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External debt and monetary policy autonomy[☆]

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ABSTRACT

During a time of rising world interest rates, the central bank of a small open economy may be motivated to increase its own interest rate to keep from suffering a destabilizing outflow of capital and depreciation in the exchange rate. Empirically, this paper shows that this is especially true for a small open economy with a current account deficit, which relies on foreign capital inflows to finance this deficit. In addition, the method of current account financing has a large effect on whether or not the central bank will opt for exchange rate and capital flow stabilization during a time of rising world interest rates. A current account deficit financed mainly through reserve depletion or the accumulation of private sector debt will cause the central bank to pursue de facto exchange rate stabilization, whereas a current account deficit financed through equity or FDI will not. Quantitatively, reserve depletion of about 7% of GDP will motivate the central bank with a floating currency to adjust its interest rate in line with the foreign interest rate to where it appears that the central bank has an exchange rate peg.

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Deuda externa y autonomía de la política monetaria

RESUMEN

Durante un periodo de tasas de interés mundiales al alza, el banco central de una economía abierta pequeña podría verse motivado a aumentar su tasa de interés para evitar sufrir una salida de capital desestabilizadora y una depreciación de la tasa de cambio. El presente artículo muestra de manera empírica que esto es especialmente cierto para una economía abierta pequeña con un déficit en cuenta corriente, la cual depende de la entrada de capital extranjero para financiar su déficit. Asimismo, el método de financiación de cuenta corriente tiene un efecto importante sobre si el banco central optará o no por la estabilización de la tasa del cambio y flujo de capital durante un periodo de alza de tasa de interés mundial. Un déficit de cuenta corriente financiado fundamentalmente con el agotamiento de la reserva o la acumulación de deuda procedente del sector privado ocasionará que el banco central busque de facto la estabilización de la tasa de cambio, mientras que un déficit de cuenta corriente que se financie mediante la venta de acciones o inversión extranjera directa no lo hará. Desde el punto de vista cuantitativo, un agotamiento de la reserva de un 7% del PIB motivará que el banco central con moneda flotante ajuste su tasa de interés en línea con la tasa de interés extranjera con la que parezca que el banco central tiene fijado un tipo de cambio.

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1. Introduction

In 2015, the Banco de México, the central bank in Mexico, rescheduled their monetary policy meetings to occur immediately following the meetings of the Federal Reserve. Monetary policy makers in Mexico knew that Fed lift-off from near-zero interest rate policy was imminent, and they wanted to arrange it such that the Banco de México could lift-off from their own extraordinarily low interest rates as soon as the Fed moved, and thus prevent a sudden shift in capital flows that would result in a sharp depreciation in the peso. When the Fed increased interest rates by 25 basis points on December 16th, the Banco de México matched them with a similar 25 basis point increase on December 17th.

The tendency for a central bank to mimic the monetary actions of a base currency central bank like the Federal Reserve is well documented. Usually the intention is to forestall a shift in capital flows that would lead to a sharp appreciation or depreciation of the currency. As shown in [Shambaugh \(2004\)](#), [Obstfeld, Shambaugh, and Taylor \(2005\)](#), and [Klein and Shambaugh \(2015\)](#), a way to measure monetary policy autonomy in the data is to regress changes in the policy interest rate in one country on changes in a base country interest rate. These papers find that the coefficient in this regression is much higher in countries with a pegged currency than in those with a floating currency, and the coefficient is higher for a country with an open capital account than in a country with a closed capital account.

In a country with a pegged exchange rate and an open capital account this need to match monetary policy actions is automatic, as implied by the famous trilemma from [Mundell \(1963\)](#) and [Fleming \(1962\)](#). By the same logic, monetary policy autonomy is automatic in a country with a floating exchange rate. Mechanically, a central bank with a floating currency has complete monetary policy autonomy and can do whatever it likes with its interest rate. But if the central bank has complete monetary policy autonomy, they can always choose to mimic a base country interest rate, and thus adopt a de facto exchange rate peg or soft peg. This paper will ask how a country's net external liability position might affect the central bank's choice of whether to pursue a monetary policy based solely on domestic concerns like the output gap or inflation, adopt a de facto exchange rate peg in an attempt to manage their external accounts.

Using a regression framework similar to that in [Klein and Shambaugh \(2015\)](#), we find that central banks in countries with a worsening external liability position (a current account deficit) are likely to move their interest rate in concert with a base country interest rate, and thus adopt some sort of de facto currency peg in an attempt to manage the external account. The intuition is as follows. A current account deficit needs to be financed by a positive net inflow of capital. An interest rate increase in the base country means that foreign investments are more attractive, and this leads to the possibility that those capital flows would reverse. As a result, central banks in countries with a current account deficit would find it necessary to raise their interest rate in order to retain foreign capital that would be tempted to flee.

A number of authors question the degree of monetary policy autonomy in a country with a floating exchange rate that is subject to exogenous swings in capital inflows and outflows (see e.g. [Rey, 2015](#)). [Obstfeld \(2015\)](#) discusses how financial globalization affects the trade-offs faced by monetary policy makers. [Edwards \(2015\)](#) examines the case of three Latin American countries with flexible exchange rates, inflation targeting and capital mobility and finds evidence that these countries tend to mimic Federal Reserve policy, and thus the degree of monetary policy autonomy is lower than would be expected. [Dąbrowski, Śmiech, and Papież \(2015\)](#) argue that ex-ante exchange rate regimes do not fully

predetermine monetary policy response to shocks. They liken this to a “fear of floating” ([Calvo & Reinhart, 2002](#)) or more specifically, a “fear of losing international reserves” ([Aizenman & Hutchison, 2012](#); [Aizenman & Sun, 2012](#)).

[Forbes and Klein \(2015\)](#) look at policy responses to a stop in capital inflows, and raising interest rates is one of them. But they argue that among possible policy options, raising interest rates leads to a sharp drop in GDP and is definitely not the most favorable option. Other options include reserve depletion, allowing the currency to depreciate, or imposing capital controls. However, reserve depletion may not be an option for a country with already depleted reserves, currency depreciation may not be favorable in a country with a large stock of foreign currency denominated debt, and temporary episodic capital controls may be difficult to implement in practice.¹ Intuitively, we find that not all forms of external liability accumulation cause a central bank to opt away from monetary policy autonomy toward a de facto peg. Only a currency account deficit financed by reserve depletion or the accumulation of foreign currency denominated debt cause a central bank to willingly sacrifice monetary policy autonomy. Equity financing or domestic currency denominated debt do not have the same effect.

These results are based on regressions that end in 2011. But the “taper tantrum” episode of the summer of 2013 provides a nice out-of-sample example of the mechanisms involved in this paper. [Eichengreen and Gupta \(2014\)](#), [Mishra, Moriyama, and N'Diaye \(2014\)](#), and [Shaghil, Coulibaly, and Zlate \(2015\)](#) all find that economic fundamentals like the current account had an effect on relative performance among emerging markets during the taper tantrum. Countries that ran a large current account deficit prior to the summer of 2013 were most adversely affected during the summer of 2013. Although [Aizenman, Binici, and Hutchison \(2014\)](#) find the opposite. In line with the subject of this paper, [Arteta, Kose, Ohnsorge, and Stocker \(2015\)](#) argue that economic fundamentals were important part of the policy response to the taper tantrum. In the next section we will show how the emerging markets with current account deficits were the ones that were most likely to raise interest rates after the first suggestion of Fed tapering. Furthermore, the difference in interest rate responses across emerging markets is due to cross-country differences in debt-based capital inflows. Emerging markets that prior to the announcement of tapering received positive net debt inflows saw a much greater increase in rates than those with negative net debt inflows. Whether a country had positive or negative net equity inflows prior to 2013 had no effect on the subsequent interest rate response.

This paper will proceed as follows. The out-of-sample example of comparing policy responses across emerging markets during the “taper tantrum” is presented in Section 2. The formal econometric model and data that is used to measure the effect of external debt accumulation on monetary policy autonomy is presented in Section 3. The econometric results as well as the results from various robustness checks are presented in Section 4. Finally, Section 5 concludes.

¹ See [Obstfeld, Shambaugh, and Taylor \(2010\)](#) for a discussion of the importance of reserve accumulation for financial stability, [Céspedes, Chang, and Velasco \(2005\)](#) for a discussion of the financial (in)stability role of foreign currency denominated debt, and [Klein and Shambaugh \(2015\)](#) and [Fernández, Rebucci, and Uribe \(2015\)](#) for a discussion of the effectiveness of short-run episodic capital controls. The distinction between spending reserves and raising the interest rate is only possible if central bank reserve sales are sterilized. If unsterilized, then reserve depletion has the same effect on the central bank balance sheet as an open market sale of domestic bonds and thus raises the interest rate. Sterilized foreign exchange interventions are only possible when there exists some form of capital control or friction that prevents private sector agents from buying or selling foreign bonds as easily as the central bank.

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