Journal of Business Research 69 (2016) 2193–2198

Contents lists available at ScienceDirect

Journal of Business Research

Investigating the dynamic relationships between equity markets and currency markets☆

Jeng-Bau Lin, Shan-Heng Fu *

Department of Business Administration, National Chung Hsing University, 250 Kuo Kuang Rd., Taichung 402, Taiwan, ROC

ARTICLE INFO

Article history:
Received 1 August 2015
Received in revised form 1 October 2015
Accepted 1 November 2015
Available online 24 December 2015

Keywords:
Current account
Capital account
Panel cointegration
Panel DOLS
Panel Granger causality

ABSTRACT

This study investigates the panel dynamic relationships between equity markets and currency markets for the four Asian economies over the period January 2001–December 2013 using a panel Granger-causality approach. Over the past 20 years, Japan, South Korea, Singapore, and Taiwan have integrated themselves together with a high degree of globalization in economic and financial relations. Evidences support the flow-oriented hypothesis of exchange rates that indicates that exchange rates influence stock prices positively via the current account for Japan, and document the stock-oriented hypothesis of exchange rates that states that exchange rates affect stock prices negatively via the capital account for the other three countries. The findings for the short-run and long-run panel Granger-causality tests reveal that bi-directional causality exists between the two variables. The empirical results provide important policy implications for the monetary authorities and the mutual fund managers in the equity markets.

1. Introduction

The significance of equity market–currency market nexus in the Asian emerging economies has been increasing since the Asian financial crisis of 1997. Particularly, the financial events occurring in one country due to the outbreak of global financial tsunami in mid-September, 2008, have seriously affected the financial market stability of other countries. Since then, most of these emerging economies have applied a rapid reform in the financial markets to promote themselves toward globalization, thus accelerating an integration of the markets. Afterwards, international capital flows among the currency markets in this region may have influenced the equity market performance. As a result, the financial securities have become more attractive but with a higher risk. The interesting topic on the linkage among the financial markets in this regional economy has thus attracted scholars' attention.

In recent decades, several academic studies on financial asset prices mainly concentrate on the relationship between exchange rates and stock prices. Regarding the theoretical aspect, two models can account for this relationship. Dornbusch and Fischer (1980) develop the flow-oriented hypothesis of exchange rates focusing on the current account of the balance of payments, which hypothesizes that changes in exchange rates influence real output and stock prices positively via international competitiveness and trade balance. In contrast, Branson (1983) and Frankel (1983) present the stock-oriented hypothesis of exchange rates concentrating on the capital account, which proposes that exchange rates affect stock prices negatively via capital mobility.

Regarding the empirical aspect, prior research examines the relationship between the two variables in the financial markets. On the one hand, Aggarwal (1981), Chiang et al. (2000), Wu (2000), Fang (2002), Wongbangpo and Sharma (2002), and Phylaktis and Ravazzolo (2005) find the relevant evidence supporting the flow-oriented hypothesis of exchange rates. On the other hand, the empirical works by Soenen and Hennigar (1988), Kwona and Shinb (1999), Maysami and Koh (2000), Ibrahim and Aziz (2003), Kim (2003), Tai (2007), Tsai (2012), and Liang, Lin, and Hsu (2013) confirm the stock-oriented hypothesis of exchange rates. However, some other studies focus on this issue on a per country basis, although the eventual results are ambiguous. For instance, recent works such as Bahmani-Oskooee and Sohrabian (1992), Yu (1997), Abdalla and Murinde (1997), Ajayi et al. (1998), Granger, Huang, and Yang (2000), Nieh and Lee (2001), Yau and Nieh (2006), Yutaka (2006), and Pan, Fok, and Liu (2007) on surveying the relationship between the two variables using the Granger-causality in Asian emerging economies have not yet reached consensus. More importantly, in studying different issues, Kao and Chiang (2000) and Lee, Lee, and Chiu (2012) indicate that previous studies using the traditional methodologies ignore the country-heterogeneity problem, which produces homogeneous bias and the potential endogeneity problem, thus rendering the estimated coefficients inefficient. The use of Pedroni's (1999, 2004) heterogeneous panel cointegration methods in this study can effectively solve the two econometric problems.

☆ The authors thank the guest editors, Chih-Wen Wu, National Chung Hsing University, and Domingo Ribeiro-Soriano, University of Valencia, and the anonymous reviewers for their careful reading and suggestions.

* Corresponding author.
E-mail addresses: jblin@dragon.nchu.edu.tw (J.-B. Lin), shfu@cyut.edu.tw (S.-H. Fu).

http://dx.doi.org/10.1016/j.jbusres.2015.12.029
0148-2963/

Two questions arise: are the interrelated dynamics between these two variables present — particularly in the short run for an individual equity markets and in the long run — for the whole region in the Asian economies? If so, through what channels do exchange rates affect stock prices? This study deeply investigates whether a close linkage among the Asian financial markets has stimulated interactive relationships between the two variables via the current or capital account changes.

Following these developments, the aim of this study is to investigate the dynamic relationship between exchange rates in currency markets and stock prices in equity markets by employing the dynamic ordinary least squares (DOLS) and the panel Granger-causality tests for four Asian economies including Japan, South Korea, Singapore, and Taiwan. Two practical aspects lead to examining this relationship for these four countries. On the one hand, relevant industries (automobiles, electronics, and other high-techs etc.) and international trade for these countries have competing and cooperating relationships. These relationships may have favored interrelation of the equity markets among these economies. On the other hand, as Liu and Graham (1998), Feenstra, et al. (1999), Maysami and Koh (2000), and Lee (2002) indicate, in pursuit of higher returns on selected portfolio, mutual fund managers in this region have long triggered the strategy of asset allocation, which has led to the rapid capital mobility across these countries. According to the surveys in Durnev, Li, Morck, and Yeung (2003), Nielsen and Fegley (2011), and Sheil (2011), because these Asian countries have highly integrated themselves together based on a high degree of globalization in economic and financial relations, a shock occurring in one country of this region transmits to other countries. Related evidence shows that, since the late 1990s, Japan has liquidity risk in its equity market when falling into a liquidity trap. Part of international funds fled Japan and shifted quickly to some Asian equity markets. The Abe Cabinet recent announcement of its expansionary monetary policy has called some oversea funds back to the market. Seemingly, international institutional investors are beginning to greatly emphasize a growing importance of economic developments for these countries, thus injecting a great lot of money into the equity markets since the millennium.

Unlike previous research in empirical methodologies, this study uses panel methods to test for unit roots, cointegration, and short-run and long-run Granger causality relationships between the two variables. As Liang et al. (2013) indicate, panel methods have some advantages: bigger sample size and power of test, allowing for heterogeneity among countries, and checking for robustness of the empirical results by contrasting the panel short-run and long-run causality results with those from the individual estimation using a vector correction model (VECM) for each country.

The structure of the study is as follows. Section 2 presents the literature review. Section 3 explains the data source and description. Section 4 describes the method. Section 5 presents the empirical results and discussion in detail. Section 6 concludes with some policy suggestions.

2. Literature review

First, for the flow-oriented hypothesis of exchange rates, some studies find relevant evidence that plausibly explains how currency depreciation affects exporting trades and thus the sustainable economic growth via the current account in several developed and emerging economies with export-oriented sectors. Aggarwal (1981) argues that the connection between the currency and stock markets results from the influence of international trading. A change in exchange rate not only directly influences the stock prices of multinational and export oriented firms but also indirectly affects domestic firms. Chiang et al. (2000) find that Japanese and US stock returns positively affect the Asian stock returns (including Taiwan, Hong Kong, South Korea, Singapore, Malaysia, Philippines, Indonesia, and Thailand), thus reporting a positive relationship between the national stock returns and the national currency values. Fang (2002) indicates that under conditions of unstable stock and foreign exchange markets, depreciation (appreciation) of domestic currency not only decreases (increases) the mean stock return but also increases (decreases) stock market volatility in Hong Kong, South Korea, Singapore, Taiwan, and Thailand. Phylaktis and Ravazzolo (2005) point out a positive association between the Six Pacific Basin countries' (Hong Kong, Indonesia, Malaysia, Singapore, Thailand, and Philippines) stock markets and real exchange rate over the period January 1990 to December 1998. Wongbangpo and Sharma (2002) find that the exchange rate variable has a negative relationship with stock prices in Singapore. Wu (2000) uses an error correction model to explore the asymmetric effects of four different exchange rates on Singapore stock prices and the effects' sensitivity to economic instability. The author finds that the Singapore currency appreciation both against the U.S. dollar and Malaysian *ringgit* leads to a long-run increase in stock prices for most selected periods of the 1990s.

Previous empirical studies support the stock-oriented hypothesis of exchange rates, indicating that the capital inflows on the capital accounts raising the currency values, and hence increasing the momentum of purchasing shares, influence the stock prices negatively. Using data from 1980 to 1986, Soenen and Hennigar (1988) find that the influence of exchange rate on U.S. stock prices is negative. Kwona and Shinb (1999) show that the cointegration test and the vector error correction model illustrate cointegration of stock price indices with the production index, exchange rate, trade balance, and money supply, and the negative effect of exchange rate on stock price indices. Maysami and Koh (2000) show that inflation, money supply growth, changes in short-term and long-term interest rates, and variations in exchange rate form a negative cointegrating relation with changes in Singapore's stock market index. Ibrahim and Aziz (2003) use monthly data of stock prices, exchange rates, and money supply in Malaysia from 1977 to 1998, and conclude that the relation between stock and foreign exchange markets is negative; thus, when domestic currency depreciates, the stock prices will decrease. Kim (2003) finds a negative correlation between stock prices and exchange rates in the long-run and short-run analyses by adopting the multivariate cointegration and error correction model in the US stock and foreign exchange markets from 1974 to 1998. As for the contagion effects, Tai (2007) finds a strong positive effect of return shocks originating from the domestic stock market to its foreign exchange market during the 1997 Asian crisis, for the Asian emerging stock markets (India, Korea, Malaysia, Philippines, Taiwan, and Thailand). This dynamic relationship between stock market and foreign exchange market is consistent with stock-oriented exchange rate models. Tsai (2012) indicates that the negative relation between stock and foreign exchange markets is more obvious when exchange rates are extremely high or low by adopting the quantile regression model. Using panel DOLS methodologies, Liang et al. (2013) document that exchange rates negatively affect stock prices via capital mobility, supporting the stock-oriented hypothesis of exchange rates.

Nevertheless, on surveying the relationship between the two variables using the Granger-causality in the Asian emerging economies on a per country basis, the empirical results of some other studies differ. Bahmani-Oskooee and Sohrabian (1992) find a bidirectional causality between stock prices measured by S&P 500 index and the effective exchange rate of the dollar, at least in the short-run. Yet, the cointegration analysis reveals no long-run relationship between two variables. Using daily data for a period of 1983–94, Yu (1997) demonstrates the bidirectional relationship in Tokyo, and no causation in the Singapore markets. Furthermore, the author finds that changes in exchange rate Granger cause changes in stock prices. Abdalla and Murinde (1997) find a unidirectional causality from exchange rates to stock prices in India, Korea, and Pakistan but not in the Philippines. Ajayi et al. (1998) indicate bidirectional causality in Taiwan, unidirectional causality from stock prices to exchange rates in Indonesia and the Philippines, and from exchange rates to stock prices in Korea, but not for any causality in Hong