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Dynamic capital mobility, capital-market risk, and contagion: evidence from seven Asian countries

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Abstract

This paper analyzes three important issues related to the Asian financial crisis. First, was capital mobility increasing in this area during the 1990s? Second, was there a sudden increase of capital-market risk in those countries? Finally, is there any evidence of contagion in the Asian capital market? Using monthly time-series data, we find that capital mobility had been rapidly increasing before the crisis; there was a sudden increase in capital-market risk; and there is evidence of contagion in the Asian capital market from Thailand to other Asian countries.

JEL classification: F31; F32

Keywords: Asian crisis; Dynamic capital mobility; Contagion; Uncovered interest parity

1. Introduction

Both the steady globalization of financial markets and the sudden crash in East Asia motivated our inquiry into the role that capital mobility and contagion played in the financial crisis. This paper evaluates three issues that are critically important to a full understanding of the Asian financial crisis. First, was capital mobility increasing before the

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crisis? Second, was there a sudden increase of capital-market risk in those countries? Third, is there evidence of contagion in the Asian capital market? Using monthly time-series data, we develop estimates that can be used to measure dynamic capital mobility and contagion. We find that capital mobility was increasing rapidly before the crisis and that there was a sudden increase in capital-market risk in 1997. We also find evidence of contagion in capital markets from Thailand to other Asian countries.

This paper uses econometric models to estimate dynamic capital mobility, capital-market risk, and contagion in Asian crisis countries. First, we estimate dynamic capital mobility using the deviation from *uncovered* interest parity (UIP). UIP is a much more relevant concept than covered interest parity (CIP), because the countries under investigation are not developed enough to be able to make wide use of sophisticated financial instruments to cover foreign exchange-rate risk. Second, we estimate the capital-market risk of seven Asian countries using a GARCH model of conditional variance. Third, Granger-causality tests reveal evidence of contagion in these countries' capital markets.

This paper is organized as follows. Section 2 estimates the dynamic capital mobility of seven Asian countries. Section 3 provides estimates of increased capital-market risk in these countries and Section 4 provides evidence of contagion in East Asia using a Granger-causality test of time-varying capital-market risk. Section 5 concludes.

2. Dynamic capital mobility

Although there are many studies that examine dynamic capital mobility for developed economies using either a simple interest rate differential or the deviation from UIP, with the exception of Faruqee (1992) little effort has been made to estimate dynamic capital mobility for emerging economies. This paper investigates the dynamic capital mobility of seven Asian countries by estimating deviations from UIP.

2.1. Economic importance of Japan in Pacific Asian countries

Frankel (1992), Frankel and Wei (1994), and Kohsaka (1996) report that Pacific Asia's development has increased regional economic interdependence through trade and capital flows. In particular, Kohsaka (1996) investigated the role of Japan both as a major capital supplier as well as a financial intermediary in Pacific Asia and estimated that Japan's total long-term capital outflow reached its peak of US$ 192 billion in 1989.

Following this line of argument, we show the importance of the Japanese economy in Asia. Tables 1 and 2 show that before the Asian crisis these Asian countries depended more heavily on Japan than on the United States in terms of trade volumes and long-term capital flows. Table 1 shows that four of the five Asian countries traded more with Japan than with the United States over the 1990–1996 period, whereas, e.g. Latin American countries traded much more with the United States than with Japan.

Table 2 compares the currency composition of long-term debt of four Asian countries with five Latin American countries. With the exception of Malaysia in 1991 and 1995, the