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Automatic stabilizer feature of fixed exchange rate regimes ☆

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ABSTRACT

This paper shows that countries characterized by a financial accelerator mechanism may reverse the usual finding of the literature — flexible exchange rate regimes do a worse job of insulating open economies from external shocks. I obtain this result with a calibrated small open economy model that endogenizes foreign interest rates by linking them to the banking sector's financial leverage. This relationship renders exchange rate policy more important compared to the usual exogeneity assumption. I find empirical support for this prediction using the Local Projections method. Finally, 2nd order approximation to the model finds larger welfare losses under flexible exchange rate regimes.

1. Introduction

In the late 90's, emerging market countries have faced severe financial crises, resulting in large costs of bank restructuring, extended periods of contraction, and high unemployment. Theoretical and empirical studies have blamed the inability of pegged regimes to withstand speculative attacks, especially with rapidly growing international financial activity during this period. Advocates of this view have advised a combination of flexible exchange rate regimes and inflation targeting. Despite these developments, many researchers have shown that emerging market economies do not *de facto* float their currency (e.g. Calvo and Reinhart, 2002; Levy-Yeyati and Sturzenegger, 2005; Alesina and Wagner, 2006; Bersch and Klüh, 2007). Among the reasons are the lack of central bank credibility, large terms of trade shocks, high inflation due to exchange rate pass through, and liability dollarization.

The interaction of liability dollarization with exchange rate regimes, and the implications for output volatility have been analyzed extensively by the "Balance Sheet Effects" literature (e.g.

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Allen et al., 2002; Berganza et al., 2004; Calvo, 2001; Cespedes et al., 2004; Chang and Velasco, 2000a,b, 2001; Choi and Cook, 2004; Eichengreen and Hausmann, 2007; Gatti et al., 2007; Krugman, 1999; Schneider and Tornell, 2004). In this literature, the effects of exchange rates regimes on the economy are determined by two main opposing effects. On one hand, smaller exchange rate volatility limits the fluctuations of the net foreign liability component of balance sheets, thereby reducing uncertainty and risk premiums in an economy with high degree of liability dollarization. On the other hand, a tight exchange rate regime results in involuntary interest rate adjustments in response to foreign interest rate shocks. These so-called external constraints on monetary policy are less binding under more flexible regimes where a part of the external shock is absorbed by exchange rates. A majority of the literature finds that the latter effect dominates the former and flexible exchange rates do a better job of insulating economies from external shocks.

This paper compares the relative strength of the aforementioned two effects by measuring the performance of different exchange rate regimes. It formulates a small open economy dynamic stochastic general equilibrium (DSGE) model where terms of foreign credit depends on the balance sheet of domestic banks, and there is a financial accelerator mechanism.

The financial accelerator framework of Bernanke et al. (1999) (BGG) is a convenient starting point for the purposes mentioned above for two reasons. First, it allows for the effects of various shocks to be amplified through its effects on firms' balance sheets, which in turn provides a better fit of the model's output to the actual data. Second, the model includes a domestic financial sector which facilitates the analysis of balance sheet effects and foreign creditor behavior when the contract between the domestic banking system and the foreign creditors is defined.

Gertler et al. (2007) (GGN) extend this model to a small open economy setting and show how the central bank has to peg the interest rates to the foreign interest rates under a fixed regime, and thereby cause a hike in real interest rates in response to adverse external shocks. The recession caused by these shocks is less profound under flexible exchange rate regimes where a part of the negative effect of the external shock is absorbed by the depreciation of the currency. Furthermore, this contrast between the performances of different exchange rate regimes becomes more apparent when the financial accelerator mechanism is included due to its implicit amplification mechanism.

Analysis in this paper alters the standard financial accelerator framework in two ways. First, domestic banks are only able to diversify the idiosyncratic shocks but are vulnerable to systematic ones. This is in contrast to the standard model where the banks are able to diversify the aggregate risk and always collect

Table 1
Leverage, depreciations and output drops during recessions

		% Change in the exchange rate	Leverage	GDP growth
		(1)	(2)	(1)
1997 Asian crisis	Malaysia	12.4	61.9	−4.5
	Philippines	14.6	−10.7	0.1
	Singapore	4.2	23.1	−1.2
	Thailand	25.8	136.3	−9.6
	Vietnam	5.8	−92.7	7.3
1994 Peso crisis	Ecuador	16.7	37.7	−11.5
	Mexico	89.9	−30.7	−4.2
	Peru	2.3	−23.3	10.3
	Uruguay	26.0	−412.6	3.0
1998 Russian default plus Brazil abandoning the band	Argentina	0.0	37.6	−4.0
	Chile	10.5	12.6	−1.6
	Colombia	23.2	42.9	−2.7
	Mexico	4.6	−155.1	2.4
	Panama	0.0	−101.4	3.5
	Peru	15.4	7.3	1.3
	Russia	153.6	26.5	−12.1
	Uruguay	8.3	−283.0	3.2
2001 Turkish crisis	Turkey	96.0	41.1	−7.2
2002 Argentine crisis	Argentina	206.0	122.1	−7.6

(1) % changes are over the year before and after the crisis.
(2) Total banking sector net foreign liabilities divided by banking sector net worth (%).