Expectations and information in second generation currency crises models

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Abstract

We explore the role of expectations in second generation currency crises models, proving that sudden shifts in speculators’ behavior can trigger currency devaluations, even without any sizable worsening of the fundamentals. Our model shows that ‘small’ (mean-preserving) changes of speculators’ beliefs may drive agents to a unique equilibrium with a self-fulfilling attack. Following a recent line of research, we also compare the results of private and public information models, finding the following paradox: releasing public information seems to be more convenient when fundamentals are bad. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

The financial turmoil that invested east Asian countries in the summer of 1997 has revealed the limits of theoretical models in explaining actual currency crises episodes. According to many accounts, the event supposed to be the most likely cause of a crisis (a definite worsening of the fundamentals, possibly implied by an unsustainable stance of the economic policy) did not occur, at least in some of the Asian economies struck by speculative attacks.² Thus, many economists believe
that other factors might have a crucial role in determining the dynamics of a crisis.

In first generation currency crises models (FGMs), originally developed by Krugman (1979) and Flood and Garber (1984), financial crises follow a deterioration of the fundamentals, typically due to inconsistent economic policies. By contrast, second generation models (SGMs), first developed by Obstfeld (1986, 1994), turned the attention to the costs and benefits of the fixed exchange rate policy, stressing the importance of the trade-off faced by the government between defending a fixed currency peg and other policy targets. In these models, a devaluation is the government’s optimal response to the actions of speculators and can take place as a result of self-fulfilling beliefs, without a previous worsening of the fundamentals. Since speculative attacks raise the cost of defending a fixed exchange rate, SGMs may exhibit self-fulfilling multiple equilibria. In SGMs the space of fundamentals is usually divided in three parts: when fundamentals are ‘good’, there is a unique equilibrium in which the exchange rate is maintained; when fundamentals are ‘bad’, the currency depreciates; when fundamentals fall in an ‘intermediate’ range (the ‘ripe for attack’ zone), both outcomes are feasible.

In a recent paper, Morris and Shin (1998) started a promising strand of analysis, by developing a SGM with incomplete information. They consider speculators having a uniform prior probability distribution over the state of fundamentals that is updated according to the observation of a private signal. Their model, as well as the earliest complete information models, does not allow to examine the role of the distribution of agents’ beliefs about the fundamentals. This issue has been neglected in the literature, presumably because one could think that, in an incomplete information framework, only the mean of speculators’ probability assessment over the fundamentals matters. If this were true, we would have a similar tripartition for the mean of the distribution over the fundamentals. Hence, the incomplete information framework would not enrich the benchmark analysis and would not modify the structure of the equilibria. Nevertheless, agents’ beliefs have often been put forward to explain actual currency crises. For instance, after the Russian crisis, many commentators pointed to an increase in agents’ uncertainty as a possible explanation for the transmission of the speculative pressures to countries especially in Latin America that had very limited trade linkages with Russia (see also International Monetary Fund, 1999 and Bank for International Settlements, 1999). Yet, typical SGMs do not explain why uncertainty should influence speculative attacks.

In this paper we present two different variants of the incomplete information model studied by Morris and Shin (1998). Our first SGM allows to study the role played by agents’ beliefs about the fundamentals in a standard ‘currency crisis’

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2 Corsetti et al. (1998) and Radelet and Sachs (1998) express different views of the causes of the Asian crisis.

3 Targets of the economic policy that can conflict with the defense of a fixed currency peg include: achieving a low level of unemployment, stimulating economic growth, reducing the fiscal burden, supporting a sound banking system. For an overview, see Obstfeld (1996).

4 For a discussion about the self-fulfilling feature of currency crises, see Obstfeld (1994), Krugman (1996) and the commentaries therein.
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