

Optimal informational policy and currency crisis toward a new analysis on the institutionalisation of ex-post crisis exchange-rate management

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This paper extends some theoretical results of Morris and Shin [1998] on the role of uncertainty about fundamentals in currency crisis and explores its policy ramifications. In particular, questions of optimal information disclosure become important whenever the outcome of a principal's policy is threatened by coordinated behaviour on the part of a large number of atomised agents. Some papers (Sbracia and Zaghini [2001], Metz [2000], Metz and Heinemann [2002]), applying also the global games approach, have questioned, implicitly or explicitly, the current demand for full transparency in order to prevent currency crisis. However, their models are not suitable to answer the question under what conditions speculative attacks should indeed be prevented. In their models, the single objective of the government is to prevent currency attacks. But preventing speculative attacks may not necessarily be good for the economy. When fundamentals are bad enough, a surrender of an unsustainable peg could be welfare improving. Therefore, we try to develop a model where the devaluation may be also welfare improving.

The idea that governments intend to minimise a social loss function, and face a conflict between two objectives is not a novelty. However, the central point of this paper, how the ex-post strategy of the government may facilitate or not the coordination when there are many participants playing a global game against a policy maker, and how this modifies the efficacy of informational policy, is, to the best of our knowledge, new to the literature.

The game has three stages. In stage 1, the principal learns the true value of fundamentals and decides on the relative precision of information and parameters concerning the distribution of fundamentals. In stage 2, speculators choose their action simultaneously after receiving private signals about the fundamentals. In stage 3, the principal observes the fraction of speculators that attack the currency and decides whether to maintain the currency peg.

The problem of characterising the unique equilibrium is one of the principal innovations of the global game approach. So, unique equilibrium can be specified by a couple (x^*, θ^*) , such that all speculators use a trigger strategy around x^* and the government follows a simple rule around θ^* . The trigger point of the government's optimal strategy depends on a parameter that measures the weight placed on depreciation relative to output increase for instance or the government's willingness to accommodate. This assumption modifies the analysis in two ways. First, the fundamental cut-off point clearly depends on this parameter. However, this parameter may change after the devaluation if for instance the government ties its hand to an institutionalised ex-post exchange rate regime or an independent monetary institution with other preferences. Secondly, the cut-off signal of speculators may be modified in subtle ways: first, there is a kind of portfolio effect, payoffs depend on the ex-post regime, second, there may be a kind of signalling effect that can help a particular course of action.

Uniqueness conditions are standard, in the sense that it always depends on the relative precision of private information to public information. We identify the unique equilibrium and are thus able to characterise and calibrate expected welfare costs of currency crisis. In order to conduct our simulations and comparative static exercises, we need to differentiate welfare costs according to extreme market sentiment or prior fundamentals mean. We find that the efficacy of informational policy may be influenced by the ex-post strategy but in a non trivial way.
