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Sovereign liquidity crises: Analytics and implications for public policy

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Abstract

This paper offers an analytical framework with which to assess some recent proposals for strengthening the international financial architecture. We develop a model of sovereign liquidity crises that reflects two sources of financial stress – weak fundamentals and self-fulfilling expectations. We examine the nature of the underlying co-ordination game and investigate the properties of the unique equilibrium. In so doing, we are able to characterise the welfare costs of belief-driven crises, which we find to be potentially significant. We also evaluate some recent policy proposals including prudent debt and liquidity management, capital controls, greater information disclosure, and the efficacy of monetary policy tightening in the midst of crisis. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

The financial crises experienced in Asia, Russia, and Latin America during the late twentieth century have resulted in much ink being spilt in academic and policy circles. The debate has largely been conducted in terms of "first and

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second generation" models of currency crisis. [1] First generation models (e.g. Krugman, 1979) emphasise the importance of a secular deterioration in fundamentals, such as the level of foreign reserves, in triggering crises and demonstrate how speculative attacks on a currency can be generated as a result of inconsistent government policies. By contrast, second generation models (e.g. Obstfeld, 1996) argue that crises can arise even when policies are consistent with a fixed exchange rate. They show that currency crises embody a co-ordination problem, in which the actions of speculators are mutually reinforcing – it is more attractive to attack a currency if it already under attack from others. Multiple equilibria result. If no one believes that a crisis is about to occur, there will be no speculative attack. But if everyone believes that a crisis is about to occur, it becomes optimal for each speculator to attack if others do. But such models are silent about the reasons for the shifts in beliefs that cause the switch between equilibria. Explanations typically rely on "sunspots", i.e., random events, unrelated to changes in the real economy that affect investor beliefs in ways that turn out to be self-fulfilling.

A central feature of the recent problems experienced by emerging economies has been the sharp reversal of capital flows. By contrast, the academic literature has focused on crises in the currency markets, and relatively little attention has be given to investor behaviour in the capital markets. [2] Viewed from a second-generation perspective, the relationship between a sovereign debtor and its creditors also has the characteristics of a co-ordination problem. If a country is liquidity constrained and if one set of creditors attempt to exit, this imposes externalities on all other creditors in the event of their requiring repayment. A sovereign liquidity crisis is thus analogous to the Diamond and Dybvig (1983) bank run. King (1999) notes that while liquidity runs have played a major part in recent financial crises, factors fundamental to national balance sheets, such as a level of country's resources, also played a part. So in practise, real-life crises are likely to have elements of both belief-driven and fundamentals-based attacks. Krugman (1999) attempts to reconcile the two types of model by highlighting the role of government guarantees on private sector debt and weaknesses in corporate and financial sector balance sheets. But again, the reason for the shift in creditor beliefs is left unexplained.

The indeterminacy of equilibrium has meant that the literature, to date, has had very little to say about the welfare costs of the creditor co-ordination problem and, consequently, the policies that should be followed to "manage" liquidity runs on a country. [3] In an environment where many equilibria can be

[1] See Flood and Marion (1998) for a comprehensive review.

[2] The original contribution is that of Calvo (1988). Recent papers on this issue include Chang and Velasco (1999) and Powell (1999).

[3] Jeanne (1999) is an important exception.