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# The role of (non-)transparency in a currency crisis model

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## Abstract

This paper extends the work by Morris and Shin (Am. Econom. Rev. 88 (1998) 587–597) where multiple equilibria in the self-fulfilling currency attack models can be reduced to a unique equilibrium when agents observe fundamentals privately with small errors. We find that under a more general specification with realistic parameters, noisy private observations are generally insufficient to prevent the multiplicity of equilibria. The pivotal role played by the transparency of fundamentals/policies in currency crisis is also examined. Surprisingly, transparency may trigger rather than eliminate currency crises when fundamentals are relatively healthy. Our results may be relevant to research in other coordination problems. © 2002 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

There are two genres of models on currency crisis in the literature. The first generation models, à la Krugman (1979), explain currency crisis from the inconsistencies between the exchange rates and domestic macroeconomic fundamentals. The second generation models (see Obstfeld, 1986, 1994, 1996) view currency crises as shifts between different equilibria generated from

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self-fulfilling speculative attacks. In a recent paper, Morris and Shin (1998) (MS, hereafter) suggest that the multiplicity of equilibria in this type of models is in fact “apparent” (p. 588) and is due to an unrealistic assumption that all agents observe the same signals without error. By using a more realistic assumption that agents privately observe fundamentals with small errors, they establish a very strong result that multiplicity of equilibria in a standard second generation model is eliminated. This result makes self-fulfilling expectations and their required belief coordination irrelevant.

Based on their analysis, MS urge governments to adopt transparent policy. According to MS, transparent policy means policy that makes the fundamentals common knowledge. Since we plan to clarify the policy suggestion that MS advocate, we will adopt their notion of transparency. However, their notion may not be the only accepted one. For instance, Heinemann and Illing (1999) define transparency as a reduction in the dispersion of private signal noise.<sup>1</sup> The reader is referred to King (1999) for a thorough discussion of the notion of transparency.

It appears that, when making their policy suggestion, what MS have in mind is fundamentals that are relatively weak. However, when the fundamentals are relatively strong, the suggested policy restores self-fulfilling currency crisis as a possible equilibrium outcome. In this latter case, transparent policy is in fact inferior to policy that is not transparent. It prompts us to examine the robustness of the insight. To this end, we expand the parameter space of the original MS model to investigate equilibrium outcome in those previously unexplored scenarios.

The present paper enlarges the analytical framework of MS by including various boundary conditions. We find that transparency alone in many cases cannot discourage currency attacks, contrary to MS’s assertion. In fact, for some cases, the opposite is true. We also clarify that the MS’s uniqueness result depends on the nature of the equilibrium at the boundaries, and it is the uniqueness of the boundary equilibrium that generates their results. If there are multiple equilibria at the boundaries, then the lack of common knowledge of the fundamentals may also lead to multiple rather than a single equilibrium as found by MS. In other words, private observational errors are generally not sufficient to eliminate multiplicity of equilibria. The ultimate equilibrium will still need to be determined by self-fulfilling expectations. It still leaves open the question how agents succeed in coordinating their beliefs.

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<sup>1</sup> Heinemann and Illing find that a reduction in the dispersion of private signal noise lowers the critical state that triggers a crisis. They also strengthen the MS uniqueness result using the solution concept of rationalizable equilibrium. This concept, however, is not particularly useful for our purpose. Since it is a weaker solution concept, the result of multiple (Nash) equilibria that we obtain here is stronger than a result of multiple rationalizable equilibria otherwise obtained.

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