CHAPTER 1

INTRODUCTION

In this chapter, we shall discuss the issues that researches on stock market linkages would normally focus on and the implications of the findings on portfolio diversification. A brief chronological development of the methodologies used on the study of stock market interdependence will also be included. Since this study is related to the 1997 Asian financial crisis, a brief account on the main chronological events leading to it would certainly help to explain, in retrospect, the behaviour of the ASEAN markets over the sample period that will be used in this study. Lastly, the rationale of this study will be put forward to support the reasons for conducting this study and the specific objectives are then spelled out.

1.1 Stock Market Linkages and Portfolio Diversification

Innumerable studies have already been conducted to investigate the presence of short-run and long-run relationships among geographically linked group of emerging stock markets, such as those in the Asian or Latin American countries. The majority of these studies on market interdependence can be classified broadly into two categories. The first category examines how integrated a specific group of stock markets are. The second category extends beyond this by investigating possible changes in stock market relationships. The latter

includes studies that examine the pattern of changes in the equity market inter-relationships over time, especially over crisis periods.

In both categories of studies, some of the frequently asked questions are: In a specified period of time, what is the extent and manner of long-term and short-term stock index interaction among the equity markets? Are the markets showing signs of convergence during any of the sub-period? What is the impact of a major financial crisis on the stock market integration? Are the stock market fluctuations due mainly to regional or contagion effects? Do the developed markets, like that of the U.S. and Japan, play any permanent or transitory role in driving the equilibrium relations across these markets? Does one particular stock market lead another? How much of the movements in one market can be explained by innovations in another?

Such interest in market interdependence was initially sparked by the stock market crash in October 1987. A decade later, the financial crisis in the Asian region further increased the intensity of interest in this topic. For the investors who are seeking for diversification opportunities in the emerging stock markets, the existence of linkages among these markets would have serious implications. When markets share a single common stochastic trend, it means that they move together. As a result, any one market would be a representative of the behavior of that group of markets. This would effectively amount to a reduced scope for portfolio diversification possibilities. Furthermore, Fernandez and Sosvilla (2000) also highlighted the possibility that market co-movements can lead to market contagion as investors incorporate in their trading decisions, information about

price changes in other markets. This carries the risk of errors in one market being transmitted to elsewhere. Besides information availability, other factors like accounting standards, and political and liquidity risk may also affect portfolio diversification decision (Phylaktis and Ravazzolo, 2002).

1.2 Chronological Development of Methodologies

The chronological development of methodologies used in the researches on relationships among stock indices is an interesting aspect to look into. Early researches primarily focused on the return correlations among different markets (Agmon, 1972; Panton, 1976). However, Kasa (1992) contended that contemporaneous correlations might convey misconstrued information about relationships among markets. In later researches, more sophisticated analyses are used. For instance, Eun and Shim (1989) used simulated response functions of an estimated VAR system of nine major world markets to find evidence of cross-country interactions as well as to show that the U.S. market plays an influential role in the co-movements of these stock indices. Chowdhury (1994) applied both the analyses of the impulse response and the variance decomposition functions to examine the extent of relationships among the stock indices of the Asian Newly Industralised Economies (NIEs), Japan and the U.S. By modeling the stock returns using the ARCH methodology, Chan, et al. (1992) and Engel and Susmel (1993) examined linkages and spillovers in the stock markets. However, modeling of returns could result in loss of essential information on possible common trends if the price indices are co-integrated

(Baillie and Bollerslev, 1989). To overcome this problem, most of the recently conducted researches (which will be discussed later in this paper) employ the cointegration techniques.

1.3 Asian Financial Crisis

Since this study encompasses the 1997 Asian financial crisis, it is necessary to make a brief note on the main chronological events pertaining to this crisis. The abandonment of the exchange rate peg by the Thai government on 2 July 1997, heralded by a sharp fall of the Thai Composite Index in the previous month, is marked infamously as the starting point of the crisis. This move caused the Thai Baht to immediately plunge as much as 15% against the U.S. dollar. What ensued was a pandemonium of currency devaluation panic that spread rapidly to the other Southeast Asian countries, particularly, Malaysia, Indonesia and the Philippines. Within the two-month period of July and August 1997, the Philippines peso, the Indonesian rupiah and the Malaysian ringgit were floated, in that order.

This turmoil gradually pervaded the north Asian financial markets as well as many emerging markets in other regions. By late October 1997, the Hong Kong equity market saw a 25% loss of its value and this was closely followed by price declines in the emerging Latin-American markets. On 17 November 1997, South Korea abandoned the peg of the won to the U.S. dollar. Eventually, Thailand, Indonesia and South Korea turned to IMF for a bailout. The rapidity and

pervasiveness of the financial turmoil was least expected. In a period of less than a year, its effect was felt, to varying degrees, by practically all the countries in the Asian region.

1.4 Rationale of Study

Historically, the countries of South East Asia were badly divided by ideological conflict and war. A great deal of their scarce resources was channeled into combating internal insurgencies and economic hardship, and they had to depend on external powers for security and aid. The Association of South East Asian Nations (ASEAN) was then founded in 1967 with the primary purpose of providing a framework and mechanism for regional co-operation to achieve peace, stability, progress and prosperity. The five original members of ASEAN were Malaysia, Singapore, Indonesia, Thailand and the Philippines (which will be referred to as ASEAN-5 in this study). Today, ASEAN has come a long way – not only has it achieved most of what it had initially set out to do, it has also recently enlarged its membership to include an additional five other South East Asian countries.

Thus, the ASEAN-5 stock markets would make an interesting study for the following reasons:

- The countries are historically linked through the ideologies formulated in the ASEAN Declaration.
- Close geographical proximity.

- Mutual trading partners.
- Some common cultural and historical backgrounds.
- The 1997 Asian financial crisis has, to varying degrees, affected the economies of these countries. This study will investigate the changing patterns of the equity market linkages in these ASEAN-5 countries over the financial crisis period.
- A more up-to-date knowledge about the degree of linkage between these markets would be useful to the international fund managers who are seeking for portfolio diversification opportunities.

To date, most of the researches that analyze interdependence of stock market indices in the Asia-Pacific region have included the subset of these five ASEAN equity markets in their analyses. However, there is not much literature that focuses exclusively on the changing patterns of the market interactions of these ASEAN-5 countries through the three periods prior to, during and after the Asian financial crisis. Hence, this study is conducted in the hope to extend the present literature on market integration.

1.5 Objectives of Study

The primary objective of this study is to examine the stock market linkages of the ASEAN-5 countries over the last decade. Specifically, we wish to examine the following:

1. Contemporaneous relationship between any two of these five equity markets using simple correlation analysis,
2. Long-run co-movement of these stock markets through cointegration techniques and vector error correction models,
3. Granger-causal relationship between each pair of stock markets,
4. The relative influence of the random innovations in each equity market on the variation of its returns and on the returns of the other four markets through variance decomposition,
5. The sensitivity of each market to movements in the other ASEAN markets through the impulse response analysis.

The investigation will be repeated separately for each of the three periods identified for this study. In this way, we can examine the changing patterns of both short-run and long-run interdependence among these ASEAN-5 markets.

1.6 Organization of Report

The remainder of this report is organized as follows. Chapter 2 reviews and compares related studies conducted so far. It will include a brief summary of the methodologies employed, the sample periods used as well as the results obtained. Chapter 3 discusses the data and the methodologies that will be used in this study. In Chapter 4, the empirical results will be presented and inferences and implications will be drawn. In Chapter 5, we conclude the findings, discuss the limitations and suggest future researches.