ELSEVIER European Economic Review 45 (2001) 1121–1150

EUROPEAN ECONOMIC REVIEW

www.elsevier.com/locate/econbase

Currency crises and monetary policy in an economy with credit constraints

Philippe Aghion[a,b,c], Philippe Bacchetta[c,d,e,*], Abhijit Banerjee[f]

[a] *Harvard University, Cambridge, MA 02183, USA*
[b] *University College, London WC1E 6BT, UK*
[c] *Center for Economic Policy Research, London, UK*
[d] *Study Center Gerzensee, P.O. Box 21, CH-3115 Gerzensee, Switzerland*
[e] *DEEP, Université de Lausanne, CH-1015 Lausanne, Switzerland*
[f] *Massachusetts Institute of Technology, Cambridge, MA 02142, USA*

Abstract

This paper presents a simple model of currency crises which is driven by the interplay between the credit constraints of private domestic firms and the existence of nominal price rigidities. The possibility of multiple equilibria, including a 'currency crisis' equilibrium with low output and a depreciated domestic currency, results from the following mechanism: If nominal prices are 'sticky', a currency depreciation leads to an increase in the foreign currency debt repayment obligations of firms, and thus to a fall in their profits; this reduces firms' borrowing capacity and therefore investment and output in a credit-constrained economy, which in turn reduces the demand for the domestic currency and leads to a depreciation. We examine the impact of various shocks, including productivity, fiscal, or expectational shocks. We then analyze the optimal monetary policy to prevent or solve currency crises. We also argue that currency crises can occur both under fixed and flexible exchange rate regimes as the primary source of crises is the deteriorating balance sheet of private firms.

JEL classification: E4; E5; F3

Keywords: Monetary policy; Foreign currency debt; Currency crisis

* Corresponding author. Tel.: +41-31-780-31-01; fax: +41-31-780-31-00.
E-mail address: phbacchetta@szgerzensee.ch (P. Bacchetta).

0014-2921/01/$ - see front matter
PII: S0014-2921(00)00100-8

1. Introduction

Currency crises have been traditionally viewed as retribution for governments that have mismanaged the economy and/or lack credibility: Both the so-called first-generation models and the more recent second-generation models broadly answer to this description. However, the recent crises in East and Southeast Asia have led to a wide-spread questioning of this view.[1] It is observed that most of the crisis economies enjoyed government surpluses and increasing foreign exchange reserves (unlike what the first-generation models would suggest) as well as low unemployment and booming exports (unlike in most of the second-generation models). Of course there are other forms of government failure. In the case of the East and Southeast Asian countries there is some evidence that the financial sector in these countries was not very well regulated. Without denying that this was an important element of the crisis, there is reason to doubt that it is the whole story: First because the lack of transparency in the financial sector of these countries was already well-known among market participants and second because these economies have now recovered and face interest rates not significantly higher than before the crisis, without any major overhaul of the financial sector.

It is therefore not surprising that over the last two or three years, a third generation of models of financial crises has begun to emerge. These models have in common the idea that the crisis should be seen as a result of a shock that was amplified by what Bernanke et al. (1999) have called a financial accelerator mechanism. In some of these models (Aghion et al., 1999a, b) there is a real shock that gets amplified while in others (Krugman, 1999a; Chang and Velasco, 1999) there are multiple equilibria with the crisis brought on by a pure shift in expectations. The basic story is similar: A real currency depreciation can have a large effect on output if it affects the credit access of some subset of agents;[2] moreover this effect on output may in turn affect the exchange rate, further amplifying the shock and causing it to persist.

The present paper is a contribution to this line of research. It differs from the previous papers in that it is an explicitly dynamic monetary model with nominal rigidities playing an important role.[3] This approach allows us to tell a very simple story of currency crises: If nominal prices are rigid in the short run, a currency depreciation leads to an increase in the foreign currency debt

[1] For example, see Krugman (1999a), Furman and Stiglitz (1998), Radelet and Sachs (1998).

[2] In Chang and Velasco (1999) the effect on the borrowing capacity of the firm sector is indirect – it comes from a fall in the lending capacity of the banking sector. Therefore their model is not strictly a financial accelerator model.

[3] Aghion et al. (2000a) contains a precursor of the model in this paper. Krugman (1999b) presents an elegant simplification of the model in Aghion et al. (2000a).