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An analysis of currency crisis in South Korea

Tribhuvan N. Puri[a,*], Chikuang Kuan[b], Kooros Maskooki[c]

[a]*Department of Accounting and Finance, Charlton College of Business, University of Massachusetts, Darthmouth, 285 Old Westport Road, North Darthmouth, MA 02747, USA*

[b]*Department of Finance, School of Business and Management, Temple University, Philadelphia, PA 19122, USA*

[c]*Department of Accounting and Finance, Charlton College of Business, University of Massachusetts, Darthmouth, 285 Old Westport Road, North Darthmouth, MA 02747, USA*

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Abstract

This paper provides empirical evidence on the causes and timing of the 1997 currency crisis in South Korea. A persistent weakness in the economic fundamentals through out much of the pre-crisis period created necessary conditions for the crisis. However, the timing of the currency crisis was determined by a unique combination of an unprecedented increase in default risk faced by the banking system and a decrease in foreign exchange reserves (FXRES) that restricted the ability of the government to bail out. A VAR model identifies two important variables that were crucial in triggering the currency crisis. One is the ratio of dishonored bills (DS) that measures default risk and serves as a proxy for the market value of banks. The other is FXRES that measures the strength of the government's bailout policies. Estimates from a vector autoregressive (VAR) model confirm a strong impact of the lagged changes in the ratio of DS and FXRES on the current changes in the won's value. Immediately before the November crisis, the ratio of DS reached an all-time high while reserves dropped to 1-month imports. These developments significantly contributed to the negative expectations resulting in a massive capital outflow followed by a drastic devaluation of the currency.

Keywords: Asian crisis; Currency crisis; Economic indicators; Default risk; Interest rate exposure; Ratio of dishonored bills; FX reserves; Bailout; Capital flows; Vector auto-regressive models (VAR)

* Corresponding author. Tel.: +1-508-999-8426.
E-mail address: tpuri@umassd.edu (T.N. Puri).

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1. Introduction

The Korean currency crisis in November 1997 took place amidst severe market overreaction and herding, exacerbated by concerns about the economic fundamentals that started showing signs of weakness long before the crisis occurred.[1] This paper presents a systematic analysis into causes and timing of the Korean currency crisis.

The analysis shows that signs of an impending crisis are evident from the deterioration of many key economic fundamentals over an extended period running up to the crisis. In particular, current account worsened and the GDP growth rate fell in the years immediately before the crisis. A highly leveraged Korean corporate sector exhibited low profitability and the stock market lost its value considerably. Moreover, the government's implicit bailout policies, which offered incentives for *moral hazard* and *adverse selection*, encouraged an unprecedented lending boom to finance predominantly low quality investments.[2] As the conglomerates defaulted on their loans, their ability to obtain external financing on their own became seriously limited. Thus the burden fell on the banks, which obtained short-term debt and lent long term to conglomerates and incurred considerable interest rate exposure. The ability of the banks to absorb domestic and external losses was seriously limited due to being undercapitalized—a sure sign of an imminent trouble, especially since the government had limited reserves to rescue the banks. The deterioration of economic fundamentals in 1995–1996 created necessary conditions for a crisis. However, it was the vulnerable banking sector and government's inability to rescue financial and nonfinancial institutions that became directly responsible for triggering the currency crisis in November 1997.

This paper aims at determining the causes and timing of the Korean currency crisis within the framework of a vector autoregressive model (VAR). The empirical evidence suggests that the excessive default risk faced by banks and the government's inability to bail out the troubled institutions played a crucial role in determining when the crisis would occur. In our VAR system, the ratio of dishonored bills (DS), an aggregate measure used by the Bank of Korea (BOK), represents the extent of default risk faced by the Korean banks, and foreign exchange reserve (FXRES) serves as a measure of government's ability to rescue troubled institutions.[3] A higher ratio of DS implies a lower market value of the banks since the banks are required to absorb losses from the private sector instead of maximizing their value. Similarly, reserve levels that are inadequate to finance the current account deficit for a significant period of time reflect poorly on the

[1] Krugman (1994) argues that the deteriorating fundamentals and bad policies created preconditions for the financial and currency crisis in Asia in the years leading to the Asian crisis.

[2] Moral hazard and adverse selection are associated with asymmetric information. Moral hazard occurs when one party (corporations and banks) has incentive and ability to shift the costs to the other party (government). Adverse selection refers to a situation, in which creditors are unable to judge the quality of the creditworthiness of borrowers. Therefore, they pay a price that reflects only average quality. As a result, noncompetitive projects may be selected.

[3] The ratio of dishonored bills is defined as the defaulted bills as a fraction of the total bills issued.