



Country characteristics and the effects of government consumption shocks on the current account and real exchange rate[☆]



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ABSTRACT

This paper examines the effects of government consumption shocks on the current account and the real exchange rate, as well as the influence of various country characteristics on these effects. A dataset of 18 industrial countries is used for the analysis. Panel VAR models are estimated for the groups of countries classified by country characteristics. The primary empirical findings are as follows. First, positive government consumption shocks lead, if anything, to real exchange rate depreciation, but the direction of the current account response varies across samples. In particular, positive government consumption shocks lead to real exchange rate depreciation under a floating exchange rate regime. Second, international capital mobility has a significant impact on the effects of government consumption shocks. The depreciation of the real exchange rate and the improvement of current account are larger in countries with low international capital mobility than those with high capital mobility. Third, albeit less robust, the depreciation of the real exchange rate and the improvement of the current account are larger in countries under more flexible exchange rate regimes than those under less flexible exchange rate regimes. In addition, the current account improves more in countries with high trade openness than those with low trade openness. Standard theories do not fully explain these empirical patterns. Thus, these findings suggest a need for further theoretical development.

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1. Introduction

Recent studies of the effects of fiscal policy in open economies have challenged the conventional wisdom and generated a lively debate. Kim and Roubini (2008) empirically investigated the issue in the U.S. using a VAR (Vector Auto-Regression) model. The authors documented that expansionary fiscal policy shocks lead to a short-run current account improvement and real exchange rate depreciation, contradicting the predictions of many theoretical models, including the traditional Mundell–Fleming–Dornbusch (MFD) model and modern DSGE (dynamic stochastic general equilibrium) models.

Given this paradoxical result, the subsequent studies (e.g. Erceg et al., 2005, Corsetti and Müller, 2006, Müller, 2008, Ravn et al., 2012,

Beetsma et al., 2008, Kollmann, 2010, Monacelli and Perotti, 2010, and Enders et al., 2011) have investigated the effects of fiscal policy on the current account (or trade balance) and/or the real exchange rate. Some studies have expanded the set of countries examined and/or used different empirical models to document the empirical effects of fiscal policy, while others have developed theoretical models to match the empirical evidence.

Despite the efforts of these studies, the empirical effects of fiscal policy in open economies remain controversial. The predictions of theoretical models are consistent with some important empirical evidence; however, theoretical models have not been fully tested for various empirical regularities, especially regarding the role of country characteristics in accounting for cross-country differences in the effects of fiscal policy. To shed light on this issue, this paper presents the empirical evidence based on the analysis of 18 industrial countries using VAR models. The sample of 18 countries included in this analysis represents one of the largest samples evaluated in the literature.¹ This paper investigates the following two questions: First, what are the empirical effects

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¹ For example, Kim and Roubini (2008), Müller (2008), and Enders et al. (2011) used U.S. data. Corsetti and Müller (2006) and Monacelli and Perotti (2010) investigated four countries. Ravn et al. (2012) investigated five countries, using panel VAR models. Beetsma et al. (2008) examined 16 countries in the European Union, using panel VAR models.

of fiscal policy on the current account (or trade balance) and on the real exchange rate in industrial countries? Second, and more importantly, which country characteristics can explain the cross-country differences in the effects of government consumption shocks on the current account (or trade balance) and the real exchange rate?

Following many recent studies, VAR models are used to examine the effects of government consumption shocks. Government net tax (or transfer) shocks and government budget balance (or deficit) shocks, as well as government consumption shocks, have been considered in the literature. However, this paper focuses only on government consumption shocks for the following reasons. First, the method to identify government consumption shocks is less controversial than that used to identify transfer/tax shocks or government budget balance/deficit shocks. Second, high-frequency data on government consumption are available for most industrial countries; however, high-frequency data on government budget balance/deficit or net transfers/taxes are difficult to obtain for some countries. Third, the theoretical work on the effects of government consumption shocks is more developed than that on the effects of net transfer/tax shocks.

Theoretical studies have suggested that the effects of fiscal policy in open economies critically depend on country characteristics. However, few studies have empirically investigated the theoretical predictions of the influence of country characteristics on the effects of fiscal policy.² In particular, previous studies have mostly used a general empirical finding that does not depend on country characteristics when evaluating the relative success or failure of theoretical models. This paper discusses the relative success and failure of theoretical models by exploiting the new dimensions of data, i.e., the influence of country characteristics on the effects of government consumption shocks. As such, this paper contributes to the empirical literature, which has searched for a theoretical model with empirical relevance.

I consider the four types of country characteristics: exchange rate regime, international capital mobility, country size, and trade openness. Past theoretical works have discussed these characteristics.³ First, the role of the exchange rate regime has long been discussed in the context of sticky price models. The predictions of the effects of government consumption shocks on the real exchange rate under a floating exchange rate regime are not uniform across models. The real exchange rate appreciates in the basic MFD model, while it depreciates in some extended models such as the one with deficit monetization (Dornbusch, 1980). The real exchange rate depreciates in the New Open Economy Macro (NOEM) models such as Betts and Devereux (2000) and Kim and Lee (2008), extended from Obstfeld and Rogoff (1995b), but more recent DSGE models such as Ravn et al. (2012) and Corsetti et al. (2012b) have different predictions. The exchange rate regime also plays a role in determining the effects of government consumption shocks on the current account, although the exact consequences depend on the specifications of the theoretical models.

Second, with a low degree of international capital mobility, the effect of government consumption shocks on the real exchange rate is likely to be relatively weak because a larger interest rate differential across countries is allowed, for example, as in the MFD model. The effect on the current account is also likely to be weaker with a low degree of international capital mobility. For instance, the expenditure switching effect is weaker in the MFD model. Moreover, in the intertemporal model such as Obstfeld and Rogoff

(1995a) and Frenkel and Razin (1996), limited international lending and borrowing imply limited current account movement. For example, when the capital is perfectly mobile, the intertemporal effect leads to a fall in the current account upon a temporary government consumption shock, but such effect is subdued with a low degree of capital mobility.

Third, the size of a country is a key determinant of the effects of structural shocks in open economies. The current account and the real exchange rate movements tend to reflect the differences between the economic conditions of one country and those of the rest of the world. Therefore, the (domestic) structural shocks such as government consumption shocks have smaller effects on the current account and real exchange rate in a large open economy than in a small open economy, as the shocks influence the world equilibrium conditions only in a large open economy.

Fourth, government consumption falls mostly on domestic goods and therefore increases the relative price of home- vs. foreign-based goods (or appreciate the real exchange rate). Consequently, in a country with lower trade openness (i.e. more home bias in consumption), a government consumption shock would enable the (consumption-based) real exchange rate to appreciate more substantially. Such a mechanism is also found in Ravn et al. (2012), who have developed a theoretical model with a deep-habit mechanism to explain how a government consumption shock leads to real exchange rate depreciation. On the other hand, some recent studies such as Corsetti and Müller (2006) and Müller (2008) show that the trade balance worsens more in economies that are relatively more open to trade.

To examine the role of each type of the country characteristics aforementioned, I estimate panel VAR models for the two distinct groups of countries classified by their characteristics and subsequently compare the results of the two groups. I use non-interpolated data, since some previous studies, such as Perotti (2004) and Ilzetzi et al. (2013), have emphasized the importance of using non-interpolated data in analyzing the effects of government consumption shocks.

Two recent studies have examined how economic environments and country characteristics may influence the effects of fiscal policy, particularly government spending multipliers. Ilzetzi et al. (2013) have estimated panel VAR models for the two distinct groups of countries, classified by the country characteristics, using quarterly data from 44 countries. Corsetti et al. (2012a) have employed a two-stage process to simultaneously consider various characteristics, using annual data from 17 OECD countries. While these papers focus on output effects (or fiscal multipliers), I focus on open economy effects.⁴

In Section 2, I explain the empirical methodology and discuss the empirical results. In Section 3, I check the robustness of the results in various extended experiments and discuss the transmission mechanism. In Section 4, I conclude with a summary of the findings.

2. Panel VAR for distinct groups of countries

2.1. Panel VAR model

Let us assume that an economy i ($i = 1, 2, \dots, N$) is described by the following structural form equation:

$$G(L)y_t^i = d^i + e_t^i \quad (1)$$

where $G(L)$ is a matrix polynomial in the lag operator L , y_t^i is an $M \times 1$ data vector, d^i is a $M \times 1$ constant matrix, M is the number of variables in the model, and e_t^i is a vector of structural

² An exception is Corsetti and Müller (2006), who emphasized the influence of two country characteristics (country size and persistence of shocks) on the effects of fiscal policy on the current account using four sample countries. The current study systematically investigates this issue with additional country characteristics (4 characteristics) and a larger sample (18 countries). In addition, two related papers (Ilzetzi et al., 2013, and Corsetti et al., 2012a) have been published recently. I discovered these two papers while I was revising the current paper. Later, I discuss these two papers in details.

³ More detailed explanations are found in Kim (2014).

⁴ These two papers also discussed some open economy aspects. In Section 3, I discuss the results of these studies, compared with those of the current study.

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