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East Asian equity markets, financial crises, and the Japanese currency

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The paper studies the interactions between the US and four East Asian equity markets. The focus is on the change in the information structure/flow between these markets triggered by the 1997 Asian financial crisis. It is shown that the information structure during the crisis period is different from that in the non-crisis periods. While the US market leads the four East Asian markets before, during, and after the crisis, it is Granger-caused by these markets during the financial crisis period but not in the post-crisis sample. Further, in accordance with concerns reported in the market, the Japanese currency is found to affect these equity markets during the crisis period. The Japanese yen effect, however, disappears in the post-crisis sample. The Japanese currency effect is quite robust as it is found from both local currency and US dollar return data and in the presence of Japanese stock returns. *J. Japanese Int. Economies* **21** (1) (2007) 138–152. Department of Economics and Finance, City University of Hong Kong, Hong Kong; Economics Department, University of California, Santa Cruz, CA, USA; School of Economics and Finance, the University of Hong Kong, Hong Kong.

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1. Introduction

The interaction of national equity markets is an active research area. Early studies usually focus on the comovement of national equity indexes; see, for example, Granger and Morgenstern (1970), Grubel and Fadner (1971), and Ripley (1973). Some of these studies are motivated by the benefits of international portfolio diversification (Grubel, 1968; Levy and Sarnat, 1970; Solnik, 1974). In addition to portfolio diversification, the pattern of interactions provides evidence on information flows between national markets and the relative dominance of individual markets. Hamao et al. (1990), for instance, examine the interactions between the US, Japan, and UK stock markets and infer that information flow is unidirectional from New York to the other two markets. The leading role of the US in transmitting information to both developed and emerging markets is documented in numerous studies, which usually consider both returns and volatility interactions.[1] To the extent that information flow and market dominance have implications for market stability and real economic activity, policymakers are interested in the patterns of equity market interactions.

The recurrence of financial crises has spurred a literature on contagion in international markets. Volatility spillover is commonly used to capture the contagion effect (King and Wadhwani, 1990; King et al., 1994).[2] Some recent studies on contagion include Bae et al. (2003) and Forbes and Rigobon (2002). It is noted that the unusual volatility observed during crisis periods can affect the measurement of the intensity of markets interactions and, when is used properly, help identify the transmission mechanism.[3]

During the 1980s the gradual liberalization of financial markets in Asia, including Korea, Taiwan and other emerging markets, has fostered considerable investment interests in the East Asian equity markets. The creation of various mutual funds that have an investment focus on individual East Asian equity markets and on the region is an evidence of the growing popularity of investing in these markets. For international investors, apart from sharing the growth prospect of the region, diversification is another reason for investing in these East Asian equity markets. Even though these East Asian equity markets suffered a major setback during the recent Asian financial crisis, these markets have come back quite strongly and still represent good investment opportunities for international investors.

The current study investigates the interactions between the equity markets in the US and four East Asian economies. Specifically, the study compares the interaction patterns before, during, and after the 1997 Asian financial crisis. Financial crises are characterized by extreme market conditions that may signal a different information transmission mechanism between financial markets during a crisis. Even after the financial crisis, informational linkages between markets can assume a different pattern depending on how the crisis is resolved. For instance, King and Wadhwani (1990) suggest that contagion effects lead to shock transmission during financial crises. On the other hand, Malliaris and Urrutia (1992) assert that there is no lead–lag relationship among the major national equity indexes during the October 1987 crash period.

[1] For example, see Eun and Shim (1989), Ng et al. (1991), Cha and Cheung (1998), and Cheung and Ng (1996). Worthington and Higgs (2004), on the other hand, focus on the transmission among Asian markets.

[2] Hashimoto and Ito (2004) and Ito and Hashimoto (2002) propose an alternative measure of contagion between high frequency exchange rate and stock price data.

[3] See Rigobon (1999, 2003). Ehrmann et al. (2005), for example, use the identification through heteroskedasticity to examine the transmission between markets for money, bond, equity, and foreign exchange within and between the US and the euro area.