Chapter 96
Currency Crisis in Developing Countries

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ABSTRACT

Currency crises have been the subject of an extensive economic literature, both theoretically and empiri-cally. The purpose of this chapter is to examine and investigate the causes of currency and associated crises, evaluates the accuracy of empirical models in predicting crises, and review works on measuring the consequences of crises on the real economy. It is a cross sectional survey study and used of secondary data on the causes of currency and associated crises, and challenges in avoiding these crises. The study reveals that reduce output, financial liberalization, capital and current accounts, the real economy and macroeconomic conditions are some of the indicators of currency crisis. A key cost of currency crisis is forgone output. EWS models estimate probabilities of crises to occur. The implications are that currency crisis negatively affects the economy needs to be predicted and managed appropriately.

INTRODUCTION

In order to determine the degree of vulnerability to financial contagion or the severity of crisis, an operational definition of crisis is needed. A cur-rency crisis is defined as speculative pressures in the foreign exchange markets. To identify periods of a currency crisis, constructed crisis indices need to reflect both successful and unsuccessful speculative attacks on domestic currency. The basic idea is that when there are speculative runs on currency, the government has three policy choices. First, it can let the exchange rate depreci-ate. This is successful currency attack since the

monetary authority gives up a pegged exchange rate system after a series of speculative attack. Second, it can intervene in the foreign exchange markets by selling international reserves. Lastly, it can increase interest rates to entice capital in-flows in order to offset the speculative pressures on domestic currency. Some countries may use a combination of these three policy options to absorb speculative pressures.

Girton and Roper (1977) made the first effort in combining exchange rate depreciation with international reserve loss to measure exchange market pressure (EMP). Eichengreen, Rose, and Wyplosz (1994) use this concept to define the

onsets and episodes of currency crises. They construct EMP indices from a weighted average of the depreciation of the nominal exchange rates, the percentage change in international reserves, and the change in interest rate. Then, periods of a currency crisis are identified from a large value of these EMP indices, or when they exceed particular thresholds such as two or three standard deviations above their means. This approach has been commonly used in recent currency crisis studies and generally acknowledged as the best method for currency crisis identification. However, there are a number of cases concerning the specific implementation of indices including the selection of the components of EMP indices, how to weigh the importance of changes in reserves versus changes in exchange rates (and interest rates where included), and identifying of crisis thresholds or the cut-off points. This chapter seeks to examine the causes of currency crisis, forecasting and early warning system of currency crisis and the consequences of currency crisis. The chapter is organized as follows: the next section gives a theoretical review followed by literature review on the subject. The final section presents forecasting of currency crisis, early warning systems and the consequences of currency crisis.

1. BACKGROUND

There is an over-abundance of theoretical models and practical studies which analyse financial crises in general and predicting tools and models of those crises in particular. Studies attempting to identify the causes, origins, and consequences of currency crises (Kaminsky & Reinhart, 1999; Jotzo, 1999; Zhuang, 2002; Bongini, Laeven, & Majnoni, 2002; Sy, 2003; Apoteker & Barthélamy, 2005; Kaminsky, 2006; Bussiere & Fratzscher, 2006; Andreou, 2007; Cipollini & Kapetanios, 2009) mainly focus on macroeconomic factors, vulnerability indicators, probability of crises, and

exchange market pressure (EMP) index, that can predict those crises.

Another list of studies focus on banking crises, their causes, indicators as well as a framework for analyzing the soundness of individual banks, i.e. CAMELS framework (Gupta, 2002; Demirgüç-Kunt et al. 2006; Evans 2008). A third list deals with stock market crashes as a regular phenomenon (Illing & Liu, 2006; Novak & Beirlant, 2006; Coudert & Gex, 2008; Djebbar 2008; Djebbar & Merimet, 2008; Chen, 2009; Wang, Meric, Liu, & Meric, 2009). A final long and expanding list emphasizes other kinds of financial crises such as twin crises, debt crises, liquidity crises, default crises, and rating agencies deficiencies and so forth (Kaminsky & Reinhart, 1999; Lestano & Kuper, 2003; Sy, 2003; Djebbar, 2004; Chen & Chen, 2008; Bleaney, Bougheas, & Skamnelos, 2008; Singh, 2009; Cipollini & Kapotanios, 2009). They try to explain what happens to the financial system, corporate sector, and to the whole economy following a financial crisis.

Other researches try to discover whether it is possible to forecast this crisis or that one, focusing on the capability of EWSs in detecting vulnerabilities. The cost involving currency crisis is revealed through all sectors of the economy. This chapter therefore seeks to review currency crisis from different countries, measurement, theories and the cost of currency crisis.

2. THEORETICAL FRAMEWORK

There are five main different kinds of theoretical models examined in literature that endeavour to describe the mechanism of currency crisis. The first generation of Krugman's (1979) and Salant and Henderson's (1978) models concentred on inconsistentcy between domestic economic conditions. There may be wrong macroeconomic fundamentals and exchange rate commitment that cause a currency crash. Then the second generation models analyse the psychological game between

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