

Chapter 1

Introduction

1.1 Background Information

In the Association of South East Asian Nations (ASEAN), stock markets have operated in six countries only such as Singapore, Indonesia, Malaysia, Philippines, Thailand and Vietnam, of which Singapore stock market is categorized as an advanced market, while the remaining is grouped into emerging stock markets. Although, Indonesia, Philippines, Malaysia and Thailand have experienced long periods for stock market evolution, the Vietnam stock market is young. It was founded in the context of its country economic renovation towards a market oriented economy. Generally, the economies in ASEAN are very dynamic and its economic growth has been very impressive for long period that has been ranked the top in the world in two recent decades.

Although being severely affected by the 1997 Asian economic crisis, which lasted until 2001, ASEAN emerging economies have recovered and taken off spectacularly (Figure 1.1). Total gross domestic products (GDP) of the emerging economies have increased rapidly at high growth rates for a long period, particularly the case of Vietnam, a new emerging economy, which has maintained the sustainable high growth rates (Table 1.1). However under effect of the Global economic crisis, their economic growths had slowdowns in 2008 (Figure 1.2).

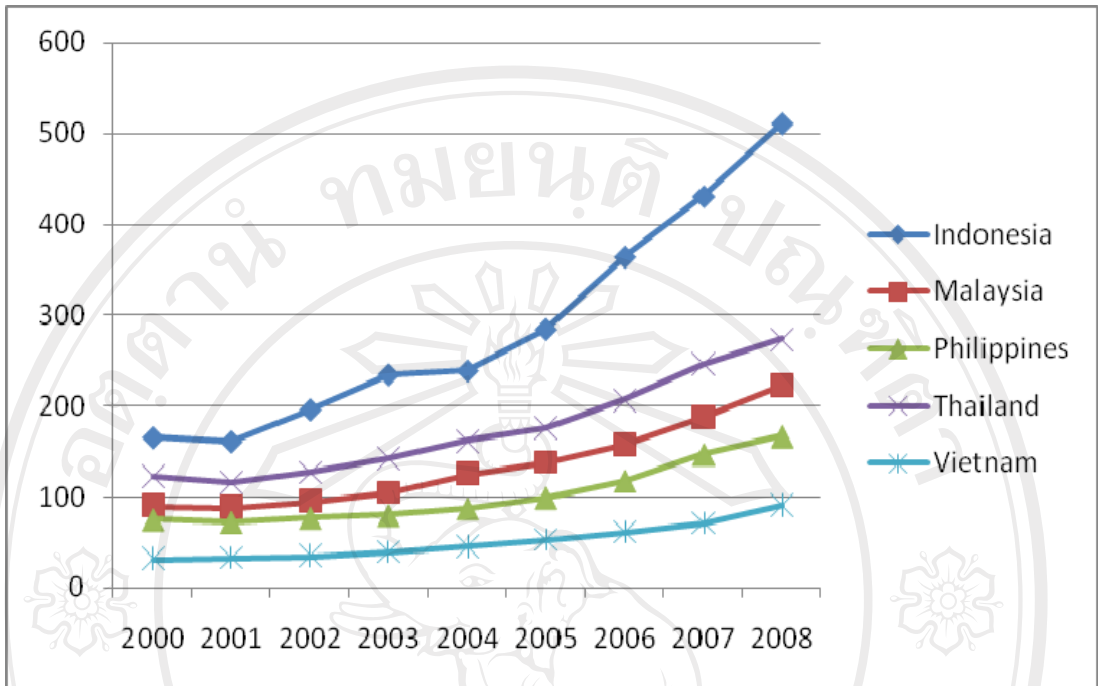


Figure 1.1: Annual GDP Growth Trend in ASEAN Emerging Economies at Current Price
(in US\$ billion)

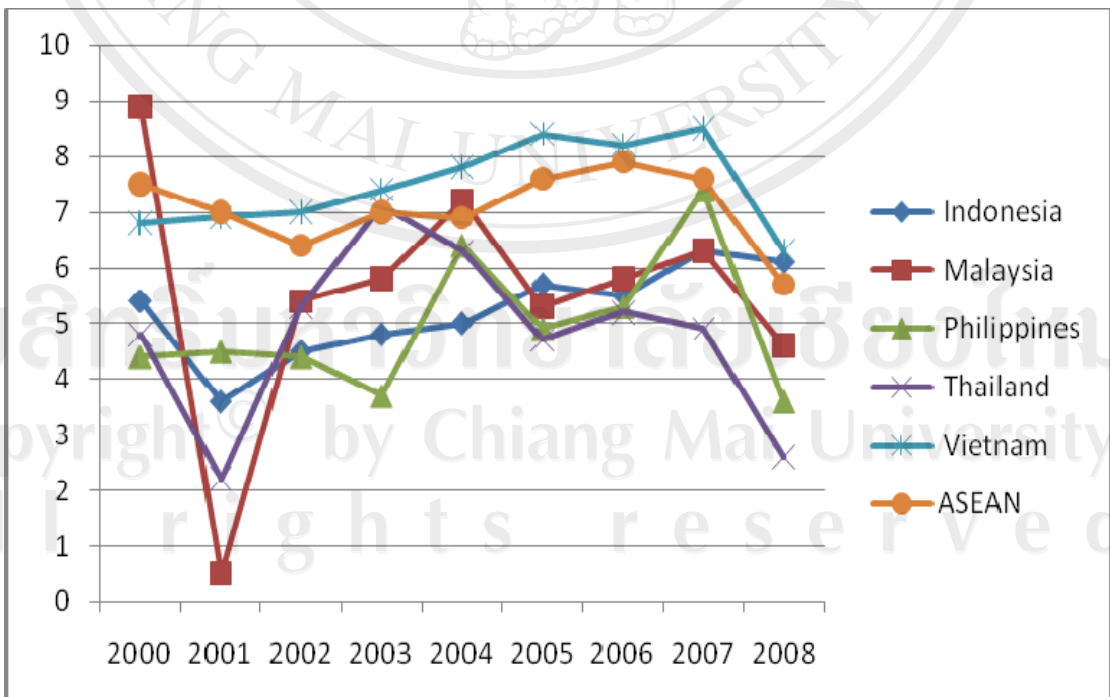


Figure 1.2: Annual Real GDP Growth Rate in ASEAN Emerging Countries

Table 1.1: Economic Growths in ASEAN Emerging Economies, 2000-2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
GDP at current market price (billion US\$)									
Indonesia	165.55	161.08	196.30	235.00	239.13	284.79	364.37	430.85	511.17
Malaysia	90.32	88.00	95.27	103.99	124.75	137.97	157.24	187.06	222.67
Philippines	74.84	71.99	76.65	79.58	86.91	98.76	117.46	146.84	166.77
Thailand	122.96	115.60	126.88	142.86	161.39	176.21	206.65	246.06	273.67
Vietnam	31.32	32.65	35.07	39.54	45.54	52.95	60.97	70.97	90.70
Real GDP growth (%)									
Indonesia	5.4	3.6	4.5	4.8	5.0	5.7	5.5	6.3	6.1
Malaysia	8.9	0.5	5.4	5.8	7.2	5.3	5.8	6.3	4.6
Philippines	4.4	4.5	4.4	3.7	6.4	4.9	5.3	7.4	3.6
Thailand	4.8	2.2	5.3	7.1	6.3	4.7	5.2	4.9	2.6
Vietnam	6.8	6.9	7.0	7.4	7.8	8.4	8.2	8.5	6.3
ASEAN	7.5	7.0	6.4	7.0	6.9	7.6	7.9	7.6	5.7

Source: ASEAN Statistical Yearbook 2008

Among the five ASEAN emerging stock markets, Malaysia stock market is largest in terms of market capitalization, followed by Indonesia, Thailand, Philippines and Vietnam. In 2007, ASEAN emerging stock markets marked a blossoming. As of 31 December 2007, the Malaysia stock exchange had 986 listed companies with a combined market capitalization of US\$325 billion, followed by the Indonesia stock

exchange (383 listed companies and the capitalization of US\$212 billion), the Thailand stock exchange (523 listed companies and the capitalization of US\$197.1 billion), the Philippine stock exchange (244 listed companies and the capitalization of US\$103 billion), and the Vietnam stock exchange (247 listed companies and the capitalization of US\$30.4 billion). In recent years, under the effects of the global economic downturn and the global stock market declines, ASEAN emerging stock markets have also been suffered from the global crisis, especially in 2008 (see Table 3.1 in Chapter 3). In addition, weak US dollar and challenges in high inflation lead to the attraction of gold as a new investment channel for hedging risks, which could be the reasons causing high volatility in ASEAN emerging stock markets.

Indeed, ASEAN emerging stock markets date back to different periods of development. In Malaysia, the stock exchange of Malaysia was officially formed in 1964 with the secession of Singapore from Malaysia. In 1973, the stock exchange of Malaysia and Singapore was separated into the Kuala Lumpur Stock Exchange Bhd (KLSEB) and the Stock Exchange of Singapore (SES) after terminating the currency interchangeability between Malaysia and Singapore. However, Malaysian companies continued to be listed on SES and vice-versa. In 1994, KLSEB was renamed Kuala Lumpur Stock Exchange (KLSE). In 2004, KLSE became a demutualised exchange and was continuously renamed the Bursa Malaysia.

In Thailand, the Stock Exchange of Thailand (SET) is located in Bangkok, and the indexes of the stock exchange consist of SET, SET50 and SET100. Legislation to establish the Securities Exchange of Thailand (SET) was formally enacted in 1974 and the SET began trading on April 30, 1975. Additionally, on January 1, 1991 the

Securities Exchange of Thailand officially changed its name to the Stock Exchange of Thailand (SET).

In the Philippines, the Philippines Stock Exchange (PSE) has operated since 1927. The main index is the PSE composite index. The PSE was formed after merging two stock exchanges *i.e.*, the Manila Stock Exchange (MSE), established on August 8, 1927 and the Makati Stock Exchange (MkSE), founded on May 27, 1963. Although both the MSE and the MkSE traded the same stocks of the same companies, the bourses were separate stock exchanges until December 23, 1992, when both exchanges merged into the current PSE.

In Indonesia, the Indonesia Stock Exchange (IDX) was formerly known as the Jakarta Stock Exchange (JKSE) and it was renamed in 2007, after merging with Surabaya stock exchange. It dates back in 1912 and was originally opened under the Dutch colonial government, and it was reopened in 1977 after several closures during World Wars I and II. After being reopened in 1977, the Indonesia stock market had grown rapidly, highlighted by a major bull run in 1990.

In Vietnam, the Vietnam stock exchange, formally known as the Securities Trading Centre, located in Ho Chi Minh city (HoSTC). The public trading of shares was started offering in Ho Chi Minh city on July 28, 2000 with a general index, called the VN-index (VNI). On August 8, 2007, the center was renamed Ho Chi Minh Stock Exchange (HOSE). This is a major stock exchange in Vietnam, along with the second trading center, namely the Hanoi Securities Trading Center (HaSTC) that was later on set up in Hanoi in March 2005 for handling auctions, and trading of stocks and bonds. Then, the HaSTC was renamed the Hanoi Stock Exchange (HNX) in January 2009.

1.2 Statement of the Problem and the Significance of the Study

Under globalization, effects of changes are rapidly transmitted among the financial markets, so the issues such as linkages, spillovers, conditional correlations and covariances between the markets, which reflect their possible interdependencies over time, are concerned by researchers, investors and managers. In fact, there have been a number of key researches, which examined market interdependencies and volatility transmission mechanism among major developed stock markets. For instance, Hamao *et al.* (1990), Susmel and Engle (1994), and Koutmos and Booth (1995) focused on New York, London, and Tokyo; Theodossiou and Lee (1993) examined interdependencies between the US, Japan, Canada, and Germany; Koutmos (1996) investigated the dynamic interdependence of major European stock markets.

Meanwhile, few other works on this issue can be found between emerging and developed stock markets over the world, for example in Asia-Pacific (Liu and Pan, 1997), in Asia (In *et al.*, 2001), in Southeast Asia (So *et al.*, 1997) and in Latin America (Christofi. and Pericli, 1999). Likewise, there have been a number of studies that focused on cross-border volatility spillover in stock markets (Hamao *et al.*, 1990; King and Wadhvani, 1990; Karolyi, 1995; Longin and Solnik, 1995; Koutmos and Booth, 1995), in foreign exchange markets (Bollerslev, 1990; Baillie *et al.*, 1993; Kearney and Patton, 2000; Hong, 2001), and in interest rate markets (Tse and Booth, 1996). Nevertheless, these researches tend to focus on some specific financial markets.

Regarding ASEAN emerging stock markets, previous studies usually engage with the developed markets. Under the context of international integration and market

liberalization, many organizations and individuals are investing in ASEAN emerging stock markets. These markets share similar characteristics *i.e.*, being neighboring and developing countries, and could be grouped as emerging stock markets. These markets may have similar groups of investors, in terms of linkages and volatility contagion, and these markets are more than likely to influence each other. For instance, they may respond to the same shock, and volatility in one market may be easily transmitted to other markets as a change in the volatility of a market tends to cause changes in the volatility of others.

Moreover, due to a long period of high growth in ASEAN emerging economies together with effects of the global financial crisis, challenges in high inflation are concerned not only in ASEAN but also in all over the world. Therefore, gold could be an item that investors in ASEAN emerging stock markets may be interested for their portfolio diversification to hedge risks.

However, very little information has been known about the issues, for instance how gold affects ASEAN emerging stock markets, how these markets are interlinked, and how volatilities transmit across these markets. Especially, as a study, the Vietnam stock market is first time included in the group of ASEAN emerging stock markets.

As of the interests, this dissertation is to bring a significant contribution to the science and practice.

The empirical analyses of linkages, volatility behaviors in the sample markets, gold effects on the sample stock markets, volatility transmissions and conditional correlations among them are useful for investors in making decision in terms of hedging risks, so that they can reduce the risks by making efficient portfolios.

Moreover, this study provides with knowledge of the interdependencies among the sample markets, so that they can cooperate in developing the regional markets.

1.3 Objectives of the Study

- (1) to examine the possible linkages and cointegrations among the international gold and five ASEAN emerging stock markets (Indonesia, Malaysia, Philippines, Thailand and Vietnam).
- (2) to focus on an empirical analysis of volatility behaviors of the five emerging stock markets in ASEAN, incorporating with effects from the international gold market.
- (3) to examine the possible shock and volatility spillover effects across international gold and ASEAN emerging stock markets, and test for asymmetric effects of positive and negative shocks with the same magnitude. Two multivariate volatility models, namely the vector autoregressive moving average GARCH (VARMA-GARCH) model, and VARMA asymmetric GARCH (VARMA-AGARCH) mode are employed.
- (4) to examine the conditional correlations among ASEAN emerging stock and international gold markets, using the constant conditional correlation (CCC) model and the dynamic conditional correlation (DCC) model that are the most widely employed multivariate GARCH specifications for studying the dynamic conditional correlations.

1.4 Structure of the Dissertation

In financial markets, linkages and volatility are the central issues to the theory and practice of investment. Gold is a precious and highly liquid metal that is categorized as a commodity and a monetary asset. It also plays an important role in significant portfolio diversification. In recent years, demand for gold has been increasing rapidly, due to a number of reasons such as the World economic downturn, high inflation, US dollar depreciation and reduction in world gold production. These may be the reasons causing high volatility in emerging stock markets as investors diversify their portfolios by including gold to hedge risks. Therefore, this dissertation centers on related issues of returns, volatility and interdependence among the international gold and ASEAN emerging stock markets. The remaining part of the dissertation is organized as follows

Chapter 2 presents the research methodology. Then, the empirical results of the study are presented through Chapters 3 to 6. In Chapter 3, possible linkages among the market price indexes in the international gold and ASEAN emerging markets (Indonesia, Malaysia, Philippines, Thailand and Vietnam) are investigated through the sample period (July 28, 2000 to March 31, 2009) by applying the Granger causality test and the Johansen cointegration technique.

Differences from Chapter 3, Chapters 4, 5 and 6 analyze daily returns of the selected market price indexes, using univariate and multivariate volatility models. Chapter 4 focuses on examining effects of international gold market on stock exchange volatility: Evidence from ASEAN emerging stock markets. Behaviors of returns and volatility of each ASEAN emerging stock market under the exogenous

effects from the international gold market are analyzed, using GARCH, GJR, GARCH-X and GJR-X models.

Next, Chapter 5 concentrates on examining volatility spillovers across international gold market and ASEAN emerging stock markets, using two multivariate GARCH (MGARCH) models, namely VARMA-GARCH and VARMA-AGARCH. In this chapter, the six sample markets are separated into two sub-scale models *i.e.*, bivariate models for gold and each selected stock market, and 5-variate models for the five ASEAN emerging stock markets in order to avoid the problem of so many parameters to be estimated as well as the problem of no convergence in MGARCH models.

After that, Chapter 6 continues with examining the conditional correlations among international gold and emerging stock markets in ASEAN over the sample period. Two MGARCH models *i.e.*, the CCC-GARCH and DCC-GARCH models are used to evaluate the conditional correlations between these markets. Finally, Chapter 7 ends up with the conclusions and suggestions for further study.