International Review of Economics and Finance 22 (2012) 161–172

Contents lists available at SciVerse ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

The comovement between exchange rates and stock prices in the Asian emerging markets

Chien-Hsiu Lin *

Department of Money and Banking, National Chengchi University, Taipei, Taiwan

ARTICLE INFO

Article history:
Received 9 October 2010
Received in revised form 23 September 2011
Accepted 27 September 2011
Available online 14 October 2011

JEL classification:
F31
G01

Keywords:
Comovement
Stock prices
Exchange rates
Asian emerging markets
ARDL model

ABSTRACT

This study investigates the comovement between exchange rates and stock prices in the Asian emerging markets. The sample covers major institutional changes, such as market liberalization and financial crises, so as to examine how the short-term and long-term relations change after such events. The autoregressive distributed lag (ARDL) model proposed by Pesaran et al. (2001) is adopted, which allows us to deal with structural breaks easily, and to handle data that have integrals of different orders. Interest rates and foreign reserves are also included in the analysis to reduce potential omitted variable bias. My empirical results suggest that the comovement between exchange rates and stock prices becomes stronger during crisis periods, consistent with contagion or spillover between asset prices, when compared with tranquil periods. Furthermore, most of the spillovers during crisis periods can be attributed to the channel running from stock price shocks to the exchange rate, suggesting that governments should stimulate economic growth and stock markets to attract capital inflow, thereby preventing a currency crisis. However, the industry causality analysis shows the comovement is not stronger for export-oriented industries for all periods, such as industrials and technology industries, thus implying that comovement between exchange rates and stock prices in the Asian emerging markets is generally driven by capital account balance rather than that of trade.

1. Introduction

The relationship between stock prices and exchange rates has received a considerable amount of attention from: economists, international investors and policy makers. Theoretically, we can summarize that the dynamic relationship between stock prices and exchange rates is viewed in two ways. On the one hand, the "flow-oriented" models of exchange rates, as proposed by Dornbusch and Fischer (1980), focus on the current account balance or the trade balance. The proponents of these models state that changes in exchange rates affect international competitiveness and thus influence real income and output. Moreover, because stock prices can be interpreted as the present value of future cash flows of firms, they react to exchange rate changes. The "stock-oriented" models of exchange rates, as proposed by Branson (1993) and Frankel (1983), on the other hand, posit that innovations in the stock market affect aggregate demand through wealth and liquidity effects, thereby influencing money demand (Gavin, 1989.) For example, a decrease in stock prices causes a reduction in the wealth of domestic investors, which in turn leads to a lower demand for money with ensuing lower interest rates. Subsequently, the lower interest rates discourage capital inflows, ceteris paribus, which causes currency depreciation and therefore, exchange rate dynamics may be affected by stock price movements.

On the empirical front, a number of studies have been conducted to verify the relationship between stock prices and exchange rates, with the use of different methodologies and datasets, but the results have been mixed. Furthermore, most of this research has been

* No. 64, Zhinan Rd., Wenshan District, Taipei, Taiwan. Tel.: +886 2 29393091x88064.
E-mail address: clin@nccu.edu.tw.

1059-0560/$ – see front matter
doi:10.1016/j.iref.2011.09.006

conducted for periods where the stock markets are operating under normal conditions. It would be interesting to verify whether or not transmissions between two asset markets, the foreign exchange market and the equity market, behave differently during crisis periods when compared with tranquil ones. When asset markets are under crisis, returns will be lower and volatility greater as well as the correlation between asset markets tending to be higher (see Climent and Meneu, 2003; Guo, Chen and Huang, 2011). In other words, the implications are that the comovement of asset prices has generally been found to strengthen during the unstable periods.

The goal of this paper is to investigate the comovement between foreign exchange rates and stock prices in the Asian emerging markets. I concentrate on these markets, because Erb et al. (1998) discovered that the 1997 Asian crisis had a widespread impact on currency valuation, with many of the affected countries' currencies severely declining in value during the event. The occurrence of a currency crisis triggered a sharp drop in stock prices in the region and thus, a key feature of the crisis was a simultaneous fall in currency and stock prices. More recently, quantitative easing policy has been used by: the United States, the United Kingdom and the Eurozone, during the financial crisis of 2008–2010, causing new money to flow into the Asian emerging markets, which has led to substantial fluctuations in currency valuation. Given that these markets experienced these currency shocks, with consequent overwhelming negative impacts on their economies and stock markets, this may have affected the perception of investors with respect to the relationship of exchange rates and stock prices, such that they began to put more weight on the linkage between the two.

On the other hand, Asian emerging countries are classified as “managed float” exchange rate regimes, with their central banks intervening in the foreign exchange market so as to influence the exchange rate in favorable directions. When, for instance, there is a currency market shock, such as a sharp depreciation or speculative attack, the domestic monetary authority may raise interest rates in an attempt to reduce capital outflow or sell foreign reserves to avoid further depreciation. Higher interest rates, however, may exert downward pressure on stock prices. Moreover, some of these countries have followed the policy of deliberately keeping their currencies a little under-valued so as to boost exports. Motivated by the intervention by central banks in the foreign exchange market, I incorporate two additional variables, interest rates and foreign reserves, so as to examine fully the relationship between stock prices and exchange rates.

This paper complements the extant empirical literature by focusing on six Asia emerging markets: India, Indonesia, Korea, the Philippines, Taiwan and Thailand.[1] More specifically, the main purpose here is to investigate, fully, the dynamic short-term causal relations and the long-term equilibrium relations between the exchange rates and the stock prices of these six Asian emerging countries for the period from January 1986 to December 2010, covering the foreign exchange and stock market liberalization during the 1990s, as well as the 1997 Asian financial crisis and the 2008 global financial crisis. I particularly pay attention to the changing relationship between exchange rates and stock prices across different subsample periods. The specific aim is to address the following related questions: (1) Do foreign exchange and stock markets become more integrated with during crisis periods when compared with those that are tranquil? (2) Do currency crises spill over or are they contagious to the stock market or vice versa? (3) Does comovement between foreign exchange and stock markets become higher in specific industries, thus reflecting the importance of the industrial factor in the comovement of asset markets? The results of this investigation will also indicate how policy intervention can change the interaction of asset prices.

The rest of this paper is organized as follows. Section 2 gives a brief literature review and the contributions to knowledge of this paper. Section 3 explains the econometric methodology and presents the empirical results. Section 4 contains industry analysis and the last section is the conclusion.

2. Brief literature review and contributions of the study

On the empirical front, a number of studies have examined the relationship between stock prices and exchange rates and most that have considered these markets have been focused on the U.S. (see Jorion, 1990; Bahmani-Oskooee and Sohrabian, 1992; Amihud, 1993; Bartov and Bodar, 1994; Ajayi and Mougoue, 1996, to name a few.) Similar tests have also been performed by Bodnar and Gentry (1993) and Qiao (1996), in relation to the Japanese and Canadian markets and the markets in: Japan, Hong Kong and Singapore. However the findings are not uniform across the various research endeavors. In this regard, Abdalla and Murinde (1997) showed that exchange rate changes lead stock prices in: India, South Korea and Pakistan, but it is the reverse in the Philippines, whereas Ajayi et al. (1998) found no consistent causal relations between the stock and currency markets in emerging economies. Qiao (1996) found the stock price-exchange rate causal nexus to be different across countries. More specifically, the direction of causation is bi-directional for Japan, is unidirectional from foreign exchange to the stock market for Hong Kong, and is non-causal for Singapore. He also noted there is a strong long-run relationship between exchange rates and stock prices in these three countries.

Regarding emerging markets analysis, the 1997 Asian currency crisis motivated several researchers to dwell on the causality between exchange rates and stock prices (see Granger et al., 2000; Pan, Fok and Liu, 2007). Granger et al. (2000) reported that exchange rates influence stock prices in Korea, but it is the opposite in Hong Kong, Malaysia, the Philippines, Singapore, Thailand and Taiwan. They also found no relationship between the two variables in Japan and Indonesia. Pan, Fok and Liu (2007) showed a significant causal relation from exchange rates to stock prices for: Hong Kong, Japan, Malaysia, and Thailand, before the 1997 Asian financial

[1] According to the MSCI list, as of May 2010, MSCI Barra classified the following 8 countries as Asian emerging markets: China, India, Indonesia, Malaysia, the Philippines, South Korea, Taiwan and Thailand. Although China is the largest one of Asian emerging countries, it implements a pegged exchange rate system to the US dollar. Moreover, owing to its great currency fluctuation, Bank Negara Malaysia pegged the ringgit to the US dollar in September 1998, maintaining its 3.80 to the dollar value for almost seven years. Since the objective of this paper is to investigate the comovement between stock prices and exchange rates, I eliminate China and Malaysia from the sample.