Lending booms, sharp reversals and real exchange rate dynamics

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Abstract

Emerging markets in the 1990s experienced periods of booms followed by collapses in gross domestic product, consumption, traded and non-traded sector output and real exchange rate movements alongside unprecedented movements in foreign investor participation in these economies. An important feature of these episodes is the asymmetry in the pattern of booms and collapses. We introduce a natural search friction into the foreign investment decision in a small open economy and demonstrate that this can generate the asymmetry observed in the data. The magnitude of the reversals predicted by the model can be quantitatively large and empirically relevant.

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1. Introduction

Emerging market economies in the 1990s experienced periods of booms followed by collapses in gross domestic product, consumption, traded and non-traded sector output and real exchange rate movements alongside unprecedented movements in foreign investor participation in these economies. The empirical stylized facts of this phenomenon have been documented extensively in Calvo et al. (1996), Calvo and Reinhart (1999) and Glick (1998). An important feature of these episodes is the asymmetry in the pattern of booms and collapses. Booms have been associated with gradual appreciations in the real exchange rate and growth in production and consumption. Collapses on the other hand have involved dramatic reversals with sharp contractions in GDP relative price of non-traded goods, the...
real exchange rate and large exit of foreign investors from the crisis economy. This paper presents a theoretical framework to explain the boom and collapse episodes of emerging economies with specific emphasis on the asymmetry of the process. The model describes a micro-foundation-based adjustment friction in foreign investor entry and exit into a small open economy. The predictions are shown to differ qualitatively from a framework where the friction is modeled as a quadratic adjustment cost in investment as is the case in the standard $q$ model of investment.

We describe a small open economy with return-seeking foreign investment flows. The source of friction in these flows emerges from information imperfections about investment returns in the emerging markets. Investment ‘projects’ are characterized by idiosyncratic returns and the type of the project can be determined only through a time-consuming search process. The decision to invest, accordingly, weighs the return from a current project against the outside option and the option value of further search. The endogenously determined entry and exit decision for the foreign investor generates dynamics in the path of net project creation which in turn generates the responses of real variables that have been observed in emerging market economies.

Our model is distinct from the earlier literature in that it incorporates the direct economic effects of a friction in foreign investor entry and exit decisions in a small open economy. Accordingly, it generates the sharp reversals in foreign investor participation observed in these economies. The existing theoretical literature can be broadly divided into two strands of explanations. One set of explanations rely on the inter-temporal consumption smoothing mechanism to obtain dynamics in the real exchange rate. Several papers (Calvo et al., 1993) that model exchange rate-based stabilization programs that are imperfectly credible rely on this mechanism. Since the empirical evidence on inter-temporal substitution is weak, Rebelo and Vegh (1995) who survey explanations based on exchange rate-based stabilizations in high inflation economies conclude that it is “very difficult to explain the magnitude of the real appreciation and consumption booms” on the basis of these explanations. Moreover, these papers do not address the asymmetric adjustment that we observe. In more recent work, Calvo and Mendoza (2000) and Mendoza (2001) combine this mechanism with an ‘occasionally binding’ credit constraint to generate ‘sudden stops’ when fundamentals deteriorate. We describe a mechanism where symmetric shocks to fundamentals generate asymmetric responses even when the constraint (adjustment friction) is always effective. A second strand of the literature extends the Kiyotaki–Moore credit cycle mechanism to generate dynamics in the real exchange rate. Aghion et al. (1999) generate equilibria with endogenous cycles in the relative price of non-traded goods and investment. Schneider and Tornell (2000) combine bailout guarantees with the credit cycle mechanism to generate self-fulfilling boom–bust phenomena. Both these papers however do not address the asymmetry of the adjustment process. In this paper, we examine phenomena that are not limited to exchange rate-based stabilization episodes and is therefore closer to the sudden stops analysis surveyed in Arellano and Mendoza (2002).

The application of search theory to investment is uncommon in the literature. However, it seems natural to consider search frictions in foreign investment. The mechanism described has the following features. Foreign investors seek high-return investment projects in an emerging market. They invest in projects that engage in real activity in the emerging market and generate a stream of returns for the investor. Foreign investors are constrained in their
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