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Effect of government spending on non-oil GDP of Bahrain

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Abstract

This paper uses the equilibrium approach to fiscal policy to study the effects of government spending on non-oil GDP of Bahrain within a two-country framework. The empirical implementation employs Bahrain and US annual data for the period 1977–2004. Results strongly suggest that the positive multiplier effect of permanent domestic government consumption is substantially neutralized by the negative impact of temporary US government spending on non-oil GDP of Bahrain. This result is significant and seems to be implied in many theoretical discussions but has largely been ignored in empirical research.
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1. Introduction

Effects of fiscal policy have been extensively analyzed within the framework of traditional macroeconomic and neoclassical (or equilibrium) models. Traditional macroeconomic models, dominating contemporary textbooks[1] describe how expansionary fiscal policy, in a closed economy, increases output, employment, interest rate and crowds out private investment. The Mundell–Fleming model, in which the effect of fiscal policy is dependent on exchange rates regime, is an extension of these traditional closed economy macroeconomic models to an open economy. In a flexible exchange rate regime, an increase in government spending increases output, interest rate, and leads to an appreciation of the exchange rate. For a small open economy

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[1] One exception is Barro (1997).

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with fixed exchange rate, however, the fiscal policy can be more powerful than it would be under the flexible exchange rates.[2]

The equilibrium approach to fiscal policy, pioneered by Baily (1971) and Barro (1981), and subsequently extended by Ahmed (1986, 1987) and Aschauer (1988) among others, uses an intertemporal framework. This approach emphasizes the distinction between temporary and permanent spending because the two components have different implications for wealth and consequently different effects on the economy. A temporary increase in government spending, in the context of a larger economy, induces excess demand that raises real interest rates; generating an increase in domestic production along the lines of intertemporal substitution effect, and ultimately resulting in a trade deficit. Permanent increase in government spending on the other hand, works via reducing private sector wealth, exerting a smaller effect on excess demand, output, and the current account. Baxter and King (1993) in a recent version of the equilibrium or the neoclassical model, in a closed economy context, find that permanent changes in government spending induce larger effects than temporary changes. Moreover, they have established quantitatively that permanent changes in government spending can lead to both short-run and long-run output multipliers that exceed one. These results differ from Barro (1981, 1997) who claims that a temporary increase in government consumption has no multiplier effect.

The primary objective of this paper is to apply empirically the equilibrium approach to fiscal policy to examine the effects of government spending on the non-oil GDP of an oil-exporting mini state under fixed exchange rate. Bahrain, a mini (or city) state in the Middle East, has maintained an effective fixed exchange rate against the US dollar since 1980s, seems to fit the description. The main contribution of the paper lies in the empirical application of the model to a mini state under fixed exchange rate in a two-country framework. We find this is an important contribution because there is a presumption among the writers on the Gulf Cooperation Council (GCC) countries, for which Bahrain is a member, that fiscal policies of these countries have been directed to achieve economic objectives such as growth and employment while monetary policy is directed at maintaining a stable exchange rate and controlling inflation.[3] However, there is no study as such quantifying the fiscal policy effects by incorporating the foreign fiscal shocks.

The linkage of Bahrain is through the international flows of goods and capital and it works through changes in the interest rate. Since Bahrain is a mini state with fixed exchange rate against the US dollar, it cannot influence the world interest rate rather, it follows the US (world) interest rate. The paper argues that a temporary increase in the US government spending raises interest rate, trade surplus of Bahrain and thereby decreases non-oil GDP of Bahrain. Since a temporary increase in Bahrain government spending cannot influence the interest rate, it will not influence the non-oil GDP of Bahrain. On the other hand, a permanent increase in Bahrain government spending will increase its non-oil GDP.

The empirical implementation employs Bahrain and US annual data for the period 1977–2004. Relevant variables are expressed as a ratio of GDP. Equations were estimated using the system non-linear (FIML) method by imposing rational expectation cross-equation restrictions. Results strongly suggest that a permanent increase in Bahrain government spending relative to GDP increases non-oil GDP of Bahrain relative to overall GDP of Bahrain. As expected, a

[2] El-Khouri (2002) provides a recent overview on the subject. However, his discussion is not much of a help to understand the effect of a foreign fiscal shock on the domestic output and employment. Useful discussions are available in Mankiw (2003).

[3] See, for example, Fasano and Iqbal (2003).

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