiscal policy to help their economies in recession.

- **JEL Classification:** F41, F42
- **Key Words:** International RBC, Fiscal Policy, Demand-side Shocks
I. Introduction

In this paper we study the international transmission of business cycles by introducing demand-side shocks to government spending into an otherwise standard DSGE two-country, two-good model. A novel aspect of our paper is that it incorporates demand-side shocks as a way to explain the transmission of business cycles. Conversely, most of the existing work on this literature relies exclusively on supply-side shocks.

The inclusion of government spending financed through distortionary taxes on labor income generates the main mechanism for the international transmission of aggregate shocks at the core of our model. This makes the topic particularly interesting at a time when the crisis in the United States has spread to the rest of the developed world, and has forced significant increases in public spending to fight the world recession.

The framework we develop allows us to address three major discrepancies between the observed properties of the data and what standard models predict regarding the international cyclical co-movement of consumption, employment, investment and output. These discrepancies were first identified by Backus, Kehoe and Kydland (1992 and 1994, hereafter BKK) for the OECD countries, and they have been a recurrent subject within the international RBC literature since then. The “quantity anomaly” or “consumption / output / productivity anomaly” is related to the fact that while in the data correlations of output across countries are larger than analogous correlations for consumption, previous theoretical work consistently obtains consumption cross-country correlations that significantly exceed output correlations. Also, while in the data investment and employment tend to co-move across countries, the vast majority of previous work predicts a negative cross-country correlation \(^1\) \(^2\) (see Table 1 for the cross-country correlations for consumption, output, employment and investment between the United States and other OECD countries). Last, the “price variability anomaly” relates to the fact that the volatility of the terms of trade relative to that of output is significantly larger in the data than what is predicted by the existing theoretical literature.

\(^1\)In models where agents are assumed to have access to a complete set of state-contingent claims, there is perfect international risk-sharing, and consumption levels are perfectly correlated across countries. Also, with no exogenous restrictions to capital mobility, capital flows from the rest of the world into the country where productivity is relatively higher. This gives rise to the negative cross-country correlations of factors of production, and to the very low cross-country output correlations, driven mainly by the exogenous spillovers in total factor productivity.