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## Exchange rate regimes and fiscal discipline: The role of trade openness



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### ABSTRACT

This study revisits the relationship between exchange rate regime (ERR) choice and fiscal discipline focusing on the role of trade openness. The conventional theoretical view is that fixed regimes bring about more fiscal discipline, while the recent literature argues that flexible regimes are more disciplinary. Empirical studies have provided mixed evidence. Using a panel dataset for a large number of developing and developed countries, as well as pooled panel OLS and instrumental variables (IV) estimation techniques, we find support for both views. We document that a fixed ERR is disciplinary at low levels of trade openness, while a flexible regime produces a greater fiscal discipline above a certain level of trade openness. Moreover, this relationship applies to only developing countries. These findings remain robust across different measures of fiscal outcomes, a number of controls, across different sub-samples, and are supported by both annual and five-year averaged panel data.

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## 1. Introduction

High and persistent budget deficits and the resulting public debt have become a serious concern for many countries in recent years. The [International Monetary Fund \(IMF\) \(2011\)](#) reveals that the overall fiscal deficit in advanced countries stood at 7.6% of GDP in 2010. In a perhaps surprising contrast, the budget deficit in emerging market economies and low-income countries were comparatively lower, that is, 3.7% and 3% of GDP, respectively. On the other hand, the average public debt escalated to about 100% of GDP in advanced economies in 2010. The case of Greece where the public debt reached as high as 143% of GDP, is well-known in both public and academic sphere. Although the average public debt in emerging countries was not very high, it was still 70% to 80% of GDP in countries like India, Brazil and Hungary. It is argued (see [Eichengreen, Feldman, Liebman, von Hagen, & Wyplosz, 2011](#); [Fatas, 2010](#)) that this surge in deficit and public debt across the world is not solely the result of the recent global financial crisis in 2008, but started much earlier, and reflects the failure of governments to accumulate large enough surpluses in good times.<sup>1</sup>

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<sup>1</sup> As [Fatas \(2010, p 2\)](#) states, the 'surge in government debt among many OECD countries in recent years is a wake-up call for their government to increase fiscal discipline'.

The concern about a high and persistent budget deficit is mainly due to its impact on other parts of the economy. For example, an ‘aggressive use of discretionary fiscal policy’ induces macroeconomic instability, such as output volatility, which may, in turn, reduce economic growth (Fatas & Mihov, 2003, p 1440). Also, as the ‘twin deficit’ hypothesis posits, a persistent budget deficit may lead to a current account deficit. In this vein, [Bluedorn and Leigh \(2011\)](#) show that a decrease in the ratio of budget deficit to GDP by 1% is associated with a decrease in the ratio of current account balance to GDP by 0.6%. Thus, fiscal discipline and the factors that can bring in such discipline are an important research agenda for academics, policymakers and alike.

Against this backdrop, this study revisits the role of exchange rate regime (ERR) in fiscal discipline. Although the idea that ERR choice can discipline fiscal policy dates back at least to [Keynes \(1923\)](#),<sup>2</sup> considerable debate at the theoretical level remains as to which exchange rate regime, fixed or flexible, provides more fiscal discipline (see [Aghevli, Khan, & Montiel, 1991](#); [Frenkel & Goldstein, 1988](#) who favour fixed regimes, and [Tornell & Velasco, 1995, 2000](#) who favour flexible regimes). Existing empirical studies (e.g. [El-Shagi, 2011](#); [Fatas & Rose, 2001](#); [Hamann, 2001](#); [Kim, 2003](#); [Tornell & Velasco, 2000](#); [Vuletin, 2013](#)) investigating the direct effect of ERR on fiscal discipline also fail to provide a definitive answer.

In this paper, we argue that one reason for the inconclusive empirical evidence is that ERR's effect on fiscal outcomes may work through its interaction with other theoretically important variable(s). This possibility has generally been ignored in previous work. Motivated by this idea, we investigate the interaction effects of ERR and trade openness on fiscal discipline. In doing so, we disentangle the direct and interaction effects of the ERR on fiscal discipline.<sup>3</sup>

There are several arguments that can shed light on the interaction effect between trade openness and exchange rate regime in explaining the budget balance. The most straight-forward argument is related to the (real) shock channel. Trade openness is inherently associated with external shocks. By making countries more exposed to external shocks, greater trade openness imposes adverse pressures on budget balance (see [Cameron, 1978](#); [Combes & Saadi-Sedik, 2006](#); [Rodrik, 1998](#)). Given that flexible exchange rates have well-established shock absorbing role in the literature,<sup>4</sup> it can thus be argued that shocks induced by greater trade openness can be mitigated by a flexible regime. This means that, where trade openness is higher, flexible regimes are expected to exert a positive impact on the budget balance. Other possible channels are discussed in [Section 2](#).

In our analysis, we use the *de facto* exchange rate regime classifications to proxy countries' exchange rate regime choice. Particular emphasis is placed on the *de facto* classification proposed by [Reinhart and Rogoff \(2004\)](#) that distinguishes as many as 14 different categories of exchange rate regimes.<sup>5</sup> The categories are ordered on a scale of 1 to 14, where 1 refers to the least flexible regime and 14 to the most flexible. This index allows us to overcome the fixed *versus* flexible dichotomy typically faced by existing empirical studies. Our trade openness indicator is the standard measure of the share of trade in GDP. More specific contributions of this study are as follows. First, we examine whether the hypothesized interaction between ERR and trade openness differs between developing and developed countries. Second, in contrast to several other studies, we consider three fiscal policy related variables, which allows us to perform a comprehensive check of the robustness of our findings.<sup>6</sup> These variables are the overall budget balance, the primary budget balance, and the government cash surplus. Third, unlike most other studies, we address the possible endogeneity of exchange rate regime choice and trade openness using instrumental variables (IV) estimation.

Our empirical analysis uses a panel dataset for a large number of developing and developed countries, covering the period from 1971 to 2010. We use pooled panel OLS as our benchmark estimation technique, and use instrumental variables (IV) estimation to account for the endogeneity that can potentially result from reverse causality. Both the OLS and IV results provide significant and robust evidence in support of the hypothesis that there is an interaction effect between ERR and trade openness that affects fiscal outcomes. However, this relationship is applicable only to developing countries, and not to developed countries, presumably because there is little variation in the ERR choice within developed countries. The findings reveal that there is a threshold level of trade openness, below which a fixed exchange rate regime provides fiscal discipline and above which a flexible regime has a disciplinary effect. Although this threshold varies across different measures of fiscal discipline, it is around 80% when fiscal discipline is measured with overall budget balance. These findings are supported by both annual and five-year averaged panel data, and remain robust across various measures of fiscal outcomes and to the use of a number of controls, including a country-specific recession dummy, the level of development, central bank independence, institutional quality, and a number of country-level fixed factors.

The above findings have important policy implications. For instance, our results suggest that Brazil, a relatively closed economy by the measure of ratio of trade to GDP, would probably improve its overall budget balance if it moved from its current flexible regime to a more fixed one. Conversely, the budget balance of a highly open economy like Singapore might deteriorate if the country abandoned, in a hypothetical scenario, its current flexible regime and embraced a fixed regime.

<sup>2</sup> [Keynes \(1923\)](#) considered the Gold Standard, a form of fixed exchange rate, as a way to ‘strap down the Ministers of Finance,’ who are always tempted to create budget deficits.

<sup>3</sup> There is another strand in the empirical literature that examines the influence of ERR on fiscal consolidation by focusing on the size of the fiscal or government expenditure multiplier under alternative exchange rate systems (fixed and flexible), studying the system under which the negative effect of a government expenditure cut will be smaller (see [Born, Juessen, & Muller, 2013](#); [Ilzetzki, Mendoza, & Végh, 2011](#)). We, however, examine whether an appropriate choice of ERR could contain the budget deficit in the first place.

<sup>4</sup> For example, [Friedman \(1953\)](#) made the argument that in the absence of nominal rigidity, flexible exchange rate regime acts as a shock absorber. The shock absorbing role of flexible exchange regimes is also empirically well-established (see [Broda, 2004](#)).

<sup>5</sup> IMF has been publishing the exchange rate arrangements of its member countries since 1945. However, IMF's official or *de jure* classification, which is based on countries' announced regime choice, does not always reflect actual ERR (see [Calvo and Reinhart, 2002](#); [Reinhart & Rogoff, 2004](#)). This observation has resulted in a number of *de facto* classifications that are based on countries' actual behaviour rather than announced behaviour. Three major *de facto* classifications are [Reinhart and Rogoff \(2004\)](#); [Levy-Yeyati and Sturzenegger \(2005\)](#) and [Shambaugh \(2004\)](#) classifications.

<sup>6</sup> Except for the study by [Fatas and Rose \(2001\)](#), all empirical studies have examined the effect of regime choice on only one or two fiscal variables.

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