

# The causes of the Asian currency crisis: empirical observations

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## Abstract

This paper examines statistically and systematically the five causes of the Asian currency crisis exposed by the IMF, using a probit model. The paper shows that the two causes of the IMF are persuasive. The Asian currency crisis tends to occur when the ratio of foreign reserve to total debt is low and the progress of financial deregulation without regularity is great. The paper also shows that the general causes found by previous researches never fit the case of this crisis, but that the trade linkage of each country to the first victim country helps explain the causes of this crisis.  
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## 1. Introduction

Some Asian currencies in the wake of the flotation of the Thai baht in 2 July 1997 collapsed, and the currency crisis spread to other countries in the Asian region. To restore these affected countries, the International Monetary Fund (IMF), World Bank (WB), Asian Development Bank (ADB) and the G-7 countries provided the US\$ 117.7 billions of assistance together with the program of economic reform. The IMF (IMF, 1998a, pp. 23–25; IMF, 1998b, pp. 82–106; WB, 1998a, pp. 1–72; ADB, 1998a, pp. 19–37) reviewed the causes of this crisis as follows: (i) current account deficits as a trigger, (ii) large external debt (overdependence on short-term capital flows) and a great progress of financial liberalization without regularity as expressing a fragile financial sector and (iii) maintenance of

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relatively fixed exchange rates and of rather high interest rates as expressing policy weakness.<sup>1</sup> However, the IMF did not test statistically these causes of the crisis.

The purpose of the paper is to examine statistically and systematically the causes of the Asian currency crisis exposed by the IMF, using a probit model.

The recent literatures on currency crises tend to capture the cause of crises and the prediction for the outburst of crises in terms of probability, by using the probit model.<sup>2</sup> This trend of research is in the practical and political requests. Frankel and Rose (1996) and Eichengreen et al. (1995, 1996) used data from 1971 through 1993 to characterize common causes of many currency crises. Crises tend to occur with high probability, depending on a low output growth, a low level of foreign direct investment, a high inflation rate and a high growth of domestic credit.<sup>3</sup> Glick and Rose (1998) examined the Asian currency crisis in 1997 together with the Russian currency crisis in September 1998 and the Brazil currency crisis in January 1999, though they did not examine the Asian crisis in isolation.<sup>4</sup> Therefore, there is naturally no papers related to the statistical test of the causes of the Asian currency crisis exposed by the IMF. In Section 2, we define the Asian currency crises, explain the statistical methodology and describe the variables for the causes (focusing on the causes of (i) and (ii) exposed by the IMF) and the dataset. In Section 3, we test and evaluate the causes of the crisis, compared with the previous researches and alternative causes of the crisis. In Section 4, we draw some conclusions.

## **2. The definition of a currency crisis, statistical methodology and the data**

We define a ‘Asian currency crisis’ as a nominal depreciation of the local currency of at least 20% between June 1997 and January 1998, while there is no such depreciation in the other any 7 months during January 1994 and May 1999.<sup>5</sup> The depreciation should be measured in the change of the monthly nominal bilateral US dollar exchange rate,

<sup>1</sup> The appreciation of the US dollar in 1996–97 had contributed to worsening the export market growth of the countries that adopted the dollar–peg system. Also, the relatively considerably high interest rates caused international investors to underestimate the risks in those countries and urged domestic investors to finance from the foreign country with relatively low interest rates.

<sup>2</sup> A useful survey of the previous literatures is found in Kaminsky et al. (1998).

<sup>3</sup> The recent currency crises are mainly by speculative attacks and so the cause of the crisis is equivalent to conditions under what the speculative attack arise. In addition, since crises appear to pass ‘contagiously’ from one country to another, the cause of the crisis is also the cause of contagion of crises.

<sup>4</sup> They concluded that the causes of the currency crisis are not financial and macroeconomic factors (a growth rate of domestic credit, the current account as a percentage of GDP, and domestic CPI inflation rate) but the strong trade linkages between the first victim and other victim countries. On the other hand, the Ministry of International Trade and Industry (1999, pp. 140–164, Footnotes 5–7) applied Frankel and Rose (1996) model to all currency crisis in 1990s, while the Ministry did not examine the Asian crisis in isolation.

<sup>5</sup> The two periods of June 1997 and January 1998 mean the periods when the currencies of the countries in the deepest crisis depreciate at worst. On the other hand, the currency crisis does not include the episodes that end in a large fall in the value of the currency and the attacks that were successfully warded off by the authorities. Eichengreen et al. (1995, 1996) and Glick and Rose (1998) include such episodes but Frankel and Rose (1996) exclude them. Also, there may be a definition of crisis where a measure is weighted with the depreciation of exchange rate and the fall of foreign reserve.

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