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A corporate balance-sheet approach to currency crises[☆]

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Abstract

This paper presents a general equilibrium currency crisis model of the 'third generation', in which the possibility of currency crises is driven by the interplay between private firms' credit-constraints and nominal price rigidities. Despite our emphasis on microfoundations, the model remains sufficiently simple that the policy analysis can be conducted graphically. The analysis hinges on four main features (i) ex post deviations from purchasing power parity; (ii) credit constraints a la Bernanke–Gertler; (iii) foreign currency borrowing by domestic firms; (iv) a competitive banking sector lending to firms and holding reserves and a monetary policy conducted either through open market operations or short-term lending facilities. We derive sufficient conditions for the existence of a sunspot equilibrium with currency crises. We show that an interest rate increase intended to support the currency in a crisis may not be effective,

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but that a relaxation of short-term lending facilities can make this policy effective by attenuating the rise in interest rates relevant to firms.

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1. Introduction

Researchers in recent years have had to grapple with the puzzle of how fast-growing economies with large export surpluses and substantial government surpluses, could end up in the space of months, in a deep and damaging currency crisis. This paper builds on a very simple story of why things fall apart quite so dramatically if domestic prices do not adjust fully to exchange rate changes in the short run, a currency depreciation leads to an increase in the debt burden of domestic firms that borrowed in foreign currency, and consequently a fall in profits.[1] Since lower profits reduce net worth, this may result in reduced investment by credit-constrained firms, and therefore in a lower level of economic activity in the following period. This, in turn, will bring a fall in the demand for money, and thus a currency depreciation in that next period. But arbitrage in the foreign exchange market then implies that the currency must depreciate in the current period as well. Hence the possibility of multiple short run equilibria in the market for foreign exchange. A currency crisis occurs when an expectational shock pushes the economy into the "bad" equilibrium with low output and a high nominal exchange rate.

This story is compelling for a number of reasons. First, there is evidence that foreign currency exposure is correlated with the likelihood of a crisis in particular, Hausmann et al. [24] show that the countries most likely to go into a crisis were those in which firms held a lot of foreign currency denominated debt.[2] Second, there is strong evidence that exchange rate changes are incorporated into domestic prices relatively slowly. For example, Goldfajn and Werlang [22] compute the pass-through from exchange rate to prices in a set of 71 countries including both developed and less developed countries. They show that the pass-through is very gradual and tends to be even smaller after currency crises—in the Asian crises, for example, less than 20% of currency depreciation was reflected in inflation after 12 months. Third, it is widely accepted that an important link between the currency crises and the subsequent fall in output was a financial crisis which affected the ability of private firms to finance production—indeed this is why the crises are often described as triple

[1] The damaging impact of foreign currency debt is often mentioned in the context of currency crise. See, for example, [19,14,31,32]. While the role of foreign currency *public* debt has received some attention in the theoretical literature on crises [11,33,20] the impact of private foreign currency debt has hardly been analyzed (see, however, [27]).

[2] See also Honkapohja and Koskela [23] for the Finnish case.