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# Real exchange rate volatility and the choice of regimes in emerging markets

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## Abstract

Traditional models of the choice of exchange rate regimes ignore the destabilizing effects of sharp and unanticipated exchange rate movements. Recent research, however, has shown that these movements have real costs in emerging markets owing to the dollarization of liabilities. This paper evaluates the performance of an emerging market economy under a credibly fixed rate, a collapsing fixed rate, and a flexible-rate regime using a speculative attack model that takes into account the real effects of unanticipated movements in exchange rates. The model is applied to South Korea to determine the dominant exchange rate regime.

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## 1. Introduction

The choice of an exchange rate regime has been and will continue to be a major, but controversial, area of research in economics. Following [Poole \(1970\)](#) there is some consensus among economists that the optimal exchange rate regime depends on the nature

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of shocks facing an economy. In particular, it depends on whether shocks are real, nominal, domestic, or foreign. In the standard literature, the comparison of exchange rate regimes is based on the minimization of a loss function that depends exclusively on the variance of real output. The real effects of unanticipated changes in the real exchange rate is left out of the analysis.<sup>1</sup> Some observers have argued that neglecting the destabilizing effects of sharp and unanticipated changes in real and nominal exchange rates is inappropriate because the financial turmoil in Mexico in 1994 and the currency crises in Asia in 1997–1998 have shown that these changes have real costs in emerging markets.<sup>2</sup>

These costs can arise through the dollarization of liabilities, as stressed by Calvo (1999).<sup>3</sup> Explanations for the real effects of unanticipated exchange rate changes through this channel can be synthesized as follows. Domestic firms in developing countries have difficulties borrowing or lending in the local currency because of market imperfections or poorly developed financial markets. This encourages foreign currency borrowing and, because domestic firms' assets are predominantly in the local currency, creates a currency mismatch. When liabilities are in foreign currencies while assets are in the local currency, sharp and unexpected exchange rate depreciations deteriorate bank and corporate balance sheets, threaten the stability of the domestic financial system, and depress economic activity.<sup>4</sup>

The potentially destabilizing effect of sharp and unanticipated exchange rate movements owing to the dollarization of liabilities, has led some economists to take the view that a fixed exchange rate system may be the appropriate regime for emerging markets. Proponents of flexible exchange rate regimes, however, argue that this line of reasoning does not consider the fact that the dollarization of liabilities is, in part, a consequence of the choice of exchange rate regimes. In a fixed exchange rate regime, the government guarantees to buy and sell foreign exchange at a predetermined price. This opens-up a source of moral hazard, promotes unhedged, short-term, foreign-currency borrowing and hence increases firms' vulnerability to exchange rate fluctuations.<sup>5</sup>

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<sup>1</sup> See, for example, Flood and Hodrick (1986), Turnovsky (1985), and Flood and Marion (1982). For an interesting analysis of the causes and consequences of exchange market volatility see Rogoff (1998).

<sup>2</sup> Velasco (2000) provides an insightful analysis of exchange-rate policies in developing countries. For an overview of the causes of the recent Asian currency and financial crisis, see Corsetti, Pesenti, and Rou-bini (1998). Kwack (1998, 2000) provides discussion of the factors contributing to the financial crisis in South Korea and six additional countries in Asia.

<sup>3</sup> The costs can also result from the use of imported intermediate inputs or the effect of exchange rate uncertainty on trade and investment. When domestic firms use imported intermediate inputs, unanticipated currency depreciations lead to an increase in the cost of production and a decrease in domestic output. One might wonder why domestic firms in emerging markets do not hedge against exchange rate risk. According to Eichengreen and Hausmann (1999), these firms lack the capacity, rather than the incentive, to hedge because foreign investors are willing to lend only in their own currency. Calvo (2002) examines the case for dollarization in emerging markets. Honig (2004) examines the link between exchange rate regimes, dollarization and government quality.

<sup>4</sup> In theory, an unanticipated real exchange rate depreciation has, simultaneously, a positive and a negative effect on output in an economy. On the one hand, it decreases output owing to the phenomenon of liability dollarization. On the other hand, it stimulates economic activity by increasing the international competitiveness of domestic industries.

<sup>5</sup> See Obstfeld (1998) for a link between fixed exchange rate regimes and moral hazard.

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