Cross-Market Causal Linkages of ASEAN-5

Swee-Ling Oh and Evan Lau***

This study seeks to understand the nature of international stock markets and the extent to which the ASEAN-5 markets causally relate with each other before and after the 1997-98 turmoil. The data series of the Composite Index (CI) in logarithm form and the volatility series of GARCH were adopted for this study. The econometric approach of Toda and Yamamoto (1995) disclosed separate findings for both the series. Generally, markets deemed to be more causally related in the post-crisis period, than prior to it. Conclusively, lesser opportunities for international portfolio diversification were made available within the regional scope as markets possess long-run predictability measures.

Introduction

Globalization and liberalization of world economies impact global equity markets. With that, the stock markets develop a great sense of underlying economic interest as more questions arise based on the crucial means of investment portfolio for investors and economic fundamentals.[1] Hereby, instead of placing stock investments in one market, investors can choose to diversify their investment. By doing so, 'mean-variance efficient' asset holdings will be made beneficial, as it reduces the risk of portfolio investment without actually lowering the expected return.[2]

In the context of risk-acquisition and expected returns, Wheatley (1988) entailed that even without market integration, assets being diversified internationally could possibly be 'mean-variance efficient'. Nevertheless, underlying the cornerstone of cross-market linkages and market integration processes, several implications can be derived. First, high correlation

* Economist, TA Securities Berhad, 30th Floor, Menara TA One, 22 Jalan P Ramlee, 50250 Kuala Lumpur, Malaysia. E-mail: pat_sling@yahoo.com; patriciaoh@ta.com.my

** Senior Lecturer, Department of Economics, Faculty of Economics and Business, Universiti Malaysia Sarawak (UNIMAS), 94300 Kota Samarahan, Sarawak, Malaysia; and is the corresponding author. E-mail: lphevan@feb.unimas.my

[1] The term 'stock market' also refers to 'equity market'. It is an entity in the business of bringing buyers and sellers of securities together, which adopts a mechanism that enables the trading of corporation stocks. Both terms are used interchangeably with other terms, such as 'market'.

[2] The term 'mean-variance efficient' simply means 'higher risk, high returns', vice versa is 'lower risk, lower returns'. One will not be able to expect that portfolios attribute both higher expected returns, while assuming lower risk. Should there be higher expected returns, the risk will be higher, and if lower returns are expected, the risk will be lower.

© 2009 IUP. All Rights Reserved.

between market(s) during volatile periods causes an increase in market co-movement constituting the effects of contagion (Forbes and Rigobon, 1999). Second, market integration constitutes market predictability measures while diminishing possibility for investment returns through international portfolio diversifications derives (Levy and Sarnat, 1970; Forbes, 1993; Masih and Masih, 1997; and Jang and Sul, 2002).

Now, as economies move towards liberalization, there is a shift from market independence towards market integration. Strong emphasis has been placed on stock market interdependence, market integration and interaction amongst international and regional stock markets (Lessard, 1973; Pentecost and Holmes, 1995; Tang and Mak, 1995; Masih and Masih, 1997; Wang *et al.*, 2003; and Coelho *et al.*, 2007). Not to mention, the stock market crash of 1987 and the economic turmoil in 1997 that brought forth tremendous impact on the markets. The extent to which the financial crisis may affect the relationship within these markets had also been provoking (Longin and Solnik, 2001; and Yang *et al.*, 2003).

Indeed, there are important linkages between the real economy and both the financial and capital market systems. Evidences indicate that the trade balance had worsened due to market liberalization. In other words, the additional investments in equity markets are financed mostly by foreign capital. While attributing causal chain between the real economy and the financial system is rather complex, evidences persistently point to the crucial role of capital markets in economic growth prospect of particularly the emerging and less developed markets (Bekaert and Harvey, 2002).

Although market liberalization does result in market integration (or vice versa), it however, has little implications for the causal relational impacts of cross-market linkages. There have been significant studies of stock market linkages conducted on the sample series of the Composite Index (CI) (see Lessard, 1973; Masih and Masih, 1997; Seabra, 2001; Azman-Saini *et al.*, 2002; Wang *et al.*, 2003; and Coelho *et al.*, 2007). However, these studies lack empirical examinations upon the volatility series. The volatility of markets respond to both to both positive and negative shocks differently (Brooks, 2007).

This study serves to fill the gap to uncover the revelation of cross-market causal linkages within the five core members of the Association of Southeast Asian Nations (ASEAN-5) borders. The ASEAN-5 includes Jakarta Stock Exchange (JSX), Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange (KLSE), Philippines Stock Exchange (PSE), Singapore Exchange (SGX) and Stock Exchange of Thailand (SET). Through the adoption of several methodological approaches, this study differs from previous literatures and draws attention to the causal relational comparisons based on: the examination of the CI series and the empirical analysis upon the CI's volatility series.

The rest of the paper is structured as follows: First, the methodological approach and data descriptions are given. Then, the findings and empirical results are presented followed by conclusion.