ASEAN-5 MONETARY INTEGRATION: THE G-PPP AND GRAVITY MODELS ANALYSIS

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ABSTRACT

Economic integration has become an important issue for ASEAN countries. ASEAN Charter was formed in 2008 as the basis of the implementation of the ASEAN free trade area in 2015. This leads to the readiness of the ASEAN 5 to implement economic integration. According to the optimum currency area (OCA) theory, the economic integration does not ignore the similarity of monetary transmission mechanism and financial market performance. This thesis assesses the implementation of economic integration in ASEAN 5 especially viewed from the point of the monetary transmission mechanism and financial market performance. There are four objectives of this thesis, (1) evaluating the feasibility of ASEAN 5 countries to implement the optimum currency area using generalized purchasing power parity (G-PPP) model, (2) estimating the monetary transmission mechanism pattern on ASEAN 5 countries using monetary condition index (MCI), (3) estimating the financial market performance pattern on ASEAN 5 countries using the financial condition index (FCI), and (4) analyzing the effect of monetary transmission mechanism (MCI) and financial market performance (FCI) on ASEAN 5 economic integration using gravity model. Several techniques are employed in the analysis. Johansen cointegration techniques are used to estimate the G-PPP model. The results show that the G-PPP hold, which means that the OCA can be applied in ASEAN 5. Vector Error Correction Model (VECM) is employed to determine the weights of MCI and FCI. The MCI explores interest rate and exchange rate channels on monetary transmission. The result exhibits that Indonesia and Thailand have similar pattern of monetary transmission with the interest rate exerts stronger influence than the exchange rate channel. While in Malaysia, Philippines and Singapore the effect of exchange rate is more dominance than interest rate. The FCI explores money, exchange rate, credit, and stock market. The results show that Thailand, Indonesia and Malaysia have similar pattern of financial market condition with foreign exchange rate market exert stronger influence than the other markets. In the Philippines the money market is more dominance than other markets, while Singapore is dominated by credit and stock market. Static and dynamic panel data analyses are employed in the gravity model. The Gravity model explores the international trading relationships among countries. The core properties of gravity model are export, GDP, GDP/capita and inter countries distance. Dummy variables represent common language, land border, and augmented the indexed variables which consist of MCI and FCI. The results indicate that MCI and FCI could support the possibility of ASEAN 5 economic integration. The finding is in accordance with the theory that states if the OCA is adopted, then the monetary policy will be ineffective. Instead, financial condition will support economic integration.

ABSTRAK

Integrasi ekonomi telah menjadi wacana yang penting bagi negara-negara ASEAN. Piagam ASEAN dibentuk pada tahun 2008 sebagai asas pelaksanaan kawasan perdagangan bebas ASEAN pada tahun 2015. Ini mengarah pada kesediaan ASEAN 5 untuk melaksanakan integrasi ekonomi. Menurut teori daerah mata wang optimum (OCA), integrasi ekonomi tidak mengabaikan persamaan mekanisme penghantaran kewangan dan prestasi pasaran kewangan. Tesis ini menilai pelaksanaan integrasi ekonomi di ASEAN 5 terutamanya melihat dari sudut mekanisme penghantaran kewangan dan prestasi pasaran kewangan. Ada empat tujuan tesis ini, iaitu (1) menilai kelayakan negara ASEAN 5 untuk melaksanakan kawasan mata wang yang optimum dengan menggunakan model pariti kuasa beli umum (G-PPP), (2) menganggarkan pola mekanisme penghantaran dasar kewangan di negara-negara ASEAN 5 menggunakan indeks keadaan kewangan (MCI), (3) menganggarkan pola prestasi pasaran kewangan pada negara ASEAN 5 menggunakan indeks keadaan kewangan (FCI), dan (4) menganalisis pengaruh mekanisme penghantaran kewangan (MCI) dan prestasi pasaran kewangan (FCI) integrasi ekonomi di negara ASEAN 5 menggunakan model graviti. Beberapa teknik ekonometri digunakan dalam kajian ini. Teknik kointegrasi Johansen digunakan untuk menjangka model G-PPP. Hasil kajian menunjukkan bahawa G-PPP, yang bererti bahawa OCA boleh diterapkan di ASEAN 5. Vektor Model Koreksi Kesalahan (VECM) yang digunakan untuk menganggarkan MCI dan FCI. MCI menghitung kadar bunga dan kadar pertukaran pada penghantaran kewangan. Hasil kajian menunjukkan bahawa Indonesia dan Thailand mempunyai pola penghantaran kewangan yang sama di mana kadar bunga lebih kuat daripada saluran nilai tukar. Sementara itu, di Malaysia, Filipina, dan Singapura pengaruh kadar pertukaran wang lebih kuat daripada kadar bunga. FCI menjelajah wang, kadar pertukaran, kredit, dan pasaran saham. Hasil kajian menunjukkan bahawa Thailand, Indonesia, dan Malaysia mempunyai corak keadaan pasaran kewangan yang sama di mana pasaran pertukaran mata wang asing lebih kuat berbanding pasaran lain. Di Filipina pasaran wang lebih kuat daripada pasaran lain, sedangkan di Singapura kredit dan saham menguasai pasaran. Analisis panel data statik dan dinamik digunakan pada Model Graviti. Model Graviti meneroka hubungan perdagangan antarabangsa di antara negara. Pembolehubah dari model graviti adalah eksport, GDP, GDP/kapita, dan jarak antara negara. Pembolehubah dummy terdiri daripada bahasa yang sama, sempadan tanah, dan menambah pembolehubah indeks yang terdiri daripada MCI dan FCI. Hasil kajian menunjukkan bahawa MCI dan FCI boleh menyokong kemungkinan integrasi ekonomi di negara ASEAN 5 (tetapi tanda MCI adalah negatif, dan positif untuk FCI). Penemuan ini sesuai dengan teori yang menyatakan bahawa jika OCA dipakai, maka dasar kewangan akan tidak berkesan. Sebaliknya, keadaan pasaran kewangan akan menyokong integrasi ekonomi.

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Lukman Hakim

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TABLE OF CONTENTS

CHAPTER FOUR: EMPIRICAL EVIDENCE

CHAPTER FIVE: DISCUSSION AND CONCLUSION

LIST OF TABLE

PAGE

LIST OF FIGURE

LIST OF ABBREVIATION

ADF	:	Augmented Dickey Fuller
AIC	:	Akaike Information Criterion
ASEAN	:	Association of South East Asia Nations
BI	:	Bank Indonesia
BNM	:	Bank Negara Malaysia
BOT	:	Bank of Thailand
CBP	:	Central Bank of the Philippines
CIA	:	Central Intelligent Agency
CPI	:	Consumer Price Index
CU	:	Currency Union
DOT	:	Directory of Trade
ECB	:	European Central Bank
EMU	:	Economic and Monetary Union
EU	:	European Union
FCI	:	Financial Condition Index
FTA	:	Free Trade Area
GATT	:	General Agreement on Tariff and Trade
GDP	:	Gross Domestic Product
GMM	:	Generalized Method of Moment
G-PPP	:	Generalized Purchasing Power Parity
GSP	:	Generalize System of Preference
IFS	:	International Financial Statistics
IMF	:	International Monetary Fund
IPS	:	Im, Pesaran and Shin
IRF	:	Impulse Response Function
ITF	:	Inflation Targeting Framework
LLC	:	Levin, Lin and Chu
MAS	:	Monetary Authority of Singapore
MCI	:	Monetary Condition Index

NPL	:	Non Performing Loan
OCA	:	Optimum Currency Area
OLS	:	Ordinary Least Square
PP	:	Phillip Peron
PPP	:	Purchasing Power Parity
PTA	:	Preferential Tariff Agreement
REER	:	Real Effective Exchange Rate
SC	:	Schwarz Criteria
SECI	:	Stock Exchange Composite Index
SVAR	:	Structural Vector Autoregression
VAR	:	Vector Autoregression
VDC	:	Variance Decomposition
VECM	:	Vector Error Correction Model
WTO	:	World Trade Organization

CHAPTER 1
INTRODUCTION

1.1 Background of the Study

The Association of Southeast Asian Nations (ASEAN) is a regionally-based international organization with ten members. ASEAN was created in 1967 with five members: Thailand, Singapore, Malaysia, Indonesia and the Philippines. In addition to the five original members, Brunei joined in 1984, Vietnam in 1995, Lao PDR and Myanmar (Burma) in 1997 and Cambodia in 1999. In 2008 or the 40th anniversary, the ten ASEAN members signed a charter. The charter is a stronger agreement between member countries to cooperate. With the implementation of this charter, the cooperation between ASEAN countries, which was originally very loose, will become closer. The charter will be the basis of the implementation of ASEAN free trade in 2015.

The total combined population of all ten ASEAN countries is more than 500,000,000 people with an average per capita GDP of USD 1,150. As a large country, Indonesia has a population of about 210,000,000 people, the fourth largest in the world. Countries with a population of approximately 60-90,000,000 are Myanmar, the Philippines, Thailand and Vietnam. Malaysia and Cambodia are about 20-30,000,000 people. Meanwhile, the population of Singapore and Laos is about five million each, while Brunei is under one million inhabitants. The size of population of the member country is proportional to the area of the respective country.

Indonesia, which has the highest number of population, has the largest area, which is approximately 1.8 million square km. Thailand and Myanmar is almost 500 - 700,000 square km respectively while the countries that have a total area of about 200 - 300,000 square km are Cambodia, Lao PDR, the Philippines, Malaysia, and Vietnam. The land area of Brunei and Singapore are 5.765 and 710 squares km, respectively (Table 1.1).

From the point of economic level, which is measured by the level of income per capita, Singapore and Brunei have the highest per capita income among member countries with per capita income of around 35,000 USD. Malaysia is the third place in the ASEAN countries with the per capita income of 6 thousand USD. Countries with per capita income of around 1 - 3,000 USD are Thailand, Indonesia, the Philippines and Vietnam. Meanwhile, per capita income for Laos PDR, Cambodia and Myanmar is still below one thousand USD.

On international trade, Singapore recorded the largest value of trade among member countries with trade values above 500,000,000 USD. Countries with international trade of approximately 200 - 300,000,000 USD are Thailand, Malaysia, and Indonesia. The Philippines and Vietnam recorded about 80 - 130,000,000 USD in the international trade, while other countries including Myanmar, Brunei, Cambodia and Laos are below 10,000,000 USD (Table 1.2).

According to Hill (2002), ASEAN has the feature of great diversity. In one hand, there are rich countries such as Singapore and Brunei Darussalam and poor countries namely Myanmar, Cambodia, and Laos. Brunei, Indonesia and Malaysia are abundant with natural resources especially oil. Meanwhile, the city state of Singapore is strategic for international trading. Indonesia, Malaysia, Singapore and Thailand were among the select group of “high performers” in the three decades prior to the recent Asian economic crisis in 1997-98. Meanwhile, Singapore and Malaysia have succeeded to get out of the economic crisis quickly, while Thailand and Indonesia required longer.

Economic crisis in 1997-98 in many ASEAN countries particularly Thailand, Malaysia and Indonesia have given many insights. It is perceived that economic recovery after the crisis and for the purpose of macroeconomics sustainability in ASEAN countries, it is possible to make the monetary integration. There have been many schemes of monetary integration among others ASEAN Free Trade Area (AFTA), ASEAN Economic Arrangement (AEA) and ASEAN Economic Community (AEC).

The arguments of the possibility in the implementation of the ASEAN 5 monetary integration are divided into two groups. One argues that ASEAN is not ready (Bayoumi & Mauro 1999; Falianty, 2005) and other states that ASEAN is ready to implement monetary integration with specific requirements that require a relatively long time (Ramayandi, 2005; Choudhry, 2005; Rana, 2007; Ogawa & Kawasaki , 2006; Ahn, Kim, & Chang, 2006).

The core theory of monetary integration analysis is based on the optimum currency area (OCA) theory. OCA is based on the seminal contributions of Mundell (1961), McKinnon (1963) and Kenen (1969). Mundell (1961) views mobility factor as the key criterion on the choice of OCA. McKinnon (1961) stresses that openness to external trade is another important criterion, while Kenen (1969) adds product diversification as a criterion of OCA. These three are the basic theory of OCA for subsequent studies and recent empirical works.

According to Tavlas (1993) and Mongelli (2002), the OCA criteria can be divides into non-economic and economic factors. The non-economic factors consist of politics, history and language aspects, meanwhile economic criteria are business cycle, trade linkages and financial integration. Business cycle aspects are similar to shock and inflation, the degree of mobility factor, the openness and size the economy, price and wage flexibility and fiscal integration. Similarity for shock and inflation is closely related to monetary mechanism transmission. Trade linkages aspects share the degree of commodity diversification, and the degree of goods market integration. Financial market aspect is financial market condition and integration that consist of stock, credit growth and money market. Meanwhile, Eichengreen (2004) lists four real preconditions for monetary integration namely the capacity to delegate monetary policy to an international institution, which should be accountable, representative, efficient and effective, a culture of monetary policy transparency, open capital accounts and common transmission mechanism.

Frankel and Rose (1998) develop a new approach known as endogeneity of OCA. They investigated the relationship between international trade and business cycle. They found that countries with closer trade links tend to have tighter correlated business cycle. Furthermore, Rose (2000) develop a model to test trade linkages criteria of the OCA based on Gravity model. Most of the researches employ Gravity model using international trade point to distance, income level, and population proxy of the size of the country. This research finds a large positive currency union (CU) on trade and a small negative effect of exchange rate volatility. In other words, CU such as MU will encourage international trade. Rose and Engel (2002) characterize the integration patterns of international currency unions. They found that members of the currency unions are more integrated than countries with their own currencies.

Studies on monetary integration in ASEAN countries have been attempted by many researchers. Elliot and Ikemoto (2004) find that trade flows were not significantly affected in the years immediately following the signing of the AFTA agreement and also that the traditional stance of ASEAN countries to outward oriented economic activity has not been significantly damaged but rather stimulated by the AFTA process and/or the Asian economic crisis. However, one effect of the Asian economic crisis was to generate a stronger desire to source imports from within the region. Rana (2007) examines whether increasing trade intensity among East Asian countries (ASEAN+3) has led to a synchronization of business cycles. The study finds that intra-industry trade, rather than inter-industry trade, is the major factor explaining business cycle co-movement in East Asia, with important implications for the prospects for a single currency in the region. Other research by Ramayandi (2005) find that ASEAN 5 which consists of Indonesia, Malaysia, Singapore, Thailand and the Philippines, appears to be relatively suitable to form a monetary union. This can be justified on at least by two factors: the trade pattern among these economies, and the relative symmetry in the nature of their economic shocks. These five countries will potentially reap sizable benefits from having a cooperative monetary policy, or even from a common currency.

Bayoumi and Eichengreen (1997) evaluates the implementation of OCA using OCA index. OCA index is based on the variability of an exchange rate between a pair of countries explained by factors such as symmetry of shocks, openness and trade dependence of an economy. Bayoumi and Mauro (1999) implement the OCA index to evaluate the possibility of ASEAN single currency. The research finds that the OCA index of ASEAN is much higher than the OCA index of European Monetary Union (EMU). In terms of the economic prerequisites for single currency, ASEAN needs is not in a significantly worse position than the European Union (EU) a few years prior to its signing the Maastricht Treaty. In line with that study, Falianty (2005) shows that ASEAN 5 is currently not ready to construct a currency union because its OCA index is much higher than the EMU. However, the value of OCA index on Singapore, Malaysia, and Thailand is relatively low than others, so these countries are currently readier to construct currency union.

Enders and Hurn (1994) assesses the possible region to implement OCA using the Generalized Purchasing Power Parity (G-PPP). The G-PPP is a cointegrating relationship among a group of real exchange rates which indicates the existence of common trends in their macroeconomic fundamentals, hence satisfying one of the necessary conditions for an OCA. G-PPP will hold if sum of cointegrating value among the countries observed are zero. Enders and Hurn (1997) find that G-

PPP hold for G-7 countries (Canada, France, Germany, Italy, Japan, UK, USA) and G-3 countries (Germany, Japan and USA). Additionally, Choudhry (2005) find that G-PPP also hold for countries of ASEAN 4 (Thailand, Malaysia, Indonesia, the Philippines) and South Korea. Ogawa and Kawasaki (2006) also find evidence of G-PPP hold on ASEAN 5 plus Korea and China. Meanwhile, Ahn, et al, (2006) find G-PPP hold for ASEAN 4 (Indonesia, Malaysia, Singapore, Thailand) and four Northeast Asian Economies (Hong Kong SAR, Japan, Korea, and Taiwan).

Based on the above studies on the possibility of ASEAN monetary integration, most of these researches ignore the role of monetary transmission mechanism and financial market performance on OCA. Although, as suggested by Tavlas (1993), Mongelli (2003), and Eichengreen (2004), two things, namely monetary transmission mechanism and financial market performance, are important factors as a condition of applying the OCA in a region.

1.2 Statement of the problem

Major previous researches focusing on OCA theory ignore the role of monetary and financial condition, which become the barrier of comprehensive analysis of ASEAN monetary integration (Bayoumi & Mauro, 1999; Falianty, 2005; Ramayandi, 2005; Choudhry, 2005; Ogawa & Kawasaki, 2006; Ahn, et,al , 2006, Rana, 2007). This is a research gap given in prior studies on monetary integration. So, this dissertation attempts to fill the gap in this area. This study will focus on the effect of monetary and financial condition on ASEAN 5 monetary integration.

In elaborating monetary transmission mechanism, this study will use the approach used by Freedman (1996a, 1996b) by applying the monetary conditions index (MCI). MCI is constructed, taking into consideration the interest rate and exchange rate channels of monetary policy transmission mechanism, in a small open economy. Meanwhile, in exploring financial market performance, this study will use the approach used by Goodhart and Hofmann (2001) and Holtz (2005) by applying the financial conditions index (FCI). FCI is an indicator of financial market performance consisting of four asset prices namely money market, foreign exchange, credit and stock market. Then, both MCI and FCI will be extended? into Gravity model of international trade on ASEAN 5 countries as suggested by Frankel and Rose (1998) as indicator of the possibility of ASEAN monetary integration. Before entering the analysis of the effect of monetary transmission mechanism and financial market performance in the possibility of ASEAN monetary integration, we will first do a test on the feasibility of adopting optimum currency area (OCA) by applying generalized purchasing power parity (G-PPP) method.

1.3 Theoretical and Conceptual Framework

The theoretical framework will explain the link between theory and model estimation in this research, while conceptual framework explores relationship among variables in the model. The following will be described sequentially.

1.3.1 Theoretical Framework

In accordance with the problem statement mentioned above, we will examine the effects of transmission mechanism of monetary policy and financial market performance in monetary integration. This study uses the core theory of OCA pioneered by Mundell (1961), McKinnon (1963) and Kenen (1969). In its development, many researchers derive the OCA theory in a variety of viewpoints. Associating them, we need to set up a theoretical framework as shown in Figure 1.1, which is described as follows:

First we will assess whether ASEAN 5 is feasible to apply the OCA. For that, we use the G-PPP to evaluate the feasibility. G-PPP was first proposed by Enders and Hurn (1994) and in essence will see if a region will be able to apply the OCA, if PPP is to hold.

Second, we will examine the similarity of monetary transmission mechanism (MTM) of ASEAN 5 as a condition of formation of OCA as suggested by Mongelli (2003) and Eichengreen (2004). To investigate the pattern of the MTM, we will use a monetary conditions index (MCI) developed by Freedman (1994). MCI explores the relationship of two of the most important channels in the MTM namely interest rate and exchange rate channel. With MCI, it will eventually be seen where the most dominant point is, and whether the interest rate or exchange rate influence the ultimate objective of monetary policy. The result is going to be seen how the pattern of monetary policy transmission mechanism in ASEAN 5.

Third, we will also examine the similarity of the financial market performance in the OCA as recommended by Ishiyama (1975). We use the Financial Condition Index (FCI) developed by Goodhart and Hofmann (2001) and Holz (2005). FCI explores the relationship of four financial markets namely money market, foreign exchange markets, credit markets and capital markets. The results of the FCI will be able to show the pattern of financial market performance in ASEAN 5 countries.

Fourth, we will use endogenous OCA concept developed by Frankel and Rose (1998) which stated that the most important factor in the application of OCA is situated on the strength of foreign trade between countries within a region. International trade is considered a strength that comes from within the region itself, so-called endogenous. The standard model used by Frankel and Rose (1998) is an international trade Gravity model where the dependent variable is exports between countries of origin and destination, while the main independent variables are GDP, GDP/capita and distance, and dummy variables consist of common language and land border. In order to address the problem statements on the impact of MTM and financial market performance, we add two indexes namely MCI and FCI in Gravity model.

1.3.2 Conceptual Framework

Based on the four models used in this study, we will describe the conceptual framework as follows:

G-PPP

Based on the concept developed by Enders and Hurn (1994), several countries in one region will be able to apply the OCA if the PPP is to hold. The point of PPP hold is technically where the total value normality of cointegration of all countries is nul (0). We test G-PPP using Johansen cointegration (Figure 1.2).

MCI

The standard procedure to calculate an index is a weighted index multiplied by the absolute value, and then the results are summed. Therefore, the first step to calculate an index is to find the weight. The weight of real interest rates and real exchange rate in the MCI cannot be obtained directly, but must be taken from the coefficient of an economic model. Qayyum (2002) and Kannan & Bhoi (2006) use a simple inflation model to find the weights. Based on these weights, we can see that the pattern of monetary policy transmission mechanism is either the same or different among the five ASEAN countries studied. Furthermore, each weight is multiplied by the absolute value, and then summed, so that MCI is found (Figure 1.3).

FCI

Similar to the way of calculating MCI, FCI weights also cannot be calculated directly, but must be taken from the economic model. FCI explores four markets namely the money market, foreign exchange, credit and stocks which are represented by real interest rate, real exchange rate, real credit growth and real stock price, respectively. Based on Montagnoli and Napolitano (2005), we use the inflation model to find the weight of the four market types. From the results of weight, we can see a pattern of financial market performance of the five ASEAN countries. Furthermore, each weight multiplied by absolute value and summed to find the FCI (Figure 1.4).

Gravity Model

Frankel and Rose (1998) develop an endogenous OCA by using Gravity model. Gravity model uses export standards between countries of origin and destination as dependent variables, while the independent variables in the model are the core Gravity GDP, GDP / capital, both of origin and destination, and distance. Several dummy variables added to them are common language and land border. Theoretical relationship of independent to dependent variables is all positive, except distance which has negative relationship. In this study, we add to the Gravity model two indexes namely MCI and FCI, in order to explain the influence of monetary transmission mechanism and financial market performance in monetary integration. Based on Mongelli (2003), the influence of monetary transmission mechanism of the exports is expected to be negative, while according to Ishiyama (1975), financial market performance is expected to influence positively (Figure, 1.5).

1.4 Objectives of the Study

The main purpose of this study is to investigate the effect of monetary transmission mechanism and financial market performance on the possibility of ASEAN 5 monetary integration. There are four objectives of the research namely (1) to assess the feasibility of the ASEAN 5 to implement the optimum currency area (OCA) using generalized purchasing power parity (G-PPP) model; (2) to estimate monetary transmission mechanism pattern on ASEAN 5 using monetary condition index (MCI); (3) to estimate financial market performance pattern on ASEAN 5 countries using financial condition index (FCI); and finally (4) to analyze the effect of monetary condition (MCI) and financial condition (FCI) on ASEAN 5 monetary integration using Gravity model of monetary integration.

1.5 Research Questions

1. What hold is the purchasing power parity in the ASEAN 5 countries?
2. What is the pattern of monetary condition index (MCI) among ASEAN 5 countries?
3. What is the pattern of financial condition index (FCI) among ASEAN 5 countries?
4. What is the relationship between MCI and FCI with the Gravity model of the international trade of the ASEAN 5 monetary integration?

1.6 Research Hypotheses

Here we present the hypothesis of this study, which are arranged in order of the model used in this study:

Hypothesis 1

According to Enders and Hurn (1994, 1997), the G-PPP will hold in a region if the number of normalization cointegration is zero. Therefore, the hypothesis of this model is:

Ho1 : If the total normalization of the cointegration ASEAN 5 is not equal to zero (0), which means that the PPP does not hold, then it is not feasible for the group of countries to apply the OCA.

Ha1: If the total normalization of the cointegration of the ASEAN 5 is equal to zero (0), which means that the PPP is to hold, then the group of countries is eligible to apply the OCA.

Hypothesis 2

The MCI concepts developed by Freedman (1994), in which proportion of index weight is obtained from the model of inflation, will be able to show the same pattern of monetary policy transmission mechanism in ASEAN 5. Therefore, the hypothesis of this model is

Ho2 : If the proportion of the weight of the index of the countries are equal, then the pattern of monetary transmission mechanism in the ASEAN 5 is similar.

Ha2: If the proportion of the index weighting of the countries is not the same, then the pattern of monetary transmission mechanism in ASEAN 5 is different.

Hypothesis 3

Based on the FCI concept developed by Goodhart and Hofmann (2001), Holz (2005), Montagnoli and Napolitano (2005), where the proportion of index weight is obtained from the inflation model, similar patterns of financial market performance in the ASEAN 5 will be shown. Therefore, the hypothesis of this model is

Ho3 : If the proportion of the weight of the index of the countries are equal, then the pattern of financial market performance in the ASEAN 5 is similar.

Ha3: If the proportion of the index weighting of countries is not the same, then the pattern of financial market performance in ASEAN 5 is different.

Hypothesis 4

Based on the criteria in the OCA on the importance of monetary transmission mechanism as presented by Mongelli (2003) that in the long term, there is a possibility of having a negative relationship to monetary integration, the hypothesis of this model can be written as follows:

Ho4 : There is a positive relationship between MCI and exports in the Gravity model which shows that the influence of the monetary transmission mechanism of monetary integration is positive.

Ha4: There is a negative relationship between MCI and exports in the Gravity model which shows that the influence of the monetary transmission mechanism of monetary integration is negative.

Hypothesis 5

Based on the OCA criteria proposed by Ishiyama (1975) on the impact on economic performance, when financial market integration is positive, then the hypothesis of this model can be written as follows:

Ho5 : There is a negative relationship between FCI and exports in the Gravity model which shows that on the effect of economic performance, financial market performance of monetary integration is negative.

Ha5: There is a positive relationship between FCI and exports in the Gravity model which shows that on the effect of economic performance, financial market performance of monetary integration is positive.

1.7 Significance of the Study

The significance of the study is to support the process of economic integration in ASEAN 5 is running. Several schemes have been implemented and the economic integration of the most important thing is to plan the implementation of the ASEAN Free Trade Area (AFTA) in 2015 and also the discourse of the application of monetary integration in the future. Therefore, it is necessary to exploration currency relations ASEAN countries that could reflect the Purchasing Power Parity (PPP) in the long run. It is important to evaluate whether the currencies in the ASEAN 5 there are opportunities to join in a common currency.

Based on endogenous OCA theory, trade between member states is the most important in the effort to establish monetary integration. The power trade between member countries will be binding long-term relationship of members who will form the monetary integration. In addition, a very important role in supporting the possibility of monetary integration is the monetary and financial conditions. Without the monetary and financial conditions are healthy, the monetary integration will not be implemented properly. Therefore, this study is expected to provide a new insight in explaining the possibility of ASEAN 5 monetary integration. Monetary and financial condition are able to determine monetary integration among the ASEAN 5 countries. Specifically, this study will provide new approach to Gravity model of monetary integration by using monetary condition index (MCI) and financial condition index (FCI) respectively. The study recommends that both the MCI and FCI can be an important indicator of monetary integration.

1.8 Limitation of Study

This study is conducted only on ASEAN 5 countries namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Five other countries which are Brunei Darussalam, Vietnam, Cambodia, Laos, and Myanmar are excluded in this research, which become the barriers of comprehensive analysis of ASEAN monetary integration. A comparative study with five other ASEAN countries has not been studied due to data limitation.

1.9 Operational definition of Terms

Monetary Integration. Monetary integration is a group of countries which apply common currency. The region that adopted the common currency has to implement a single central bank. Optimum currency area (OCA) is the basic theory of monetary integration.

Optimum Currency Area (OCA). OCA is based on the seminal contributions of Mundell (1961), McKinnon (1963) and Kenen (1969). The competitiveness of region which applies OCA will be able to maintain full employment, balanced international payment, and stable internal average price level. Tavlas (1993) and Mongelli (2002) divide the OCA criteria into non-economic and economic factors. The non-economic factors consist of politics, history and language aspects, while economic criteria are business cycle, trade linkages and financial integration. Business cycle aspects consist of the similarity of shock and inflation, the degree of factor mobility, the openness and size the economy, price and wage flexibility and fiscal integration. Similarity of shock and inflation is closely related to monetary mechanism transmission. Trade linkages aspects share the degree of commodity diversification, and the degree of goods market integration. Financial market aspects are financial market condition and integration that consists of stock, credit growth and money market.

Generalized Purchasing Power Parity (G-PPP). According to Enders and Hurn (1994, 1997), the G-PPP model explains that PPP holds if a linear combination of some bilateral real exchange rate series has an equilibrium in the long run, even if each individual bilateral rate series is non-stationary. According to Choudhry (2005), G-PPP will hold within the domain of a currency area since the individual nations will experience a set of common real macroeconomic shocks. G-PPP has been interpreted in terms of an optimum currency area (OCA) that operates a single common currency.

Monetary Condition Index (MCI). It is one of the OCA criteria relating to the similarity of inflation and shock by using monetary transmission mechanism (MTM) analysis. In the measurement of monetary transmission effect on the similarity of inflation, one approach is to use monetary condition index (MCI). MCI has been used as a measure of monetary policy stance. MCI is constructed by taking into consideration the interest rate and exchange rate channel of monetary policy transmission mechanism in a small open economy. In the open economy, monetary policy affects the inflation rate through two important monetary transmission mechanisms which are interest rate and exchange rate channels (Freedman, 1995; Qayyum, 2002; Kanaan & Bhoi, 2006).

Financial Condition Index (FCI). It is one of the OCA criteria related to financial integration. Financial integration among countries will occur when the financial performance of each country is well. This leads to the development of an index to measure financial condition of a country, called Financial Condition Index (FCI). FCI is an indicator of performance financial sector or financial market. Based on the convention to calculate FCI, many studies focus on analyses of the four assets i.e. money market (short-term interest rate), foreign exchange rate market (the real effective exchange rate), housing market (real house prices) and stock market (real stock price). These are the variables used by Goodhart and Hofmaan (2001) for G-7 countries; Lack (2002) for Switzerland; Gauthier, C, Graham C, & Liu, Y. (2004) for Canada and, Montagnoli and Napolitano (2005) for USA, Canada and Euro Area. Meanwhile, Holz (2005) uses growth of domestic credit instead of housing prices, when constructing the FCI. He replaces the real house prices with domestic credit for European Monetary Union (EMU) and argues that domestic credit is more influential for financial sector in EMU than real house prices. So in this study, we choose to apply the approach by Holz (2005), that is by using the four assets, namely money market (short-term interest rate), foreign exchange rate market (the real effective exchange rate), credit markets (real credit market) and stock market (real stock price).

Gravity Model. The endogenous approach to monetary integration (OCA) is the focus on international trade as developed by Frankel and Rose (1998) by using the Gravity model. Standard Gravity model of international trade sees the linkages between countries as dependent variables with some explanatory variables such as national income, national income per capita and distance. Rose (2000) develops a Gravity model by adding population and several dummy variables such as regional trade agreement, common language, common land border, common colonizer, same nation, colonial relationship, number of landlocked countries, log of sum of land area, log of product of land area and number of island countries. Wall (2002) adds income per capita variable in the model. Rose (2004) and Subramanian and Wei (2007) extend the Gravity model to multilateral trade agreements such as the World Trade Organization (WTO), and the Generalized System of Preferences (GSP). Aviat and Coeurdacier (2007) extend the complementarities between bilateral trade in goods and bilateral asset holdings in a simultaneous gravity equations framework. In general, it can be noted here that the Gravity model is open for development by adding various variables that could support the explanation of the importance of monetary integration.

ASEAN (Association of South East Asia Nations). The Association of Southeast Asian Nations (ASEAN) is a regionally-based international organization with ten members. ASEAN was created in 1967 with five members: Thailand, Singapore, Malaysia, Indonesia and the Philippines. In addition to the five original members, Brunei joined in 1984, Vietnam in 1995, Laos and Myanmar (Burma) in 1997 and Cambodia in 1999. In 2008 or on the 40th anniversary, the ten ASEAN members signed a charter. The charter is a stronger agreement to build together and cooperate in within ASEAN countries. This study only explores the ASEAN 5 which consists of Indonesia, Malaysia, Philippines, Singapore and Thailand.

1.10 Organization of thesis

This dissertation is divided into five (5) chapters. Chapter One serves as the introduction. Chapter Two discusses literature review on the optimum currency area (OCA), monetary transmission mechanism, financial market performance, and the previous studies. Chapter Three explains the methodology of research and data. Chapter Four explores empirical evidence of G-PPP, MCI, FCI and Gravity model. Chapter Five provides discussion and conclusion.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the relevant literature related to this study which is divided into several sections as follows. First, theoretical background explores the concept and core theory which is also the foundation of this research. The concepts of economic integration will explain about definition, type, level and sequencing implementation of economic integration. Optimum currency area (OCA) is the core theory of the research derived from the old and new approaches, monetary transmission mechanism and financial market performance. Second, we show the review of the existing empirical studies of the economic integration on ASEAN 5 countries which cover shocking studies, OCA index, trade effect, G-PPP analysis as it is important to know the progress of economic integration research in ASEAN countries. Third, we explore monetary and financial profile of ASEAN 5 countries consisting of Indonesia, Malaysia, Philippines, Singapore and Thailand. Fourth, we describe the steps in the policy that have been made by ASEAN since its establishment, up until the time to implement ASEAN free trade area by 2015.

2.2 Theoretical Background

2.2.1 Economic Integration Concept

Economic integration has long been the economic discourse for the region. After the birth of the European Union (EU); which have implemented Economic and Monetary Union (EMU), and the entry of the single European currency called Euro in 1999, the discussion of economic integration has become more attractive. The success of the EU has inspired many regions to explore the possibility of doing the same thing, including countries in Asia, especially East Asia and Southeast Asia.

According to Jovanovic (2006), economic integration is the agreement of a few countries working together to improve the welfare among the members, which means they have free movement of goods and services within the group. The level of integration depends on how far the level of freedom in conducting transactions, which include the elimination of tariffs and quotas, mobility of factors of production, and harmonization of fiscal, monetary, transportation and other economic policies.

Following Balassa’s view, Javanovic (2006) divides the economic integration into five (5) types which are free trade area, custom union, common market, economic union, and total economic integration. First, a free trade area is an agreement among countries all tariff and quantitative restriction are eliminated on mutual trading. Second, a custom union is the expansion of a free trade area where the participating countries introduce a common external tariff on trades with the third countries. Third, in a common market, apart from customs unions, there is free mobility of factors of productions, and introduction of common regulations on the movements of factors with third countries. Fourth, an economic union among countries extends the common market with the harmonization of fiscal, monetary, industrial and regional, transport and other economic policies. Fifth, a total economic union among countries assumes union with a single economic policy and a supranational government with a great economic authority. There are no administrative barriers to the movement of goods, service and factors, hence prices are equalized net of transport cost (as in Table 2.1).

Jovanovic (2006) also explores two initial conditions before free trade area implementation. First, a preferential tariff agreement (PTA) among countries assumes the tariffs on trades among signatory countries are lower in relations to tariffs charged on trades with third countries. Second, a partial customs union is formed when the participating countries retain their initial tariffs on their mutual trade while introduce common external tariffs on trade with third countries.

Crowley (2001) classifies economic integration with the new taxonomy. The first is the most basic, called the regional autarky, which means a bilateral agreement such as those in ASEAN. Secondly is trade integration, which consists of free trade area and customs union. The characteristics of free trade area is to remove tariffs and quotas internally while national tariff is retained against the outside, while customs unions are free trade area added to the common external tariff. The example of FTA is the ASEAN after 2015 and the example of customs unions is Mercosur. The third is the scale integration, consisting of the common market and economic union.

Common Market provides free movement of factors of production, goods and services, while the economics union harmonizes or coordinates several national policies and transfers them to the supranational level. An example of common market and economic union is the EU before EMU. The fourth is the integration policy which consists of monetary and fiscal union. The characteristic of monetary union is to implement single currency and operate single central bank. We can see this in the application of the European single currency, euro, and the establishment of European Central Bank (ECB). Fiscal union imposes tax harmonization, while fiscal sovereignty is limited in some cases already implemented in the EU. Fifth is the political integration or political union in which the effective and democratic bodies are at the supranational level. Until now, it does not exist out of a political integration project (Table 2.2).

The sequence of integration does not necessarily have to be gradual from one type to another. The establishment of any of these types depends on the agreement among the participating countries. However, the formation of EMU in the EU shows that European countries follow the stages of economic integration that is linear and consistent (Jovanovic, 2008). The EU has successfully reached the peak stage of economic integration which form the EMU and by implementing a single currency, euro, it means that they comply with what is called the optimum currency area (OCA). The following is an explanation of the OCA theory.

2.2.2 The Theory of Optimum Currency Area

A discourse on the economic integration cannot be separated from the theory of optimum currency area (OCA). Initially, OCA is one response to the possibility of balance of payment crisis in the implementation plan of the European free trade area in the 1950s from the international monetary perspective, which was first presented by Mundell (1961). OCA is the region that adopted a single currency and implemented a single central bank. According to McKinnon (1963), the regions which apply OCA will be able to maintain full employment, balanced international payment, and stable internal average price level.

Tavlas (1993) continues to explain the benefits of the implementation of OCA as stated below:

- Elimination of exchange rate risk. The adoption of a single currency would eliminate exchange rate risk. This risk is equivalent to a cost for a risk- trader and the trader will sometimes have to bear an explicit cost to avoid it.
- Decreasing Transaction cost. Single currency enhances the role of money as a unit of account by setting economies of scale into play, thereby decreasing transaction costs including the costs of information, search, uncertainty and calculation.
- Elimination of the need for reserves. The adoption of a single currency would eliminate the need of a firm to look after the currency exchange within the area, the enlargement of the foreign exchange market, the decrease in both the volatility

of prices and the ability of speculators to influence price, thus to disrupt the conduct of monetary policy.

Besides the many benefits, Tavlas (1993) and Mongelli (2002) argue that the application of OCA will also need cost:

- Loss of usage of exchange rate tool. The adoption of a single currency would lose of the use of the exchange rate tool, which could be especially severe in the event of different terms of trade shock among the members of a currency area.
- Loss of monetary policy independence. The cost was viewed as particularly acute in that a nation could no longer pursue an independent monetary policy to choose its desired mix between inflation and unemployment. In the long run, monetary policy is ineffective.

According to Madhur (2002), sustaining a common currency may be even more difficult the adopting it There are four constraints in implementing the OCA(i) diversity in the level of economic development cross countries; (ii) weakness in the financial sectors of many countries; (iii) inadequacy of region-level resources pooling mechanism and institutions required for forming and managing a currency union; (iv) lack of political precondition for monetary cooperation and a common currency

Tavlas (1993) and Mongelli (2002) explore at least ten (10) characteristics of the OCA:

Macroeconomics

- Similar inflation rates. Fleming (1969) in Ishiyama (1975) states that the similarity of inflation is very important in building optimum currency area. When inflation rates between countries are similar, an equilibrated flow of current account transactions is more likely to take place within the currency than if inflation rates are different.

- The degree of factor mobility. Mundell (1961) emphasizes the degree of factor mobility to apply OCA. Countries between which there is a high degree of factor mobility are viewed as better candidates for monetary performance because factor mobility provides a substitute for exchange rate flexibility in promoting external adjustment.

- The openness and size of the economy. McKinnon (1963) argues that the degree of openness and size of the economy in the countries are to be pre-conditional for OCA. Open economies tend to prefer fixed exchange rate arrangement since exchange rate changes in such economies are not likely to be accompanied with significant effects on real competitiveness. Moreover, in open economies, frequent exchange rate adjustments diminish the liquidity property of the money, since the overall price index would vary more than in relatively closed economies. As a corollary to this criterion, note that the smaller the size of the economy, the more open it is likely to be and, thus the more inclined to join in a currency area.

- Price and wage flexibility. Friedman (1953) and Ishiyama (1975) emphasize price and wage flexibility to be the foundation of OCA. When prices and wages are flexible among regions, the transition towards adjustment between regions is less likely to be associated with unemployment in one region and inflation in another, diminishing the need of exchange rate adjustment.
- Fiscal integration. Kenen (1969) emphasizes fiscal integration to be the foundation of OCA. The higher the level of fiscal integration between two areas, the greater their ability to smooth out diverse shocks through fiscal transfers from a low unemployment region to high unemployment region. In turn, fiscal harmonization usually implies that the members of a currency area also enter some form of political union.

Trade Linkages Aspect

- The degree of commodity diversification. Based on an argument from Kennen (1969), the degree of commodity diversification must be present? to implement OCA. Highly diversified economies are viewed as better candidates for currency areas than less diversified economies since the diversification provides some insulation against a variety of shocks, forestalling the need of frequent changes in the terms of trade via the exchange rate.
- The degree of goods integration. Mundell (1961) argues that the degree of goods integration should be observed to implement OCA. Countries that possess similar

production structures are prone to symmetric terms-of-trade shocks, negating the effectiveness of the exchange rate tool between the countries. Consequently, countries with similar production structures are deemed to be better candidates for currency areas than countries whose production structures are markedly different.

Financial Integration Aspect

- Ingram in Ishiyama (1975) notes that financial integration can reduce the need for exchange rate adjustments. It permits, amongst others, to cushion temporary adverse disturbances through capital inflows -- e.g. by borrowing from surplus areas or decumulating net foreign assets that can be reverted when the shock is over. Under a high degree of financial integration, even modest changes in interest rates would elicit equilibrating capital movements across partner countries. This would reduce differences in long-term interest rates, easing the financing of external imbalances but also fostering an efficient allocation of resources. Financial integration is not a substitute for a permanent adjustment when necessary, in this case, it can only smoothen the long-term adjustment process.

Political aspects

- Mintz in Ishiyama (1975) argues that the major and perhaps only, real condition for the institution of monetary integration is the political will to integrate on the part of the prospective members. Eichengreen (1996) find that the economic criteria are dominated by political factors in successful currency area. They also find that compliance with commitments is greatest in the presence of either a locally dominant state, willing and able to use its influence to sustain monetary cooperation, or a broad network of institutional linkages sufficient to make the loss of monetary autonomy tolerable to each partner.

Mongelli (2002) introduces the terminology of "the new OCA" developed by Frankel and Rose (1998.) They provide OCA theory with a more forward-looking outlook, arguing that many of the prerequisites for monetary union, espoused by traditional theorists, are in fact reinforced by the creation of monetary union. They believe that the increased economic integration, especially trading among countries, increases convergence between nations, hence reducing the costs of monetary union in terms of loss of exchange rate control. Frankel and Rose (1998) argue that trading is an endogenous factors which are most important in applying the optimum currency area. This view is also called as the endogeneity of OCA.

According to Frankel and Rose (1998), the effect of increased trade integration on the cross-country correlation of business cycle activity is ambiguous. Reduced trade barriers can result in increased industrial specialization by country and therefore more asynchronous business cycles resulting from industry-specific shocks. On the other hand, increased integration may result in more highly correlated business cycles because of demand shocks or intra-industry trade. This ambiguity is theoretical rather than empirical. Using a panel of thirty years of data from twenty industrialized countries, they find a strong positive relationship between the degree of bilateral trade intensity and the cross-country bilateral correlation of business cycle activity. That is to say, greater integration historically has resulted in more highly synchronized cycles.

The estimates of the trade gains from monetary integration -- i.e., the strength of the endogeneity of OCA paradigm – shows large variations across studies. Rose (2000) find a large positive effect of a currency union on international trade. By using a gravity model on a panel covering 186 countries during 1970-1990, Rose finds that countries sharing the same currency, trade three times as much as they would with different currencies. Frankel and Rose (2000) extend the framework of Rose (2000) and use a panel covering 200 countries plus dependencies. Their main findings are that: currency union brings more than triple trades among partner countries. These findings are robust to the inclusion of linguistic, historical and political links. Rose and Van Wincoop (2001) postulate instead that EMU would spur intra euro area trade by more than 50 percent, a considerably smaller estimate. Alesina, Barro, and Tenreyro (2002) apply a different methodology than the gravity models and found that currency unions were more likely to increase co-movements of prices and, perhaps, of output.

2.2.3 Monetary Transmission Mechanism

According to Mongelli (2003) in relation to the similar inflation and shock, many researchers have studied monetary transmission mechanism (MTM). Ramaswami & Slok (1998) explore the business cycles criteria towards the similarity of inflation and shock on European countries with VAR method. This research divides countries into two groups based on the response to the shock of monetary policy. First group has relatively longer response (Austria, Belgium, Finland, Germany, Netherlands and United Kingdom) while second group has relatively faster response to shock of monetary policy (Denmark, France, Italy, Portugal, Spain and Sweden). Peersman and Smets (2001) study the macroeconomic effects of a monetary policy shock in the euro area. They find that the effects of a temporary rise in nominal and real short-term interest rate on the exchange rate, output and prices is very similar -- in terms of both time profile and intensity -- for the US economy and the euro area. Angeloni, Kashyap, Mojon, and Terlizzese (2001) also find broad similarities in the monetary transmission in the euro area and the US, although there are differences in the relative potentials of channels.

Yuen (2001) uses SVAR to explore similarity shocks in East Asia which consist of twelve countries namely Japan, Korea, Taiwan, Hong Kong, Singapore, Indonesia, Malaysia, Philippines, Thailand, China, Australia and New Zealand. Haug, at al (2005) study monetary transmission for the possibility of single currency on Australia-New Zealand which used VECM method. This research finds that the monetary policy transmission mechanisms of New Zealand and Australia are similar and it is possible to build a single currency. These studies indicate that monetary transmission pattern is the most important aspect to prepare the implementation of single currency.

The transmission mechanism of monetary policy explains how monetary policy works. Which variables respond to interest rate changes, when, why, how, how much and how predictable. Monetary transmission is the process by which changes in monetary policy affect real economic activity. Monetary transmission is a complex and interesting topic because there is not one, but many channels through which monetary policy operates (Mishkin, 1997, 1999).

Monetary transmission can be divided into the price and the quantity approach. The price approaches consist of interest rate, exchange rate, and other assets channels such as wealth and stock. Meanwhile, the quantity approaches consist of monetary and credit channel (Figure 2.1).

Price Channel

- The Interest rate channel

The interest rate channel has been a standard model of monetary transmission based on Keynesian tradition. This channel can be characterized by schematic diagram, where increasing money supply (M) influence the decrease of interest rate (r) as an impact to increase investment (I) and output (Y):

$$M\uparrow \Rightarrow r\downarrow \Rightarrow I\uparrow \Rightarrow Y\uparrow$$

According to Taylor (1995), interest rate channel is a strong monetary transmission because interest rate affects directly on consumer and investment spending. He argues that the interest rate channel is a main component of how monetary policy effects are transmitted to the economy. In his model, contractionary monetary policy raises the short-term nominal interest rate. Then, through a combination of sticky prices and rational expectations, the real long-term interest rate rises as well, at least for a time. These higher real interest rates lead to a decline in business fixed investment, residential housing investment, consumer durable expenditure and inventory investment, which produces the decline in aggregate output (Mishkin, 1995).

- The Exchange Rate Channel

Under flexible exchange rates, the channel of monetary policy involves interest rate effects. Specifically, when domestic real interest rates rise, domestic currency deposits become more attractive. This leads to currency appreciation. The high value of the domestic currency makes domestic goods more expensive than foreign goods, and causes a fall in net exports and aggregate output. The central bank still maintains its monetary independence and can take actions to reduce the volatility of real GDP and inflation although the exchange rate is volatile. However, under a fixed exchange rate system, an expansionary monetary policy initially lowers the domestic interest rate and raises income. This results in capital outflows as well as a current account deficit (Mishkin, 1995).

In summary, the exchange rate channel works since increasing money supply (M) influence the decrease of interest rate (r) and as an impact, depreciate domestic currency (E), so net export (NX) and output Y increase:

$$M\uparrow \Rightarrow r\downarrow \Rightarrow E\uparrow \Rightarrow NX\uparrow \Rightarrow Y\uparrow$$

- Other Asset Price Channel

Other asset price channel is developed by monetarist. Two channels are often emphasized in monetarist stories about the monetary transmission mechanism: these involve Tobin's q theory of investment and wealth effects on consumption (Melzer, 1995). Tobin's q theory provides a mechanism through which monetary policy affects. Tobin (1969) defined q as the market value of firms divided by the replacement cost of capital. If q is high, the market price of firms is high relative to the replacement cost of the capital. This situation causes new plant and equipment capital is cheap relative to the market value of business firms. On the other hand, when q is low, firms will not purchase new investment goods because the market value of firms is low relative to the cost of the capital. Investment spending will be low and decrease the income. How might monetary policy affect equity prices? In a monetarist story, when the money supply increase, it will lead higher equity prices (P_e), q, and thus to a higher investment spending (I), leading to an increase in output (Y):

$$M\uparrow \Rightarrow P_e\uparrow \Rightarrow q\uparrow \Rightarrow I\uparrow \Rightarrow Y\uparrow$$

An alternative channel for monetary transmission through equity prices occurs through wealth effects on consumption. This channel has been strongly advocated by Franco Modigliani and his MIT-Penn-SSRC (MPS) model, a version of which is currently in use at the Board of Governors of the Federal Reserve System. In this approach, consumption spending is determined by the lifetime resources of consumers, which are made up of human capital, real capital and financial wealth. A major component of financial wealth is common stocks. When stock prices rises, the value of financial wealth increase, thus decreasing the lifetime resources of consumers, and consumption should rise and lead to an increase in income (Y) (Mishkin, 1995).

$$M\uparrow \Rightarrow P_e\uparrow \Rightarrow \text{wealth}\uparrow \Rightarrow \text{consumption}\uparrow \Rightarrow Y\uparrow$$

Quantity Channel

- Monetary channel

Monetary channel is the core of monetarist paradigm. The monetarists view money supply as the strategic variable, affecting income directly. The general view of these monetarists is that changes in money stock are a primary determinant of changes in total spending (Park, 1976). In summary, the monetary channel works since increase of money supply (M) leads to increase in spending and output (Y) (Crews, 1976).

$$M\uparrow \Rightarrow \text{spending}\uparrow \Rightarrow Y\uparrow$$

- The Credit channel

According to Bernanke and Gertler (1995), the term “credit channel” is something of a misnomer. The credit channel is an enhancement mechanism, not a truly independent or parallel channel. Two mechanisms have been suggested to explain the link between monetary policy actions and the external finance premium which is the difference in cost between funds raised externally (by issuing equity or debt) and funds generated internally (by retaining earning). First, the bank lending channel focuses more narrowly on the possible effect of monetary policy actions on the supply of loans by depository institutions. In general, bank lending channel works since increasing money supply will influence the increase in bank deposit, so it gives an impact in the increasing of loan (L), investment (I) and output (Y).

$$M\uparrow \Rightarrow d\uparrow \Rightarrow L\uparrow \Rightarrow I\uparrow \Rightarrow Y\uparrow$$

Second, the balance sheet channel stressed the potential impact of change in monetary policy on the borrower’s balance sheet and income statements including variables such as borrower’s net worth, cash flow and liquid assets. In this channel, often occurs problems of asymmetric information are adverse selection and moral hazard. Adverse selection is the problem created by the borrower before the transaction occurs, and moral hazard is created after the transaction occurs (Mishkin, 1995).

In summary, balance sheet channel works since increasing money supply influence the increase of net worth (P_e) which will reduce adverse selection, moral hazard and lead to increasing loan (L), investment and output (Y) :

$M\uparrow \Rightarrow P_e\uparrow \Rightarrow$ adverse selection $\downarrow$, moral hazard $\downarrow \Rightarrow L\uparrow \Rightarrow I\uparrow \Rightarrow Y\uparrow$

Another alternative is, increasing money supply will impact on decreasing interest rate which will lead to the increase of cash flow and reduce the adverse selection and moral hazard, therefore increasing loan (L), investment (I), and output (Y).

$$M \uparrow \Rightarrow r \downarrow \Rightarrow \text{cash flow} \uparrow \Rightarrow \textit{adverse selection} \downarrow, \textit{moral hazard} \downarrow \Rightarrow L \uparrow \Rightarrow I \uparrow \Rightarrow Y \uparrow$$

Several researches on monetary transmission mechanism have been conducted by researchers using Monetary Condition Index (MCI). MCI has been used as the measure of the stance monetary policy. MCI is constructed taking into consideration the interest rate and exchange rate channel of monetary policy transmission mechanism in a small open economy. In the open economy, monetary policy affects the inflation rate through two important monetary transmissions which are interest rate and exchange rate channels. The Bank of Canada pioneers the construction of MCI during the early 1990s in light of the close inter linkages between its money and foreign exchange markets (Freedman, 1996a, 1996b).

The adoption of the MCI as an operating target broadened the horizons of interest rate by attempting to tackle exchange rate shocks. MCI served as the immediate operational target of monetary policy, supplemented by monetary data that has proved to be good leading indicators of output (especially real narrow money) and the inflation rate (especially broad money). MCI is implemented in several countries like Turkey (Kesriyeli & Kocaker, 1999); The United Kingdom (Batini & Turnbull, 2002); Pakistan (Qayyum, 2002); India (Kannan & Bhoi, 2006).

2.2.4 Financial Market Performance

According to Ishiyama (1975), the degree of financial integration is one important criterion in the application of optimum currency area. Based on the study of Ingram and Scitovsky, Ishiyama (1975) concludes that a high degree of international financial integration is a criterion for an optimum currency area. The difference in the interest rate structure will be more apparent in long-term rates, because foreign purchases and sales of securities tend to be concentrated in short-term ones, in which foreign exchange risk can be covered in the forward market. The absence of free transaction in the long-term securities among nations will be a source of balance of payment instability because foreign holdings of short-term claims will be liquidated if and when the interest rate is different. Thus, the most important aspect of financial integration criterion related to long term securities, mere integration of markets for short term funds in not considered a sufficient condition for a common currency area.

Financial markets are linked both within countries and across countries. Empirical studies of foreign exchange or international money markets mostly rely on purchasing power parity (PPP), real interest parity (RIP) or uncovered interest parity (UIP) theory. Taylor (2002) investigates the purchasing-power parity (PPP) which have existed since the late nineteenth century. The evidence for long-run PPP is favorable using recent multivariate and univariate tests of higher power. Residual variance analysis shows that episodes of floating exchange rates have generally been associated with larger deviations from PPP, but is due to the larger shocks to the real exchange rate process in such episodes. In the course of the twentieth century, there was relatively little change in the capacity of international market integration to smooth out real exchange rate shocks. Instead, changes in the size of shocks depended on the political economy of monetary and exchange rate regime.

Maveyraud-Tricoire and Rous (2009) explore international linkages between stock market returns are based on the theory of international portfolio diversification. The switch from a multiple currencies regime to a monetary union modifies the conditions of the realization of the real interest parity (RIP) between countries of this area. The adoption of a common currency should deepen integration between countries of the monetary union. However, the increase of both financial and economic competition, following the suppression of exchange rate premium and uncertainty associated with exchange rate volatility, does not necessarily promote the convergence of real interest rates as the Optimum Currency Area (OCA) theory suggests.

Study of financial market on economic integration context is conducted by many researchers focusing on the role of stock market. Heston et al. (1995), using data on 6000 firm in the US and twelve European countries from 1978 to 1990 found evidence that capital market for large firms were integrated with the markets for small firms. Bracker et al. (1999) argue that the extent of stock market integration may depend upon certain macroeconomics variables that characterize and influence the degree of economic integration between two countries. Leong and Fermingham (2003) explore interdependence of five East Asian stock price (Singapore, Korea, Japan, Taiwan and Hong Kong) from 1990 to 2000. A simple correlation analysis indicates that the stock market has strengthened since the Asian crisis. Chai and Rhee (2005) in studying financial market integration in East Asia (Korea, China, Japan, Hong Kong, Taiwan, Indonesia, Malaysia, Philippines, Singapore, Thailand) used ARCH and VAR on 10 East Asia countries. The results of the study indicate that during the 1990s financial markets have become increasingly integrated over time in East Asia. These studies affirm that financial market condition is the main supporting factor to implement the single currency.

Kim, Moshirian, and Wu (2005) examine the influence of the European Monetary Union (EMU) on the dynamic process of stock market integration over 1989-2003 using a bivariate EGARCH framework with time-varying conditional correlations. They find that there has been a clear regime shift in European stock market integration with the introduction of the EMU. The EMU has been necessary for stock market integration as unidirectional causality was found. Linear systems regression analysis shows that the increase in both regional and global stock market integration over this period was significantly driven in part, by macroeconomic convergence associated with the introduction of the EMU and financial development levels.

Phylaktis and Ravazzolo (2005) study the long-run and short-run dynamics between stock prices and exchange rates. This research uses cointegration and multivariate Granger causality tests. They apply the analysis to a group of Pacific Basin countries over the period 1980-1998. The evidence suggests that stock and foreign exchange markets are positively related and that the US stock market acts as a conduit for these links. Furthermore, these links are not found to be determined by foreign exchange restrictions. Finally, through the application of recursive estimation the evidence shows that the financial crisis had a temporary effect on the long-run co-movement of these markets.

Bley's (2009) studies were to determine the dynamics and contemporaneous interactions of Euro stock markets at the country and economic sector level. Overall test results have revealed the time-varying nature of the financial market integration process. Promoted by the anticipation and subsequently the formation of the currency union, Euro stock markets became more integrated between 1998 and 2006. Monetary policy convergence, however, may have facilitated the divergence of economic variables. Evidence is found that return behavior is changing and stock markets within the Euro zone are starting to drift apart.

Huyghebaert and Wang (2010) examine the integration and causality of interdependencies among seven major East Asian stock exchanges before, during, and after the 1997–1998 Asian financial crisis. While stock market interactions are limited before the Asian financial crisis, they find that Hong Kong and Singapore responded significantly to shocks in most other East Asian markets, including Shanghai and Shenzhen, during this crisis. After the crisis, shocks in Hong Kong and Singapore largely affect other East Asian stock markets, except for those in Mainland China. Finally, the role of the USA shows that it strongly influences stock returns in

East Asia – except for Mainland China – in all periods, while the reverse does not hold true.

Based on some researches in the above, it appears that financial integration will occur when the financial performance of each country is in good condition. Therefore, some researchers developed an index to measure financial condition namely financial condition index (FCI). FCI is an indicator of performance financial sector or financial market performance. The financial institutions such as Goldman Sachs (GS), J.P. Morgan (JPM) use FCIs to explore financial sector performance in the developing counties.

Goodhart and Hofmann (2001) are pioneers in the calculating of Financial condition index (FCI) for G7 countries which consist of money, foreign exchange, housing and stock market. They find that house and stock prices get a substantial weight in such an index. Meanwhile, Mayes and Viren (2001) implemented FCI in Finland. They explore how asset prices, particularly house and stock prices, can provide useful additional indicators of future changes in output and inflation. Gauthier, Graham and Liu (2004) constructed three FCIs for Canada, Montagnoli and Napolitano (2005) on United States, Canada and the Euro Area, and Lack (2002) on Switzerland. Holz (2005) in a meantime developed FCI by replacing housing price to credit domestic growth. Credit growth is shown to provide early warning signals in combination with the measure of financial misalignment.

2.3 Review of Existing Empirical Studies of Economic Integration on ASEAN 5 Countries

2.3.1 Shocking Studies

The shocking studies explore similarities of macroeconomic conditions among countries which have the potential to join in a union such as growth, inflation, volatility of exchange rate, etc.. This methodology seeks to assess the similarity of a broad range of OCA properties within a group of countries in order to find subsets, or clusters, of countries that share similar characteristics and may therefore be more suitable for monetary union. The SVAR techniques developed by Blanchard and Quah (1989) are implemented to isolate demand and supply shocks in a selection of economies using time series data of real and nominal output growth. The application of Structural Vector Autoregression (SVAR) techniques for the analysis of monetary union was first undertaken by Bayoumi and Eichengreen (1997) in relation to the EMU and other possible single currency areas. The method also has the strength to predict the size of disturbances and the speed of adjustment, further shedding light on the question of monetary union. They find that several potential currency areas emerge from their analysis of supply and demand shocks. These areas are Germany and its North European counterparts, Africa, North-East Asia and South-East Asia.

Ramayandi (2005) find that Indonesia, Malaysia, Singapore, Thailand and the Philippines appear to be relatively suitable to form a monetary union. This can be justified in at least two arguments: the trade pattern among these economies, and the relative symmetry in the nature of their economic shocks. These five countries will potentially reap sizable benefits from having a cooperative monetary policy, or even from a common currency.

Aminian (2005) exhibites regional monetary cooperation for East Asia (ASEAN + 3). This paper discusses the rationale and chances for such cooperation. It is argued that, although regional incentives are not strong enough and the political prerequisites for monetary unification are not yet given, almost all economic indicators suggest that East Asian countries are ready for cooperation on economic grounds.

Huang and Guo (2006) investigate empirically, the feasibility of creating a currency union in East Asia following closer monetary cooperation in recent years. The analysis of structural disturbances suggests that it may be beneficial for Hong Kong, Indonesia, Korea, Malaysia, Singapore and Thailand to take the lead in endorsing and fostering a common currency zone.

2.3.2 OCA Index

Bayoumi and Eichengreen (1997) construct OCA index based on the variability of an exchange rate between a pair of countries explained by such factors as symmetry of shocks, openness and trade dependence of an economy. The formula "OCA Index" is expressed on the basis of the following equation:

$$SD(e_{ij}) = \alpha + \beta_1 SD\,({`}y_i - {`}y_j) + \beta_2 DISSIM_{ij} + \beta_3\, TRADEij + \beta_4 SIZEij \quad (2.1)$$

This relates the variability of the nominal exchange rate (e) as dependent variable with several independent variables consist of differences in output disturbances (y), commodity compositions of exports (DISSIM), trade linkages (TRADE) and country size (SIZE).

Bayoumi and Mauro (1999) implement the OCA index to evaluate the possibility of ASEAN single currency. This research finds that the OCA index of ASEAN is much higher than the OCA index of EMU. In terms of the economic prerequisites for single currency, ASEAN was not in a significantly worse position than the EU a few years prior to its signing of the Maastricht Treaty. ASEAN takes much longer to be able to create a single currency. In line with that study, Falianty (2005) shows that ASEAN 5 was not ready to construct a currency union because the OCA index was much higher than with the EMU. However, the value of OCA index on Singapore, Malaysia, and Thailand are relatively low than the others, so these countries are more ready to construct currency union.

2.3.3 Trade Effect

As mentioned earlier, the endogenous approach to economic integration is the focus on international trade as developed by Frankel and Rose (1998) by using the gravity model. Standard gravity model of international trade see the linkages between countries as the dependent variable with some explanatory variables such as national income, national income per capita and distance. McCallum (1995) formulates the gravity model as follows.

$$x_{ij} = \beta_0 + \beta_1 y_i + \beta_2 y_y + \beta_3 Dist_{ij} + \beta_4 Dummy_{ij} + \mu_{ij} \quad (2.2)$$

where x_{ij} is the value of bilateral export between countries *i* and *j*; y_i is real GDP of the origin countries *i* and y_j is real GDP of the destination countries j; $Dist_{ij}$ is the distance between countries *i* and *j*; *Dummy ij* is a dummy variable equals to 1 for interprovincial trade and 0 for province-to-state trade, and u_{ij} is an error term.

Rose (2000) develops a gravity model by adding population and several dummy variables such as variables of regional trade agreement, common language, common land border, common colonizer, same nation, colonial relationship, number of landlocked countries, log of sum of land area, log of product of land area and number of island countries. Meanwhile, Wall (2002) adds income per capita variable in the model gravity as written in the equation below:

$$\ln x_{ij} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln y_{it} + \beta_4 \ln y_{jt} + \beta_5 \ln D_{ij} + \beta_6 C_{ij} + \beta_7 L_{ij} + e_{ij} \quad (2.3)$$

where x_{ij} is the value of bilateral export between countries *i* and *j*, Y_{it} is real GDP of the origin countries *i* ; Y_{jt} is real GDP of the destination countries *j*; y_{it} is the real per capita GDP of the origin countries *i* and y_{jt} is the real per capita GDP of the destination countries *j*, D_{ij} is the distance between countries i and j, C_{ij} is a common language dummy, and L_{ij} is land border dummy.

In the context of ASEAN economic integration, there have been some preliminary researches using Gravity model. Frankel and Wei (1997) use gravity models to explore the impact of the ASEAN bloc in the international trade of 63 countries for 1980, 1990, 1992 and 1994. The dependent variable is the bilateral volume of total trade (exports plus imports) between countries i and j. The two most important vital factors in explaining bilateral trade flows are the geographical distance between the two countries and their economic size. The independent variables consist of GDP, distance, land border and common language. Thus, the independent variables are the distances between countries represented by the distance between the capital city, and the size of the economy as measured by the GDP of each country then add the dummy variable which consists of land border, common language, and ASEAN as block economy. The result of this research is that ASEAN block gives positive impact on world economic integration.

Similar results are also presented by Plummer (2006ab) and Rana (2007) who also used the gravity model. Plummer (2006ab) uses the data based on Rose's (1998, 2000) to detect the impact of ASEAN block economy to world economic integration. ASEAN as a group has been a statistically significant determinant of international trade flows. Whether or not this is due to ASEAN economic integration is not exactly clear, but the increase in magnitudes of the estimated coefficients on the ASEAN binary variables when serious ASEAN economic integration began to take off and interrupted by the Asian Crisis would give some prima facie support to this argument. Second, it underscored the fact that monetary integration is one of the chief determinants of trade flows, a notion to which the Europeans have long subscribed. Finally, like with respect to overall trade, ASEAN has been an important determinant of European trade, though consistently to a less extent than in the case of US trade.

Rana (2007) find that trade integration is leading to the synchronization of business cycles in ASEAN+3. This result is in accordance with the findings of Frankel and Rose (1998) which stated that the level of trade integration increases significantly after the formation of a currency union. He suggests that although ex ante East Asia may not be a good candidate for a currency union, ex post that is based on endogenous factors could be. The latter factors are important because trade expansion due to the formation of a currency union could lead to greater synchronization of business cycles, which in turn reduces the costs of a union by increasing the incidence of symmetric shocks.

2.3.4 Generalized Purchasing Power Parity (GPPP) Analysis

The generalized PPP (G-PPP) was developed by Enders and Hurn (1994, 1997) to explain the non-mean reverting behavior of the real exchange in the post-World War II period. The G-PPP is a cointegrating relationship among a group of real exchange rates which indicate the existence of common trends in their macroeconomic fundamentals, hence satisfies one of the necessary conditions for an OCA. G-PPP is hold if sum of cointegrating value among the countries observed are zero. More formally the methodology estimates the following regression:

$$\beta_2 q_{12t} + \beta_3 q_{13t} + \beta_4 q_{14t} + \ldots + \beta_{m+1} Q_{1m+1t} = 0 \qquad (2.4)$$

Where q_{1it} are the log of the bilateral real exchange rates between country 1 (the base country) and country 2 in time period t, β is an intercept term, β_{1i} are the parameters of the co-integrating vector.

Enders and Hurn (1997) find that G-PPP has a hold on G-7 (Canada, France, Germany, Italy, Japan, UK, USA) and G-3 (Germany, Japan and USA). Choudhry (2005) find that G-PPP has a hold on ASEAN 4 (Thailand, Malaysia, Indonesia, the Philippines) and South Korea. Ogawa and Kawasaki (2006) are able to find evidence of G-PPP's hold on ASEAN 5 plus Korea and China. Ahn, et,al (2006) find that G-PPP has a hold on ASEAN 4 (Indonesia, Malaysia, Singapore, Thailand) and four Northeast Asian Economies (Hong Kong SAR, Japan, Korea, and Taiwan) (Table 2.1).

2.4. Monetary and Financial's Profile of ASEAN5 Countries

2.4.1 Indonesia

Modern banking in Indonesia started in 1827, since Dutch colonial administration established a private bank, the De Javasche Bank. The Bank had the authority to circulate paper money and coins. Until the Second World War, Dutch, British, Japanese, Chinese and also a few Indonesian banks were operated in the country. The operations of the banks were disrupted during the Japanese occupation, but soon resumed after the Proclamation of Independence in 1945 (Lim, 2004).

Financial system in the Soekarno's era (1945-1965) was strongly repressed and destroyed by government policies. These policies include elimination of all foreign ownership or participation in the banking system, nationalization of the former Dutch-owned bank, and later, the consolidation of the nationalized banks into one institution, combining central and commercial banking functions. The government's reliance on the central bank to fund most current budget expenditures, especially after 1960 led to hyperinflation and undermined public confidence in the currency, resulting it to shrink the real size of the money supply to less than 4 percent of GDP (Cole & Slade, 1996).

Indonesia's modern financial system was started by Soeharto's government in 1968. The first phase of rapid development, from 1968-1972 was a period of recuperation from the previous devastation and was concentrated in the banking sector. The second development spurned, from 1983 through 1990, combining rapid growth with structural change and expansion of all types of financial assets and institutions. In between these two development periods is the oil boom decade (1973-1983) which saw a shifting of financial activity to both the fiscal sector and offshore financial institutions (Cole & Slade, 1996).

In the second phase, government implemented many financial liberalization policies on the sectors. Meanwhile, in the 1983 reform, a partial step towards restoring market mechanism was represented. It was intended to improve efficiency of the financial system by easing the restraints on the activities of existing banks, both private and state owned. This include elimination of allocation of bank credit refinanced from the Central Bank of Indonesia, removal of controls on most deposit rate by banks and on all loans except those refinanced by Bank Indonesia and removal of the remaining subsidies on deposit rates paid by state banks. In October 1988, Government launched an economic liberalization policy package on banking sector. Its main elements were removal of moratorium on entry of new banks, provision of new branches of general banks, branching of foreign banks expanded to seven major cities, extension of foreign exchange powers to banks, permission for state enterprises to hold up to 50 percent of their deposits with private banks, extension to all banks of the power to issue certificates of deposit, reduction of reserve requirement from 15 percent for demand deposit and 10 percent for saving and time deposit to 2 percent of deposit liabilities. New banks quickly entered in response to the removal of restrictions to bank entry and 43 new private banks were established in 1990 (Chant & Pangestu, 1996).

Financial liberalization of many Asian Countries during mid 1980s occurred prematurely to prelude the economic crisis at the end of 1990s. In a sense, the opening up of the financial system was not accompanied by appropriate regulations including Indonesia’s major financial liberalizations which occurred in 1983 and 1988. The policy package in October 1988 from the liberalization of banking sector was extremely inefficient due to the state-dominated banking sector which generally have failed to act as efficient and dynamic financial intermediary. Unsound financial system became one of crisis’ causes in 1997-1998 (Hill, 1999).

The economic and financial crisis in Indonesia, which started in mid-1997, has been more severe, prolonged, difficult to resolve and has caused hyper inflation. Against this background, the most suitable framework for future monetary policy in Indonesia is inflation targeting. Bank Indonesia started to announce its annual inflation target and plan of monetary policy at the beginning of 2000. In view of these factors, Bank Indonesia adopted a fully-fledged inflation targeting framework (ITF) in July 2005 (Goeltom, 2008).

2.4.2 Malaysia

Banking development in Malaysia began with the opening of a branch of Chartered Bank in 1875 in Penang. Banking soon expanded to Malacca and Kuala Lumpur. Those days, commercial banks were known as exchange banks, since they mainly dealt with foreign exchange transaction relating to external trade. The first locally incorporated bank was established in 1913 (Lim, 2004). Meanwhile, the central bank, Bank Negara Malaysia (BNM) was established in 1959 under the Central Bank of Malaysia Ordinance. BNM made use of reserve and liquidity ratios, interest rate variation, selective, credit controls and moral suasion in regulating monetary system of the country. BNM has been a key player in financial system in Malaysia.

The Malaysian financial system can be divided into the banking system and the system of non bank financial intermediaries. The banking system consists of Central Bank, commercial bank, merchant bank, finance companies including discount houses, money and foreign exchange brokers, and the Credit Guarantee Corporation which provides guarantee cover for commercial banks on loans to small business. Meanwhile, the non bank financial intermediaries are supervised by various government departments and agencies. They can be divided into five groups – the development finance institution, the savings institution, provident and pension funds, insurance companies, and others, which include societies and unit trust. The capital market comprises of a primary securities market, in which issues of government and corporate securities are offered for sale, and a secondary market, in which such securities are traded, operated by Kuala Lumpur Stock Exchange (Yusof, Hussin, Alowi, Sing, & Singh, 1996).

The Commercial banks are the most important group of financial intermediaries. The commercial banks have seen strong deposit growth which accounted for 38.4 percent of total assets in 1977; 44.2 percent in 1990, and increase to 61 percent in 2003. However, the number decreased to 26 commercial banks in 2003. There were 38 commercial banks in 1990, of which 22 were domestic incorporated banks (Lim, 2004). In Malaysia, commercial banks have to adhere to certain lending guidelines stipulated by the Central Bank on the Bumiputera community, low cost housing and small medium enterprises. In 1975, BNM introduced the guideline required for the commercial bank and finance companies to extend a minimum of 50 percent new credit to priority sectors. The priority sectors comprised of (1) the Bumiputera Community; (2) small-scale enterprises, including the special loans scheme; (3) agricultural food production; (4) individual housing loans, including low cost houses; (5) manufacturing; (6) the broad sector covering agricultural, fishing and forestry; building, construction and property development and manufacturing (Yusof, et, al, 1996).

In line with the trend of interest rate liberalization, Malaysian banks were allowed to fix their own interest rates on loans and deposits from October 1978. This "free market" approach led to a general increase in the interest rate on loans based on the cost of funds plus margin that depended on borrower's credit standing. The only exception was rates quoted to some priority sector. The fragility of the banking system was exposed after the country was hit in the Asian financial crisis. Before the crisis, credit expanded at an annual average of nearly 30 percent. However, a large proportion of the lending went into property development and stock market investment which led to a surge in the number of non performing loans (NPL). In 1998, an asset management company, Pengurusan Danaharta Nasional, was given the task of buying NPLs from banks and rehabilitating them. A sister agency, Danamodal Nasional was also set up to re-capitalize ailing financial institutions.

The outbreak of the financial crisis led to the imposition of currency and capital controls by Government in September 1998. The government peg the domestic currency Ringgit Malaysia at RM3.8 to 1 US dollar. In 2000, the government instituted a merger program where 58 commercial banks, merchant banks and financed companies, all locally owned, were reorganized into 10 banking groups. In 2001, BNM mapped out a ten year Financial Sector Masterplan (FSMP) to further sharpen the banking sector's competitive edge. The current task involves building up domestic capacity and pegs local bank performance against international standards. Islamic banking, which has been growing rapidly in recent years, has also been included in the master plan. As in 2001, the Islamic banking sector constituted 8.2 percent of the banking system.

The equity market in Malaysia has been an important avenue for direct financing especially when the economy is buoyant and share prices are high. When the economic crisis erupted, market capitalization fell drastically within a year from 807 billion ringgit in 1996 to 376 billion ringgit in late 1997. To recover from the crisis in equity market, the Government introduced a ten-year Capital Market Masterplan (CMM) in early 2001. The masterplan focused on making position and steer capital market towards global prominence by making fund raising more attractive to both investors and borrowers, especially on the corporate bond and venture capital market (Cheong, 2006).

2.4.3 The Philippines

The first formal bank in the Philippines was established in 1851. Since then, banking has evolved in line with the growth of the economy. The Philippines' banking sector comprises of the central bank, the commercial banks, thrift banks, rural banks, two special government banks and an offshore banking unit. The Central Bank of Philippines (CBP) was established in 1949. In 1993, a new Central Bank Act was promulgated to establish the present central bank: Bangko Sentral ng Pilipinas (BSP). The BSP has greater independence and more effective powers in the management of monetary policy. The BSP is mandated mainly to ensure a stable price environment conducive for economic growth.

The decade of 1980s of the financial system in the Philippines has been described as quite sophisticated for its level of development. It has a well organized money market, long experience in experimenting with financial instrument, and professional staffing. The country's savings rate is also relatively high by developing-country standards. By these conditions, the Philippines financial system seems comparable with that of almost all other countries in Asia, including Japan, Korea and Taiwan (Montes & Ravalo, 1995).

The security market in the Philippines is relatively small in comparison to Singapore and Malaysia. Market capitalization as a percentage of GDP in the Philippines is 30 percent, while that of Singapore and Malaysia is 137 percent and 135 percent respectively. As elsewhere in ASEAN, the Philippines Stock Exchange (PSE) Index is easily influenced by trend in the global financial market as well as changes in domestic economic and political conditions. Similarly, like other stock markets in the region, the PSE index was not spared from the effect of economic crisis. The PSE index plunged from 3,448 in early 1997 to a seven year low of 1,082 in 1998.

2.4.4 Singapore

The first bank that was established in Singapore was an office of the Union Bank of Calcutta in 1840. Soon, British, Dutch, French and American banks also started setting up their offices. The first local bank began operations in 1903, but had to be liquidated in 1913. However, many other local banks survived such as Four Seas Communication Bank (1906) and Overseas Chinese Banking Corporation or OCBC (1932).

When Singapore was part of the Federation of Malaysia, banks operations were under the control of the Malaysia Central Bank. The Monetary Authority of Singapore (MAS) was established in 1970 to act as the central monetary institution. The MAS performs most of the functions of a central bank. The only exception is the non-issuance of currency. However in 2002, the responsibility of the Board of Commissioners of Currency was transferred to MAS, and since then the Currency Board ceased to exist.

A study of Singapore monetary policy noted the following empirical facts: (1) domestic interest rates were determined by external factors and the most dominant factor was the foreign exchange rate; (2) real investments were not significantly affected by domestic monetary variables and hence the Keynesian multiplier effect on GDP via monetary policy may not be of a realizable proportion; and (iii) domestic consumer prices were most significantly determined by import prices (and unit labor cost) and not directly by monetary variables. As prices go up, due to the increase in world market price, domestic nominal incomes will go up and MAS supplies more money as an adaptive response. Singapore often uses exchange rate changes as an anti-inflationary policy.

The effort has been made to further develop the capital markets, notably the bond market. The Government initiated an Approved Bond Intermediary (ABI) scheme where selected funds will enjoy tax exemptions on interest. Furthermore, statutory boards and Government-linked Companies (GLCs) have been encouraged to issues bonds, steps taken to precipitate the growth of the debt market.

Consolidation in the equity market was seen when the Singapore Exchange (SGX) was established in December 1999, a result of the merger of the Stock Exchange of Singapore and the Singapore International Monetary Exchange. SGX became a publicly listed company in November 2000. The commitment towards attaining a capital market of international standing remains a goal to be pursued (Lim, 2004).

2.4.5 Thailand

In 1888, the first banking office was set up by the Hong Kong and Shanghai Bank. The branches of foreign banks dominated the Thai banking industry up to 1941. During 1942-1945, the banking industry changed hands from foreign to local owners. Five new local commercial banks were opened during the period to replace the branches of the foreign banks. At the end of second Word War, foreign bank reappeared. Seven new local banks were also founded during the 1945-1962 period.

The Enactment of the Commercial Banking Act of 1962 heralded a new growth phase in Thai banking (Lim, 2004).

In 1942, the Bank of Thailand (BOT) was established as the central bank. BOT performs all the functions of the central bank. It manages the public debt, administers foreign exchange controls and supervises the financial system. In order to ensure a sound financial system, BOT prescribes the ratio of cash reserves to total deposits, capital fund to total assets and interest rate. In 1985, BOT introduced several measures to ensure greater flexibility to financial system. In 1989, BOT removed interest rate ceiling on commercial bank time deposits with maturities longer than one year. Interest rate ceiling for the other types of deposits were also eliminated in 1992. To enhance competition and protect small borrowers, BOT also required commercial bank to announce their minimum retail rate, based on the cost of funds, a benchmark rate for small but good quality borrowers.

Thailand also removed its foreign exchange controls to encourage the free mobility of capital. Three rounds of foreign exchange liberalizations have been implemented. The first round instituted in 1990, allowing commercial banks to authorize foreign exchange transactions in trade related activities without prior approval from the central bank. In 1991, exchange controls were further loosened. Controls related to capital account transaction were lifted. However, outward direct investment above a certain limit and the acquisition of foreign real estate or securities by Thai residents still required approval from the central bank. Exporters were also allowed to accept baht payments form non resident baht account without prior approval from the central bank and to use their export proceeds to service external obligations. The third round of foreign exchange liberalization saw the limit on outward transfer of direct investment by resident raised. The limit on bank notes taken to neighboring countries was also increased.

Like in most South East Asia countries, Thailand provides financial assistance to priority economic sectors. The financial assistance included (1) increased credit allocation to those sectors; (ii) financial assistance to export manufacturers; (iii) assistance for rice exporters; (iv) special assistance to exporters affected by the baht exchange rate adjustment; (v) changing the regulations governing the rediscounting of promissory notes arising from exports, small industrial undertakings and animal husbandry.

During the Asian financial crisis 1997-1998, Thailand was severely affected. In return for seeking financial assistance from the IMF, the country had to fulfill several conditions set out by the IMF. The central bank had to raise foreign ownership of banks to help re-capitalize the local banks. Five of Thailand’s seven independent commercial banks now have a significant foreign investors’ presence. They include the Thai Farmers Bank, the Bangkok Bank and the Siam Commercial Bank. Similarly two of the five nationalized banks, namely Radanasin Bank and Nakornthon Bank had been sold off to foreign investors.

A number of new institutions were set up to restructure the financial sector and restore confidence. The Financial Institution Development Fund (FIDF) was established to prevent bank runs and systemic risk. The main responsibility was to guarantee the deposits and liabilities of financial institutions. This guarantee, however, is to be later phased into a self-financed and limited deposit insurance scheme. Subsequently, the government established two more institutions: a Financial Sector Restructuring Authority (FRA) with the objective of auctioning off the assets of closed financial companies, and the Thai Asset Management Corporation (TAMC) to manage non performing loans of the banking sector (McCauley, 2006).

2.5 The Performance of Economic Integration in ASEAN

ASEAN was formed in 1967. In the beginning ASEAN primarily pursued political goals- peace & security in SEA. Only from 1970s onward started to give thought to closer economic integration. Although a Preferential Trading Agreement was agreed upon in 1977, the impact was limited and some countries are not ready to open up. In 1980s trade liberalization seriously started to make way. In 1992 ASEAN members also wanted to arm themselves against the newly developed trading blocs of NAFTA and the EU in 1992 they established AFTA. In 1997 AFTA leaders adopted ASEAN Vision 2020- plan the establishment of ASEAN community by the 2020 made up three different pillars ASEAN Economic Community (AEC), an ASEAN Security Community (ASC), and ASEAN Socio Cultural Community (ASCC). The AEC is meant to single market and production base with free movement of goods service, investment, skilled labour and a free flow of capital. Inequality in allocation of interest and losses from regional cooperation given gap in development stages among ASEAN members.

While so far, trade cooperation among the ASEAN countries are also less encouraging. Several factors indicate that some of the schemes and proposals are not successful. ASEAN industrial Project which started in 1976, of the 5, only the Urea Project in Indonesia and Malaysia took off. ASEAN Industrial Complement Scheme which was launched in 1981 on the principle of resources pooling and market sharing. The first project was ASEAN car. Also not successful. ASEAN Industrial Joint Venture Scheme –encouraging intra ASEAN investment among private investors- did not have major impact on ASEAN trade and investment. Calculation shows that only 5% of intra ASEAN trade has been carried out using CERP (Common Effective Preferential Tariff). Inequality in allocation of interest and losses from regional cooperation given gap in development stages among ASEAN members. Some study on AFTA shows that Philippines benefit most from trade diversion created by AFTA. The next beneficial member are Singapore (10%), Thailand (6%), Malaysia (5%), and Indonesia (3%). If trade creation factor is taken into consideration, AFTA bring welfare gains to Malaysia and Singapore (Reyes 2004).

ASEAN was established by a declaration and not by treaty, meaning that ASEAN completely lack legal personality. EU on the other hand have legal personality and dispose of a powerful commission to implement and enforce decisions. The Bangkok Declaration (1967) simply proclaimed the aims of ASEAN to promote peace, stability and prosperity through regional cooperation, respect for the rule of law and adherence to UN principles. It is different the Treaty of Rome signed on 25 March 1957 that created the European Economic Community (EEC) as a legal entity, along with a powerful Commission to implement decisions of its member states and to verify and enforce compliance to those decisions. The EEC later became the European Union (EU) when the Treaty of Maastricht was signed on 7 February 1992. In addition to economic cooperation, the Treaty on European Union added two other pillars: common foreign and security policy; and justice and home affairs (Reyes, 2004).

The next difference between EU and ASEAN is if the EU put forward the handle links form the supranational approach of economic instruments to reduce disparities across member countries, while ASEAN sub-regional approach instead uses that not infrequently it will reduce the sense of togetherness within the ASEAN members. In this respect the European Structural Funds have proved to be powerful in reducing disparities among the EU member countries, and between regions within the member countries to be more precise. This supranational approach, particularly the interaction between the EU Council and the European Commission, has also allowed the adoption of an EU pre-accession strategy vis-à-vis the 13 candidate countries of Central and Eastern Europe. Also the role of the European Investment Bank, established as the EU's financing institution by the 1957 Treaty of Rome, is important to mention. Meanwhile in ASEAN the major instrument for convergence and "sub-regional" development is subregional co-operation. The aim is to narrow the gap in the levels of development among member states and to reduce poverty and socio-economic disparities in the region, and for this reason, ASEAN supports the implementation and further development of growth areas. These areas are the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN, Growth Area (BIMP-

EAGA), the Indonesia-Malaysia-Singapore Growth Triangle (IMS-GT), the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT), and the inter-state areas along the West-East Corridor (WEC) of the Mekong Basin in Vietnam, Laos, Cambodia and Northeastern Thailand within the ASEAN Mekong Basin Development Cooperation scheme (Cuyver, 2002).

There is also a marked difference in the face of economic crisis between ASEAN and the EU. In ASEAN, "macro-economic solidarity" is even much weaker than in the EU. The original currency swap agreement among the "ASEAN-5" was too small compared to the monetary problems that the ASEAN countries were facing during the Asian crisis of 1997-1999. Japan's proposal of establishing an Asian Monetary Fund would contribute to the development of "macro-economic solidarity" mechanisms among the "ASEAN+3", especially through and after the "Chiang Mai Initiative" of the finance ministers of the "ASEAN+3". But apparently it did not run optimally, because ultimately the completion of the economic crisis of the ASEAN countries actually much settled by the scheme developed by the IMF. Meanwhile in the EU, monetary integration went from the establishment of a system of fixed but adjustable exchange rates among the six original members. Followed by the establishment of the European Monetary System (EMS) in 1979 among nine EU members with the further European monetary integration which finally found an apotheoses in the creation of the European Monetary Union (EMU) in 1999 (Cuyver, 2002).

CHAPTER 3
METHODOLOGY RESEARCH AND DATA

3.1. Introduction

This research is conducted by the time series and panel data analysis. The time series analysis used Vector Error Correction Model (VECM). VECM operates the stationary series test using the Augmented Dickey-Fuller (ADF) and the Phillips Perron (PP) unit root tests, to reach the optimal lag length using two information criteria Akaike Information Criteria (AIC) and Schwarz Criteria (SC), and to test any cointegration among variables using the Johansen cointegration test. Panel data analysis implements the static and dynamic approach. For dynamic approach needs unit root test and cointegration of panel data. Model specification and data provide on this chapter too, consist of Generalized Purchasing Power Parity (G-PPP), Monetary Condition Index (MCI), Financial Condition Index (FCI), and Gravity Model.

3.2 Vector Error Correction (VECM)

According to Maddala and Kim (1998), VECM has been a viable alternative to the unrestricted VAR model. Unrestricted VAR has proved to be a convenient method of summarizing the dynamic relationships among variable and particularly suitable for studying the MTM. Unrestricted VAR model assume that the variables are stationary and co-integrated. If the variables are stationary and co-integrated, then unrestricted

VAR method in first differences become an appropriate methodology. However, if the variables are non-stationary, but co-integrated, the correct specification is a vector error-correction model (VECM) (Koop, 2005).

The first step in the estimation procedure is to determine if the variables are stationary or non stationary in levels. We apply here are the Augmented Dickey-Fuller (ADF) and the Phillips Perron (PP) unit root tests for testing for stationary of the data. Second step, we reach the optimal lag length. Third step, to test whether there is any cointegration between variables, We use the Johansen cointegration test.

3.2.1 Stationary series

According to Enders (2004), the testing for stationary or unit root under Augmented Dickey-Fuller (ADF) is based on the equations:

$$\Delta X_{jt} = \mu + \alpha^* X_{jt-1} + \sum_{i=1}^{p} \gamma_i \Delta X_{jt-1} + \varepsilon_t \tag{3.1}$$

And

$$\Delta X_{jt} = \mu + \beta t + \tilde{\alpha} X_{jt-1} + \sum_{i=1}^{p} \gamma_i \Delta X_{jt-1} + \varepsilon_t \tag{3.2}$$

where X_{jt} is the series being tested which are the time series. μ is constant and t represents a time trend. The first equation show a model without trend and the second represent the model with trend. The unit root process is tested under the null hypothesis of α^* = 0 and $\tilde{\alpha}$ = 0 with test statistic of t_{α^*} and $t_{\tilde{\alpha}}$, respectively.

The Phillips-Perron (PP) unit root test are based on the following model

$$X_{jt} = \mu + \alpha^{*} X_{jt-1} + \varepsilon_t \tag{3.3}$$

and

$$X_{jt} = \mu + \tilde{\beta}(t - T/2) + \tilde{\alpha} X_{jt-1} + \varepsilon_t \tag{3.4}$$

where X_{jt} is the series being tested which are the time series. T is the number observation, μ and β are non zero mean and linier trend term, respectively. The first equation show a model without trend and the second represent the model with trend. The unit root process is tested under the null hypothesis of $\alpha^{*} = 0$ and $\tilde{\alpha} = 0$ with test statistic of $t_{\alpha^{*}}$ and $t_{\tilde{\alpha}}$, respectively.

3.2.2 Lag Length Selection

According to Enders (2004), selection of lag length is very important to determine the VAR or VECM method. The test of determine appropriate lag length are the multivariate generalizations base on two information criteria:

$$AIC = -2l/T + 2n/T \tag{3.5}$$

and

$$SC = -2l/T + n \log T/T \tag{3.6}$$

These information criteria used for model selection such as determining the lag length of the VAR, with smaller values of the information criterion being preferred.

3.2.3 Cointegration

According to Enders (2004), in the Johansen procedure to estimate the number of characteristic roots using the following two test statistics:

$$\lambda_{trace}(r) = -T\sum_{i=r+1}^{n}\ln\left(1-\hat{\lambda}_i\right) \tag{3.7}$$

$$\lambda_{\max}(r, r+1) = -T\ln\left(1-\lambda_{i+1}\right) \tag{3.8}$$

Whare $\hat{\lambda}_i$ is the estimated value of characteristic roots also called eigenvalues. T is the number of usable observations. When the appropriate value of r are clear, these statistics are simply referred to as λ_{trace} and $\lambda_{\max}$. The first statistics tests the null hypothesis that the number of distinct cointegrating vectors is less than or equal to r against a general alternative. The second statistics test the null that the number of cointegrating vectors is r against the alternative of r +1 cointegrating vectors. The critical value of λ_{trace} and $\lambda_{\max}$ statistics are provided by Johansen and Juselius (1990).

3.2.4 VECM, Granger Causality and Block Exogeneity

According to Enders (2004) the main characteristics of VECM as compared with the VARs is the notion of an equilibrium short run dynamic relationships and the introduction of past disequilibrium as explanatory variables in the dynamic behavior of current variables. The VECM is of the form:

$$\Delta y_t = \sum_{j=1}^{k-1} \Gamma_j \Delta y_{t-j} + \alpha\beta' \Delta y_{t-k} + \mu + \in_t \qquad (3.9)$$

Where $\sum_{j=1}^{k-1} \Gamma_j \Delta y_{t-j}$ and $\alpha\beta' \Delta y_{t-k}$ are the vector autoregressive (VAR) component in first differences and error correction component, respectively. y_t is a $p \times 1$ vector of variables and is integrated of order one. μ is a $p \times 1$ vector of constant, k is a lag structure, while $\in_t$ is a $p \times 1$ vector of white noise error terms. Γ_j is a $p \times p$ matrix that represent short term adjustment among variables across p equations at the j lag. β' is a $p \times r$ matrix of cointegrating vectors, and Δ denotes first differences. α is a $p \times r$ matrix of speed adjustment parameters representing the speed of error correction mechanism. A larger α suggests a faster convergence toward long-run equilibrium in cases of short-run deviations from this equilibrium.

Is there any relationship between cointegration and Granger causality? According to Maddala and Kim (1998), cointegration is concerned with long run equilibrium. On the other hand, VECM and Granger causality is concerned with short run equilibrium. These two different concepts can be considered in error correction model (ECM) or VECM. According to Dahalan (2003), the VECM is useful for detecting direction of Granger causality when variables are cointegrated. Either the statistical significance of the tests of the lagged error-correction term and the F-test applied to the joint significance of coefficient of the lag of the explanatory variables present evidence of Granger causality.

In order to support the causality is also required analysis of exogeneity. A block exogeneity test is useful for detecting whether to incorporate and additional variable into a VAR. This block aims to distinguish between causality and exogeneity. In essence, the block exogeneity restricts all lags of parameters to be equal to zero. Chi-sq is used to determine the significance of this test (Enders, 2004).

3.2.5 Innovation Accounting Analysis

According to Enders (2004) and Dahalan (2003), the analysis of dynamic interaction on VECM method is investigated by the innovation accounting analysis. The analysis comprises the impulse response functions (IRFs) and variance decompositions (VDC) can be useful tools to examine the relationships among economic variables. The IRF traces out the time paths of the effects the exogenous shock in one variable on the other variable in the model. The estimated VECM is transformed into an infinite order vector moving average (VMA) model. The VMA is essential to trace out the time path of the various shocks on the variable and can be expressed as

$$\Delta y_t = \mu + \sum_{i=0}^{\infty} \phi \in_{t-i} \qquad (3.10)$$

Where ϕ is a (3 x 3) matrix coefficient of impulse response functions which can be used to generate the effects of $\in_{t-i}$ on the entire time path i of the Δy_t sequences.

On the other hand, according to Dahalan (2003) the variance decomposition analysis decomposes the forecast error variance for a certain variable into component accounted for by innovations of all variables in the model. The forecast error variance decomposition or variable is the proportion of the movement in a sequence due to its own shock and shocks to the other variables. The variance decomposition can be obtained by computing the percentage of the *ith* period ahead squared forecast error of one variables as produced by a one standard deviation shock by the same or other variables.

3.3 Panel Data

Panel data refers to pooling observation for N a cross section (e.g. countries, households, firms, individuals, etc.) over several T time periods (e.g. annually, quarterly, monthly, etc.). According to Baltagi (2003) explore several benefits of panel data. First, panel data can be controlling for individual heterogeneity usually panel data suggest that individuals, firms, states or countries are heterogeneous. Time-series and cross-section studies no controlling for this heterogeneity run the risk of obtaining biased result. Second, panel data give more informative data, more variability, less collinearity among the variables, more degree of freedom and more efficiency. Time series studies are plagued with multicollinearity. Third, panel data are better able to study the dynamics of adjustment. Cross sectional distribution that look relatively stable hide a multitude of change. Spells of unemployment, job turnover, residential and income mobility are better studied with panels. Panel data are also well suited to study the duration of economic states like unemployment and poverty, and if these panels are long enough. Fourth, panel data are better able to identity and measure affects that are simply not detectable in pure cross-section or pure time series data. Firth, panel data models allow us to construct and test more complicated behavioral models than purely cross-section or time data. Sixth, panel data are usually gathered on micro units, like individual, firms and households. Many variables can be more accurately measured at the micro level, and biases resulting from aggregation over firms or individuals are eliminated.

Meanwhile, Baltagi (2003) exhibits several limitations of panel data method. First, design and data collection problems include problems of coverage (incomplete account of the population of interest), non response (due to lack of cooperation of the respondent or because of interviewer error), recall (respondent not remembering correctly), frequency of interviewing, interview spacing, reference period, the use of bounding and time in sample bias. Second, short time series dimension problem because typical panels involve annual data covering a short span of time for each individual. This means that asymptotic argument rely crucially on the number of individual tending to infinity. Increasing the time span of the panel is not without cost either. In fact, this increase the chances of attrition and increases the computational difficulty for limited dependent variable panel data model.

The basic framework of the panel data is a regression model of the form

$$Y_{it} = \alpha_i + \beta X_{it} + u_{it} \tag{3.11}$$

Where the variables Y and X have both *i* and *t* subscripts for i = 1,2,.., *N* sections and *t* = 1,2…, T time periods. The data set is called *balanced* if nest data both across section and across time is full. Otherwise, when observations are missing for the time periods of some of the cross sectional units then the panel is called *unbalanced*.

In general panel data divide two approach are static and dynamic model. In the static model consist of a common constant, fixed effect and random effect. In the dynamic panel model improved upon by the methods of Arrelano and Bond (1991), the following will explain one by one:

3.3.1 The Common Constants Method

The common constants method also called the pooled OLS method as in equation 3.9. The assumption of the model are no differences among the data matrices of the cross sectional dimension (N). In others words the model estimates a common constant a for all cross sections or commons constant for N.

Practically, this method implies that there are no differences between the estimated cross section and it is useful under the hypothesis that the data set is a priori homogeneous. However, this case is quite restrictive and case of more interests involving the inclusion of fixed and random effects in the method of estimation (Asteriou & Hall, 2007).

3.3.2 The Fixed Effects Method

According to Asteriou and Hall (2007), in the fixed effects method, the constant is treated as group or section specific. This means that the models allows for different constants for each group. The effects estimator is also known a the least squares dummy variables (LSDV) estimator because in order to allow for different constants for each group, it includes a dummy variable for each group. To understanding this better consider the following model:

$$Y_{it} = a_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + u_{it} \tag{3.12}$$

which can be written in a matrix notation as:

$$Y = D_{\alpha} + X\beta^{'} + u \tag{3.13}$$

Where the dummy variable (D) is the one that allow us to take different group-spesifc estimates for each of the constants for every different section. The standard F-test can be used to check fixed effect against the simple common constants OLS method.

3.3.3 The Random Effect Method

According to Asteriou and Hall (2007), the random effect method is an alternative method of estimating a panel data model. The difference between the fixed effect and the random effects method is that the latter handles the contains for each section not as fixed, but as random parameters. Hence the variability of the constant fo3 each section comes from the fact that:

$$a_i = a + v_i \tag{3.14}$$

Where v_i is zero mean standard random variable.

The random effect model takes the following form:

$$Y_{it} = (a + v_i) + \beta_1 X_{1it} + \beta_2 X_{2it} + ... + \beta_k X_{kit} + u_{it} \tag{3.15}$$

$$Y_{it} = a + \beta_1 X_{1it} + \beta_1 X_{1it} + ... + \beta_k X_{kit} + (v_i + u_{it}) \tag{3.16}$$

In general, the difference between the two possible ways of testing panel data models is the fixed effect model assume that each country differs in its intercept term, whereas the random effect assume that each country differs in its error term. Usually, when the panel is balanced or contains all existing cross sectional data, one might expect that the fixed effects model will work best. In other case, where the sample contains limited observations of the existing cross sectional units, the random effect model might be more appropriate. In the random effect model used to the Breusch-Pagan test is the counterpart to the F-test.

In making a choice between the fixed effect and random effect approaches used to the Hausman tests. This test investigates whether random effect estimation could be almost good. Thus we actually test H_o, that random effects is consistent and efficient, versus H_1 that random effect is inconsistent, as the fixed effect will be consistent. A large value of the Hausman statistic, so we reject the null hypothesis that the random effect is inconsistent but the fixed effect is consistent.

3.3.4 Dynamic Panel Data

According to Baltagi (2003), many economic relationships are dynamic in nature and one of the advantages of panel data is that they allow the researcher to better understand the dynamics of adjustment. See, for example, Balestra and Nerlove (1966) on dynamic demand for natural gas, Baltagi and Levin (1986) on dynamic demand for an addictive commodity like cigarettes, Holtz-Eakin (1988) on a dynamic wage equation, Arellano and Bond (1991) on a dynamic model of employment, Islam (1995) on a dynamic model for growth convergence, and Ziliak (1997) on a dynamic lifecycle labor supply model. These dynamic relationships are characterized by the presence of a lagged dependent variable among the regressors.

Arellano and Bond (1991) propose a generalized method of moments (GMM) procedure that is more efficient than the Anderson and Hsiao (1982) estimator. Arellano and Bond (1991) argue that additional instruments can be obtained in a dynamic panel data model if one utilizes the orthogonally conditions that exist between lagged values of y_{it} and the disturbances e_{it}. Consider the linear dynamic panel data specification given by

$$Y_{it} = \sum_{j=1}^{p} p_j Y_{it-j} + X_{it}'\beta + \delta_i + \varepsilon_{it} \tag{3.17}$$

First differencing this specification eliminates the individual effect and produces an equation of the form

$$\Delta Y_{it} = \sum_{j=1}^{p} p_j \Delta Y_{it-j} + \Delta X_{it}'\beta + \Delta\varepsilon_{it} \tag{3.18}$$

Which may be estimated using GMM techniques.

Efficient GMM estimation of this equation will typically employ a different number of instruments for each period, with the period-specific instruments corresponding to the different numbers of lagged dependent and predetermined variables available at a given period. Thus, along with any strictly exogenous variables, one may use period-specific sets of instruments corresponding to lagged values of the dependent and other predetermined variables.

3.3.5 Panel Stationary of series

According to Baltagi (2003), recent literature suggests that panel-based unit root tests have higher power than unit root tests based on individual time series. Several unit root test for panel data are Levin, Lin and Chu (2002), Breitung (2000), Im, Pesaran and Shin (2003), Fisher-type tests using ADF and PP tests. The following will explain one by one:

LLC and Breitung

Levin, Lin, and Chu or LLC (2002) , and Breitung (2000) tests assumed that there is a common unit root process so that is identical across cross-sections. LLC and Breitung both consider the following basic ADF specification:

$$\Delta y_{it} = \alpha y_{it-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{it-j} + X'_{it} \delta + \varepsilon_{it} \tag{3.19}$$

where we assume a common, but allow the lag order for the difference terms, to vary across cross-sections. The null hypothesis is a unit root, while under the alternative is no unit root.

IPS and Fisher

The Im, Pesaran, and Shin or IPS (2003), and the Fisher-ADF and PP tests all allow for individual unit root processes so that may vary across cross-sections. The tests are all characterized by the combining of individual unit root tests to derive a panel-specific result. IPS by specifying a separate ADF regression for each cross section:

$$\Delta y_{it} = \alpha y_{it-1} + \sum_{j=1}^{p_u} \beta_{ij} \Delta y_{it-j} + X'_{it}\,\delta + \varepsilon_{it} \tag{3.20}$$

The IPS test statistic requires specification of the number of lags and the specification of the deterministic component for each cross-section ADF equation. You may choose to include individual constants, or to include individual constant and trend terms. The null and alternative hypotheses are the same as for the as IPS.

An alternative approach to panel unit root tests uses Fisher's (1932) results to derive tests that combine the p-values from individual unit root tests. This idea has been proposed by Maddala and Wu (1999). If we define π_i as the p-value from any individual unit root test for cross-section *i*, then under the null of unit root for all *N* cross-sections, we have the asymptotic result that

$$-2\sum_{i=1}^{N} \log(\pi_i) \longrightarrow \chi^2_{2N} \tag{3.21}$$

The asymptotic χ^2 and standard normal statistics using ADF and Phillips-Perron individual unit root tests. The null and alternative hypotheses are the same as for the as IPS. For both Fisher tests, you must specify the exogenous variables for the test equations. it may elect to include no exogenous regressors, to include individual constants (effects), or include individual constant and trend terms. Additionally, when the Fisher tests are based on ADF test statistics, you must specify the number of lags used in each cross-section ADF regression. For the PP form of the test, you must instead specify a method for estimating f_o.

3.3.6 Panel Cointegration

According to Asteriou and Hall (2007), the main motivation towards testing for cointegration is primarily linked within the provision of investigating the problem of spurious regressions, which exists only in presence of non stationary. The cointegration test among two variables is a formal way of investigating between:

- a simple spurious regression where both X_{it} and Y_{it} are integrated of the same order and the residuals of regressing Y_{it} to X_{it} (i.e the u_{it} sequence of this contains a stochastic trend; or
- the special case in which again both X_{it} and Y_{it} are integrated of the same order, but this time the u_{it} sequence is stationary

Normally in the first case we apply first difference to reestimate the regression equation, while in the second case we conclude that the variables X_{it} and Y_{it} are cointegrated. Thus, in order to test for cointegration it is important to ensure that the regression variables are a priori of the same order. Several panel cointegration test are Kao test and Fisher/Johansen Test. The following will explain one by one:

Kao Test

Kao test follows the same basic approach as Engle-Granger tests, but specifies cross-section specific intercepts and homogeneous coefficients on the first-stage regressors. Consider the model:

$$Y_{it} = a_i + \beta X_{1it} + u_{it} \tag{3.22}$$

The residual-based cointegration test can be applied to equation:

$$u_{it} = eu_{it-1} + v_{it} \tag{3.23}$$

Kao proposed four different DF-type that are given below:

$$DF_p = \frac{\sqrt{N}T(\hat{p}-1)+3\sqrt{N}}{\sqrt{10.2}} \tag{3.24}$$

$$DF_t = \sqrt{1.25t_p} + \sqrt{1.875N} \tag{3.25}$$

$$DF_p^* = \frac{\sqrt{N}T(\hat{p}-1)+3\sqrt{N}\,\hat{\sigma}_v^2 / \hat{\sigma}_{0v}^2}{\sqrt{3+36\hat{\sigma}_v^4 / (5\hat{\sigma}_{0v}^4)}} \tag{3.26}$$

$$DF_p^* = \frac{t_p + \sqrt{6N}\,\hat{\sigma}_v / (2\hat{\sigma}_{0v})}{\sqrt{\hat{\sigma}_{0v}^2 / (2\hat{\sigma}_v^2) + 3\hat{\sigma}_v^2 / (10\hat{\sigma}_{0v}^2)}} \tag{3.27}$$

Kao also proposes an ADF test statisctics by

$$DF_p^* = \frac{t_{ADF} + \sqrt{6N}\,\hat{\sigma}_v \big/ (2\hat{\sigma}_{0v})}{\sqrt{\hat{\sigma}_{0v}^2 \big/ (2\hat{\sigma}_v^2) + 3\hat{\sigma}_v^2 \big/ (10\hat{\sigma}_{0v}^2)}} \tag{3.28}$$

Where N is number of i, σ is variance, t_{ADF} is the ADF statistic of regression.

Fisher/Johansen Test

Fisher (1932) derived a combined test that uses the results of the individual independent tests. Maddala and Wu (1999) use Fisher's result to propose an alternative approach to testing for cointegration in panel data by combining tests from individual cross-sections to obtain at test statistic for the full panel.

If π_i is the p-value from an individual cointegration test for cross-section, then under the null hypothesis for the panel,

$$-2\sum_{i=1}^{N} \log(\pi_i) \longrightarrow \chi_{2N}^2 \tag{3.29}$$

By default, in EViews 6 software reports the value based on MacKinnon-Haug-Michelis (1999) p-values for Johansen's cointegration trace test and maximum eigenvalue test.

3.4 Model Specification

3.4.1 Generalized Purchasing Power Parity (G-PPP)

This part is to evaluate the possibility of ASEAN economic integration by the Generalized Purchasing Power Parity (G-PPP). G-PPP is developed based on the concept of purchasing power parity. Purchasing power parity is fundamental theoretical concept in international economics. However, several early studies failed to detect that PPP holds. According to new arguments, this was due to the random walk assumption (Froot & Rogoff, 1995). The milestone of PPP studies against the random walk assumption was conducted by Abuaf and Jorion (1990). They reject the hypothesis that the real exchange rate follows a random walk by pooling the data in a system of univariate autoregressions, and by using the Dickey and Fuller statistics. They show that long-run PPP might indeed hold.

Several studies enhanced the Abuaf and Jorion (1990) approach by employing the Johansen cointegration test to estimate the PPP in the OCA concept with namely the Generalized Purchasing Power Parity (G-PPP). According to Enders and Hurn (1994, 1997), the G-PPP model explains that PPP holds if a linear combination of some bilateral real exchange rate series has equilibrium in the long run, even if each individual bilateral rate series is non-stationary. According to Choudhry (2005) G-PPP will hold within the domain of a currency area since the individual nations will experience a set of common real macroeconomic shocks. G-PPP has been interpreted in term of an optimum currency area (OCA) that operates a single common currency.

Enders and Hurn (1994) fail to find PPP hold by G-PPP approach between Germany, the UK and the USA, using Japan as the base country. They conclude that these three currencies are not within a currency area. On the contrary, Enders and Hurn (1997) find G-PPP on G-7 (Canada, France, Germany, Italy, Japan, UK, USA) and G-3 (Germany, Japan and USA). Using data from the industrialized countries during the post-Bretton Woods period, they show that G-PPP holds for various groupings of nations. An interesting finding is that G-PPP does not hold among the set of major European nations. The direct implication is that such nations do not constitute the domain of a currency area. Liang (1999) fails to find evidence of the G-PPP between Hong Kong, China, but does find G-PPP when Japan is added to the group.

Choudhry (2005) find G-PPP between Thailand, Malaysia, Indonesia and the Philippines and South Korea. This study investigates the effects of the Asian currency crisis of 1997– 1998 on the generalized PPP between several real exchange rates among Asian countries. Monthly log of real exchange rates of the currencies of Thailand, Malaysia, Indonesia, the Philippines and South Korea vis-à-vis the US dollar and the Japanese yen during 1990–2004 are applied in this investigation. Further tests are conducted between exchange rates vis-à-vis the Thai baht to explore relationship of economic crisis in 1997/1998. Tests are conducted for periods before and after the crisis. Results from the Johansen method of multivariate cointegration show a substantial change in the relationship between these real exchange rates before and after the Asian currency crisis based on three currencies: US dollar, yen and baht.

Additionally, Kawasaki and Ogawa (2006) detect a cointegration relationship among real effective exchanges rates (REER), they investigate whether the region composed of ASEAN 5 + 3 is an optimum currency area (OCA). In this investigation, interest is on an issue whether the Japanese yen could be regarded as an “insider” currency as well as other East Asian currencies. Or, is the Japanese yen still an “outsider” which is used as a target currency of foreign exchange rate policy for other East Asian countries. This study employs a Dynamic OLS to estimate the long-term relationship among the East Asian currencies in a currency basket. The results indicate that the Japanese yen works as an exogenous variable in the cointegration system during a pre-crisis period while it works as an endogenous one during a post-crisis period. It implies that the Japanese yen could be regarded as an insider currency as well as other East Asian currencies after the crisis although it is regarded as an outsider currency as well as the US dollar and the euro before the Asian crisis.

Ahn,etal (2006) find G-PPP between ASEAN 4 (Indonesia, Malaysia, Singapore, Thailand) and four Northeast Asian Economies (Hong Kong SAR, Japan, Korea, and Taiwan). They attempts to make a contribution to the recent search for a suitable assessment of the economic feasibility of a higher degree of monetary cooperation in East Asia. By using a SVAR approach as well as a G-PPP approach, they find that a larger group of appropriately selected East Asian economies does satisfy the macroeconomic conditions for forming an Optimum Currency Area

(OCA). The East Asian group consists of four ASEAN countries (Indonesia, Malaysia, Singapore, and Thailand) and four Northeast Asian economies (Hong Kong SAR, Japan, Republic of Korea, and Taiwan). This finding presents a striking contrast to the existing research results whose policy recommendation has generally been that countries in East Asia should start with a smaller subgroup currency area. It is time that many East Asian economies as a region made a serious effort to pursue a higher degree of monetary cooperation among them selves for forming an OCA. To estimate of G-PPP, Ahn, et al (2006) use bilateral nominal exchange rate, but Kawasaki and Ogawa (2006) explored real effective exchange rate (REER). In this study prefer to uses the REER, because REER has the trade weighted that included several trading partners, so expect much better reflect the real situation.

Following Enders and Hurn (1994), G-PPP theory suppose that a group of $m + 1$ countries in an n country world constitutes a currency area. While In this study m are ASEAN 5 countries consist of Indonesia, Malaysia, The Philippines, Singapore and Malaysia. Since there are only m independent REER within the group of $m + 1$ countries. The reduced-form solution for the m independent REER can them be expressed as:

$$Q_t = A X_t \tag{3.30}$$

where Q_t is the $m \times 1$ vector of REER, A is $m \times (m + 1)$ parameter matrix, and X_t is the $(m + 1) \times 1$ vector of real fundamentals such as output levels. The real exchange rates will be stationary and hence PPP will hold if all the elements of X_t are stationary. Since the elements of X_t represent real shocks, each of them is assumed nonstationary. Then, X_t can be expressed using the common trends representation as follows:

$$X_t = \Psi\Phi_t \tag{3.31}$$

where Ψ is the (*m* 1) x (*m* 1) matrix of the parameters, and Φ_t is the (*m* 1) x1 vector of the nonstationary stochastic trends. Therefore, the behavior of the real effective exchange rates Q_t can be determined the following:

$$Q_t = A\Psi\Phi_t \tag{3.32}$$

The behavior of real macroeconomic shocks and thus that of real exchange rates depend on the rank of the matrix Ψ. As long as the *rank* (Ψ) < *m*, it is always possible to premultiply *Qt* by *m* x *m* matrix Φ to obtain at least one cointegrating vector of the real exchange rates as follows:

$$\Phi\ (A\Psi) = 0 \tag{3.33}$$

Equations 3.32 and 3.33 imply $\beta Q_t = 0$. If the rank(Ψ) = 1, all the elements of X_t share a single common trend and hence there exist m − 1 linear combinations of the real exchange rates, which are stationary. Especially, if the rank (Ψ) = m − 1, all the elements of X_t share m − 1 common trends and hence there will be a unique cointegrating vector of the real exchange rates. In this case, βQ = 0 can be rewritten as follows:

$$B_1 q_{11t} + \beta_2 q_{12t} + \beta_3 q_{13t} + \ldots + \beta_{m+1} Q_{1m+1t} = 0 \tag{3.34}$$

Equation 3.34 shows the long-run equilibrium relationship between the m REER within the group of m + 1 countries. The G-PPP holds within the group of countries in question. Note that the weights β_i are functions of parameters in matrix A that represent linkages among the economies. There all fundamentals (or shocks) are highly interrelated within these countries and hence these countries can be good candidates for implementation of OCA. It becomes the strict (absolute) PPP relationship (between the currencies of countries 1 and 2) if sum of the β_{it} are equal to zero.

In estimating G-PPP model are some steps should be taken. The first to see the necessary data stationarity by unit roots test using Augmented Dickey and Fuller (ADF) and Phillipn Peron (PP). Followed by setting the optimal lag using the AIC and SC. Johansen cointegration is used to view the existence of cointegration of REER among ASEAN five countries. The sum of normalization of Johansen cointegration result indicated the long run interrelationship and if sum of the β_{it} are equal to zero as evidence of PPP hold.

3.4.2 Monetary Condition Index (MCI)

The one of the OCA criteria relating to the similarity of inflation and shock by using monetary transmission mechanism (MTM) analysis. The measurement of monetary transmission effect on the similarity of inflation, one approach is to use monetary condition index (MCI). MCI has been used as measure of the stance monetary policy. MCI is constructed taking into consideration the interest rate and exchange rate channel of monetary policy transmission mechanism in a small open economy. In the open economy, monetary policy affects the inflation rate through two important monetary transmission are interest rate and exchange rate channels (Freedman, 1995; Qayyum, 2002; Kanaan & Bhoi, 2006).

According to Qayyum (2001), there are several possible uses of MCI which discussions in the literature. First, MCI can be used as operational target of monetary policy. For this purpose desired MCI is constructed by taking into consideration the long run monetary policy objectives. As a policy targets monetary authority is required to bring actual level of MCI to the targeted level. The central banks of Canada and New Zealand, among others, are using MCI as an operational target of monetary policy. Second, MCI can be used an indicator of monetary policy conditions in a particular time. It can measure monetary policy stance that is whether monetary policy is tight or loose with reference to particular period. Third, MCI can also be used as a monetary policy rule. For this purpose the objective function of monetary policy rule can be obtained by rearranging MCI equation.

The Bank of Canada pioneers the construction of MCI during the early 1990s in light of the close inter linkages between its money and foreign exchange markets. The adoption of the MCI as an operating target broadened the horizons of interest rate targeting by attempting to tackle exchange rate shocks. Nominal MCI served as the immediate operational target of monetary policy, supplemented by monetary data that had proved to be good a leading indicators for output (especially real narrow money) and inflation rate (especially broad money) (Freedman, 1996ab). In so far, several countries have adopted MCI in monetary policy among the countries are Turkey (Kesriyeli & Kocaker, 1999); The United Kingdom (Batini & Turnbull, 2002); Pakistan (Qayyum, 2002); and India (Kannan & Bhoi, 2006).

According to Eika, Ericsson and Nymoen (1996), MCI is unlikely to be a useful operational policy tool unless numerous assumptions are satisfied by the empirical model from which the MCI is derived. While cross-checking and good judgment might avoid substantial policy mistakes arising from such model deficiencies, the implied adjustments would reduce the actual role of an MCI in policy. Thus, the value of existing MCIs for economic policy analysis is doubtful.

Batini and Turnbull (2002) suggests an alternative MCI for the UK to be used as a coincident indicator of stance, obtained by estimating and simulating a small-scale macro-econometric model over the period 1984 Q4–1999 Q3. To overcome familiar criticisms of MCIs, it measure innovates upon existing MCIs in several respects. In this sense it may be more informative than those in understanding whether an existing level of interest rates, given the existing level of sterling, makes monetary policy ‘tighter’ or ‘looser’ than in previous periods.

Many central banks have adopted MCI as a useful indicator of overall monetary conditions. The Reserve Bank of New Zealand (RBNZ) used to take a stance on the monetary conditions based on MCI. The Norges Bank, the Bank of Iceland and the Bank of Sweden have constructed MCI as indicators of monetary conditions. Meanwhile the Bank of Finland adopted the MCI as a leading indicator of the influence of monetary conditions on aggregate demand. Several international agencies such as the Organization for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), the European Monetary Institute and investment firms such as Deutsche Bank, Goldman Sachs, J.P. Morgan have constructed MCIs to gauge monetary conditions for various countries (Table 3.1) (Kannan & Bhoi, 2006).

Qayyum (2002) estimates Monetary Conditions Index (MCI) of inflation variable for Pakistan by using monthly data from June 1990 to June 2001. Before calculating MCI, he has estimated weights of interest rate and exchange rate to be used in the construction of MCI. For this purpose he used unit root analysis and Johansen maximum likelihood method base on vector autoregressive technology. The estimated monetary conditions ratio for Pakistan is around 2.79:1.

Peng and Leung (2005) estimate MCIs for mainland China for assessing its monetary and financial conditions, by extending the conventional MCI – a weighted sum of real interest rates and the real effective exchange rate – to capture the credit availability effect, as bank credit was viewed as an important channel through which China's monetary policy is implemented. Kannan and Bhoi (2006) attempts to construct MCI for India taking take both interest rate and exchange rate channels simultaneously into consideration while evaluating the stance of monetary policy and evolving monetary conditions. A "broad" MCI has also been constructed which incorporates credit growth as an additional indicator of monetary conditions. The results reveal interest rate to be more important than exchange rate in influencing monetary conditions in India.

A MCI is a weighted average of the percentage point change in the domestic interest rate(r) and percentage change in an exchange rate (e), relative to their values in a base period or real variable (r_t-r_0). In real terms, a MCI at time *t* can be written as:

$$MCI_{it} = w_1 \ r_t - r_0 \ + w_2 \ e_t - e_0 \tag{3.35}$$

where *r* is the real short-term interest rate, *e* is the real effective exchange rate, w_1 and w_2 is the weights of r and e, respectively. The ratio of the weights, w_1/w_2, is termed as the MCI ratio. Higher ratio indicates the more important of the interest rate channel as compared to the exchange rate channel in the transmission of monetary policy. For example, 3:1 ratio indicates that 1 percentage point interest rate change has three times the effect of 1 percent change in the exchange rate.

The most important of the process of construction of MCI is to determine the weights of interest rate and exchange rate. MCI weight cannot be observed directly, so they are usually derived empirically from a model of economy. According to Batini and Turnbull (2002), The IMF, OECD, Deutsche Bank (DB), Merrill Lynch (ML) construct MCIs employing relative weights that intend to represent the relative impact of interest and exchange rates on aggregate demand model.

According to Goodhart and Hofmann (2001), one method that is used to find weight of components of MCI is using impulse response of unrestricted VAR. Meanwhile, Kesriyeli and Kocaker (1999), Qayyum (2002) use inflation model to determine the weights of interest rate and exchange rate. The model is estimated by VECM approach. They argue that the economic data tend not to be stationary, whereas VAR assumes that all data is stationary, so VECM is most appropriate as method. According to Koop (2005), VECM is a suitable method for non stationary data series.

According to Kesriyeli and Kocaker (1999) and Qayyum (2002) derive the inflation model for a small open economy is as:

$$\pi = \alpha_0 + \alpha_1 r_1 + \alpha_2 e_2 + \varepsilon_t \qquad (3.36)$$

Where π is current rate of inflation measure by log CPI, r_t is real interest rate, e_t is effective exchange rate, ε_t is well behaved error term.

The VECM of real interest rate (r_t) and real effective exchange rate (e_t) of MCI on inflation model (π) can be expressed as follows:

$$\Delta\pi = \mu_t + \gamma_1 Z_{t-1} + \sum_{i=1}^{kr} \beta_1 \Delta r_{t-i} + \sum_{i=1}^{k_e} \beta_2 \Delta e_{t-1} + \eta_t \qquad (3.37)$$

Where Z_{t-1} is the error correction term obtained from the cointegration equation. γ_1, β_1, and β_2 are estimation parameters of interest rate and exchange rate. η is stationary random process with zero mean and constant variance.

The process of estimating the VECM begins with determines stationary of the variables. The stationary of the variables determined test using Augmented Dickey and Fuller (ADF), and Phillipn Peron (PP) test. This is followed by optimal lag length selection, using the Akaike Information Criteria (AIC) and Schwarz Criteria (SC). Johansen cointegration is used to view the existence of cointegration between variables. VECM, Granger causality, block exogeneity and innovation accounting analysis are applied to see the short-term relationship between variables.

3.4.3 Financial Condition Index (FCI)

This part presents the study of one of the OCA criteria in relation to financial integration. The financial integration among countries will occur when the financial performance of each country is performing well. This lead to have the development an index to measure financial condition of a country called Financial Condition Index (FCI). FCI is an indicator of performance financial sector or financial market. Many financial institutions use FCI to forecast output growth for several quarters ahead and often gauge the future course of monetary policy. FCI is capable in predicting monetary policy actions, and the use of such index can be more diverse to the monetary authority. First, when there is a shock to the economy, changes in the FCI can provide the policymaker with an information for market's interpretation and expectations of future monetary policy. Second, the central bank can obtain leading information on the impact of market conditions and expectations of the future economic outlook. Third, the FCI can be used as a synthetic measure of the financial conditions that economic agents face and thus constitutes a broad assessment of the "financial" stance (Gauthier et al. 2004).

Several studies have tried to examine the significance of FCI as an indicator of financial conditions. Among others are Goodhart and Hofmann (2001), Mayes and Viren (2001), Gauthier et al. (2004), Montagnoli and Napolitano (2005). Goodhart and Hofmann (2001) are the pioneers in calculating FCI. They derived FCI, by looking at reduced form coefficient estimates of the inflation model and VAR impulse responses as a weighted average of the short-term real interest rate, the real effective exchange rate, real property and real share prices, for the G7 countries. They found that house and share prices get a substantial weight in such an index and that the derived FCI contain useful information about future inflationary pressures.

Mayes and Viren (2001) constructs FCI for Finland. They explore how asset prices, particularly house and stock prices, can provide useful additional indicators of future changes in output and inflation. They find a clear role for house prices but poorly determined relationship for stock prices. Additionally, the significance of FCI defends on the data frequency used in computing the FCI. This helps market participants to make judgment about the likely central bank's reactions as well as helping the central banks in assessing the stance of policy between forecasts. Lack (2002) constructs and examined the FCI for Switzerland. He explains that the role of housing and stock prices in the monetary transmission mechanism in Switzerland has not been fully explored yet. Housing and stock prices are routinely monitored by the Swiss National Bank (SNB), and yet they do not formally enter the SNB's models and indicators.

Gauthier et al. (2004) examine three FCIs for Canada which based on three approaches: an IS-curve-based model, generalized impulse-response functions, and factor analysis. Each approach is intended to address one or more criticisms of the monetary conditions index (MCI) and existing FCIs. To evaluate their three FCIs, the authors consider five performance criteria: the consistency of each FCI's weight with economic theory, its graphical ability to predict turning points in the business cycle, its dynamic correlation with output, its in sample fit in explaining output, and its out-of-sample performance in forecasting output. Using monthly data, they found, in general, that housing prices, equity prices, and bond yield risk premiums, in addition to short-and long-term interest rates and the exchange rate, are significant in explaining output from 1981 to 2000.

Montagnoli and Napolitano (2005) construct FCI for three countries consist of United States, Canada and the Euro Area using the Kalman filter algorithm. This methodology allows us to capture the changes of the weights associated with each financial variable in explaining the output gap over time by estimating forward-looking Taylor rules augmented for FCI. The results suggest that FCI enter positively and statistically significant into the Federal Reserve (Fed), European Central Bank (ECB) and Bank of Canada interest rate settings. This gives a positive view for the use of the FCI as an important short term indicator to guide the conduct of monetary policy in three out of four countries analyzed.

Based on the convention to calculate FCI, many studies focus on analysis of the four assets i.e. money market (short-term interest rate), foreign exchange rate market (the real effective exchange rate), housing market (real house prices) and stock market (real stock price). These are the variables used by Goodhart and Hofmaan (2001) for G-7 countries; Lack (2002) for Switzerland; Gauthier et al. (2004) for Canada and, Montagnoli and Napolitano (2005) for United State, Canada and Euro Area. Meanwhile, Holz (2005) used growth of domestic credit instead of housing prices in constructing the FCI. He replaces the real house prices with domestic credit for European Monetary Union (EMU) and argues that domestic credit is more influential for financial sector in EMU than real house price.

This study will be based on Holz (2005), and Goodhart and Hofmann (2001) in calculating the FCI for ASEAN 5 countries based on four variables i.e. the call money rate proxy of the money market; real effective exchange rate proxy of foreign exchange rate market, domestic credit proxy of credit market, and stock price proxy of stock market. The FCI is defined as

$$FCI_t = w_1 \;\; r_t - r_0 \;\; + w_2 \;\; e_t - e_0 \;\; + w_3 \;\; l_t - l_0 \;\; + w_4 \;\; s_t - s_0 \qquad (3.38)$$

where r is the money market interest rate, e is the logarithm of the real effective exchange rate, l is the logarithm of the domestic credit and s is the logarithm of stock price index, where w_1, w_2 ,w_3 and w_4 is the weights of r, e, l and, s respectively.

The most important of the process of construction of FCI is to determine the weights of money, foreign exchange, credit and stock market. FCI weight cannot be observed directly, so they are usually derived empirically from a model of economy. According to Montagnoli and Napolitano (2005), the weights to variables in FCI model can be derived from the inflation model for a small open economy. This can be expressed us below:

$$\pi_t = \alpha_0 + \alpha_1 r_t + \alpha_2 e_t + \alpha_3 l_t + \alpha_4 s_t + \varepsilon_t \qquad (3.39)$$

Where π_t is current rate of inflation measure by log CPI, r_t is real interest rate, e_t is real effective exchange rate, l_t is real domestic credit, s_t is real stock price ε_t is well behaved error term.

The VECM of real interest rate (r_t), real effective exchange rate (e_t), real domestic credit (l_t), real stock price (s_t) of FCI on inflation model (π) can be expressed as follows:

$$\Delta\pi = \mu_t + \gamma_1 Z_{t-1} + \sum_{i=1}^{k_r} \delta_1 \Delta r_{t-1} + \sum_{i=1}^{k_r} \delta_2 \Delta e_{t-1} + \sum_{i=1}^{k_r} \delta_3 \Delta l_{t-1} + \sum_{i=1}^{k_r} \delta_4 \Delta s_{t-1} + \eta_t \qquad (3.40)$$

Where Z_{t-1} is the error correction term obtained from the cointegration equation. δ_1, δ_2, δ_3, δ_4 are estimation parameters of money, exchange rate, credit and stock market. η is stationary random process with zero mean and constant variance.

According to Goodhart and Hofmann (2001), one method can be used to determine the weight of components of FCI is using impulse response of unrestricted VAR. Unrestricted VAR model assume that the variables are stationary and cointegrated. But, if the variables are non stationary and cointegrated, then an unsrestricted VAR method in first differences become an appropriate methodology. However, if the variables are non-stationary, but cointegrated, the correct specification is a vector error-correction model (VECM) (Koop, 2005). So, this study is employed by VECM model.

There are various statistical procedures that are necessary in estimating the VECM. The first step is to determine if the data series are stationary or otherwise.

This can be done by employing Augmented Dickey Fuller (ADF) and Phillipn Peron (PP) test. The second step will be to determine the number of lags necessary to appropriately capture the dynamics of the data by using Akaike Information Criteria (AIC) and Schwarz Criteria (SC). Johansen cointegration test is used to determine the existence of cointegration between variables. VECM, Granger causality, block exogeneity and innovation accounting analysis are applied to see the short-term relationship between variables.

3.4.4 Gravity Model

The gravity model is used to explore the impact of currency union on international trade. They have been discussed at length by Rose (2000) and Frankel and Rose (2002). Rose (2000) augment gravity model to estimate the effects of currency unions and exchange rate volatility on trade. He used the standard gravity equation consist of bilateral trade as dependent variable and GDP, GDP per capita, distance, volatility of bilateral exchange and extended with many dummies variables as independent variables. The dummies variables among often represent contiguity, common language, regional trade agreement, common nation, colonies, colonized, and common currency. The study was applied to 186 countries with using more 300 bilateral trade observations spanning five different year (1970, 1975, 1980, 1985, and 1990). The models are executed by OLS and pooled method. The result finds a large positive that effect of a currency union on international trade, and a small negative effect of exchange rate volatility.

Frankel and Rose (2002) observe the implication of common currency for trade and income by augmented gravity model. They used the standard gravity equation consist of log bilateral trade as dependent variable and log GDP, log GDP per capita, log distance, number landlocked, log of product of land area, and extended with many dummies variables as independent variables. The dummies variables consist of common land border, common language, colonizer, ex-colony/colonizer, political union, common FTA, currency union, and currency board. The panel data set includes observations from almost 8000 country-pair observation from over 180 countries and territories of five year intervals from 1970 through 1995 and estimated by OLS. The result of the study indicates that currency union seems to have a large effect in creating trade.

Rose and Van Wincoop (2001) investigated the relationship of a national currency and the currency union. The thrust of the paper has been to estimate the real benefits of currency union. Currency union reduces trade barriers associated with national borders, leading to substantial increases in both trade and welfare. That is, a national currency seems to be a significant barrier to trade. Reducing trade barriers through currency unions like EMU or dollarization in the Americas will thus result in increased international trade. Eliminating the monetary barrier to trade brings benefits for consumers- possibly in the form of more currency unions.

Rose (2004) explores the effect of currency union on trade with gravity model by meta-analysis method. Meta-analysis is a set of quantitative techniques for evaluating and combining empirical results from different studies. The main findings are that the hypothesis that there is no effect of currency union on trade can be rejected at standard significance levels and the combined estimate implies that a bilateral currency union increase trade between 30 to 90 percent.

Rose (2004) estimates the effect on international trade by multilateral trade agreements, the World Trade Organization (WTO), its predecessor the General Agreement on Tariffs and Trade (GATT), and the Generalized System of Preferences (GSP). He employs a standard "gravity" model of bilateral merchandise trade and a large panel data set covering over 50 years and 175 countries. An extensive search reveals little evidence that countries joining or belonging to the GATT/WTO have different trade patterns from outsiders, though the GSP seems to have a strong effect. However, Subramanian and Wei (2007) claims that the WTO has a strong positive impact on trade, amounting to about 120 percent of additional world trade. While, Aviat and Coeurdacier (2007) explore the complementarity between bilateral trade in goods and bilateral asset holdings in a simultaneous gravity equations framework and found that a 10 percent increase in bilateral trade raises bilateral asset holdings between 6 to 7 percent.

Standard gravity model of international trade modeled the linkages between countries as the dependent variable with some explanatory variables such as national income, national income per capita and distance. McCallum (1995) formulates the gravity model as follows.

$$x_{ij} = \beta_0 + \beta_1 y_i + \beta_2 y_y + \beta_3 Dist_{ij} + \beta_4 Dummy_{ij} + \mu_{ij} \tag{3.41}$$

where x_{ij} is the value of bilateral export between countries *i* and *j*; y_i is real GDP of the origin countries *i* and y_j is real GDP of the destination countries j; $Dist_{ij}$ is the distance between countries *i* and *j*; *Dummy ij* is a dummy variable equal to 1 for interprovincial trade and 0 for province-to-state trade, and u_{ij} is an error term.

Rose (2000) develops a gravity model by adding population and several dummy variables such as variables of regional trade agreement; common language; common land border; common colonizer; same nation; colonial relationship; number of landlocked countries; log of sum of land area; log of product of land area and number of island countries. Meanwhile, Wall (2002) adds variable of income per capita variable in the model gravity as known in the equation below:

$$\ln x_{ij} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln y_{it} + \beta_4 \ln y_{jt} + \beta_5 \ln D_{ij} + \beta_6 C_{ij} + \beta_7 L_{ij} + e_{ij} \quad (3.42)$$

where x_{ij} is the value of bilateral export between countries *i* and *j*, Y_{it} is real GDP of the origin countries *i* ; Y_{jt} is real GDP of the destination countries *j*; y_{it} is the real per capita GDP of the origin countries *i* and y_{jt} is the real per capita GDP of the destination countries *j*, D_{ij} is the distance between countries i and j, C_{ij} is a common language dummy, and L_{ij} is land border dummy.

In this study. we consider the ASEAN 5 economic integration in static panel data model. Based on Gravity model of McCallum (1995), Rose (2003), and Wall (2002), we introduce new variables i.e. monetary transmission mechanism (MCI) and financial market performance (FCI) to the model. Our model is expressed as:

$$\ln x_{ijt} = \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln y_{it} + \beta_4 \ln y_{jt} + \beta_5 \ln D_{ji} + \delta_1 C_{ij} + \delta_2 L_{ij} + \lambda_1 MCI_{it} + \lambda_2 MCI_{jt} + \lambda_3 FCI_{it} + \lambda_4 FCI_{jt} + \varepsilon_{ij} \quad (3.43)$$

where x_{ij} is the value of bilateral export between countries i and j, Y_{it} is real GDP of the origin countries i and Y_{jt} is GDP of the destination countries j, y_{it} is the real per capita GDP of the origin countries and y_{jt} is the real per capita GDP of the destination countries, D_{ij} is the distance between countries i and j, C_{ij} is a common language dummy, and L_{ij} is land border dummy, MCI_{it} is MCI of the origin countries, MCI_{jt} is the MCI of the destination countries, FCI_{it} is the FCI of the origin countries, and FCI_{jt} is the FCI of the destination countries.

According to Wall (2002), export are expected to be positively related to national incomes and income per capita or β_1, β_2, β_3, β_4, are expected to be positive, but relate negatively to the distance or β5 is expected. Both variable dummies as common language (C), Land Border (L), are expected to be positive. Finally, variable of monetary transmission mechanism (MCI) and financial market performance (FCI) are also expected to be positive.

We elaborate the dynamic data panel to extend the Gravity model analysis. Martínez-Zarzoso, Felicitas, and Horsewood. (2009) develop the Gravity dynamic data panel based on Arellano and Bond (1991). Arellano and Bond (1991) suggest to transform the model in first differences or in orthogonal deviations, to eliminate the fixed effects and to run it by using the one and two-step GMM estimator (FD-GMM). The model specification is expressed below:

$$\ln x_{ijt} = \alpha_1 \ln d\, x_{ijt}(-1) + \beta_0 + \beta_1 \ln dY_{it} + \beta_2 \ln dY_{jt} + \beta_3 \ln dy_{it} + \beta_4 \ln dy_{jt} + \beta_5 \ln D_{ji} + \delta_1 C_{ij} + \delta_2 L_{ij} + \lambda_1 \ln dMCI_{it} + \lambda_2 \ln dMCI_{jt} + \lambda_3 \ln dFCI_{it} + \lambda_4 \ln dFCI_{jt} + \varepsilon_{ij} \quad (3.44)$$

Test for unit roots and cointegration will be performed on the dynamic panel data. If the data does not pass unit root test, so data used is the first differencing form. In estimating the dynamic data panel is some steps should be taken. Test on the stationary of the dynamic panel data is conducted using many unit root test procedure of Levin, Lin & Chu, Breitung t-stat Im, Pesaran and Shin W-stat, ADF-Fisher Chi-square, and PP-Fisher Chi-square. Next, Johansen Fisher panel and Kao cointegration test are employed to seek for evidence of cointegration among the variable. Nevertheless, the Hausman test will used to compute the fixed and random effect estimation of the static and dynamic panel data models.

3.5. Data

3.5.1 G-PPP, MCI and FCI

The data used for estimating the G-PPP model is real effective exchange rate (REER). The sample data consist of quarterly observations for the period of 1988 to 2007. The data of REER is not available to all countries, and have to be calculated manually. In this study, the REER is computed based on the formula developed by Appleyard and Field (1998) and Riad (2008). In this formula, the REER is computed from real exchange rate (RER) multiplied by the weighted trade sharing with partner countries. This is shown below

$$RER = \frac{P_i}{P_j} x \frac{S_i}{S_j} \quad (3.45)$$

$$REER = \Pi(RER)^{w_{ij}} \quad (3.46)$$

$$REER = \sum \log(RER)_i (w_{ij}) \quad (3.45)$$

where S_i and S_j represent is nominal exchange rate countries i (home country) and j (trading partner) in term of US dollar (extracted from IFS line 8). P_i and P_j represent the consumer price index (CPI) of countries i and j, respectively. w_{ij} represents the weight of trade sharing of trading partners from 15 countries (data is extracted from IMF the Directory of Trade (DOT)). [1] REER data is converted into natural logarithms.

There are four steps in REER calculation. First, identify a set of trading partner countries with a total trading reached more than 70 percent. Second, arrange the RER in accordance with the formula above. Third, each RER is multiplied by weights and sump up all. Fourth, make the REER index with 2005 as base year and change in the logarithmic form (seen at Appendix C: Data, within each cell is the multiplication of the RER with the weight of trade sharing).

[1] According to Riad (2008) determining the number of trading partners of REER must achieve 50 percent more than the total trade (exports and imports) of a country. Based on it, we decided 15 countries with total trade reaching more than 50 percent of ASEAN 5 countries. Breakdown of countries and a mount of trading can be seen in C. Appendix: Data.

The MCI model used to three data are inflation, real interest rate, and real effective exchange rate (REER). The inflation data proxy from consumer price index (CPI) (2005 = base year) (IFS line 135). Real interest rate is calculated from the call money interest rate reduce inflation (2005=base year) on percent per annum (IFS line 125).

The FCI model used to five data are inflation (consumer price index), real interest rate, real domestic credit, real effective exchange rate (REER), and stock exchange composite index (SECI). SECI series is extracted form CEIC data limited (2005=base year), others series data are sourced from the International Financial Statistic (IFS) International Monetary Fund (IMF), real domestic credit on million USD on 2005=base year (IFS line 39). All series including interest rate and CPI are transformed into natural logarithms.

3.5.2 Gravity Model

We estimate quarterly data of bilateral exports of five (5) countries over the period from 1988 to 2007. Our data set is a balanced panel with 1600 observations (5 x 4 x 4 x 20). Our estimation of the model for the period 1988 to 2007 divide for two sub-samples 1988-1997 (financial liberalization period) and 1998-2007 (economic recovery period). In this study, the dependent variable is export from origin country to destination country. The independent variables are gross domestic product (GDP), gross domestic product per capita (GDP/capita), distance, dummy variable consist of common language (C), land border (L), monetary condition index (MCI), financial condition index (FCI).   The data on export among countries series is extracted from the Directory of Trade (DOT) of IMF. The series on GDP and GDP per capita are sourced from International Financial Statistic (IFS) of IMF. MCI and FCI series are self computation. Data on distance obtained from http://www.timeanddate.com. Finally data on common language and land border are extracted from CIA web site https://www.cia.gov/library/publications/the-world-factbook (see Table 3.2, 3.3, 3.4. 3.5, 3.6).

CHAPTER 4
EMPIRICAL EVIDENCE

4.1 Introduction

In this chapter the results and analysis covering the four models estimated will be presented. First, the estimation of the G-PPP model using Johansen cointegration, which previously would be carried out for stationarity data tests and lag selection of the model. Second, to estimate the MCI by first looking for the weight of the index by using the first cointegration of the VECM model, then the weight is multiplied by the value, which derives the total index, based on the weight of MCI to set the pattern of the monetary policy transmission mechanism. In order to strengthen the analysis Granger causality, block exogeneity and innovation accounting were also used. Third, the method used to calculate the FCI is the same as the calculation of the MCI. To estimate both the MCI and FCI, stationarity data tests, lag selection, and cointegration of the model was done. Fourth, to enter the index of the MCI and FCI in the standard gravity model using both static and dynamic panel data methods. Especially for the dynamic panel data, the unit root test and cointegration of the model were tested.

4.2 Generalized Purchasing Power Parity (G-PPP)

4.2.1 Stationarity of Series

We used the Augmented Dickey and Fuller test (ADF) and the Phillip and Peron (PP) unit root tests to explore the integration order of the series on level and first differences. The results of the unit root test are reported in Table 4.1, the ADF and PP test show that the hypothesis of a unit root at the level of all series cannot be rejected at the 1% or 5% significance level. However, test statistics of the first difference for the series conclude that the null hypothesis of unit root is rejected by both tests. Therefore, all series share similar temporal properties of continuing a unit root in levels and being stationary in the first-difference. This suggests that all series are best modeled as I (1).

4.2.2 Lag Length Selection

The appropriate lag length is selected based on the AIC and SC. Both selected the appropriate lag length. Both information criteria can be used for model selection such as determining the lag length of the model, with smaller values of the information criterion being preferred. The results in Table 4.2 showed that the REER of ASEAN 5 is two (2) in determining the appropriate lag length.

4.2.3 Cointegration

From the unit root test, we established that the variable in estimating the model are integrated at level one or stationary in difference. This allows us to proved with the Johansen's cointegration analysis. The results in Table 4.3 showed that a single cointegration between 1 and 10 percent of significance, respectively. The results suggest that the real effective exchange rates (REER) of the ASEAN 5 countries are tied together by a unique long-run equilibrium relationship. Meanwhile, the long-run relationship before any arbitrary normalization cointegration is:

$$0.5 \text{ INA} - 13.7 \text{ MAL} + 0.7 \text{ PHIL} + 7.1 \text{ SING} + 5.5 \text{ THAI} = 0.1$$

Hypothesis 1

According to Enders and Hurn (1994, 1997), the G-PPP will hold in a region if the number of normalization cointegration is zero. Therefore, the hypothesis of this model is:

Ho1 : If the total normalization of the cointegration ASEAN 5 is not equal to zero (0), which means that the PPP does not hold, then it is not feasible for the group of countries to apply the OCA.

Ha1: If the total normalization of the cointegration of the ASEAN 5 is equal to zero (0), which means that the PPP is to hold, then the group of countries is eligible to apply the OCA.

The result indicated that the total of β_{it} is equal to zero, and hence the null hypothesis is rejected.

The GPPP result also indicates that the ASEAN 5 have the criteria for applying the Optimum Currency Area (OCA). In general, our results support several previous research, notably by Choudhry (2005), Ahn, et al. (2006) and Ogawa and Kawasaki (2006), for the feasibility of applying the Optimum Currency Area (OCA) among ASEAN 5 countries.

4.3 Monetary Condition Index (MCI)

4.3.1 Stationarity of Series

The test of stationarity is usually known as the unit root test. For the purpose of testing of the unit root test for the time series we used the Augmented Dickey Fuller (ADF) and Phillip-Peron (PP) tests. For the first step, we estimate each series variable in level, and if the hypothesis of unit root is not rejected the series is estimated again, but the data series from first differences. The estimated ADF and PP unit root test statistics are reported in Table 4.4 and 4.5. The ADF and P-P tests show that the hypothesis of a unit root in the level for all series cannot be rejected at the 1% or 5% significance level, but rejected the same null hypothesis for the first difference for all series. Therefore, all series share similar temporal properties of continuing a unit root in levels and being stationary in the first-difference. This suggests that all series are best modeled as I (1).

4.3.2 Lag Length Selection

Based on the AIC and SC, we selected the appropriate lag length. Both information criteria can be used for model selection such as determining the lag length of the model, with smaller values of the information criterion being preferred. As can be seen from Table 4.6, the optimal lag for ASEAN 5 countries is one (1).

4.3.3 Cointegration

In the test of order of integration, we have established that the time series data of the variable to be used in the modeling inflation for the estimating of weights are not stationary at their level. However, these series can be made stationary after differencing. This result leads toward the Johansen's cointegration analysis. As can be seen from Table 4.7, both maximal eigenvalue and trace statistics lead to the conclusion that there are three cointegrating vectors between these variables at the 1% level of significance for all series for each country of ASEAN 5.

4.3.4 VECM, Granger Causality and Block Exogeneity

In this section, we analyze the short-run equilibrium used to calculate VECM, Granger causality, and block exogeneity. Under VECM the values of ECTs are determined based on the order of the variables in the model.[2] The VECM analysis is likely to be sensitive to the ordering of the variables. In this regard, these variables are arranged in a specific order. Inflation (DP) is placed first, because it is the basis

[2] The ordering of the VECM method is a sequence of variables to be estimate in the model.

for the model estimation. The other variables are ordered as follows; interest rate (DR) and exchange rate (DE). Granger causality analysis was divided bidirectionally and unidirectionally for each pair of variables. The block exogeneity reinforced the results of Granger causality. These results are reported in Table 4.8, 4.9, and the resume is in Table 4.10.

- Indonesia. The ECTs for all orders of variable: inflation (DP), interest rate (DR), exchange rate (DE) are significant. Granger causality indicates no bidirectional relationship in the short-run. However, the unidirectional causality is reinforced by block exogeneity between inflation (DP) and interest rate (DR); exchange rate (DE) and price (DP); and exchange rate (DE) and interest rate (DR).

- Malaysia. The ECTs for all orders of variable: inflation (DP), interest rate (DR), exchange rate (DE) are significant. Granger causality indicates no bidirectional relationship in the short-run. Meanwhile, the unidirectional causality is reinforced by block exogeneity between inflation (DP) and interest rate (DR); and inflation (DP) and exchange rate (DE).

- Philippines. The ECTs for the orders are interest rate (DR) and exchange rate (DE). Bidirectional Granger causality exists between inflation (DP) and interest rate (DR), which is reinforced by block exogeneity, however, there is no unidirectional causality.

- Singapore. Only one order of ECT is significant, namely, interest rate (DR). Bidirectional Granger causality exists between interest rate (DR) and exchange rate (DE), however, unidirectional causality and block exogeneity are absent.

- Thailand. The ECTs for all orders of variable: inflation (DP), interest rate (DR), exchange rate (DE) are significant. Bidirectional Granger causality exists between interest rate (DR) and exchange rate (DE), inflation (DP) and interest rate (DR). Meanwhile, the one unidirectional causality is reinforced by block exogeneity, namely, from exchange rate (DE) to interest rate (DR).

The results of ECTs show that interest rate (DR) and exchange rate (DE) channels exist for all the ASEAN 5 countries, except for Singapore, where there is only the interest rate (DR) channel. However, the results of bidirectional and unidirectional Granger Causality vary among the countries.

4.3.5 VECM and MCI

VECM is used to determine the weight of MCI, and then later used to compute the weight of MCI. The results of the first cointegration of ASEAN 5 countries are presented below (t-ratios are in parentheses):

Indonesia

$$DP = -0.014060 \underset{(-3.15891)}{- 0.030774\,DR} \underset{(12.9250)}{+ 0.319620\,DE}$$

Weight of MCI = 1 : 10

Malaysia

DP =	–0.007572	– 0.047003 *DR*	+ 0.021782 *DE*
		(-4.91175)	(1.15550)

Weight of MCI = 1 : 0.5

Philippines

DP =	0.007996	+ 3.670620 *DR*	–1.575095 *DE*
		(9.51298)	(-1.42011)

Weight of MCI = 1 : 0.4

Singapore

DP =	–0.008611	–0.273357 *DR*	+ 0.024501 *DE*
		(-7.93799)	(0.36715)

Weight of MCI = 1 : 0.1

Thailand

DP =	–0.007331	–0.051742 *DR*	–0.189177 *DE*
		(-6.86144)	(-6.54966)

Weight of MCI = 1 : 3.7

From these results, we obtained weights of rate of interest and exchange rate that are used in the construction of the monetary condition index (MCI) of the inflation model for ASEAN 5 countries. Then each country will be described one by one, as below:

- Indonesia. The coefficient estimates of interest rate (DR) and exchange rate (DE) are 0.03 and 0.31, respectively. Based on this result, the weight of MCI is 1 : 10. This ratio implies that the effect of the exchange rate channel is 10 times greater than the effect of the interest rate channel for the inflation model.
- Malaysia. The coefficient estimates of interest rate (DR) and exchange rate (DE) are 0.04 and 0.02, respectively. Based on this result, the

weight of MCI is 1 : 0.5. This ratio implies that the effect of the exchange rate channel is 0.5 times greater than the effect of the interest rate channel for the inflation model.

- Philippines. The coefficient estimates of interest rate (DR) and exchange rate (DE) are 3.67 and 1.57, respectively. Based on this result, the weight of MCI is 1 : 0.4. This ratio implies that the effect of the exchange rate channel is 0.4 times greater than the effect of the interest rate channel for the inflation model.
- Singapore. The coefficient estimates of interest rate (DR) and exchange rate (DE) are 0.27 and 0.02, respectively. Based on this result, the weight of MCI is 1 : 0.1. This ratio implies that the effect of the exchange rate channel is 0.1 times greater than the effect of the interest rate channel for the inflation model.
- Thailand. The coefficient estimates of interest rate (DR) and exchange rate (DE) are 0.05 and 0.18, respectively. Based on this result, the weight of MCI is 1 : 3.7. This ratio implies that the effect of the exchange rate is 3.7 times greater than the effect of the interest rate channel for the inflation model.

Hypothesis 2

The MCI concepts developed by Freedman (1994), in which proportion of index weight is obtained from the model of inflation, will be able to show the same pattern of monetary policy transmission mechanism in ASEAN 5. Therefore, the hypothesis of this model is

Ho2 : If the proportion of the weight of the index of the countries are equal, then the pattern of monetary transmission mechanism in the ASEAN 5 is similar.

Ha2: If the proportion of the index weighting of the countries is not the same, then the pattern of monetary transmission mechanism in ASEAN 5 is different.

The results indicated that the proportion of the index weighting of the countries is not the same, and hence the null hypothesis is rejected, then the pattern of monetary transmission mechanism in ASEAN 5 is different.

Based on the MCI estimation, we can explore the pattern of monetary transmission mechanisms of ASEAN 5 countries. In general, Indonesia and Thailand have similar patterns of monetary transmission, with the exchange rate channel shown stronger than the interest rate channel. Meanwhile, Malaysia, Philippines and Singapore indicate that the effect of the interest rate is stronger than the exchange rate channel (as seen in Table 4.11).

The MCIs of ASEAN 5 are shown in Figure 4.1 until 4.5. The magnitude of MCI of each country varies from large to small: Indonesia (45-105), Thailand (16-33), Philippines (6-22), Malaysia (3-10), and Singapore (1-7). As can be seen from the figures, the biggest magnitude of MCI of ASEAN 5 countries occurred during the economic crisis in 1997/1998. During the financial liberalization period (1988-1997) the magnitude of MCI is relatively high. However, during the economic recovery period (1998-2007), the magnitude of MCI is low. This phenomenon indicates that the country with greater economic volatility tends to be larger as compared to the country that has lower economic volatility, where the MCI tends to get smaller.

4.3.6 Innovation Accounting Analysis

The innovation accounting analysis is likely to be sensitive to the ordering of the variables subject to the Choleski Decomposition. In this regard, these variables are arranged in a specific order. Inflation (DP) is placed first since it is the basis of the model estimation. The other variables are ordered as follows: interest rate (DR) and exchange rate (DE).

Impulse Response Functions (IRF) of the inflation model of ASEAN 5 countries are reported in Figure 4.6 to 4.10, illustrating the response of inflation to a single standard deviation (SD) shock inflation (DP), interest rate (DR) and exchange rate (DE). In general, for ASEAN 5 countries, the response of inflation (DP) to shock from itself is very high and positive over a long time period. For Indonesia, Malaysia and the Philippines have similar patterns, in response to inflation (DP), impulses from the interest rate (DR) had a positive effect in the early stages and then stabilized afterward. However, the response inflation (DP) to shocks to the exchange rate (DE) had negative effect in the initial stages and stabilized in the later stages. Meanwhile, Singapore and Thailand also had similar patterns, with response inflation (DP) to shocks to interest rate (DR) and exchange rate (DE) having a negative effect in the early stages and stabilizing afterward.

The analysis of variance decomposition (VDC) seems to reinforce the result of IRFs. The variance decomposition (VDC) of the inflation model of ASEAN 5 countries is reported in Table 4.12. As can be seen from the results, the variance of all alternatives of the inflation equation of MCI for ASEAN 5 countries are mainly explained by DP itself in the long run, where the range of each country varies. Variance decomposition of DP for Indonesia and Malaysia is approximately in a range from 40 to 50 percent over the 24 quarters horizon, while for the Philippines, Singapore, and Thailand is approximately above 95 percent.

There are two patterns to explain the share of the variance decomposition of the interest rate (DR) and the exchange rate (DE). Firstly, that the interest rate (DR) variance is greater than the variance of the exchange rate (DE). Secondly, that the variance of the exchange rate (DE) is greater than variance of the interest rate (DR). Malaysia and the Philippines are included in the first pattern. Composition of the Malaysia variance reaches approximately 37 percent (DR) and 6 percent (DE), and the Philippines is roughly above 1 percent (DR) and 0.2 percent (DE), respectively. Meanwhile, Indonesia, Philippines and Singapore are included in the second pattern. Composition of variance for Indonesia reaches 18 percent (DR) and 40 percent (DE), Singapore is around 0.76 percent (DR) and 0.84 percent (DE), and Thailand is 0.63 percent (DR) and 4.13 percent (DE).

The results from IRF and VDC of ASEAN5 indicate that response to shock and variance in all of ASEAN 5 for the inflation model is mainly attributed to inflation (DP) itself, while interest rate (DR) and exchange rate (DE) have a real influence on inflation (DP). Nevertheless, the magnitude of the impact varies for each country in ASEAN 5.

4.4 Financial Condition Index (FCI)

4.4.1 Stationarity of Series

The test of stationarity is usually known as the unit root test. For the purpose of testing of unit root of the time series we used the Augmented Dickey Fuller (ADF) and Phillip Peron (PP) tests. In the first step, we estimate each series variable in level, and if the hypothesis of unit root is not rejected the series is estimated again, but the data series form in first differences. The estimated ADF and PP unit root test statistics are reported in Table 4.13. and 4.14. The ADF and PP test show that the hypothesis of a unit root in the level of all series cannot be rejected at the 1% or 5% significance level, but reject the same null hypothesis for the first difference for all series. Therefore, all series share similar temporal property of continuing a unit root in levels and being stationary in the first-difference. This suggests that all series are best modeled as I (1).

4.4.2 Lag Length Selection

The optimal lag length is selected using statistical tests that include the Akaike Information Criteria (AIC) and Schwarz Criteria (SC). Both information criteria can be used for model selection such as determining the lag length of the model, with smaller values of the information criteria being preferred. As seen in Table 4.15, the optimal lag of ASEAN 5 countries is one (1).

4.4.3 Cointegration

In the test of order of integration, we have established that the time series data of the variable to be used in the modeling inflation for the estimated weights is not stationary at their level. However, these series can be made stationary after differencing. This result leads toward the Johansen's cointegration analysis. As can be seen in Table 4.16, both maximal eigenvalue and trace statistics lead to the conclusion that there are three cointegrating vectors between these variables at a 1% level of significance for all series in ASEAN 5 countries.

4.4.4 VECM, Granger Causality and Block Exogeneity

In this section, we analyse the short relationship equilibrium based on VECM, Granger causality, and block exogeneity. As the variables are cointegrated, the VECM serves as an appropriate framework for evaluating the short-run dynamic interaction between the variables through lagged values of the variable. Under VECM, the values of ECTs are determined based on the order of the variables in the model.[3] The VECM analysis is likely to be sensitive to the ordering of the variables. In this regard, these variables are arranged in a specific order. Inflation (DP) is placed

[3] Order of the VECM method is a sequence of variables to be estimated in the model.

first, because it is the basis of model estimation. The other variables are ordered as follows: money market (DR), foreign exchange market (DE), credit market (DL), and stock market (DS). Furthermore, the Granger causality analysis indicates either bidirectional or unidirectional for each pair of variables. In the study, block exogeneity is used to reinforce the results of the Granger causality. These results are reported in Table 4.17, 4.18, and Table 4.19, which summarizes the results of VECM, Granger causality and block exogeneity.

- Indonesia. The ECTs of four out of five orders are significant. They are inflation (DP), money market (DR), foreign exchange market (DE), credit market (DL) as dependent variables are significant. The short-run equilibrium indicates bidirectional Granger causality between inflation (DP) and credit market (DL), and between credit (DL) and stock market (DS), which is reinforced by block exogeneity, while the unidirectional causality, which is reinforced by block exogeneity, is from foreign exchange market (DE) to inflation (DP); from foreign exchange market (DE) to money market (DR); from inflation (DP) to money market (DR), but from exchange rate (DE) to credit market (DL), and from interest rate (DR) to stock market (DS) are not reinforced by block exogeneity. However, the relationship variables that exist only on block exogeneity are from money market (DR) to inflation (DP); from credit market (DL) to money market (DR); from money market (DR) to foreign exchange market (DE); and from money market (DR) to credit market (DL).

- Malaysia. The ECTs of four out of five orders, i.e., when inflation (DP), foreign exchange (DE), credit (DL), and stock market (DS) are used as dependent variables are significant. Granger causality tests indicate no bidirectional causality in the short-run. We also find evidence of unidirectional causality being reinforced by block exogeneity, namely, from inflation (DP) to money market (DR) and foreign exchange market (DE). However, the unidirectional causality without support from block exogeneity, i.e., from money market (DR) to credit market (DL); from foreign exchange market (DE) to stock market (DS); and from stock market (DS) to money market (DR). Meanwhile, the relationship variables that exist only on block exogeneity are from foreign exchange market (DE) to inflation (DP); from stock market (DS) to inflation (DP); from money (DR) to foreign exchange market (DE); from stock market (DS) to foreign exchange market (DE); from inflation (DP) to stock market (DS), and from foreign exchange market (DE) to stock market (DS).

- Philippines. The ECTs of three out of five orders, that is, when money (DR), foreign exchange (DE), stock (DS) and credit market (DL) are used as dependent variables, are significant. The short-run equilibrium indicates bidirectional Granger causality is reinforced by block exogeneity between inflation (DP) and money market (DR), but between foreign exchange (DE) and stock market (DS) it is not supported by block exogeneity. We also find evidence that unidirectional causality is reinforced by block exogeneity from price (DP) to stock (DS), but from credit (DL) to foreign exchange market (DE); and from credit (DL) to stock market (DS) it is not support by block exogeneity. Meanwhile, the relationship variables that exist only on block exogeneity are from stock market (DS) to inflation (DP); from credit (DL) to money market (DR); from stock market (DS) to money market (DR); from stock market (DS) to foreign exchange (DE); from stock market (DS) to credit (DL); and from money market (DR) to stock market (DS).

- Singapore. The ECTs to money (DR), credit (DL), and stock market (DS) as dependent variables are significant. The short-run equilibrium indicates bidirectional Granger causality is reinforced by block exogeneity between credit (DL) and stock money (DS), but inflation (DP) and credit market (DL), and foreign exchange (DE) and stock market (DS) are not supported by block exogeneity. However, the results show unidirectional causality from inflation (DP) to money market (DR); from money (DR) to foreign exchange market (DE); from stock market (DS) to inflation (DP) and none are reinforced by block exogeneity. Meanwhile, the relationship variables that exist on block exogeneity are from foreign exchange market (DE) to inflation (DP);

from credit market (DL) to inflation (DP); from credit (DL) to money market (DR); from stock (DS) to money market (DR); from credit (DL) to foreign exchange market (DE), and from inflation (DP) to stock market (DS).

- Thailand. The ECTs for money (DR), foreign exchange (DE), credit market (DL) as dependent variables are significant, but for inflation (DP) and stock market (DS), they are insignificant. Bidirectional Granger causality between foreign exchange (DE) and credit market (DL) is reinforced by block exogeneity, but between price (DP) and interest rate (DR), and between price (DP) and credit (DL) are not reinforced by block exogeneity. However, unidirectional causality is reinforced by block exogeneity for price (DP) to exchange rate (DE); but interest rate (DR) to credit (DL): interest rate (DR) to stock (DS); exchange rate (DE) to interest rate (DR); exchange rate (DE) to stock (DS); credit (DL) to price (DS) are not supported by block exogeneity. Meanwhile, the relationship variable that exists on block exogeneity is from stock market (DE) to credit market (DP).

The results of ECTs show that credit market (DL) exists in all of ASEAN 5 countries. However, money market (DR) exists in four countries, namely, Indonesia, the Philippines, Singapore and Thailand. Foreign exchange market (DE) also exists in four countries, Indonesia, Malaysia, the Philippines, and Thailand. Stock market (DS) only exists in three countries, namely, Malaysia, the Philippines and Singapore.

However, the result of bidirectional, unidirectional Granger Causality and block exogeneity varies among the countries.

4.4.5 VECM and FCI

VECM is used to determine the weight of FCI and later used to compute the weight of FCI. The results of the first cointegation of ASEAN 5 countries are presented below (t-ratios are in the parentheses):

Indonesia

DP = -0.012711 -0.033277*DR* + 0.362312 *DE*
[-3.11290] [7.81085]
-0.042298 *DL* - 0.004710 *DS*
[-0.95945] [0.27533]

Weight of FCI 1 : 11: 1.3 : 0.14

Malaysia

DP = - 0.021329 + 0.111354 *DR* + 0.393929 *DE*
[3.48233] [6.10152]
- 0.057358 *DL* + 0.329756 *DS*
[-1.28986] [9.03111]

Weight of FCI 1 : 3.5 : 0.5 : 3

Philippines

DP = -0.000607 0.561189 *DR* - 0.324557 *DE*
[7.69227] [-1.62095]
+ 0.266093*DL* - 0.443934*DS*
[1.98954] [-5.17884]

Weight of FCI 1: 0.6 : 0.5 : 0.8

Singapore

DP = - 0.004228 -0.040498 *DR* + 0.039776 *DE*
[-5.49045] [2.60003]
- 0.161183*DL* + 0.088423 *DS*
[-5.29191] [6.95369]

Weight of FCI 1: 1: 4 : 2.1

Thailand

$DP = -0.001264 \quad -0.026820\,DR \quad -0.426191\,DE$
$\qquad\qquad\qquad\qquad [-3.58894] \qquad [-15.0431]$
$\quad - 0.240080\,DL \quad + 0.002686\,DS$
$\quad [-6.33997] \qquad [\,0.18692]$

Weight of FCI = 1: 15.9 : 9: 0.1

These results formed the basis in determining the weights of rate of interest, exchange rate, credit and stock that are used in the construction of the financial condition index (FCI) for the inflation model in ASEAN 5 countries:

- Indonesia. The coefficient estimates weights of money, foreign exchange, credit, and stock market are 0.033, 0.362, 0.042, and 0.0047, respectively. Based on the ratio of the weight of FCI is 1 : 11: 1.3 : 0.14, this ratio implies that the effect of the foreign exchange market is 11 times greater, the credit market 1.3 times greater, and the stock market 0.14 times greater than the effect of the money market for the inflation model. In other words, for Indonesia, foreign exchange is the dominant market, which is followed by the credit, money and stock market.
- Malaysia. The coefficient estimates weights of money, foreign exchange, credit, and stock market are 0.11, 0.39, 0.057, 0.33 respectively. Hence, the ratio of weight of FCI is given as 1 : 3.5 : 0.5 : 3. This ratio implies that the effect of the foreign exchange market is 3.5 times greater, the credit market 0.5 times greater, and the stock market 3 times greater than the effect of the money market for the inflation

model. In other words, for Malaysia, foreign exchange is the dominant market, which is followed by the stock market, money market and credit market.

- Philippines. The coefficient estimates weights of money, foreign exchange, credit, and stock market are 0.56, 0.32, 0.26, and 0.44, respectively. Hence, the ratio weight of FCI is 1: 0.6 : 0.5 : 0.8. This ratio implies that the effect of the foreign exchange market is 0.6 times greater, the credit market 0.5 times greater, and the stock market 0.8 times greater than the effect of the money market for the inflation model. In other words, for the Philippines, money is the dominant market, which is followed by the stock, foreign exchange and credit market.
- Singapore. The coefficient estimates weights of real interest rate, real effective exchange rate, real credit domestic, and real exchange rate are 0.04, 0.039, 0.16, and 0.08, respectively. Based on this result the ratio of weight of FCI is 1: 1: 4 : 2.1. This ratio implies that the effect of the foreign exchange market is equal, the credit market is 4 times greater, and the stock market 2.1 times greater than the effect of the money market on the inflation model. In other words, for Singapore, the credit market is the dominant market, and is followed by stock, money and the exchange market.

- Thailand. The coefficient estimates weights of money, foreign exchange, credit, and stock market are 0.026, 0.426, 0.24, and 0.0026, respectively. The ratio of the weight of FCI is 1: 15.9 : 9 : 0.1. This ratio implies that the effect of the foreign exchange market is 15.9 times greater, the credit market 9 times greater, and the stock market 0.1 times greater than the effect of the money market for the inflation model. In other words, for Thailand, foreign exchange is the dominant market, and is followed by stock, credit, and money market.

Hypothesis 3

Based on the FCI concept developed by Goodhart and Hofmann (2001), Holz (2005), Montagnoli and Napolitano (2005), where the proportion of index weight is obtained from the inflation model, similar patterns of financial market performance in the ASEAN 5 will be shown. Therefore, the hypothesis of this model is

Ho3 : If the proportion of the weight of the index of the countries are equal, then the pattern of financial market performance in the ASEAN 5 is similar.

Ha3: If the proportion of the index weighting of countries is not the same, then the pattern of financial market performance in ASEAN 5 is different.

The results indicated that the proportion of the index weighting of the countries is not the same, and hence the null hypothesis is rejected, then the pattern of financial market performance in ASEAN 5 is different.

From these results, we obtained weights of rate of interest, exchange rate, credit and stock price that are used in the construction of FCI for the inflation model in ASEAN 5 countries (seen in Table 4.20). Based on the FCI estimation, we can explore the financial market performance of the ASEAN 5 countries. In general, Indonesia, Malaysia, and Thailand have similar patterns of financial market performance, with the foreign exchange market shown more dominant than the other markets. Meanwhile, the Philippines shows a more dominant money market, but Singapore is dominated more by the credit market than the other markets.

The FCI of ASEAN 5 countries are shown in Figure 4.11 to Figure 4.15. The magnitude of FCI for each country in the ASEAN 5 varies from large to small: Thailand (165 to 200), Indonesia (60 to 130), Singapore (56 to 70), Malaysia (34 to 48), and Philippines (16 to 34). As can be seen from the figures, the biggest magnitude of FCI of ASEAN 5 countries occurred during the crisis period in 1997/1998. During the recovery period (1999-2007), the magnitude of FCI for Indonesia and the Philippines shows a downward trend, while for Malaysia, Singapore, Thailand, it shows an upward trend. This phenomenon indicates that during the period of high economic volatility, the FCI tended to increase.

4.4.6 Innovation Accounting Analysis

The innovation accounting analysis is likely to be sensitive to the ordering of the variables subject to the Choleski Decomposition. In this regard, these variables are arranged in a specific order. Inflation (DP) is placed first since it is the basis of the model estimation. The other variables are ordered as follows: money (DR), foreign exchange (DE), credit (DL), and stock (DS).

Impulse Response Functions (IRF) of the inflation model of ASEAN 5 countries are reported in Figure 4.16 to 4.20, illustrating the response of inflation to a single standard deviation (SD), shock inflation (DP), money (DR), foreign exchange (DE), credit (DL), and stock market (DS). In general, for ASEAN 5 countries, the response of inflation (DP) to shock from itself is very largely positive over a long time period.

In the case for Indonesia and the Philippines, the response of inflation (DP) to shock was positive in the money (DR) and credit market (DL) in the early stages and stabilized afterward. However, the response of inflation (DP) to standard deviation shock in the foreign exchange market (DE) had a negative effect in the initial stages and stabilized in the later stages, but the response of inflation (DR) to shock in the stock market (DS) coincides with the baseline (origin) (as seen in Figure 4.16 and 4.17).

For Malaysia, Singapore and Thailand show similar patterns of negative response of inflation (DP) to the shock to money (DR) and stock market (DS) in the early stages, but stabilized afterward. The inflation (DP) had a positive response to shock to the foreign exchange (DE) and credit market (DL) for Malaysia, while for Singapore the response of inflation (DP) to the shock in the exchange rate (DE) coincides with the baseline and credit (DL) shows a negative effect (as seen Figure 4.18 and 4.19). Figure 4.20 presents the IRF of Thailand, where it shows that inflation (DP) is less responsive to shock in all variables almost completely over the 24 quarters horizon.

The variance decomposition (VDC) of the inflation model (DP) of ASEAN 5 countries is reported in Table 4.21. As can be seen from the results, the variance of all alternatives of the ASEAN 5 countries are primarily explained by inflation (DP) itself, with difference ranges for each country. Variance decomposition of inflation (DP) for Malaysia, Philippines, Singapore, and Thailand on average were above 95 percent, while Indonesia recorded a range of 30 to 40 percent over the 24 quarter horizon.

For Singapore and Thailand the forecast error variance of inflation attributed less than 1 percent in money (DR), foreign exchange (DE), credit (DL), and stock market (DS). For Malaysia, the VDC of money (DR) and foreign exchange (DE) is for 4 percent and 1.3 percent, respectively, while the others are under one percent. As for the Philippines, the interest rate (DR) only recorded 2 percent, while all others were under one percent. Meanwhile, for Indonesia, the variant of inflation can be attributed largely by the money market (DR), which recorded 23 percent, foreign exchange (DE) reached 35 percent, while for the credit (DL) and stock market (DS) each reached only about 7 percent and 1 percent, respectively.

The result from IRF and VDC of ASEAN5 indicate that responses to shock and variance in all of ASEAN 5 for the inflation model is primarily attributed to inflation (DP) itself, while money (DR), foreign exchange (DE), credit (DL) and stock market (DS) had a real influence on inflation (DP). Nevertheless, the magnitude of the impact varies for each country in the ASEAN 5 countries.

4.5. Gravity Model

4.5.1 Panel Stationarity of Series

For the purpose of testing the order of integration of the dynamic panel data series we used unit root tests of Levin, Lin & Chu; Breitung; Im, Pesaran & Shin, ADF-Fisher and PP Fisher. In the first step, we estimated each series variable in levels and first differences. The estimated unit root test statistics are reported in Table 4.22. The tests show that the hypotheses of a unit root in the level of all series cannot be rejected at the 1% or 5% significance level. However, the values of the test statistics obtained from the first differences of each series indicate that the null hypothesis of unit root is rejected by both tests. This suggests that the first-difference of each series is stationary and all the variables are best modeled as integrated of order one I(1).

4.5.2 Panel Cointegration

The dynamic panel data used Fisher Johansen's cointegration and the Kao test for the long-run cointegration analysis. As shown in Table 4.23, both maximal eigenvalue and trace statistics lead to the conclusion that there are three cointegrating vectors between these variables at a 1 percent level of significance for all countries in ASEAN5.

4.5.3 Static Gravity Model

The results of the static gravity model in the financial liberalization period (1988-1997) are presented in Table 4.24. The results are divided into two models, namely, fixed effect and random effect. In general, the fixed effect model is more robust than the random effect. The Hausman test indicates that the random effect model is rejected, so the fixed effect model is the good model for our analysis. The t-statistic test of the fixed model, except destination GDP and land border, are significant at 1 percent and 5 percent levels.

The fixed model shows that the relationship between national income and income per capita to export is positive, which is in agreement with the theory. The relationship between the distance to export is negative, which subscribed to the theory. Nevertheless, the signs for all dummy variables, i.e., land border (L) and common language (C), are negative. The signs for indices variables, destination and origin, MCI are negative, while for destination and origin, FCI is positive. The results show that the monetary transmission mechanism and financial market performance support the possibility of ASEAN 5 economic integration, given that the sign of the monetary transmission mechanism is negative and for financial market performance is positive.

The result of the static gravity model during the economic recovery period (1998-2007) is presented in Table 4.25. The results are also divided into two models, namely, fixed effect and random effect. The fixed effect model is more robust than the random effect. Based on the Hausman test, the fixed effect is the good model for the analysis. The t-statistic test of the fixed models, except destination, land border, and common language, are significant at 1 percent and 5 percent levels.

The fixed effect model shows that the relationship between national income and income per capita to export is positive, which subscribes to the theory. The relationship between the distance to export is negative, also inline with the theory. The signs for land border (L) and the common language (C) are positive and negative, respectively. The indices variables, destination and origin MCI and the destination and origin FCI are negative and positive, respectively. The results also show that the monetary transmission mechanism and financial market performance support the possibility of ASEAN 5 economic integration, but the signs of the monetary transmission mechanism and financial market performance are negative and positive, respectively.

4.5.4 Dynamic Gravity Panel Data Model

The results of the dynamic gravity model in the financial liberalization period (1988-1997) are presented in Table 4.26. The results are divided into two models, namely, one-step and two-step FD-GMM estimation. In general, the one-step method for the FD-GMM model is more robust than the two-step, with evidence that the relationships are significant for the t-statistic at 1 percent and 5 percent levels. In the two-step method, the t-statistic shows no significant relationship between the variables. However, there are relationships between the variables of lagged export, distance, destination MCI and FCI as indicated in the one-step method of estimation.

Nevertheless, the relationship between lagged export to export is negative, and the relationship between the distance to export is positive, which is contrary to the theory. The signs of the indices variables, destination MCI and destination FCI, are negative and positive, respectively. The results show that destination, monetary transmission mechanism, and financial market performance also support the possibility of ASEAN 5 economic integration, but the sign of the monetary transmission mechanism is negative, and positive for financial market performance.

The result of the dynamic gravity model during the economic recovery period (1998-2007) is presented in Table 4.27. The results are also divided into two models, namely, one-step and two-step FD-GMM estimation. As in the above case, the one-step and two-step methods for the FD-GMM models are equally robust, with t-statistic relationships between variables at 1 percent and 5 percent significance levels. The relationship between variables in the one-step method that passed the t-test are lagged export, origin and destination GDP per capita, and origin and destination MCI. Meanwhile, in the two-step method, the significant relationships are between the variables of lagged export, origin and destination GDP per capita, and destination MCI and FCI.

However, the one-step and two-step models show that the relationship between lagged export to export is negative and this confirms the theory. The relationship between origin and destination GDP per capita to export is positive, which is in line with the theory. The one-step model also shows evidence of the negative sign of the indices variables, origin and destination MCI, which subscribes to the theory. Nevertheless, in the two-step model, the signs of the indices variables, destination MCI and destination FCI, are negative and positive, respectively. Given that the sign of the monetary transmission mechanism and financial market performance are negative and positive, respectively, the results obtained show the possibility of ASEAN 5 economic integration.

Hypothesis 4

Based on the criteria in the OCA on the importance of monetary transmission mechanism as presented by Mongelli (2003) that in the long term, there is a possibility of having a negative relationship to monetary integration, the hypothesis of this model can be written as follows:

Ho4 : There is a positive relationship between MCI and exports in the Gravity model which shows that the influence of the monetary transmission mechanism of monetary integration is positive.

Ha4: There is a negative relationship between MCI and exports in the Gravity model which shows that the influence of the monetary transmission mechanism of monetary integration is negative.

The results indicated that relationship between MCI and exports in the Gravity model is negative, hence the null hypothesis is rejected, then the influence of the monetary transmission mechanism of monetary integration is negative.

Hypothesis 5

Based on the OCA criteria proposed by Ishiyama (1975) on the impact on economic performance, when financial market integration is positive, then the hypothesis of this model can be written as follows:

Ho5 : There is a negative relationship between FCI and exports in the Gravity model which shows that on the effect of economic performance, financial market performance of monetary integration is negative.

Ha5: There is a positive relationship between FCI and exports in the Gravity model which shows that on the effect of economic performance, financial market performance of monetary integration is positive.

The results indicated that relationship between FCI and exports in the Gravity model is positive, hence the null hypothesis is rejected, then the influence of the financial market performance of monetary integration is negative.

CHAPTER 5
DISCUSSION AND CONCLUSIONS

5.1 Discussion

5.1.1 Generalized Purchasing Power Parity (G-PPP)

As mentioned earlier, the G-PPP has been interpreted in terms of an optimum currency area (OCA) that operates a single common currency or group of currencies. Therefore, G-PPP is one method to determine a suitable area to apply the single currency. The advantage of this method is the ability to integrate the variability of the real effective exchange rate (REER) of each country in a cointegration model in determining a long-run relationship, which is a prerequisite application of OCA. Several studies of GPPP were implemented by Enders and Hurn (1997) to find the G-PPP hold on G-7 (Canada, France, Germany, Italy, Japan, UK, USA) and G-3 (Germany, Japan and USA).

The result shows the existence of an interrelationship from the Johansen cointegration test among the ASEAN 5 countries. The evidence of G-PPP holds, which supports the adoption of OCA in the ASEAN 5 countries. This finding is in accordance with previous studies, namely, Choudhry (2005) on ASEAN 4 (Thailand, Malaysia, Indonesia, the Philippines) and South Korea, Ogawa and Kawasaki (2006) on ASEAN 5 plus Korea and China, and Ahn, et al. (2006) on ASEAN 4 (Indonesia, Malaysia, Singapore, Thailand) and four Northeast Asian Economies (Hong Kong SAR, Japan, Korea, and Taiwan).

5.1.2 Monetary Condition Index (MCI)

As mentioned earlier, one of the pre-conditions for optimum currency area (OCA) is the similarity of monetary condition. The monetary condition index (MCI) can be used to measure the effect of the monetary transmission on the similarity of inflation which is also a gauge of the monetary policy stance. MCI is constructed based on the interest rate and exchange rate channel of the monetary policy transmission mechanism in a small open economy. Several countries have already developed the MCI and implemented it in their monetary policy, namely Turkey (Kesriyeli & Kocaker, 1999); The United Kingdom (Batini and Turnbull, 2002); Pakistan (Qayyum, 2002); and India (Kannan & Bhoi, 2006).

The MCI result of ASEAN 5 shows that Indonesia and Thailand have similar patterns of monetary transmission with the effect that the interest rate is stronger than the exchange rate channel. Meanwhile, in Malaysia, the Philippines and Singapore the effect of exchange rate is stronger compared to the interest rate. VECM analysis indicates that all orders for Indonesia, Malaysia and Thailand have a short-run relationship. For the Philippines and Singapore not all orders have a short-run relationship. Similarly, in the analysis of Granger causality only the Philippines and Thailand have bidirectional causality between interest rate (DR) and price (DP) and for other ASEAN 5 countries there is unidirectional causality. In the innovation accounting analysis, VDC and IRF indicate that real interest rate (DR) and real effective exchange rate (DE) have a real influence on inflation (DP). Nevertheless, the magnitude of influence for each country in ASEAN 5 is different.

The magnitude of MCI for each country in ASEAN 5 varies from a large to small index with the highest reported for Indonesia (45-105), Thailand (16-33), Philippines (6-22), Malaysia (3-10), and Singapore (1-7). The increasing magnitude of the MCI countries occurred during the financial liberalization period (1988-1997). Meanwhile, in the economic recovery period (1998-2007), the magnitude of MCI fell. This phenomenon indicates that the country with higher economic volatility tends to have a greater MCI, and the country with low economic volatility tends to achieve a smaller MCI.

5.1.3 Financial Condition Index (FCI)

The similarity of financial condition is one of the requirements for the application of optimum currency area (OCA). Therefore, some researchers developed an index to measure financial conditions, namely, the financial condition index (FCI). FCI is an indicator of the performance of the financial sector or financial market and its importance already been employed. In several studies by Goodhart and Hofmaan (2001) for G-7 countries, Lack (2002) for Switzerland, Gauthier et al.(2004) for Canada, Montagnoli and Napolitano (2005) for the United States, Canada and the Euro Area, and Holz (2005) for the European Monetary Union (EMU).

The FCI results of ASEAN 5 indicates that Indonesia, Malaysia, and Thailand have similar patterns of financial market performance with the exchange rate shown stronger than the other markets. In the Philippines, the money market is stronger than other markets, while Singapore is dominated by the credit and stock market. The result of VECM analysis indicates that all orders for Indonesia, Malaysia and Thailand showed a short-run relationship, while for the Philippines and Singapore not all orders have a short-run relationship. Similarly, in the analysis of Granger causality only the Philippines and Thailand showed evidence of bidirectional causality between interest rate (DR) and price (DP), and other countries only showed unidirectional causality. The innovation accounting analysis, VDC and IRF indicate that real interest rate (DR), real effective exchange rate (DE), credit (DL) and stock (DS) cause real influence on inflation (DP). However, the magnitude of influence in each country on ASEAN 5 is different.

The magnitude of FCI each country in ASEAN 5 varies from a large to small index with the highest reported for Thailand (165-200), Indonesia (60-130), Singapore (56-70), Malaysia (34-48), and the Philippines (16-34). The increasing magnitude of the FCI countries occurred during the financial liberalization period (1988-1997). Since the economic recovery period (1998-2007), the magnitude of FCI in Indonesia and Philippines tended to fall, but Malaysia, Singapore, and Thailand tended to increase. This phenomenon indicates that the higher economic volatility tends to increase the FCI. On the contrary, the lower economic volatility tends to decrease the FCI.

5.1.4 Gravity Model

As mentioned earlier, Frankel and Rose (1998) develop the endogeneity of OCA using gravity models of monetary integration analysis. This concept emphasizes that the most important condition in the OCA is the international trade relations between the members that are endogenous. The gravity model is employed in order to explore the relationship between the international trade, GDP, GDP/capita, and distances between countries. In this study the dependent variables are exports from origin to destination country. The independent variables are gross domestic product (GDP) for origin and destination country, gross domestic product per capita (GDP/capita) for origin and destination country, distance between countries, and dummy variables, which consist of common language (C) and land border (L). In order to link the effect of the monetary transmission mechanism and financial market performance, we added two indexes, namely, MCI and FCI of origin and destination country to the gravity model.

This study compares static and dynamic panel data approaches in the analysis to sharpen the analytical estimation of the gravity model. In addition, the observation period also distinguished the two eras of financial liberalization (1988-1997) and the economic recovery period (1998-2007). In general, the results showed that monetary transmission mechanism and financial market performance have supported the monetary integration in ASEAN 5, but the sign of monetary transmission mechanism is negative, and positive for financial market performance. This finding is in accordance with the theory that states that if the OCA is adopted, then the monetary policy will be reduced, but instead, financial conditions will always support monetary integration.[4]

5.2 Conclusion

The main purpose of this study is to assess the implementation of monetary integration in ASEAN 5, especially viewed from the point of the monetary transmission mechanism and financial market performance. There are four objectives of the study. The first objective is to evaluate the feasibility of ASEAN 5 countries to implement the optimum currency area using the generalized purchasing power parity (G-PPP) model. The second objective is to estimate the monetary transmission mechanism pattern for ASEAN 5 countries using the monetary condition index (MCI). The third objective is to estimate the financial market performance pattern in ASEAN 5 countries using the financial condition index (FCI). The fourth objective is to analyze the effect of monetary transmission mechanism (MCI) and financial market performance (FCI) on ASEAN 5 monetary integration based on the gravity model. Our conclusions drawn from this work are as follows:

1. The G-PPP has been interpreted as feasibly implemented for the optimum currency area (OCA) in the economic region. In this study, we employed the Johansen cointegration test for ASEAN 5 countries. The results show that the interrelationship in the long run of G-PPP occurs among the ASEAN 5 countries.

[4] Tavlas (1993) and Mongelli (2002) argued that OCA caused ineffectiveness of monetary policy in the long run. While, the financial market integration and performance tend to increase strongly during implementation of monetary integration.

This means that ASEAN 5 satisfies the conditions for implementation of an optimum currency area (OCA).

2. Similarity of monetary conditions is one of the conditions applying optimum currency area (OCA) The MCI is focused on determining the interest rate and the exchange rate channel of monetary transmission. In general, Indonesia and Thailand have similar patterns of monetary transmission with the interest rate channel being stronger than the exchange rate channel. Meanwhile, for Malaysia, the Philippines and Singapore, the effect of the exchange rate is stronger than the interest rate. The biggest magnitude of MCI of ASEAN 5 countries occurred in the crisis period in 1997-1998. Meanwhile, in the economic recovery period (1998-2007), the magnitude of MCI was low. This phenomenon indicates that countries with greater of economic volatility tend to have a larger MCI, and the country that has low economic volatility tends to produce a smaller MCI.

3. Similarity financial condition is one of the conditions applying optimum currency area (OCA) The FCI is focused in calculating the interest rate, exchange rate, credit, and stock price. Based on the FCI estimation, we explored the pattern of financial market performance for the ASEAN 5 countries. In general, Thailand, Indonesia and Malaysia have similar patterns of financial markets with the exchange rate market shown stronger than the other markets. Meanwhile, the Philippines has a stronger money market than its other markets, and Singapore is dominated by the credit and stock markets. The highest magnitude of FCI of ASEAN 5 countries occurred in the crisis period in 1997-1998. Since the

economic recovery period (1998-2007), the magnitude of FCI in Indonesia and the Philippines tended to decrease, but the FCI from Malaysia, Singapore, and Thailand tended to increase. This phenomenon indicates that the higher economic volatility tends to increase FCI, while the lower economic volatility tends to decrease FCI.

4. The Gravity model approach is used to explore the relationship between international trade with the possibility of monetary integration. In this study, the dependent variable used was exports (from origin country to destination country), while the independent variables were gross domestic product (GDP), gross domestic product per capita (GDP/capita), distance, and dummy variables consisting of common language (C), land border (L), monetary condition index (MCI), and the financial condition index (FCI). In general, the results showed that the gravity model works well in a way that can explain the possibility of monetary integration of ASEAN 5 countries. The monetary transmission mechanism (MCI) and financial market performance (FCI) have supported the monetary integration in ASEAN 5. Nevertheless, the sign of monetary transmission mechanism is negative, and that of financial market performance is positive. This finding is in accordance with the theory that states that if the OCA is adopted, then the monetary policy will be ineffective. Instead, financial market performance will always exist to support monetary integration.

5.3 Recommendations

As mentioned earlier, this study aims to assess the possibility of monetary integration in ASEAN 5 by using various approaches. Based on G-PPP model, the five ASEAN countries to implement appropriate monetary integration. These results confirm that monetary integration can be applied to the five ASEAN countries. The study also refers to the concept that promotes the power of the OCA endogeneity of intra regional trade as the main condition for implementing monetary integration which is used in analyzing the Gravity Model. The study will also look at the influence of the transmission mechanism of monetary policy and financial market performance are each represented by the Monetary condition index (MCI) and the financial condition index (FCI) to the possibility of monetary integration as represented by the Gravity Model. Results showed that MCI has a negative influence and has a positive influence on the FCI in the Gravity Model. Based on some of the findings above, we make recommendations to researchers, academics and policy makers engaged in efforts to monetary integration in ASEAN 5:

1. The study recommends that the five ASEAN countries namely Indonesia, Malaysia, Philippines, Singapore and Thailand could implement monetary integration. This recommendation was reinforced by the fact that these five countries is a founding member of ASEAN over the past 40 years has worked in all areas both in the economic, social, political and security. These five countries together were also tested through difficult times such as the economic

recession in the 1980s, the economic crisis in 1997-98, and the global economic crisis in 2008.

2. The study recommends that the trade inter ASEAN countries is an important factor for the preparation of monetary integration. Therefore, the increase in trade between ASEAN countries should be improved in a variety of schemes cooperation in the primary, secondary, and tertiary sectors to be carried out massively including the implementation of ASEAN Free Trade Area (AFTA) in 2015 will accelerate the enactment of monetary integration.

3. The study also recommends that the MCI and FCI can be used as a tool in analyzing the ASEAN monetary integration or other countries which is likely to implement monetary integration. The use of MCI and FCI as an indicator of monetary integration would be helpful to explain some of the criteria laid out in the OCA, as well as policy makers as a means to evaluate the economic integration process being executed.

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A. APPENDIX : TABLES

Table 1.1
Selected Basic ASEAN Land Area and Population Indicators

Country	Total land area	Total population[1/]	Population density[1/]	Annual population growth[1/]
	km^2	thousand	persons per km^2	percent
	2009	2009	2009	2009
Brunei Darussalam	5,765	406.2	70	2.1
Cambodia[1/]	181,035	14,957.8	83	2.1
Indonesia	1,860,360	231,369.5	124	1.2
Lao PDR	236,800	5,922.1	25	2.8
Malaysia	330,252	28,306.0	86	2.1
Myanmar[2/]	676,577	59,534.3	88	1.8
The Philippines	300,000	92,226.6	307	2.0
Singapore	710	4,987.6	7,023	3.1
Thailand	513,120	66,903.0	130	0.6
Viet Nam	331,212	87,228.4	263	1.2
ASEAN	*4,435,830*	*591,841.0*	*133*	*1.4*

Sources: ASEAN Stat, ASEAN Secretariat, 2010

Table 1.2
Selected basic ASEAN Economic indicators

Country	Gross domestic product[2/] at current prices	Gross domestic product per capita at current prices		International merchandise trade[4/]		
				Exports	Imports	Total trade
	US$ million	US$[2/]	US$ PPP[3/]	US$ million	US$ million	US$ million
	2009	2009	2009	2009	2009	2009
Brunei Darussalam	14,146.7	34,827.0	45,816.6	7,168.6	2,399.6	9,568.2
Cambodia[1/]	*10,368.2*	*693.2*	*1,789.2*	-	-	-
Indonesia	*546,527.0*	*2,362.1*	*4,365.4*	116,508.8	96,829.2	213,338.0
Lao PDR	*5,742.0*	*969.6*	*2,396.1*	-	-	-
Malaysia	191,618.4	6,769.5	12,258.1	156,704.3	123,183.8	279,888.1
Myanmar[2/]	*24,023.6*	*403.5*	*1,094.9*	6,341.5	3,849.9	10,191.3
The Philippines	*161,148.8*	*1,747.3*	*3,587.2*	38,334.7	43,008.3	81,343.0
Singapore	177,568.7	35,602.0	51,392.2	269,191.1	245,226.5	514,417.6
Thailand	*264,230.1*	*3,949.5*	*7,940.8*	151,364.7	134,124.6	285,489.3
Viet Nam	*96,317.1*	*1,104.2*	*3,080.7*	57,096.0	69,949.2	127,045.2
ASEAN	*1,491,690.6*	*2,520.4*	*4,847.4*	*802,709.6*	*718,571.2*	*1,521,280.8*

Sources: ASEAN Stat, ASEAN Secretariat, 2010

Table 2.1

The Degree of Five Types Economic Integration

	Type				
	Free trade area	Customs unions	Common market	Economic Union	Total Economic Union
Removal of Tariffs and quotas	Yes	Yes	Yes	Yes	Yes
Common external tariff	No	Yes	Yes	Yes	Yes
Factor mobility	No	No	Yes	Yes	Yes
Harmonization of economic policies	No	No	No	Yes	Yes
Total unification of economic policies	No	No	No	No	Yes

Sources: Jovanovic (2006)

Tabel 2.2
New Taxonomy of Economic Integration Types

Level	New Taxonomy	Types	Descriptions	Examples
1	Regional Autarky	Autarky	• Bilateral Agreement	ASEAN
2	Trade Integration	Free Trade Area	• Tariff and quota removed internally • National tariff retained against outside	ASEAN 2015
		Customs Unions	• Tariff and quota removed internally • Common external tariff	Mercosur
3	Scale Integration	Common Market	• Free movement of factor of production, good and services	EU before MU
		Economic Union	• Harmonization or coordination of some national policies • Transfer of some policies to supranational level	EU before MU
4	Policy Integration	Monetary Union	• Single currency • Single central bank	ECB in the EU
		Fiscal Union	• Harmonization of tax • Fiscal sovereignty	EU to some degree
5	Political Integration	Political Union	• Effective and democratic body at supranational level	Does not exist out of a political integration project

Sources: Crowley (2001).

Tabel 2.3
Selected Research of East Asia and ASEAN Economic Integration

No	Journal	Method	Result
(1)	**(2)**	**(3)**	**(4)**
A.	Shocking Studies		
1.	Ramayandi (2005)	• Trade intensity index • Correlation shock by SVAR	This study finds Indonesia, Malaysia, Singapore, Thailand and the Philippines appear to be relatively suitable to form a monetary union. This can be justified on least two arguments: the trade pattern among these economies, and the relative symmetry in the nature of their economic shocks.
2.	Aminian (2005)	• Trade intensity index • Correlation shock by SVAR	This paper discusses the rationale and chances for such cooperation. It is argued that, although regional incentives are not strong enough and the political prerequisites for monetary unification are not yet given, almost all economic indicators suggest that East Asian countries are ready for cooperation on economic grounds.
3.	Huang & Guo (2006)	• Correlation shock by SVAR	This paper investigates empirically the feasibility of creating a currency union in East Asia following closer monetary cooperations in recent years. The analysis of structural disturbances suggests that it may be beneficial for Hong Kong, Indonesia, Korea, Malaysia, Singapore and Thailand to take the lead in endorsing and fostering a common currency zone.
B.	Trade Effect		
1.	Rana (2007)	• Trade intensity index & Grubel Lloyd Index • Gravity Panel Data Model	Formation of a currency union leads to an increase in trade, which in turn leads to greater synchronization of business cycles. This study suggest, however, that caution should be exercised in searching for appropriate partners for currency union: trade may increase, but if increased trade is mainly inter-industry then business cycle movements could be weakened. It is only when the level of intra-industry trade increases that business cycles become more synchronized and the cost of a currency union is reduced.

No	Journal	Method	Result
(1)	**(2)**	**(3)**	**(4)**
C.	GPPP		
1.	Choudhry (2005)	Johansen Cointegration	This research investigates the effects of the Asian currency crisis of 1997–1998 on the generalized PPP between several real exchange rates of the Far East countries (Thailand, Malaysia, Indonesia, the Philippines and South Korea). Results from the Johansen method of multivariate cointegration show a substantial change in the relationship between these real exchange rates before and after the Asian currency crisis.
2.	Ahn, et,al (2006)	Johansen Cointegration	The empirical findings of the paper present suggest that eight economies in East Asia including ASEAN 4 (Indonesia, Malaysia, Singapore, and Thailand) and four Northeast Asian economies (Hong Kong SAR, Japan, Korea, and Taiwan) are already prepared to form an OCA any time, since macroeconomic conditions for forming an OCA are satisfied.
3.	Ogawa & Kawasaki (2006)	Johansen Cointegration	This research detects a cointegration relationship among real effective exchanges rates, we investigate whether the region composed of "ASEAN plus three countries" is an optimum currency area.

Table 3.1
MCI's Countries of Many Institutions

1	Central Bank 2	IMF 3	OECD 4	Deutsche Bank 5	Goldman Sachs 6	JP Morgan 7
Australia			2.3			4.3
Canada	3.0	4.0	2.3		4.3	2.7
France		3.0	4.0	3.4	2.1	3.5
Japan		10.0	4.0		8.8	7.9
New Zealand	2.0					
Sweden	3.0-4.0		1.5	0.5		2.1
UK		3.0	4.0	14.4	5.0	2.9
USA		10.0	9.0		39.0	10.1

Note : Weights are those on interest rates relative to those on exchange rates, e.g., a relative weight of 3 indicates that a one percentage point increase in interest rate is equivalent to a three percentage point increase in exchange rate in terms of their impact on aggregate demand over time.

Source : Kanaan & Bhoi (2006)

Table 3.2
Data, Description and Sources

Data	Description	Sources
Inflation	Composite Price Index (CPI) (2005=base year)	International Financial Statistics (IFS) IMF
Real Effective Exchange Rate (REER)	REER was calculated from real exchange rate (RER) multiplied by the weighted trade sharing to partner countries.	Calculate our self with row data from International Financial Statistic (IFS) and Directory of Trade (DOT) IMF
Real short term interest rate	Inter call money interest rate reduce inflation (2005=base year)	International Financial Statistics (IFS) IMF
Real credit domestic	Credit Domestic (2005=base year)	International Financial Statistics (IFS) IMF
Export	Export from origin to destination countries	Directory of Trade (DOT) IMF
Real Stock Price	Stock exchange composite index (SECI) (2005=base year)	CEIC data limited
Real GDP	Gross Domestic Product (2005=base year)	International Financial Statistics (IFS) IMF
Real GDP/capita	Gross Domestic Product / capita (2005=base year)	International Financial Statistics (IFS) IMF
Distance	Distance between capitol origin to destination Countries	http://www.timeanddate.com
Common language	Common language	CIA web site http://www.cia.gov/
Land Boarder	Land border	CIA web site http://www.cia.gov/
MCI	Monetary Condition Index	Calculate our self
FCI	Financial Condition Index	Calculate our self

Table 3.3
The Distance of Capital City on ASEAN-5 Countries

No	Origin Countries	Destination Countries	Distance (Km)
1.	Indonesia (Jakarta)	Malaysia	1168
		Philippines	2782
		Singapore	894
		Thailand	2314
2.	Malaysia (Kuala Lumpur)	Indonesia	1168
		Philippines	2470
		Singapore	300
		Thailand	1191
3.	Philippines (Manila)	Indonesia	2782
		Malaysia	2470
		Singapore	2397
		Thailand	2215
4.	Singapore	Indonesia	894
		Malaysia	300
		Philippines	2397
		Thailand	1425
5.	Thailand (Bangkok)	Indonesia	2314
		Malaysia	1191
		Philippines	2215
		Singapore	1425

Sources: http://www.timeanddate.com/worldclock/distanceresult.html

Table 3.4
Land Border & Languages of ASEAN-5 Countries

No	Countries	Land Border	Languages
1.	Indonesia	• Malaysia (1,782 km) • Papua New Guinea (820 km) • Timor Leste (228 km)	Bahasa Indonesia (official, modified form of Malay), English, Dutch, local dialects (like Javanese).
2.	Malaysia	• Indonesia (1,782 km) • Brunei (381 km) • Thailand (506 km)	Bahasa Malaysia (official), English, Chinese Tamil, Telugu, Malayalam, Panjabi, Thai.
3.	Philippines	-	Filipino (official; based on Tagalog) and English (official);
4.	Singapore	-	Mandarin 35%, English 23%, Malay 14.1%, Hokkien 11.4%, Cantonese 5.7%, Teochew 4.9%, Tamil 3.2%.
5.	Thailand	• Myanmar (1,800 km) • Laos (1,754 km) • Cambodia (803 km) • Malaysia (506 km)	Thai, English (secondary language of the elite), ethnic and regional dialects.

Sources: https://www.cia.gov/library/publications/the-world-factbook

Table 3.5
Matrix of Land Border ASEAN 5

	INA	MAL	PHIL	SING	THAI
INA		V			
MAL	V				V
PHIL					
SING					
THAI		V			

Note : Extract from table 3.3.

Table 3.6
Matrix of Common Language ASEAN 5

	INA	MAL	PHIL	SING	THAI
INA		V			
MAL	V				V
PHIL				V	
SING		V			
THAI					

Note : extract from table 3.3.

Table 4.1
Summary of Unit Root Test for ASEAN REER

	ADF test				PP test			
	At level		At first difference		At level		At first difference	
Country	Constant No Trend	Constant and Trend	Constant No Trend	Constant and Trend	Constant No Trend	Constant and Trend	Constant No Trend	Constant and Trend
Indonesia	-0.4475	-2.2909	-4.9948*	-4.9630*	-0.4978	-2.1512	-6.8356*	-6.7959*
Malaysia	-0.1358	-2.4752	-7.8454*	-7.8201*	-0.1406	-2.6749	-7.8181*	-7.8335*
Philippines	-2.7235	-2.0705	-7.4635*	-7.6680*	-2.7322	-2.0736	-7.3502*	-7.6611*
Singapore	-0.5545	-2.0719	-5.6851*	-5.6459*	-0.4353	-2.059	-6.2822*	-6.2350*
Thailand	-0.1584	-2.8671	-6.8998*	-6.9064*	0.1003	-2.3372	-6.7923*	-6.9432*
Critical value								
1%	-3.516676	-4.078420	-3.516676	-4.080021	-3.515536	-4.078420	-3.51667	-4.0800
5%	-2.899115	-3.467703	-2.899115	-3.468459	-2.898623	-3.467703	-2.89911	-3.4684

Note:*, **, indicate significant at the 1%, 5% levels. c and t refer to constant and trend, respectively

Table 4.2
Summary of Lag Length Selection of REER ASEAN5

Test	Lag Interval			
	Lag 1	Lag 2	Lag 3	Lag 4
AIC	-18.04838	-18.70807	-18.64447	-18.45022
SC	-16.83981	-16.72953	-15.88439	-14.89674

Note:*, **, indicate significant at the 1%, 5% levels.

Table 4.3
Summary of Johansen's Cointegration REER for ASEAN5

Hypothesized No. of CE(s)	REER ASEAN5	
	Trace Statistic	Max-Eigen Statistic
None	68.84658*	32.13945**
At most 1	36.70713	16.30031
At most 2	20.40683	12.70905
At most 3	7.697779	6.768190
At most 4	0.929589	0.929589

Note: *, **, *** denotes rejection of the hypothesis at the 1%, 5%, 10% level

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

REERINA	REERMAL	REERPHIL	REERSING	REERTHAI
0.556164	-13.73304	0.756206	7.021346	5.571234
-3.365787	26.13854	3.611249	-11.81585	-14.73065
0.526216	-18.15801	4.961249	9.566265	3.285581
-1.706265	-9.231387	3.927899	0.242466	6.608493
-0.992412	-3.759904	-4.117074	-4.519670	13.83408

Unrestricted Adjustment Coefficients (alpha):

D(REERINA)	-0.011558	-0.009704	-0.013940	0.011555
D(REERMAL)	0.015177	0.001101	0.008415	-0.003779
D(REERPHIL)	0.019708	0.000241	-0.005492	-0.005894
D(REERSING)	0.007135	0.008630	0.009120	-0.008663
D(REERTHAI)	0.021235	0.009712	-0.000158	6.39E-05

Table 4.4
Summary of Unit Root ADF MCI

Variables	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend
					Level					
P	-0.418224	-2.853272	-2.485715	-0.794640	-3.440313	-1.665254	-1.883284	-2.395005	-2.083364	-1.414685
E	-0.447513	-2.290976	-0.135804	-2.475212	-2.723510	-2.070572	-0.554505	-2.071957	-0.158452	-2.867166
R	-2.280950	-2.599814	-2.418344	-3.271269	-1.139653	-5.930131	-2.303704	-3.147499	-1.905274	-2.838098
					Fist Difference					
P	-4.325181*	-4.294897*	-7.074058*	-7.533191*	-3.614556*	-6.512734*	-4.544161*	-4.656473*	-6.311897*	-6.662022*
E	-4.994871*	-4.963003*	-7.845407*	-7.820199*	-7.463581*	-7.668010*	-5.685152*	-5.645943*	-6.899820*	-6.906481*
R	-9.991962*	-9.947164*	-11.09469*	-11.06158*	-9.600860*	-9.542087*	-9.158596*	-9.103908*	-8.972727*	-8.912890*

Note:*, **, indicate significant at the 1%, 5% levels.

Table 4.5
Summary of Unit Root PP MCI

Variables	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend
Level										
P	-0.186214	-2.166597	-2.485715	-0.794640	-4.189198	-1.638748	-2.419381	-2.023305	-2.262310	-1.285243
E	-0.497813	-2.151231	-0.140683	-2.674973	-2.732277	-2.073628	-0.435385	-2.059005	0.100399	-2.337284
R	-2.241014	-2.530425	-2.418344	-3.135340	-3.307318	-5.889256	-2.345896	-3.246679	-1.806057	-2.838098
Fist Difference										
P	-4.431229	-4.402461	-7.056907	-7.533850	-5.347090	-6.527103	-4.557851	-4.623700	-6.325165	-6.641466
E	-6.835678	-6.795968	-7.818077	-7.833546	-7.350264	-7.661172	-6.282293	-6.235028	-6.792322	-6.943201
R	-10.00613	-9.961002	-11.22305	-11.17089	-26.08712	-29.49194	-9.200435	-9.139465	-9.084388	-8.972055

Note:*, **, indicate significant at the 1%, 5% levels

Table 4.6
Summary of Lag Length Selection MCI

Lag	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	AIC	SC	AIC	SC	AIC	SC	AIC	SC	AIC	SC
1	-6.443775	-5.899919*	-11.26590	-10.72204*	-8.892387*	-8.348531*	-10.31354*	-9.769684*	-8.493903*	-7.950047*
2	-6.504559	-5.682705	-11.27257*	-10.45072	-8.768728	-7.946874	-10.04718	-9.225327	-8.384360	-7.562506
3	-6.522634*	-5.418602	-11.11660	-10.01256	-8.684796	-7.580765	-9.982549	-8.878517	-8.319518	-7.215486
4	-6.375946	-4.985453	-10.82551	-9.435014	-8.394949	-7.004456	-9.625738	-8.235245	-8.027597	-6.637104
5	-6.271847	-4.590502	-10.59126	-8.909913	-8.310893	-6.629549	-9.389005	-7.707660	-7.697328	-6.015983

Table 4.7
Summary of Johansen's Cointegration MCI

Hypothesized No. of CE(s)	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic
None	111.2021**	55.88114**	67.35769**	33.18507**	101.6912**	61.84713**	74.90026**	41.73302**	104.1196**	53.95972**
At most 1	55.32097**	29.48425**	34.17262**	25.00575**	39.84405**	29.36639**	33.16724**	24.68254**	50.15987**	36.27720**
At most 2	25.83672**	25.83672**	9.166865**	9.166865**	10.47766**	10.47766**	8.484697**	8.484697**	13.88267**	13.88267**

Note : *, **, denote rejection of the hypothesis at the 5%, 1%. All countries find cointegration.

Table 4.8
Summary of Granger Causality and ECT MCI

Country	Dependent Variable	F-statistics			t-statistics
		DP	DR	DE	ECT_{t-1}
Indonesia	DP	-	0.93757	9.09188*	[-7.60850]*
	DR	6.16880*	-	2.44767**	[5.06429]*
	DE	0.14453	0.74852	-	[2.27490]**
Malaysia	DP	-	0.55451	0.04815	[-4.66341]*
	DR	21.1375*	-	0.43178	[5.72016]*
	DE	3.50504**	0.18838	-	[-2.24308]**
Philippines	DP	-	13.1483*	0.74660	[0.79830]
	DR	2.90858**	-	0.06157	[-8.73849]*
	DE	0.02859	0.15806	-	[2.62627]**
Singapore	DP	-	0.56366	2.62980**	[0.39822]
	DR	12.8633	-	0.07054	[5.79163]*
	DE	0.86734	2.60962**	-	[-1.20515]
Thailand	DP	-	2.69134**	0.00037	[-1.89941]***
	DR	9.13716*	-	2.53381**	[7.01067]*
	DE	6.27111*	0.16534	-	[3.93410]**

Note: *, **, *** indicates rejection of null hypotheses at 1%, 5%, and 10%

Table 4.9
Summary of Block Exogeneity MCI

Countries		Indonesia	Malaysia	Philippines	Singapore	Thailand
Dependent variable: D(DP)						
D(DR)	Chi-sq	23.54	4.84	1.34	0.55	3.03
	Prob	0.00	0.02	0.24	0.46	0.08
D(DE)	Chi-sq	20.34	0.01	0.33	1.77	0.85
	Prob	0.00	0.89	0.56	0.18	0.35
All	Chi-sq	37.67	6.18	1.73	2.28	3.44
	Prob	0.00	0.04	0.42	0.32	0.18
Dependent variable: D(DR)						
D(DP)	Chi-sq	6.34	3.08	3.35	1.18	0.11
	Prob	0.01	0.08	0.06	0.28	0.75
D(DE)	Chi-sq	5.15	3.89	0.58	0.78	11.35
	Prob	0.02	0.05	0.44	0.38	0.00
All	Chi-sq	30.17	5.16	5.21	1.87	11.41
	Prob	0.00	0.08	0.07	0.39	0.00
Dependent variable: D(DE)						
D(DP)	Chi-sq	0.81	16.79	0.005	1.61	0.78
	Prob	0.36	0.00	0.94	0.21	0.39
D(DR)	Chi-sq	4.61	2.53	6.83	0.016	4.51
	Prob	0.03	0.11	0.00	0.90	0.03
All	Chi-sq	4.83	16.79	8.28	1.62	6.03
	Prob	0.08	0.00	0.02	0.44	0.05

Table 4.10
Summary of VECM, Granger Causality, Block Exogeneity of MCI

Country	VECM Order of ECT significant	Granger Causality Bidirectional	Granger Causality Unidirectional	Block Exogeneity
Indonesia	(DP), (DR), (DE)		(DP) → (DR)	(DR) →(DP)
			(DE) → (DP)	(DE) →(DP)
			(DE) → (DR)	(DP) →(DR)
				(DE) →(DR)
				(DR) →(DE)
Malaysia	(DP), (DR), (DE)		(DP) → (DR)	(DR) →(DP)
			(DP) → (DE)	(DP) →(DR)
				(DE) →(DR)
				(DP) →(DE)
Philippines	(DR), (DE)	(DP) ↔ (DR)		(DP) →(DR)
				(DR) →(DE)
Singapore	(DR)	(DR) ↔ (DE)		
Thailand	(DP), (DR), (DE)	(DP) ↔ (DR)	(DP) → (DE)	(DR) →(DP)
			(DE) → (DR)	(DE) →(DR)
				(DR) →(DE)

Table 4.11
Comparison of MCI Weights

Countries	Effect of Interest Rate	Effect of Exchange Rate
Indonesia	1	10
Malaysia	1	0.5
Philippines	1	0.4
Singapore	1	0.1
Thailand	1	3.7

Table 4.12
Variance Decomposition of DP MCI

Countries	Period	DP	DR	DE
Indonesia	1	100.0000	0.000000	0.000000
	6	41.94741	18.23770	39.81489
	12	40.48376	18.77620	40.74004
	18	40.84291	18.64406	40.51302
	24	40.32657	18.83404	40.83939
Malaysia	1	100.0000	0.000000	0.000000
	6	71.65362	24.35181	3.994571
	12	62.62753	32.16353	5.208936
	18	58.82393	35.45423	5.721835
	24	56.73185	37.26419	6.003958
Philippines	1	100.0000	0.000000	0.000000
	6	97.85336	1.859867	0.286776
	12	98.51872	1.231542	0.249738
	18	98.74754	1.015066	0.237393
	24	98.86456	0.904358	0.231078
Singapore	1	100.0000	0.000000	0.000000
	6	98.13995	0.960169	0.899885
	12	98.30110	0.835470	0.863433
	18	98.35788	0.790518	0.851600
	24	98.38710	0.767383	0.845517
Thailand	1	100.0000	0.000000	0.000000
	6	95.97181	0.630294	3.397893
	12	95.48219	0.633156	3.884657
	18	95.31819	0.631291	4.050520
	24	95.23208	0.630305	4.137615

Table 4.13
Summary of Unit Root ADF FCI

Variables	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend
					Level					
P	-0.418224	-2.853272	-2.485715	-0.794640	-3.440313	-1.665254	-1.883284	-2.395005	-2.083364	-1.414685
E	-0.447513	-2.290976	-0.135804	-2.475212	-2.723510	-2.070572	-0.554505	-2.071957	-0.158452	-2.867166
R	-2.280950	-2.599814	-2.418344	-3.271269	-1.139653	-5.930131	-2.303704	-3.147499	-1.905274	-2.838098
L	-2.067315	-2.754382	-1.205635	-2.048118	-1.181844	-1.186331	-1.704527	-1.249683	-2.208917	-1.577970
S	-0.770701	-2.616198	-2.097108	-2.761263	-1.419722	-1.913229	-1.495592	-2.549039	-2.096929	-2.073911
					Fist Difference					
P	-4.325181	-4.294897	-7.074058	-7.533191	-3.614556	-6.512734	-4.544161	-4.656473	-6.311897	-6.662022
E	-4.994871	-4.963003	-7.845407	-7.820199	-7.463581	-7.668010	-5.685152	-5.645943	-6.899820	-6.906481
R	-9.991962	-9.947164	-11.09469	-11.06158	-9.600860	-9.542087	-9.158596	-9.103908	-8.972727	-8.912890
L	-4.179524	-4.252178	-4.402675	-4.372410	-8.682063	-8.661043	-9.660795	-9.823521	-4.811913	-5.201506
S	-9.296225	-9.232973	-10.37509	-10.30703	-8.628574	-8.576661	-8.897159	-8.839361	-10.02143	-9.956727

Note:*, **, indicate significant at the 1%, 5% levels

Table 4.14

Summary of Unit Root PP FCI

Variables	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend	Constant, No Trend	Constant & Trend
					Level					
P	-0.186214	-2.166597	-2.485715	-0.794640	-4.189198	-1.638748	-2.419381	-2.023305	-2.262310	-1.285243
E	-0.497813	-2.151231	-0.140683	-2.674973	-2.732277	-2.073628	-0.435385	-2.059005	0.100399	-2.337284
R	-2.241014	-2.530425	-2.418344	-3.135340	-3.307318	-5.889256	-2.345896	-3.246679	-1.806057	-2.838098
L	-1.869659	-2.464687	-1.205635	-2.137418	-1.284737	-1.362003	-1.888971	-1.119238	-2.331919	-1.510294
S	-0.775342	-2.909438	-2.076518	-2.809435	-1.383077	-1.945977	-1.503449	-2.674764	-2.056979	-2.033321
					First Difference					
P	-4.431229	-4.402461	-7.056907	-7.533850	-5.347090	-6.527103	-4.557851	-4.623700	-6.325165	-6.641466
E	-6.835678	-6.795968	-7.818077	-7.833546	-7.350264	-7.661172	-6.282293	-6.235028	-6.792322	-6.943201
R	-10.00613	-9.961002	-11.22305	-11.17089	-26.08712	-29.49194	-9.200435	-9.139465	-9.084388	-8.972055
L	-8.657010	-8.769526	-8.325699	-8.271175	-8.690545	-8.667781	-9.661410	-9.898005	-6.499777	-6.849238
S	-9.289712	-9.237382	-10.29214	-10.22892	-8.656850	-8.600013	-8.896874	-8.839280	-10.01725	-9.952650

Note:*, **, indicate significant at the 1%, 5% levels

Table 4.15
Summary of Lag Length Selection FCI

Lag	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	AIC	SC	AIC	SC	AIC	SC	AIC	SC	AIC	SC
1	-8.483969	-7.275400*	-13.51288	-12.30432*	-10.94468*	-9.736109*	-14.84288*	-13.63431*	-11.10698	-11.10698*
2	-8.149431	-6.170894	-13.56331*	-11.58477	-10.53778	-8.559244	-14.23071	-12.25217	-12.24427*	-10.26573
3	-8.484244*	-5.724165	-13.35824	-10.59816	-10.24473	-7.484648	-13.71335	-10.95327	-11.97600	-9.215917
4	-8.034469	-4.480988	-13.02925	-9.475772	-9.706498	-6.153017	-13.09630	-9.542821	-11.59048	-8.036997
5	-7.458787	-3.099745	-12.29960	-7.940561	-9.596294	-5.237252	-12.29408	-7.935041	-10.76443	-6.405384

Table 4.16
Summary of Johansen Cointegration FCI

Relationship	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic	Trace Statistic	Max-Eigen Statistic
None	203.9480**	78.13261**	139.9461**	62.59179**	147.8894**	63.42447**	140.6811**	55.27416**	173.0266**	62.43389**
At most 1	125.8154**	52.19768**	77.35428**	35.27691**	84.46493**	31.55168*	85.40698**	34.43362**	110.5927**	44.62247**
At most 2	73.61771**	30.44301**	42.07737**	19.02837	52.91326**	26.44820**	50.97337**	26.57466**	65.97022**	27.84478**
At most 3	43.17470**	28.59551**	23.04900**	14.31970*	26.46506**	16.62486*	24.39871**	16.15703*	38.12544**	25.05836**
At most 4	14.57919**	14.57919**	8.729304**	8.729304**	9.840200**	9.840200**	8.241676**	8.241676**	13.06708**	13.06708**

Table 4.17
Summary of Granger Causality and ECT FCI

Countries	Dependent Variables	F-statistics					t-statistics
		DP	DR	DE	DL	DS	ECT_{t-1}
Indonesia	DP	-	0.93757	9.09188*	2.10685**	0.50318	[-7.56940]*
	DR	6.16880*	-	2.44767**	0.00032	1.05843	[4.54343]*
	DE	0.14453	0.74852	-	0.37798	0.26954	[3.36313]**
	DL	3.40632**	0.20713	1.89164***	-	7.41887*	[-1.63815]***
	DS	0.04303	2.20962***	0.11799	3.17581**	-	[1.06633]
Malaysia	DP	-	0.55451	0.04815	0.00404	0.99175	[-3.03756]**
	DR	21.1375*	-	0.43178	0.07015	5.00084*	[-0.94728]
	DE	3.50504**	0.18838	-	0.34133	1.04462	[-3.35181]**
	DL	0.67373	1.45306***	0.34345	-	0.92791	[1.95222]***
	DS	1.60944	0.47547	3.12273**	0.77954	-	[-7.21812]*
Philippines	DP	-	13.1483*	0.74660	1.08466	0.02964	[1.35185]
	DR	2.90858**	-	0.06157	0.63355	2.18921	[-9.44224]*
	DE	0.02859	0.15806	-	1.88027***	4.56825*	[1.76398]***
	DL	0.23864	0.53088	0.92138	-	0.80841	[0.35223]
	DS	2.81244**	0.33346	6.26894*	1.72699***	-	[5.11612]*

Note: *, **, *** indicates rejection of null hypotheses at 1%, 5%, and 10%

Continue of Table 17

Countries	Dependent Variables	F-statistics					t-statistics
		DP	DR	DE	DL	DS	ECT_{t-1}
Singapore	DP	-	0.56366	2.62980	1.82193	3.67230	[0.41396]
	DR	12.8633	-	0.07054	0.65954	0.01223	[5.92013]*
	DE	0.86734	2.60962	-	0.53570	3.69022	[-0.68536]
	DL	7.23165	0.63681	0.00034	-	2.16879	[2.65385]**
	DS	0.00507	1.03538	8.42412	5.29615	-	[-2.28866]**
Thailand	DP	-	2.69134	0.00037	13.0536	0.11737	[-0.88617]
	DR	9.13716	-	2.53381	0.20254	0.04817	[3.08651]**
	DE	6.27111	0.16534	-	1.22281	0.14336	[5.81896]*
	DL	1.65373	2.07811	1.80688	-	0.17736	[7.85736]*
	DS	0.20238	2.83994	1.20361	3.23871	-	[1.16863]

Table 4.18
Summary of Block Exogeneity FCI

Countries		Indonesia	Malaysia	Philippines	Singapore	Thailand
Dependent variable: D(DP)						
D(DR)	Chi-sq	23.37	0.46	1.03	3.12	1.81
	Prob	0.00	0.49	0.31	0.07	0.17
D(DE)	Chi-sq	9.27	3.08	0.04	5.10	0.25
	Prob	0.00	0.08	0.83	0.02	0.61
D(DL)	Chi-sq	0.04	0.13	0.35	5.65	2.05
	Prob	0.84	0.72	0.54	0.01	0.15
D(DS)	Chi-sq	0.45	17.38	5.19	2.71	1.09
	Prob	0.50	0.00	0.02	0.09	0.29
All	Chi-sq	35.13	18.63	7.65	10.12	3.72
	Prob	0.00	0.00	0.09	0.03	0.44
Dependent variable: D(DR)						
D(DP)	Chi-sq	7.93	40.16	11.86	0.23	1.84
	Prob	0.00	0.00	0.00	0.63	0.17
D(DE)	Chi-sq	7.85	2.20	1.80	0.43	1.93
	Prob	0.00	0.14	0.17	0.50	0.16
D(DL)	Chi-sq	4.08	1.21	9.31	7.08	1.16
	Prob	0.04	0.27	0.00	0.00	0.28
D(DS)	Chi-sq	0.81	1.91	58.79	16.86	0.12
	Prob	0.36	0.16	0.00	0.00	0.72
All	Chi-sq	33.68	44.94	74.73	26.92	4.13
	Prob	0.00	0.00	0.00	0.00	0.38

Continue of Table 4.18

Countries		Indonesia	Malaysia	Philippines	Singapore	Thailand
Dependent variable: D(DE)						
D(DP)	Chi-sq	0.89	10.89	0.18	0.61	3.73
	Prob	0.34	0.00	0.66	0.43	0.05
D(DR)	Chi-sq	4.54	8.58	2.84	1.66	0.44
	Prob	0.03	0.00	0.09	0.19	0.50
D(DL)	Chi-sq	1.46	0.36	0.01	4.19	76.60
	Prob	0.26	0.59	0.99	0.04	0.00
D(DS)	Chi-sq	0.03	5.25	8.74	1.75	0.32
	Prob	0.86	0.02	0.00	0.18	0.57
All	Chi-sq	6.37	18.51	10.45	6.53	92.54
	Prob	0.17	0.00	0.03	0.16	0.00
Dependent variable: D(DL)						
D(DP)	Chi-sq	0.46	0.75	0.01	0.02	2.53
	Prob	0.49	0.38	0.91	0.86	0.11
D(DR)	Chi-sq	4.97	0.84	1.78	0.16	2.98
	Prob	0.03	0.36	0.18	0.68	0.08
D(DE)	Chi-sq	1.41	0.79	0.79	0.82	5.99
	Prob	0.23	0.37	0.37	0.36	0.01
D(DS)	Chi-sq	4.84	0.08	7.63	0.12	10.21
	Prob	0.03	0.77	0.00	0.72	0.00
All	Chi-sq	12.49	1.30	9.31	1.16	17.50
	Prob	0.01	0.86	0.05	0.88	0.00

Continue of Table 4.18

Countries		Indonesia	Malaysia	Philippines	Singapore	Thailand
Dependent variable: D(DS)						
D(DP)	Chi-sq	1.37	7.17	5.12	7.89	0.31
	Prob	0.24	0.00	0.02	0.00	0.57
D(DR)	Chi-sq	2.39	0.08	6.11	2.90	3.34
	Prob	0.12	0.76	0.01	0.08	0.06
D(DE)	Chi-sq	0.30	25.60	0.89	0.08	0.04
	Prob	0.58	0.00	0.34	0.77	0.82
D(DL)	Chi-sq	11.29	2.38	0.04	11.96	1.31
	Prob	0.00	0.12	0.82	0.00	0.25
All	Chi-sq	19.98	37.61	22.33	18.21	4.49
	Prob	0.00	0.00	0.00	0.00	0.04

Table 4.19
Summary of VECM, Granger Causality, Block Exogeneity FCI

Country	VECM Order of ECT significant	Granger Causality Bidirectional	Granger Causality Unidirectional	Block Exogeneity
Indonesia	(DP), (DR), (DE), (DL)	(DP) ↔ (DL)	(DE) → (DP)	(DR) → (DP)
		(DL) ↔ (DS)	(DE) → (DR)	(DE) → (DP)
			(DE) → (DL)	(DP) → (DR)
			(DP) → (DR)	(DE) → (DR)
			(DR) → (DS)	(DL) → (DR)
				(DR) → (DE)
				(DR) → (DL)
				(DS) → (DL)
				(DL) → (DS)
Malaysia	(DP), (DE), (DL), (DS)		(DP) → (DR)	(DE) → (DP)
			(DP) → (DE)	(DS) → (DP)
			(DR) → (DL)	(DP) → (DR)
			(DE) → (DS)	(DP) → (DE)
			(DS) → (DR)	(DR) → (DE)
				(DS) → (DE)
				(DP) → (DS)
				(DE) → (DS)

Continue Table 4.19

Country	VECM Order of ECT significant	Granger Causality Bidirectional	Granger Causality Unidirectional	Block Exogeneity
Philippines	(DR), (DE), (DS), (DL)	(DP) ↔ (DR)	(DP) → (DS)	(DS) → (DP)
		(DE) ↔ (DS)	(DL) → (DE)	(DP) → (DR)
			(DL) → (DS)	(DL) → (DR)
				(DS) → (DR)
				(DS) → (DE)
				(DS) → (DL)
				(DP) → (DS)
				(DR) → (DS)
Singapore	(DR), (DL), (DS)	(DP) ↔ (DL)	(DP) → (DR)	(DE) → (DP)
		(DE) ↔ (DS)	(DR) → (DE)	(DL) → (DP)
		(DL) ↔ (DS)	(DS) → (DP)	(DL) → (DR)
				(DS) → (DR)
				(DL) → (DE)
				(DP) → (DS)
				(DL) → (DS)
Thailand	(DR), (DE), (DL)	(DP) ↔ (DR)	(DP) → (DE)	(DP) → (DE)
		(DP) ↔ (DL)	(DR) → (DL)	(DL) → (DE)
		(DE) ↔ (DL)	(DR) → (DS)	(DE) → (DL)
			(DE) → (DR)	(DS) → (DL)
			(DE) → (DS)	
			(DL) → (DS)	

Table 4.20
Comparison of FCI Weights

Countries	Effect of Interest Rate	Effect of Exchange rate	Effect of Credit Domestic	Effect of Stock Price
Indonesia	1	11	1.3	0.14
Malaysia	1	3.5	0.5	3
Philippines	1	0.6	0.5	0.8
Singapore	1	1	4	2.1
Thailand	1	15.9	9	0.1

Table 4.21

Variance Decomposition of DP FCI

Country	Period	DP	DR	DE	DL	DS
Indonesia	1	100.0000	0.000000	0.000000	0.000000	0.000000
	6	39.61920	20.95204	31.58665	6.879516	0.962598
	12	34.40439	22.83927	34.15832	7.491206	1.106804
	18	32.70169	23.44471	35.00064	7.705381	1.147580
	24	31.85832	23.74508	35.41959	7.810066	1.166941
Malaysia	1	100.0000	0.000000	0.000000	0.000000	0.000000
	6	89.87762	4.038275	1.390100	0.871947	3.822062
	12	90.16233	4.365599	1.364718	0.788646	3.318707
	18	90.31666	4.454177	1.363087	0.752949	3.113124
	24	90.39751	4.501075	1.362659	0.734567	3.004193
Philippines	1	100.0000	0.000000	0.000000	0.000000	0.000000
	6	95.17698	3.282559	0.327446	0.210118	1.002899
	12	96.03131	2.847907	0.317317	0.152278	0.651187
	18	96.30677	2.734977	0.316833	0.127662	0.513761
	24	96.44721	2.676785	0.316441	0.114593	0.444968
Singapore	1	100.0000	0.000000	0.000000	0.000000	0.000000
	6	97.44136	1.082793	0.877002	0.502884	0.095959
	12	97.64363	0.969188	0.839096	0.475439	0.072651
	18	97.71311	0.928111	0.827541	0.466737	0.064501
	24	97.74873	0.907018	0.821625	0.462308	0.060323
Thailand	1	100.0000	0.000000	0.000000	0.000000	0.000000
	6	97.97298	0.532602	0.367767	0.628800	0.497849
	12	98.16644	0.469717	0.271637	0.611929	0.480275
	18	98.25474	0.447666	0.225130	0.599982	0.472477
	24	98.29891	0.436250	0.201925	0.594353	0.468561

Table 4.22
Summary of Unit Root Test of Panel Data

No	Variable	Test	Level		First Difference	
			Statistic	Prob	Statistic	Prob
1.	**LEXP**	Levin, Lin & Chu t*	-6.14154	0.0000	-43.3734	0.0000
		Breitung t-stat	-3.00918	0.0013	-21.7659	0.0000
		Im, Pesaran and Shin W-stat	-7.18647	0.0000	-43.7107	0.0000
		ADF - Fisher Chi-square	148.551	0.0000	504.225	0.0000
		PP - Fisher Chi-square	172.858	0.0000	473.275	0.0000
2.	**LGDPO**	Levin, Lin & Chu t*	2.31646	0.9897	-10.2266	0.0000
		Breitung t-stat	0.16588	0.5659	-8.77443	0.0000
		Im, Pesaran and Shin W-stat	3.49949	0.9998	-13.7270	0.0000
		ADF - Fisher Chi-square	12.3527	1.0000	267.986	0.0000
		PP - Fisher Chi-square	23.8643	0.9798	496.117	0.0000
3.	**LGDPD**	Levin, Lin & Chu t*	-6.14154	0.0000	-11.3563	0.0000
		Breitung t-stat	-3.00918	0.0013	-8.75070	0.0000
		Im, Pesaran and Shin W-stat	3.20422	0.9993	-13.5515	0.0000
		ADF - Fisher Chi-square	12.7870	1.0000	264.407	0.0000
		PP - Fisher Chi-square	20.6670	0.9951	504.962	0.0000
4.	**LGDPKO**	Levin, Lin & Chu t*	3.02960	0.9988	-7.67683	0.0000
		Breitung t-stat	-1.75002	0.0401	-8.56909	0.0000
		Im, Pesaran and Shin W-stat	3.36043	0.9996	-14.1748	0.0000
		ADF - Fisher Chi-square	13.0600	1.0000	279.979	0.0000
		PP - Fisher Chi-square	27.5473	0.9324	515.127	0.0000
5.	**LGDPKD**	Levin, Lin & Chu t*	3.02960	0.9988	-7.67683	0.0000
		Breitung t-stat	-1.75002	0.0401	-8.56909	0.0000
		Im, Pesaran and Shin W-stat	3.36043	0.9996	-14.1748	0.0000
		ADF - Fisher Chi-square	13.0600	1.0000	279.979	0.0000
		PP - Fisher Chi-square	27.5473	0.9324	515.127	0.0000
6.	**LMCIO**	Levin, Lin & Chu t*	-4.17534	0.0000	-45.2200	0.0000
		Breitung t-stat	-6.62170	0.0000	-27.0378	0.0000
		Im, Pesaran and Shin W-stat	-7.49709	0.0000	-41.8081	0.0000
		ADF - Fisher Chi-square	145.333	0.0000	625.300	0.0000
		PP - Fisher Chi-square	147.016	0.0000	562.078	0.0000
7.	**LMCID**	Levin, Lin & Chu t*	-4.17534	0.0000	-45.2200	0.0000
		Breitung t-stat	-6.62170	0.0000	-27.0378	0.0000
		Im, Pesaran and Shin W-stat	-7.49709	0.0000	-41.8081	0.0000
		ADF - Fisher Chi-square	145.333	0.0000	625.300	0.0000
		PP - Fisher Chi-square	147.016	0.0000	562.078	0.0000
8.	**LFCIO**	Levin, Lin & Chu t*	-4.78530	0.0000	-43.0268	0.0000
		Breitung t-stat	-5.49941	0.0000	-24.7505	0.0000
		Im, Pesaran and Shin W-stat	-6.73945	0.0000	-40.2025	0.0000
		ADF - Fisher Chi-square	131.004	0.0000	622.573	0.0000
		PP - Fisher Chi-square	130.002	0.0000	555.293	0.0000
9.	**LFCID**	Levin, Lin & Chu t*	-4.78530	0.0000	-43.0268	0.0000
		Breitung t-stat	-5.49941	0.0000	-24.7505	0.0000
		Im, Pesaran and Shin W-stat	-6.73945	0.0000	-41.8081	0.0000
		ADF - Fisher Chi-square	131.004	0.0000	625.300	0.0000
		PP - Fisher Chi-square	130.002	0.0000	562.078	0.0000

Table 4.23
Summary of Johansen Fisher Panel and Kao Residual Cointegration Test

No	Series	Johansen Fisher Panel Cointegration Test		Kao residual Cointegration Test
		Trace test	Max-eigen test	t-Statistic
1.	DLEXP; DLGDPO	1688.*	701.4*	-7.327755*
	DLGDPD; DLGDPKO;	2334.*	546.4*	
	DLGDPKD; DLMCIO;	1257.*	465.4*	
	DLMCID DLFCIO	1185.*	398.8*	
	DLFCID	890.9*	326.8*	

Table 4.24
The Gravity Static Panel Data Model (1988-1997)

Dependent Variable: Log of Export

	Fixed Effect		Random Effect	
	Coefficient	t-test	Coefficient	t-test
Constanta	-1.79683	-2.043 **	-6.91870	-2.864*
(Log) Origin GDP	0.376992	5.447*	0.368776	3.917*
(Log) Destination GDP	0.081739	1.237	0.503505	5.613*
(Log) Origin GDP/Capita	0.700427	14.37*	0.817314	7.046*
(Log) Destination GDP/Capita	0.357816	7.367*	0.715159	6.519*
(Log) Distance	-0.786928	-11.69*	-1.263550	-4.670*
(Dummy) Land Border	-0.072286	0.6990	-0.072286	-0.3005
(Dummy) Common Language	-0.193131	-2.203**	-0.548545	-1.522
(Log) Origin MCI	-0.539273	-8.209*	-0.072049	-0.9662
(Log) Destination MCI	-0.514976	-8.101*	-0.155437	-2.11**
(Log) Origin FCI	0.403918	9.278*	0.289220	1.960
(Log) Destination FCI	0.415385	9.622*	0.250317	1.684
R-squared	0.86915			
R-squared adjusted	0.86405			
F-statistic	170.27			
Breusch-Pagan LM test			813.567	
Hausman Test	-		472.683	

Table 4.25
The Gravity Static Panel Data Model (1998-2007)

Dependent Variable: Log of Export

	Fixed Effect		Random Effect	
	Coefficient	t-test	Coefficient	t-test
Constanta	-3.73682	-5.232*	0.344665	0.2278
(Log) Origin GDP	0.684024	9.328*	0.389927	4.072*
(Log) Destination GDP	0.180844	2.527**	0.496769	5.514*
(Log) Origin GDP/Capita	0.405825	12.64*	0.417786	5.257*
(Log) Destination GDP/Capita	0.269805	8.604*	0.492955	6.638*
(Log) Distance	-0.492081	-11.89*	-0.638681	-3.580*
(Dummy) Land Border	0.0463133	1.292	0.338810	1.373
(Dummy) Common Language	-0.012121	-0.2263	-0.351819	-1.159
(Log) Origin MCI	0.246082	-5.947*	0.004019	0.1337
(Log) Destination MCI	-0.281896	-7.056*	-0.002393	-0.0804
(Log) Origin FCI	0.210083	7.767*	-0.243407	2.926**
(Log) Destination FCI	0.162067	5.981*	-0.848200	3.580*
R-squared	0.90689			
R-squared adjusted	0.90326			
F-statistic	249.67			
Breusch-Pagan LM test			3736.61	
Hausman Test			345.857	

Table 4.26
The Gravity Dynamic Panel Data Model (1988-1997)

Dependent Variable: DLog of Export

	FD-GMM (One step)		FD-GMM (Two Step)	
	Coefficient	t-test	Coefficient	t-test
Constanta	-0.402691	-1.733***	3.69162	0.3144
DLog Export (-1)	-0.301143	-1.671***	-0.229494	-0.4772
DLog Origin GDP	0.0469128	0.3472	-0.034026	0.009399
Dlog Destination GDP	-0.0790283	-0.8088	0.410223	0.2110
DLog Origin GDP/Capita	0.140748	0.7844	-1.16669	-0.2900
DLog Destination GDP/Capita	0.352016	1.375	-0.444524	-0.1506
DLog Distance	0.0547229	1.661***	-0.490266	-0.3152
Dummy Land Border	-0.0211071	-0.7050	0.0390067	0.6514
Dummy Common Language	0.0388759	1.225	-0.689499	-0.3170
DLog Origin MCI	-0.0782002	-1.503	-0.849096	-0.4085
DLog Destination MCI	-0.186034	-3.800*	-0.195619	-0.1597
DLog Origin FCI	0.0960677	1.005	3.14932	0.5018
DLog Destination FCI	0.272666	3.209*	-0.661263	-0.4086
Sum Square Residual	210.02		466.887	
Standard error of the regression	0.530237		0.790579	
Sargan over-identification test (Chisquare)	836.142			
Wald (joint) test (Chi-square)	485.785		485.785	

Table 4.27
The Gravity Dynamic Panel Data Model (1998-2007)

Dependent Variable: DLog of Export

	FD-GMM (One step)		FD-GMM (Two Step)	
	Coefficient	t-test	Coefficient	t-test
Constanta	-0.030457	-2.559**	-0.318809	-0.3771
DLog Export (-1)	-0.372209	-8.391*	-1.113470	-1.91***
DLog Origin GDP	0.102603	0.4267	-0.194805	-0.4549
DLog Destination GDP	-0.018514	-0.0662	0.147867	0.3491
DLog Origin GDP/Capita	0.460225	2.887**	0.555718	2.920**
DLog Destination GDP/Capita	0.480427	5.549*	0.463361	3.845*
DLog Distance	0.002214	1.462	0.039459	0.3514
Dummy Land Border	-0.009083	-3.587*	-0.030553	-1.516
Dummy Common Language	0.001657	0.4936	0.048795	0.3463
DLog Origin MCI	-0.197332	-2.452**	-0.177933	-1.586
DLog Destination MCI	-0.204881	-2.677*	-0.297731	-2.501**
DLog Origin FCI	0.000783	0.0038	0.089264	0.2233
DLog Destination FCI	0.198497	1.213	0.315170	1.746***
Sum Square Residual	39.2414		47.0446	
Standard error of the regression	0.2292		0.250954	
Sargan over-identification test (Chi-square)	1065.94			
Wald (joint) test (Chi-square)	896.546		374.495	

B. APPENDIX : FIGURES

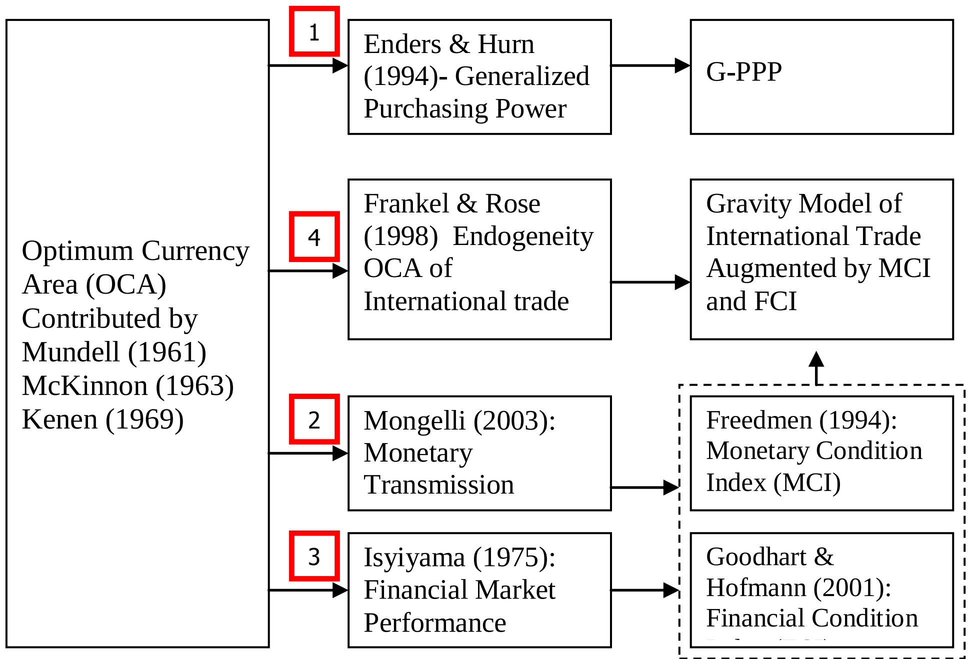


Figure 1.1 Theoretical Framework

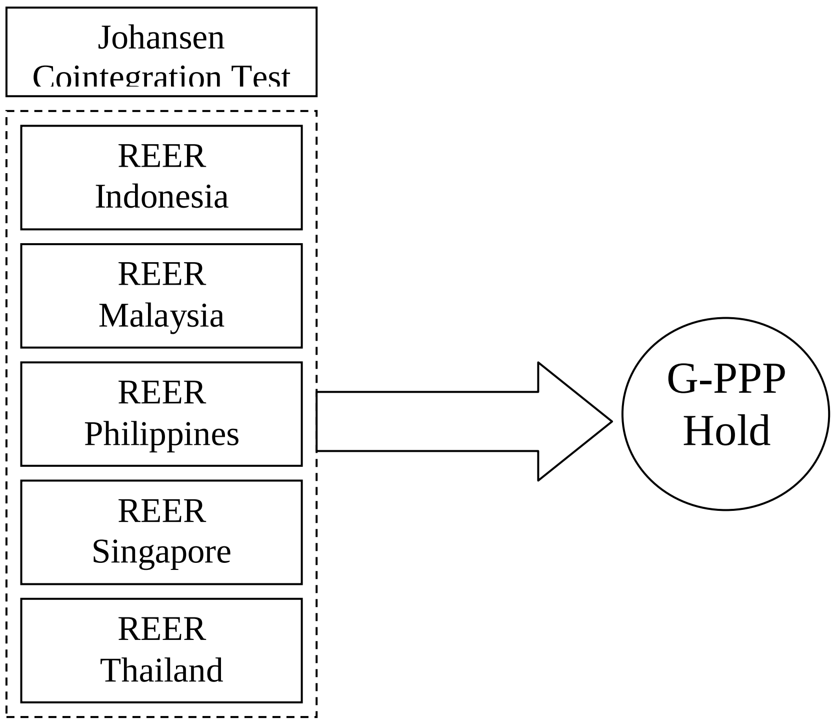


Figure 1.2 Conceptual Framework of G-PPP Model in ASEAN 5 Countries

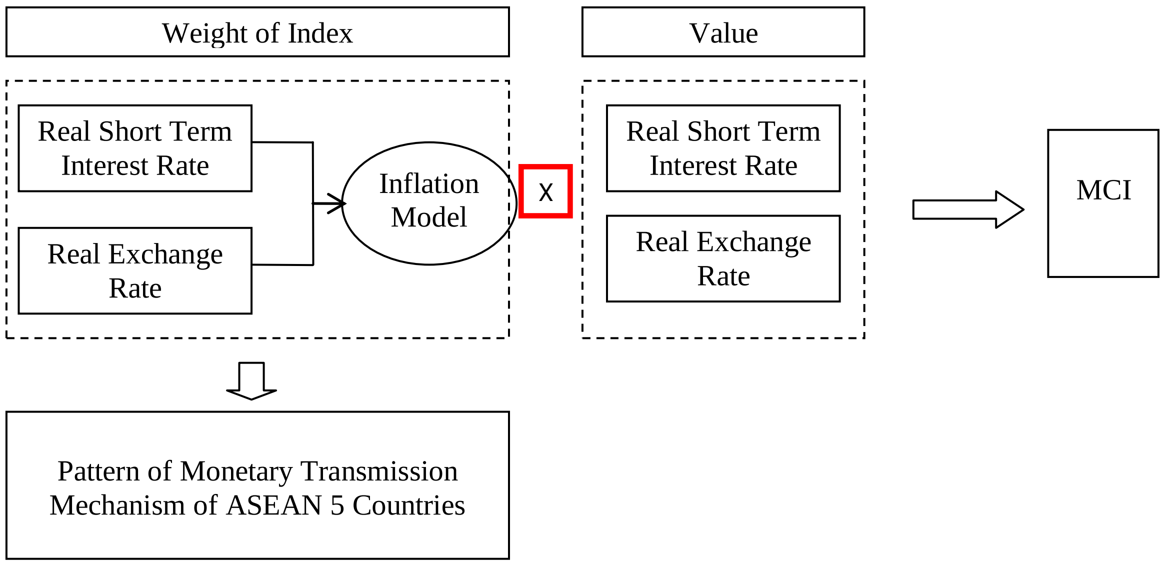


Figure 1.3 Conceptual Framework of MCI Model in ASEAN 5 Countries

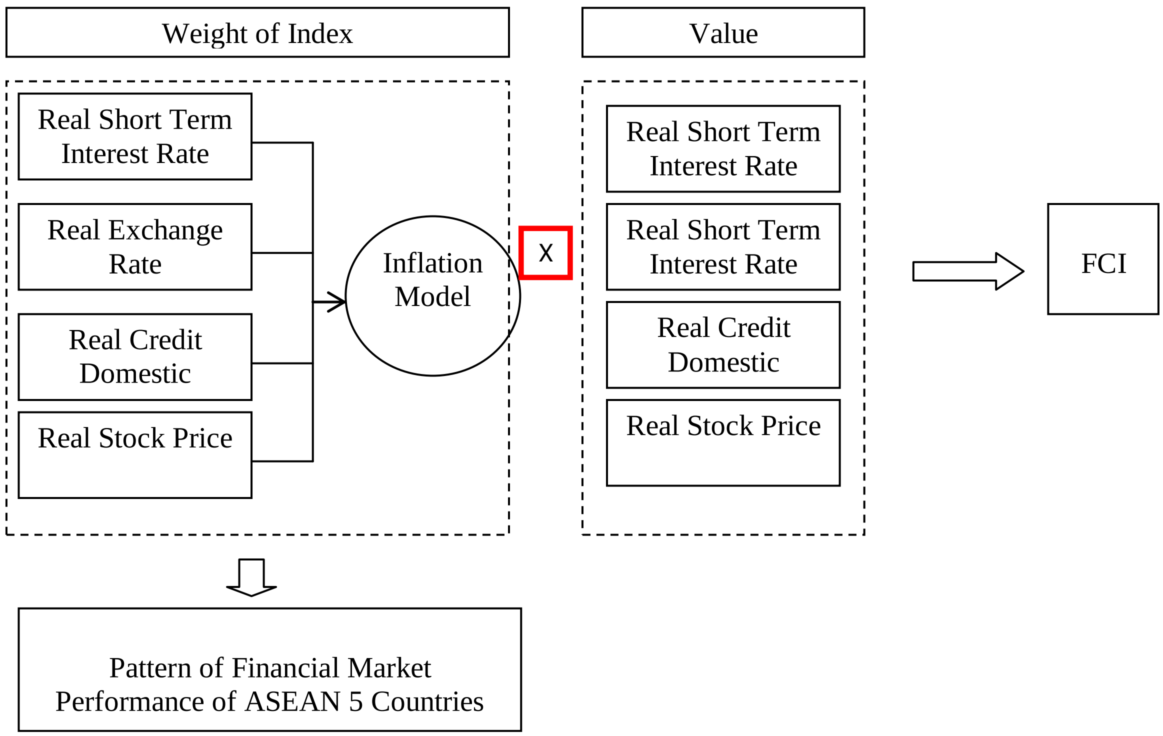


Figure 1.4 Conceptual Framework of FCI Model in ASEAN 5 Countries

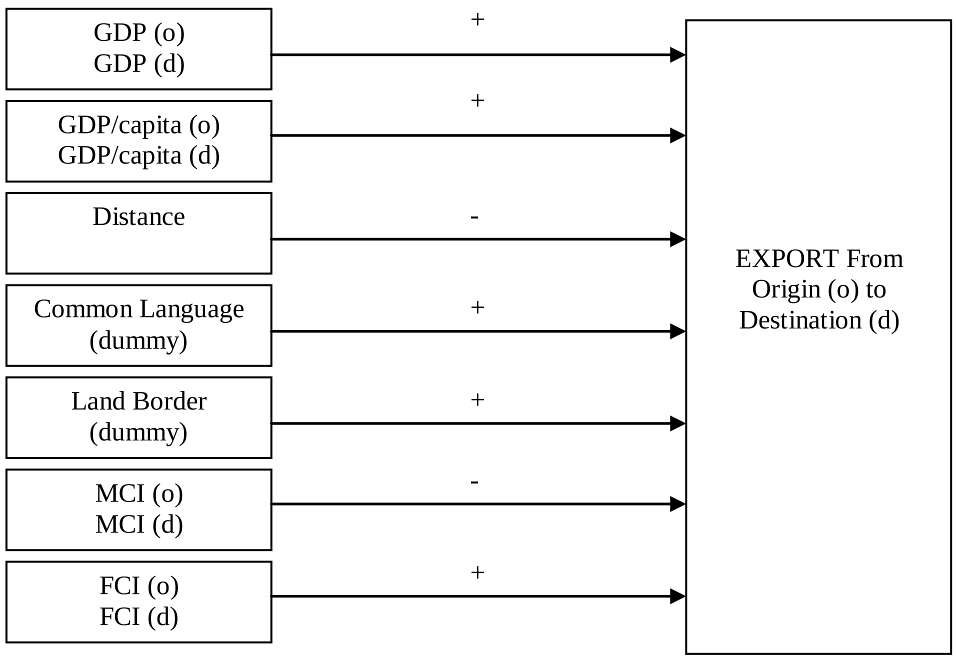
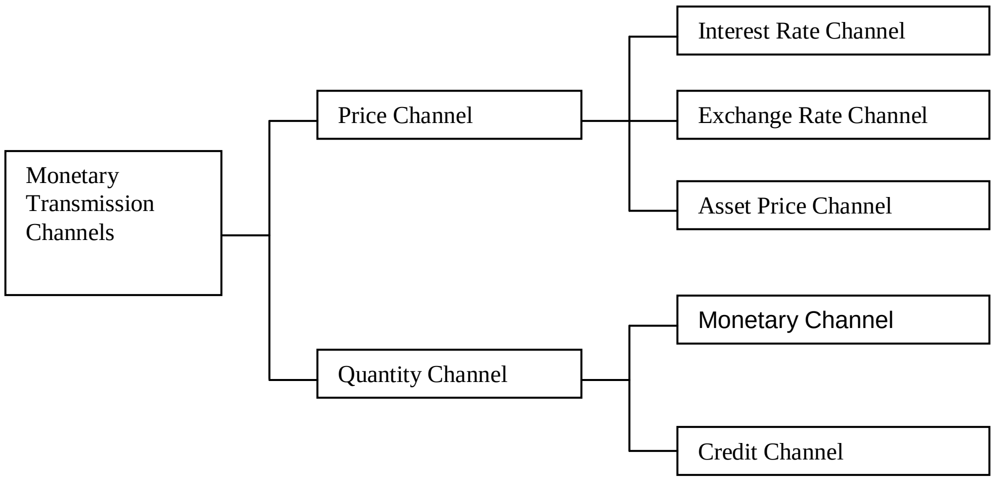


Figure 1.5 Conceptual Framework of Gravity Model Augmented by MCI & FCI in ASEAN 5 Countries



Cited: Oh (1999)

Figure 2.1. Monetary Transmission Channels

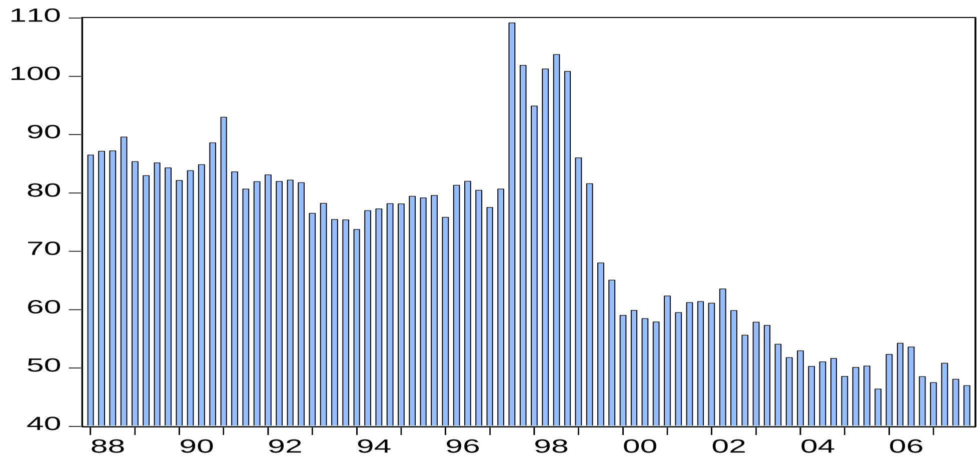


Figure 4.1 MCI of Indonesia

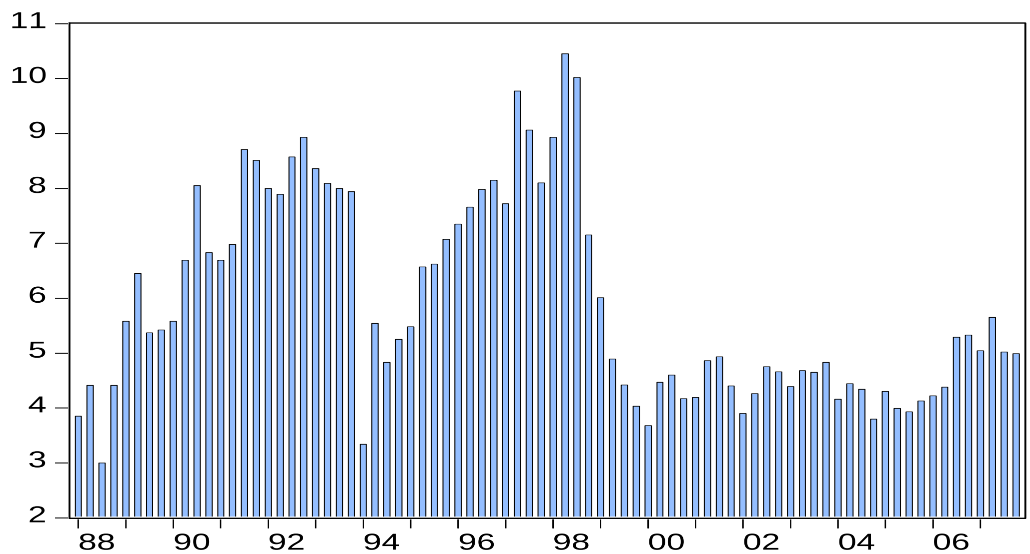


Figure 4.2 MCI of Malaysia

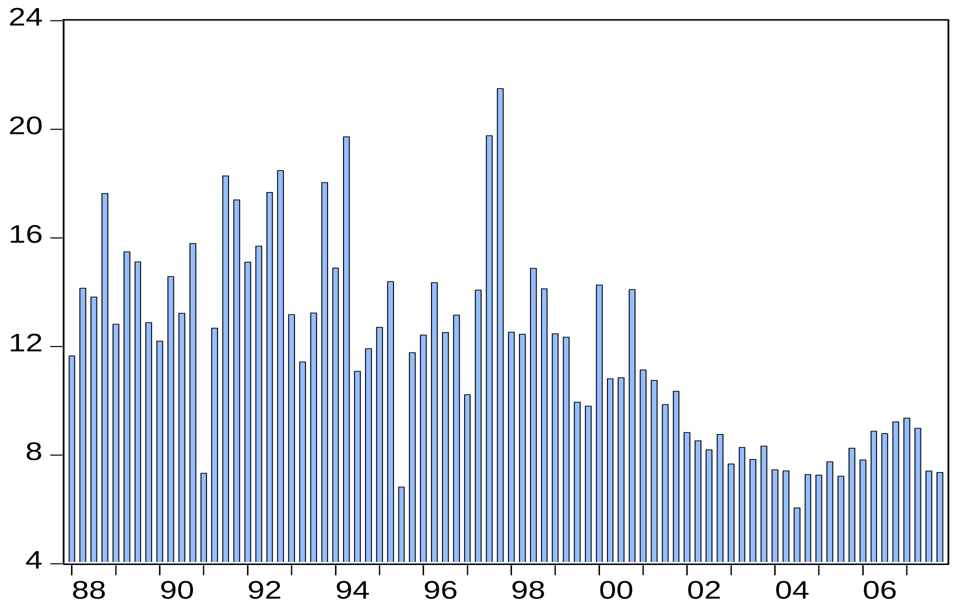


Figure 4.3 MCI of Philippines

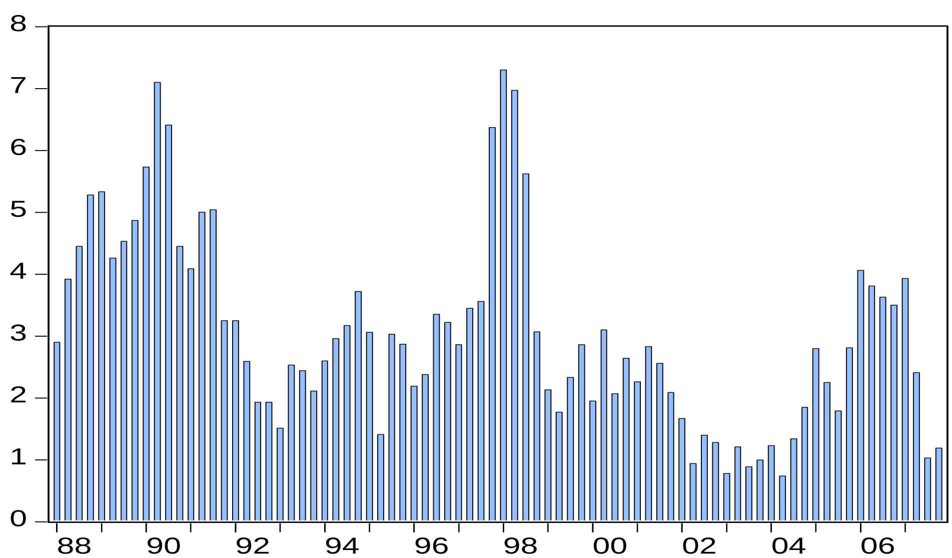


Figure 4.4 MCI of Singapore

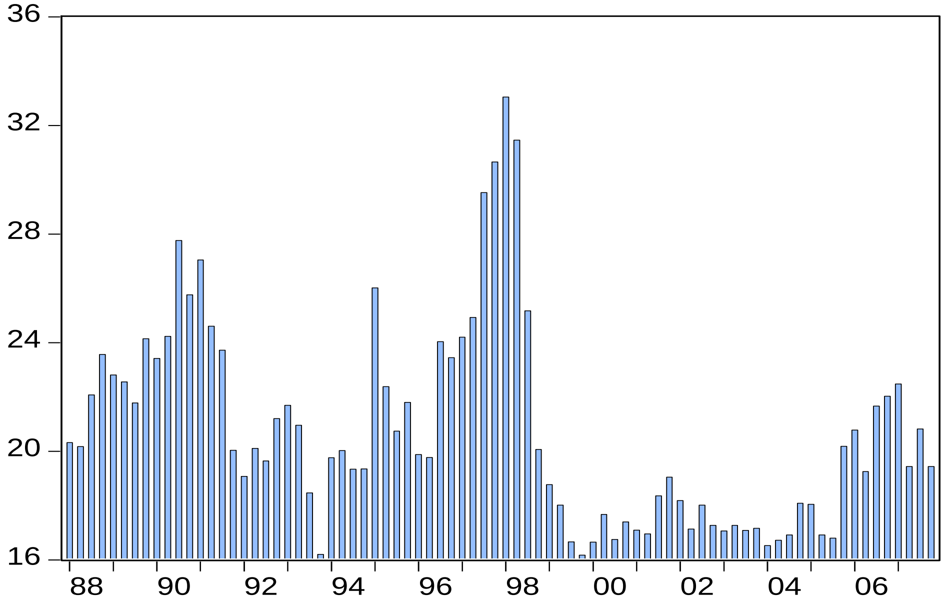


Figure 4.5 MCI of Thailand

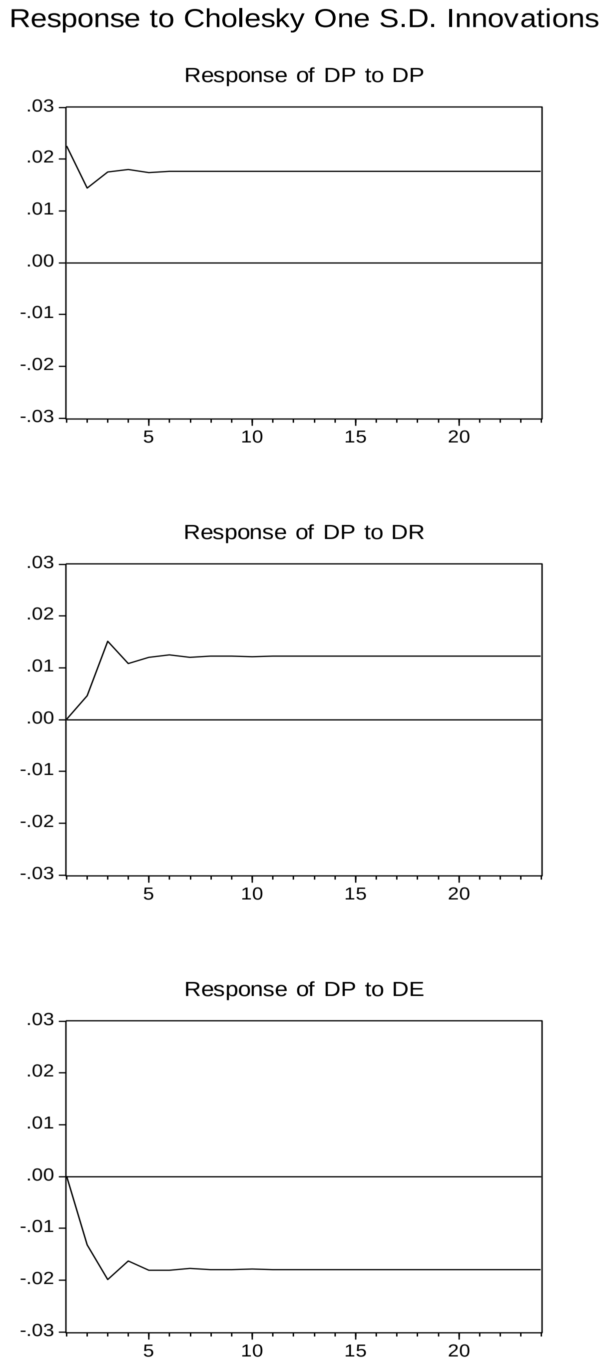


Figure 4.6 IRF MCI of Indonesia

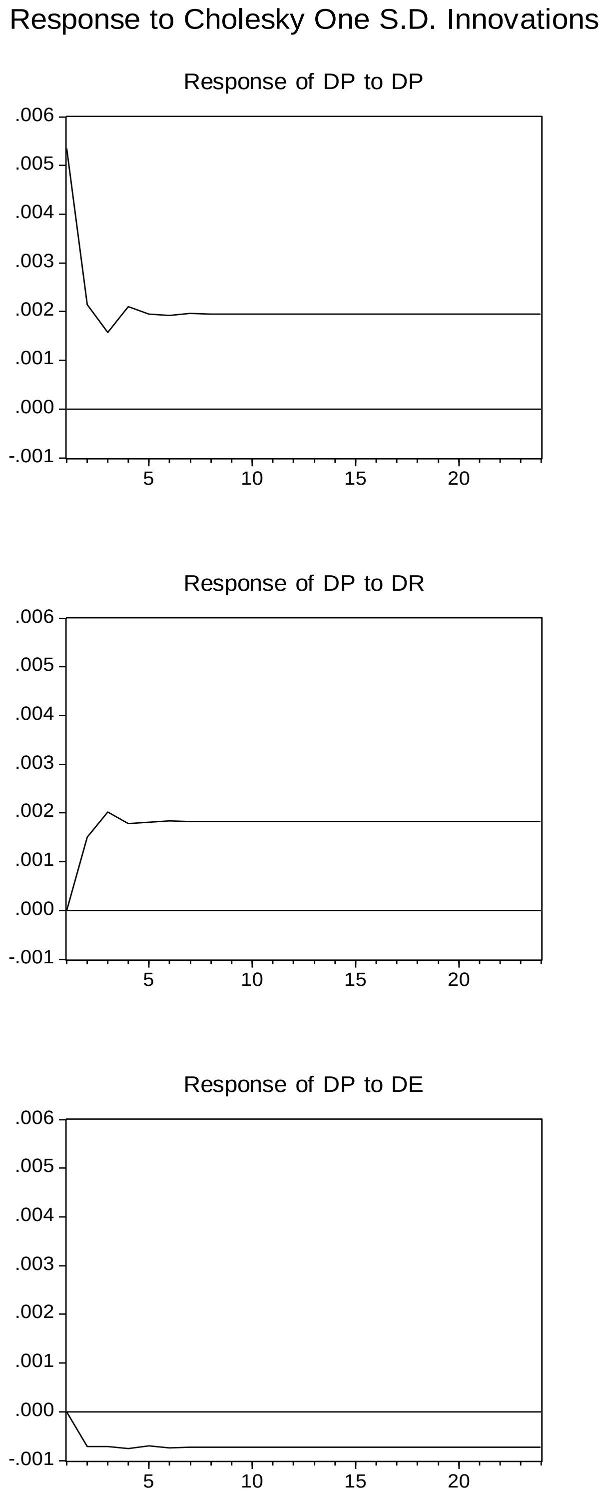


Figure 4.7 IRF MCI of Malaysia

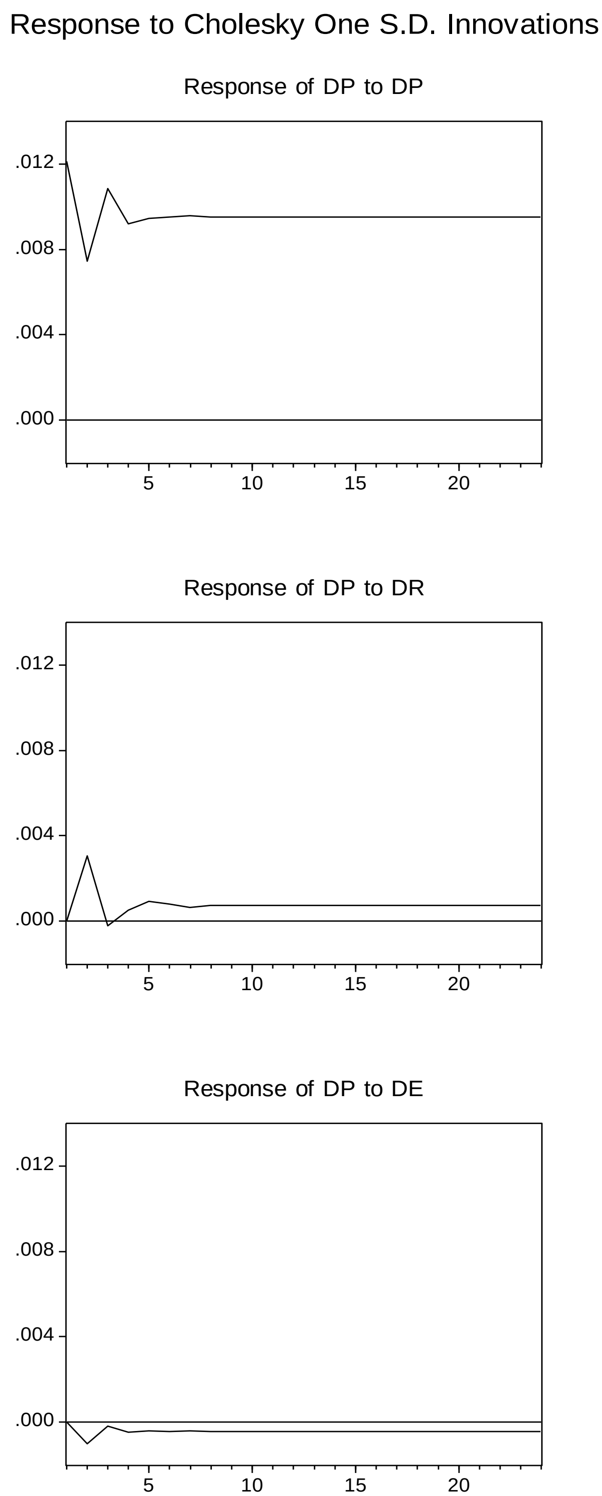


Figure 4.8 IRF MCI of Philippines

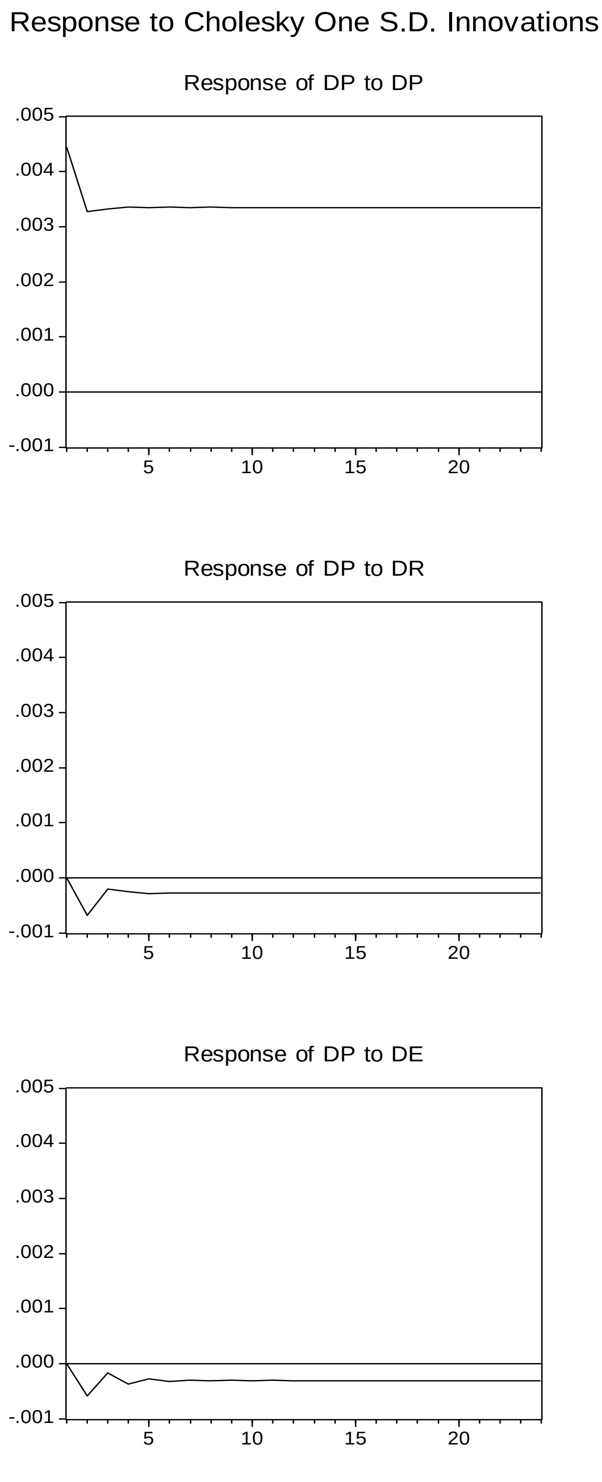


Figure 4.9 IRF MCI of Singapore

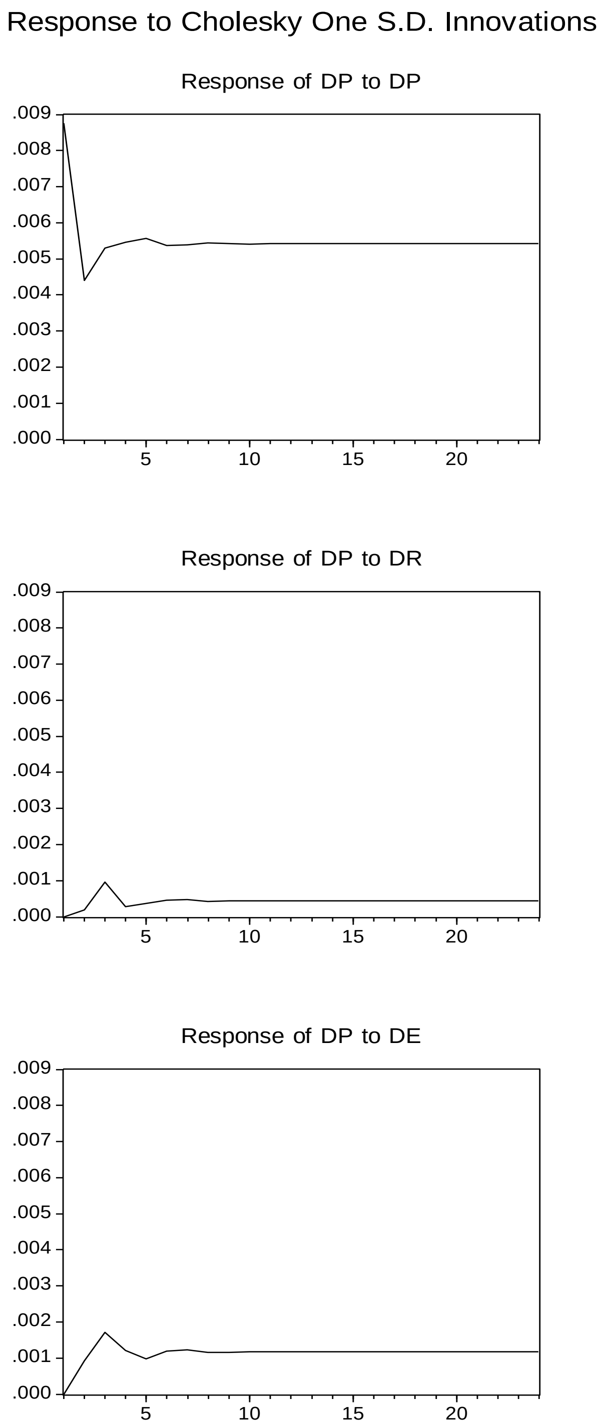


Figure 4.10 IRF MCI of Thailand

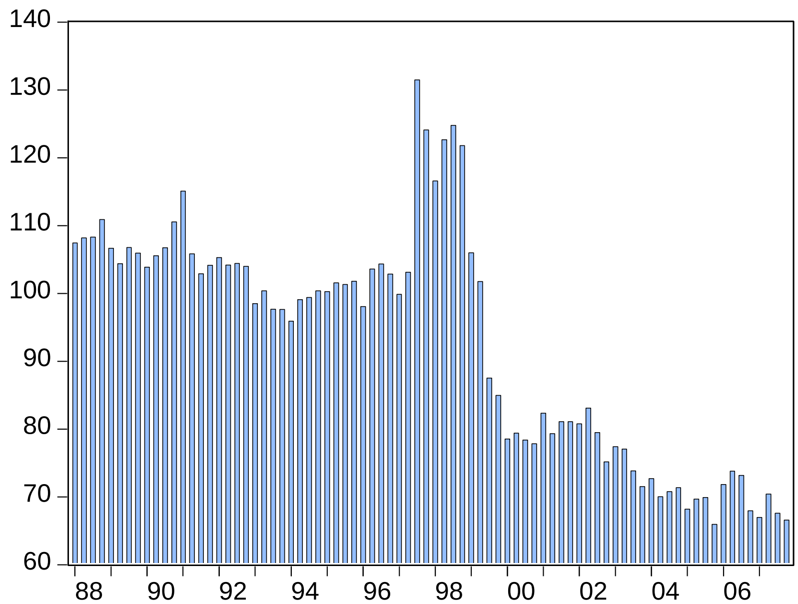


Figure 4.11 FCI of Indonesia

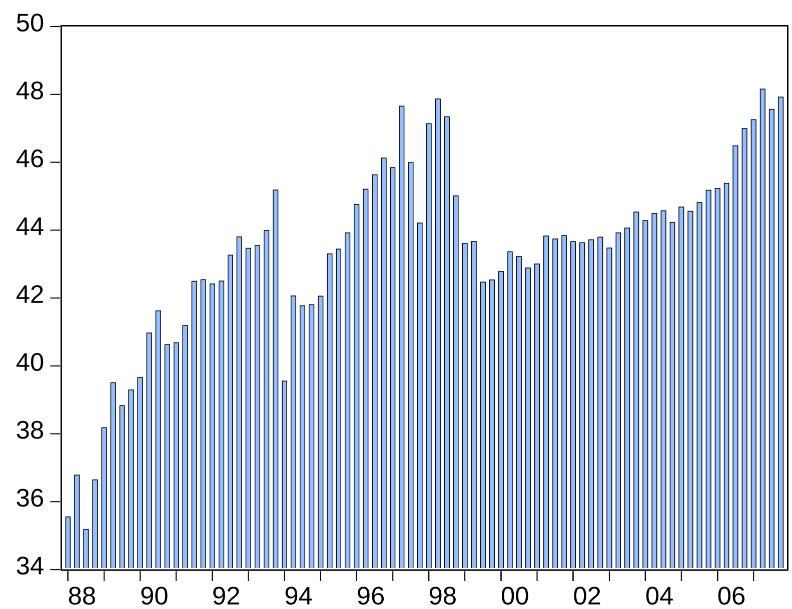


Figure 4.12 FCI of Malaysia

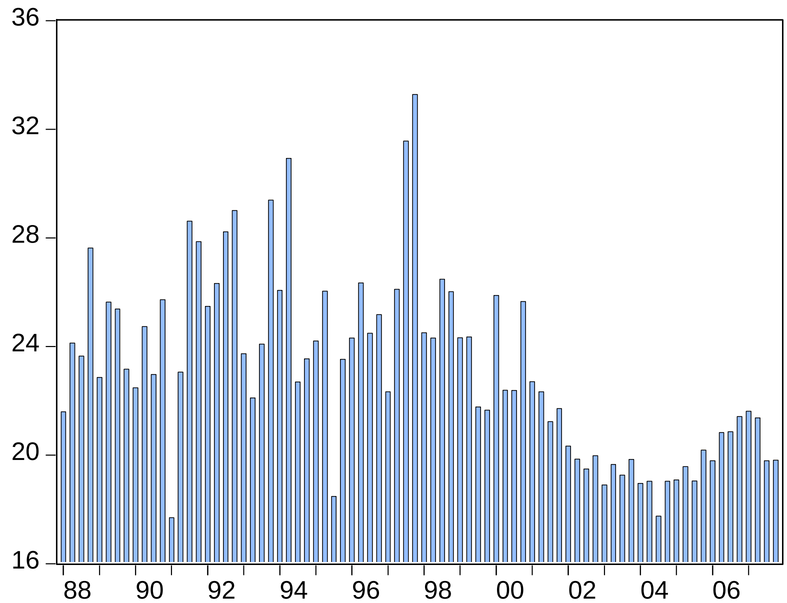


Figure 4.13 FCI of Philippines

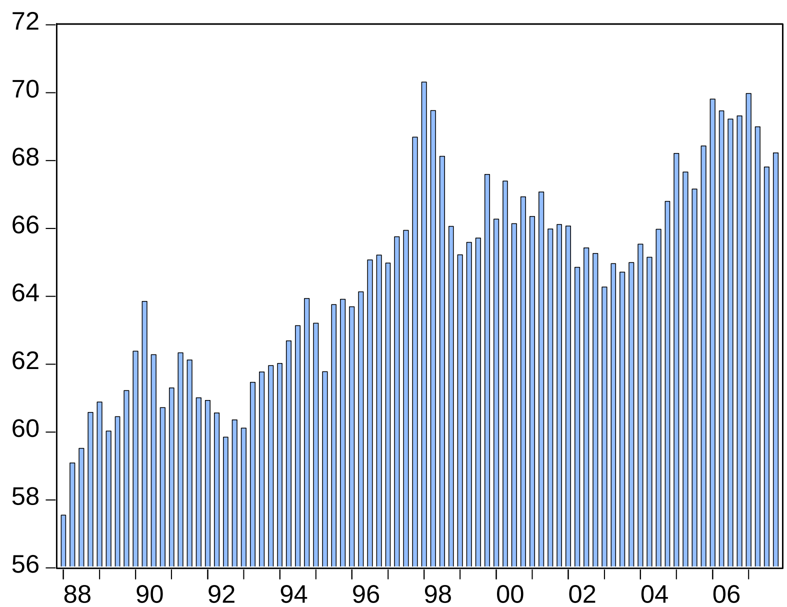


Figure 4.14 FCI of Singapore

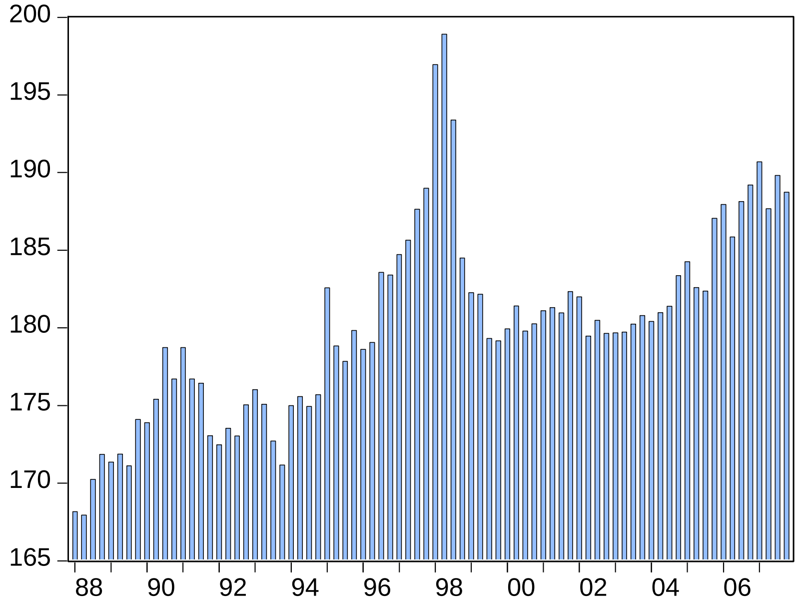


Figure 4.15 FCI of Thailand

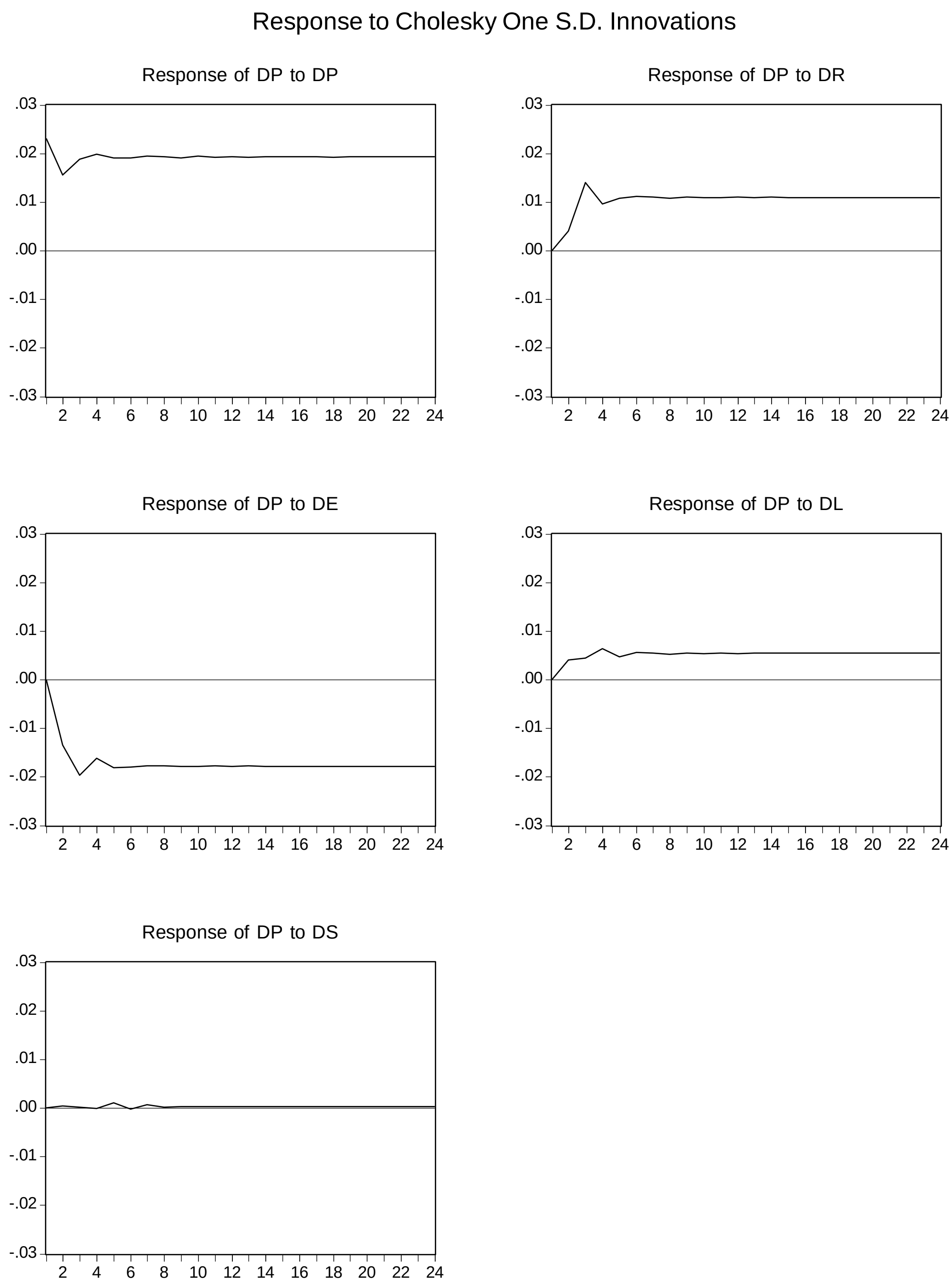


Figure 4.16 IRF FCI of Indonesia

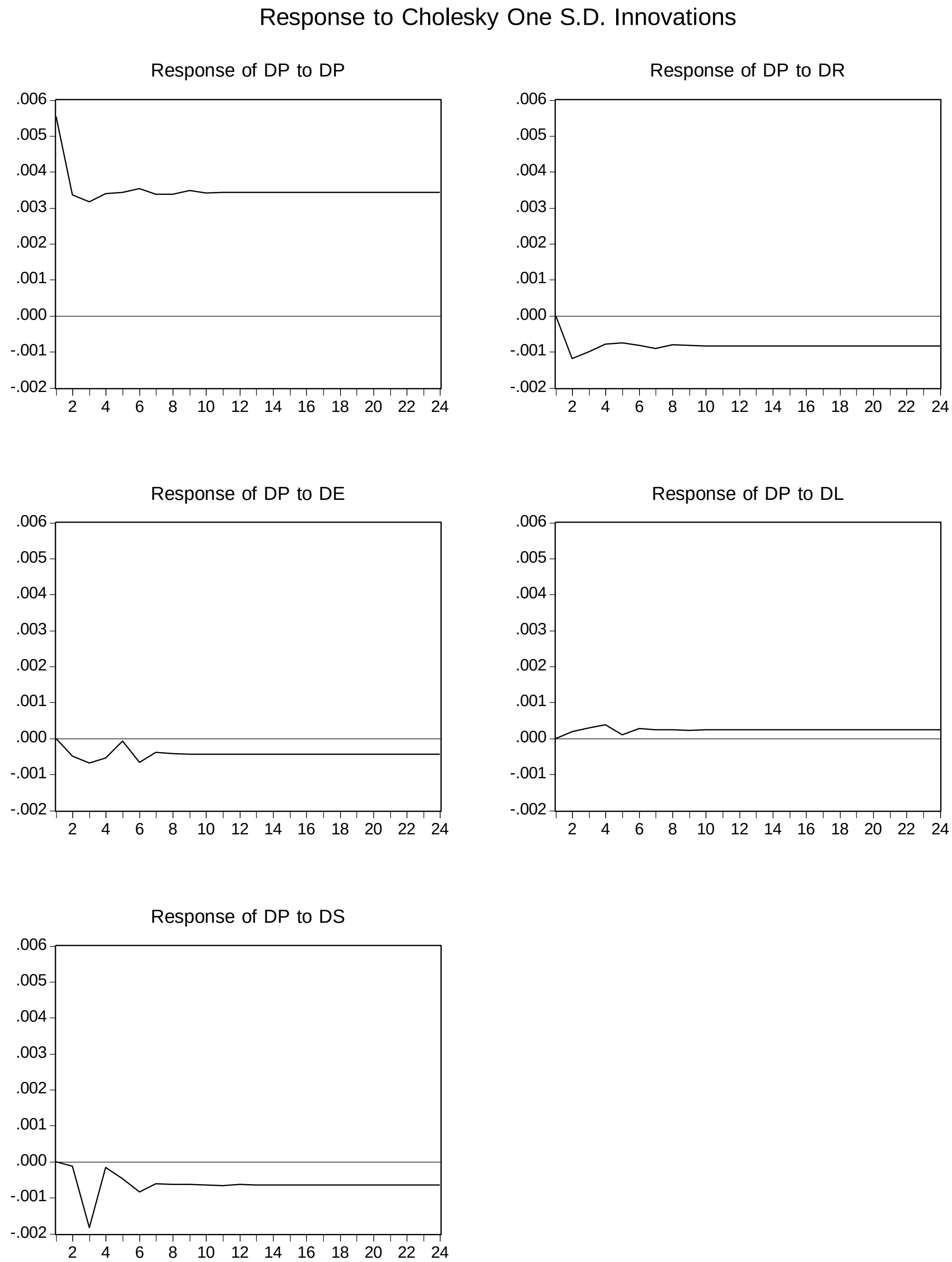


Figure 4.17 IRF FCI of Malaysia

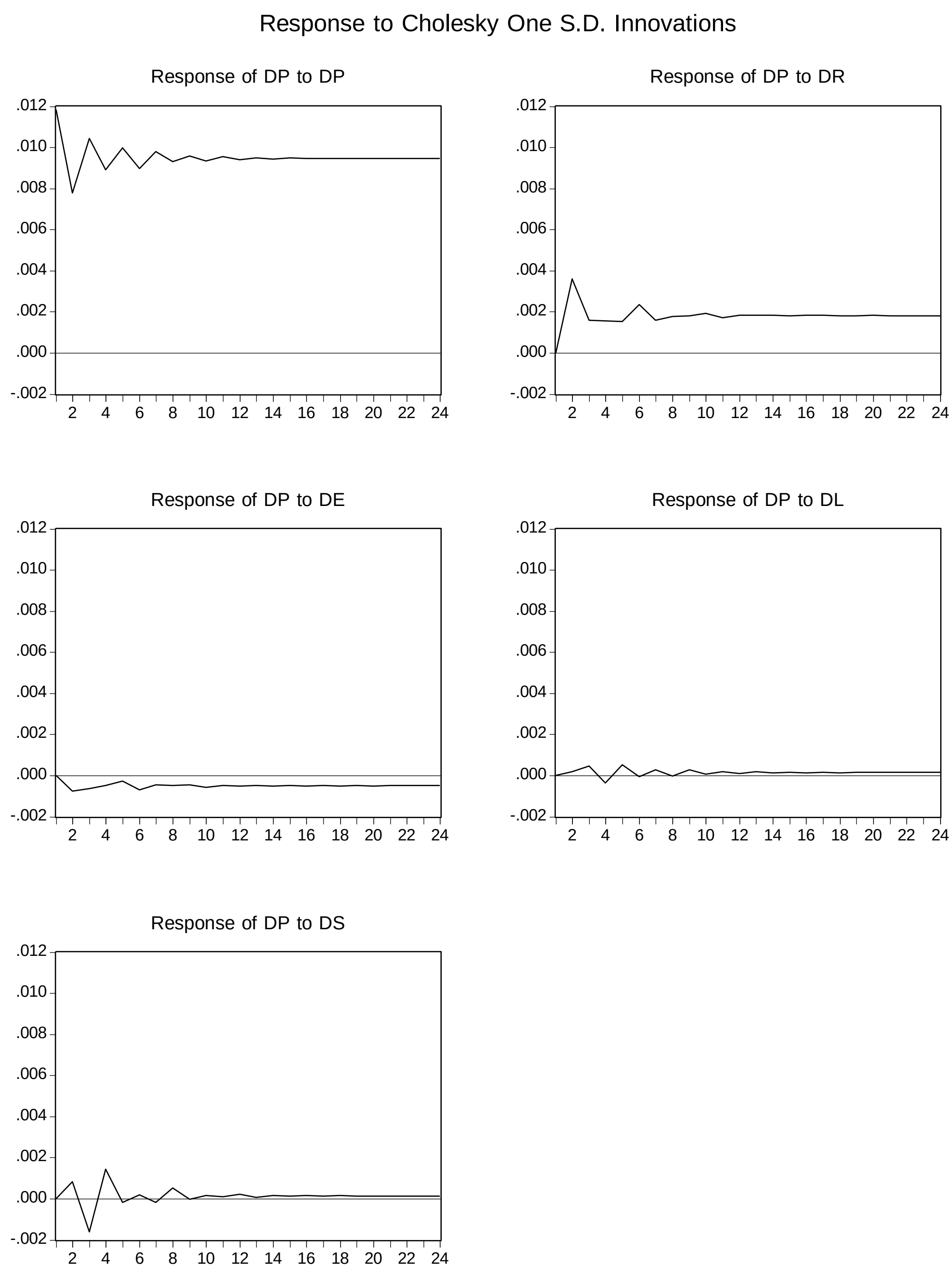


Figure 4.18 IRF FCI of Philippines

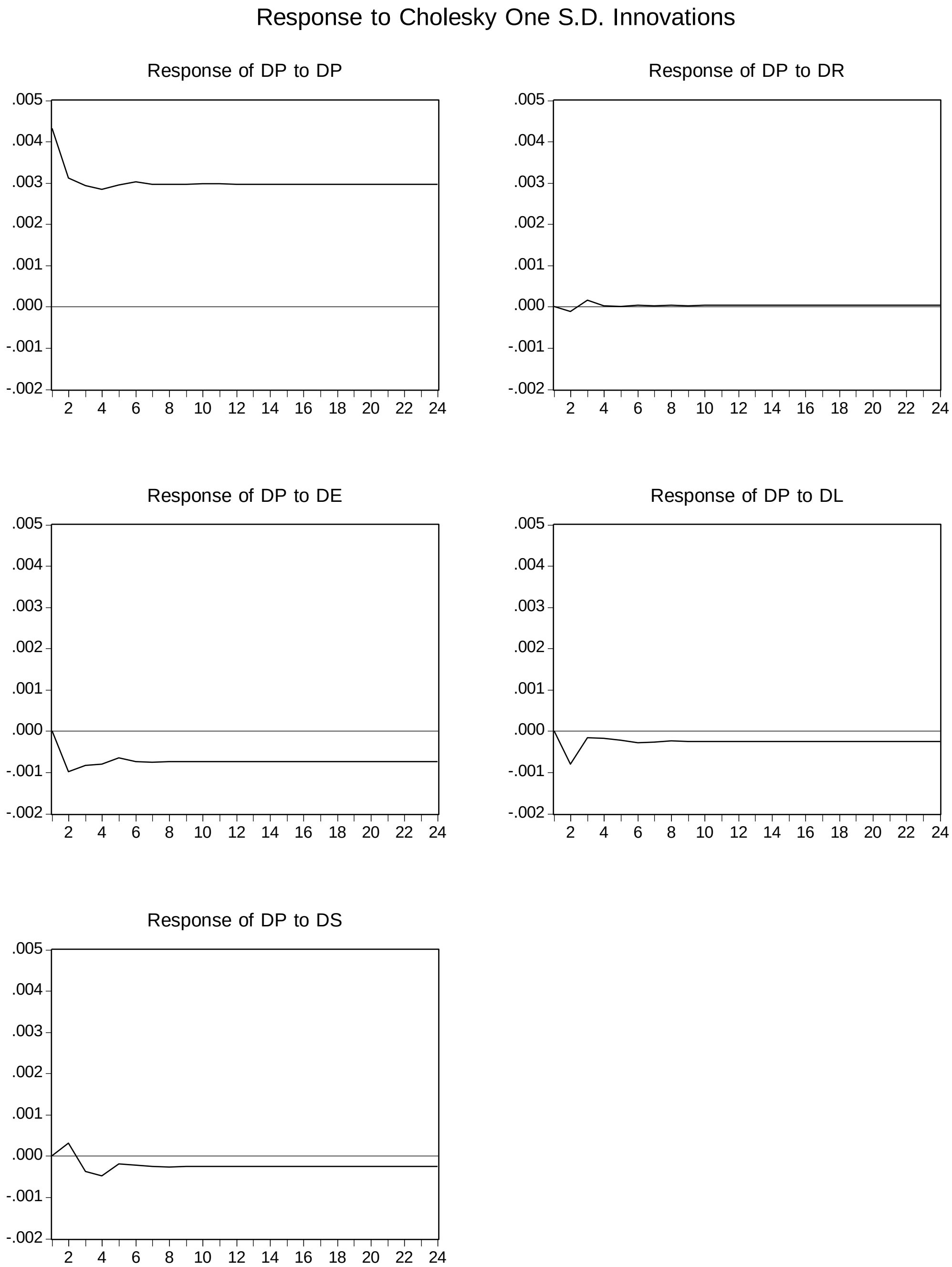


Figure 4.19 IRF FCI of Singapore

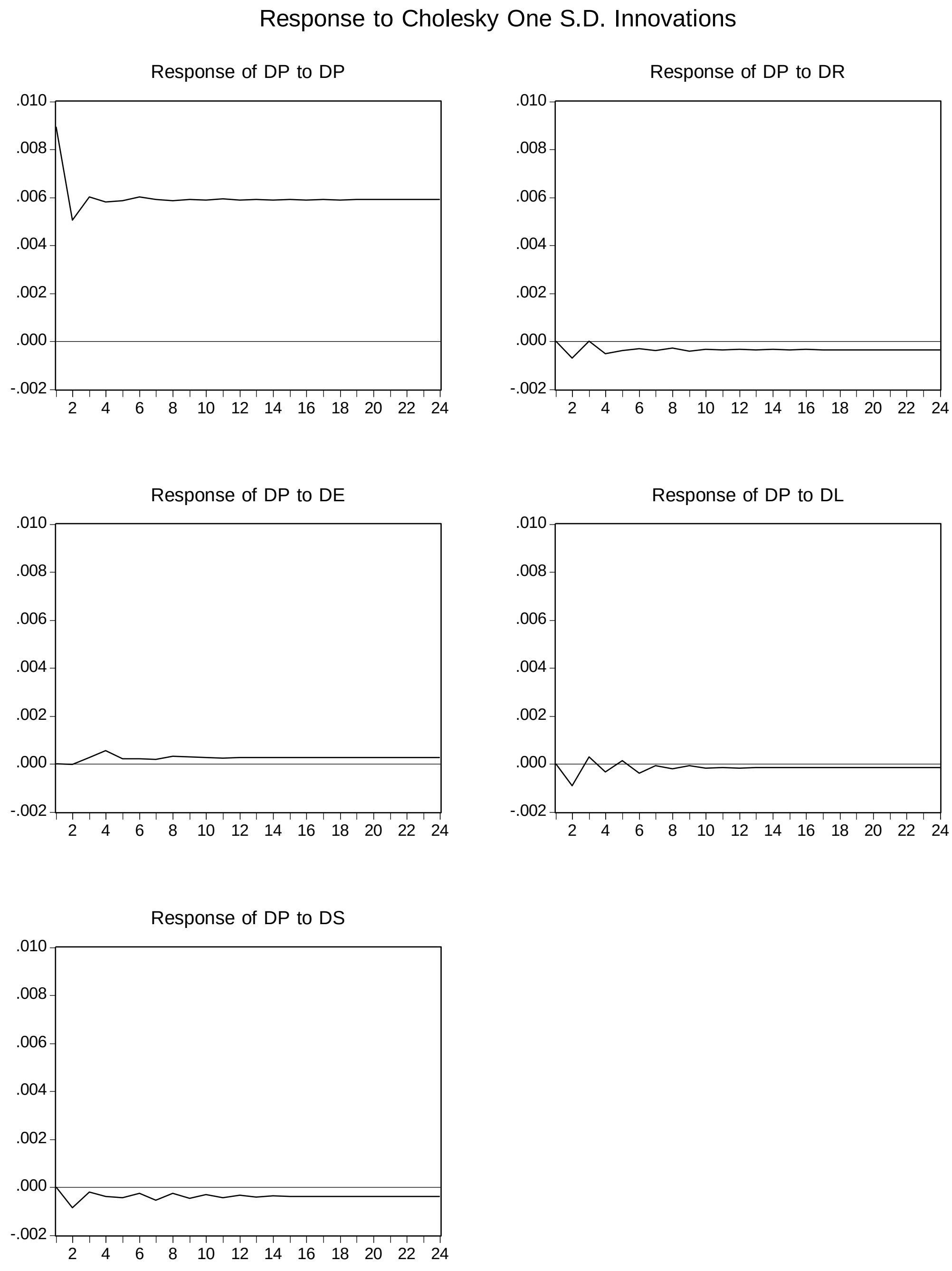


Figure 4.20 IRF FCI of Thailand

C. APPENDIX: DATA

1. BASIC DATA OF G-GPPP, MCI AND FCI

1. A INDONESIA

Quarterly	INDONESIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1988Q1	15.67	1741.36	11.90	121881.58	13.44
1988Q2	15.93	1668.06	12.97	131345.73	16.87
1988Q3	16.24	1665.34	13.04	146379.62	19.71
1988Q4	16.38	1563.12	16.06	152852.22	45.87
1989Q1	16.66	1520.21	12.10	151486.85	51.00
1989Q2	17.08	1547.43	9.54	151203.58	47.34
1989Q3	17.19	1561.42	11.64	182873.71	70.83
1989Q4	17.41	1553.86	10.85	202694.61	63.85
1990Q1	17.68	1575.29	8.55	226300.42	98.83
1990Q2	18.08	1624.56	9.91	257724.84	103.56
1990Q3	18.79	1508.92	11.69	269521.12	80.79
1990Q4	19.13	1406.36	16.13	274667.65	73.36
1991Q1	19.35	1409.34	20.50	271029.38	72.46
1991Q2	19.79	1409.04	11.13	273337.96	62.90
1991Q3	20.51	1359.93	8.53	266751.23	46.89
1991Q4	20.97	1311.80	10.17	279015.88	47.61
1992Q1	21.25	1293.25	11.45	240290.38	54.34
1992Q2	21.62	1303.98	10.24	279837.97	62.20
1992Q3	21.80	1268.53	10.79	285089.90	59.70
1992Q4	22.02	1236.49	10.59	290891.86	55.43
1993Q1	23.21	1174.92	5.82	277136.17	66.18
1993Q2	23.67	1123.48	7.99	271420.67	78.26
1993Q3	23.95	1094.60	5.50	287064.56	92.29
1993Q4	24.27	1092.40	5.41	306059.24	131.12
1994Q1	25.04	1062.13	4.07	302308.92	113.15
1994Q2	25.46	1026.51	7.63	306660.44	106.85
1994Q3	26.08	984.61	8.34	316000.20	119.16
1994Q4	26.61	952.15	9.59	329811.02	114.67
1995Q1	27.34	911.76	9.98	330745.75	107.53
1995Q2	28.13	831.14	12.22	334094.75	127.08
1995Q3	28.51	847.38	11.74	349798.16	129.02
1995Q4	28.95	852.36	12.09	355061.23	136.50

Quarterly	INDONESIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1996Q1	30.24	837.10	8.53	344712.90	162.52
1996Q2	30.38	842.22	13.98	359810.78	165.66
1996Q3	30.51	865.53	14.39	376438.75	160.71
1996Q4	30.79	879.40	12.66	396517.10	180.10
1997Q1	31.59	895.45	9.54	391561.44	191.95
1997Q2	31.86	896.32	12.71	406346.99	211.84
1997Q3	32.46	774.41	42.63	397377.22	162.82
1997Q4	33.61	627.30	37.48	277610.59	123.91
1998Q1	40.28	293.49	38.09	152164.38	200.12
1998Q2	47.67	206.17	47.97	153301.02	195.04
1998Q3	57.23	142.88	54.12	89766.89	145.02
1998Q4	59.96	198.20	47.98	120783.00	219.02
1999Q1	62.82	161.04	35.20	92183.62	226.90
1999Q2	62.40	181.17	29.61	102287.80	379.08
1999Q3	61.00	191.98	15.46	147122.29	306.71
1999Q4	60.96	195.78	12.29	155702.14	378.64
2000Q1	62.46	181.73	7.00	160728.65	334.29
2000Q2	63.09	159.90	9.15	151463.80	298.20
2000Q3	64.49	150.65	8.32	142379.29	249.35
2000Q4	66.33	143.24	8.26	136742.45	253.40
2001Q1	68.29	144.90	12.59	128750.71	238.80
2001Q2	70.12	127.45	11.02	109895.13	281.59
2001Q3	72.72	143.13	11.60	124366.28	261.92
2001Q4	74.71	128.79	12.82	115313.55	268.79
2002Q1	78.22	130.89	12.36	116179.67	345.82
2002Q2	78.92	140.98	14.06	129481.52	365.75
2002Q3	80.27	133.22	10.93	131913.36	308.85
2002Q4	82.39	131.56	6.85	127946.68	321.29
2003Q1	84.28	129.81	9.21	128881.19	307.82
2003Q2	84.45	137.14	8.09	137185.12	391.75
2003Q3	85.17	133.89	5.12	134703.42	467.11
2003Q4	86.96	129.38	3.17	134319.30	552.14
2004Q1	88.40	127.56	4.48	129562.26	596.76
2004Q2	90.14	118.47	2.52	128594.94	605.81
2004Q3	91.10	115.87	3.54	129665.10	685.62
2004Q4	92.51	109.13	4.73	134906.99	849.14

Quarterly	INDONESIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
2005Q1	95.23	99.99	2.52	127663.78	943.94
2005Q2	97.03	95.37	4.52	129270.06	999.36
2005Q3	98.76	92.09	5.13	129212.84	978.16
2005Q4	108.97	85.02	1.98	117633.68	1162.64
2006Q1	111.34	86.49	7.72	120621.88	1351.71
2006Q2	112.08	85.87	9.73	129393.10	1347.60
2006Q3	113.45	85.99	9.06	127744.69	1597.61
2006Q4	115.57	83.41	4.29	131917.25	1914.74
2007Q1	118.42	82.25	3.42	124868.69	1989.60
2007Q2	118.92	83.41	6.59	131219.33	2334.61
2007Q3	120.75	79.56	4.30	131747.14	2614.21
2007Q4	122.96	77.22	3.50	141023.56	3098.13

1. B MALAYSIA

Quarterly	MALAYSIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1988Q1	60.62	32.32	2.25	71890.60	171.16
1988Q2	60.90	31.59	2.81	72116.74	219.36
1988Q3	61.76	31.42	1.41	72356.93	206.50
1988Q4	62.16	29.83	2.84	71713.21	219.23
1989Q1	62.65	29.37	4.01	73054.26	253.31
1989Q2	62.83	31.14	4.86	75813.24	276.30
1989Q3	63.21	31.97	3.76	79497.92	309.52
1989Q4	63.65	32.07	3.82	83367.27	353.22
1990Q1	64.15	32.93	3.96	43726.96	369.51
1990Q2	64.67	34.55	5.05	44488.74	373.16
1990Q3	64.56	34.42	6.41	46547.77	292.53
1990Q4	65.56	32.95	5.21	48911.13	327.33
1991Q1	66.55	33.41	5.07	50230.33	385.57
1991Q2	67.56	33.56	5.36	49874.81	412.55
1991Q3	67.78	33.86	7.09	52342.87	349.65
1991Q4	68.34	34.06	6.88	54135.73	375.16
1992Q1	69.42	35.54	6.35	91184.80	406.42
1992Q2	70.63	37.39	6.22	91205.08	412.88
1992Q3	71.30	37.18	6.90	93876.47	423.79
1992Q4	71.77	36.44	7.27	95026.83	456.14
1993Q1	72.44	35.68	6.71	92466.44	459.88
1993Q2	73.07	35.57	6.44	95230.59	520.05
1993Q3	73.50	35.64	6.35	96875.50	619.35
1993Q4	73.67	36.12	6.29	102856.42	927.25
1994Q1	75.39	33.73	1.71	95098.04	708.86
1994Q2	75.52	35.01	3.90	97651.64	753.94
1994Q3	76.18	35.57	3.18	106176.56	849.36
1994Q4	76.96	35.53	3.60	111312.12	737.69
1995Q1	77.87	35.41	3.83	117919.46	756.32
1995Q2	78.31	35.52	4.92	127150.37	793.39
1995Q3	78.84	36.75	4.95	134639.42	778.54
1995Q4	79.52	36.59	5.41	139695.47	781.03
1996Q1	80.49	37.56	5.67	146929.50	912.74
1996Q2	81.17	38.71	5.97	156301.87	910.27
1996Q3	81.68	39.55	6.28	167008.58	915.12
1996Q4	82.18	39.83	6.45	174538.43	1004.09

Quarterly	MALAYSIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1997Q1	83.04	42.31	5.99	188992.60	986.04
1997Q2	83.17	42.83	8.04	199275.49	884.29
1997Q3	83.55	40.64	7.35	188146.52	671.69
1997Q4	84.41	41.36	6.38	156622.67	495.22
1998Q1	86.62	65.50	6.99	133738.07	615.08
1998Q2	87.94	76.58	8.45	135509.11	395.43
1998Q3	88.29	90.57	7.94	127777.24	325.47
1998Q4	88.95	71.91	5.17	135883.14	514.54
1999Q1	90.06	77.17	4.00	130966.67	446.94
1999Q2	90.27	71.68	2.91	128999.17	722.58
1999Q3	90.34	67.86	2.47	131964.90	602.24
1999Q4	90.77	64.90	2.10	130881.58	727.74
2000Q1	91.51	66.12	1.74	129951.03	880.01
2000Q2	91.54	71.90	2.50	131826.17	752.91
2000Q3	91.66	75.84	2.60	134539.68	645.48
2000Q4	92.28	81.52	2.14	140641.38	618.95
2001Q1	92.92	87.88	2.12	139696.96	593.76
2001Q2	92.98	100.12	2.73	139769.31	544.15
2001Q3	92.92	91.69	2.84	141412.09	564.29
2001Q4	93.38	98.63	2.28	145599.84	641.49
2002Q1	94.26	100.24	1.77	146437.89	703.41
2002Q2	94.78	91.70	2.17	148055.24	678.61
2002Q3	94.85	90.60	2.67	150782.30	597.21
2002Q4	95.03	93.54	2.57	152432.93	606.16
2003Q1	95.49	93.32	2.29	154646.60	599.10
2003Q2	95.64	90.19	2.60	158917.09	653.14
2003Q3	95.79	89.86	2.57	160620.49	693.41
2003Q4	95.76	91.36	2.74	160934.25	750.36
2004Q1	96.37	91.80	2.07	159850.80	857.79
2004Q2	96.74	97.32	2.32	162572.67	782.78
2004Q3	97.20	99.06	2.22	163839.25	815.36
2004Q4	98.18	97.96	1.68	161983.92	879.26
2005Q1	98.69	100.00	2.18	161331.88	848.70
2005Q2	99.52	103.04	1.85	159646.11	872.54
2005Q3	100.46	108.78	1.76	161792.60	919.60
2005Q4	101.33	117.06	1.93	167127.86	899.79

Quarterly	MALAYSIA				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
2006Q1	102.39	111.62	2.04	168782.00	936.39
2006Q2	103.63	111.36	2.21	170983.97	935.46
2006Q3	104.03	111.67	3.12	171318.27	993.34
2006Q4	104.39	114.19	3.14	180678.88	1129.43
2007Q1	105.09	119.87	2.83	188774.43	1293.24
2007Q2	105.16	121.20	3.44	190904.49	1405.64
2007Q3	105.89	123.47	2.80	197826.41	1396.54
2007Q4	106.69	128.22	2.74	203291.68	1521.58

1. C THE PHILIPPINES

Quarterly	THE PHILIPPINES				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1988Q1	27.76	192.17	9.39	24459.99	204.11
1988Q2	28.19	186.06	11.89	24569.51	232.08
1988Q3	28.69	187.92	11.57	24867.44	194.96
1988Q4	29.20	175.66	15.41	25253.94	238.91
1989Q1	30.10	172.11	10.61	25529.42	266.39
1989Q2	30.68	176.53	13.27	26531.00	302.65
1989Q3	31.99	170.57	12.90	24628.31	356.37
1989Q4	33.12	165.51	10.68	26116.80	358.70
1990Q1	34.00	163.88	9.99	24225.10	366.16
1990Q2	34.67	168.48	12.36	25766.99	301.20
1990Q3	35.71	150.60	11.06	26623.54	190.94
1990Q4	37.47	124.13	13.72	24510.60	238.66
1991Q1	40.40	116.05	5.29	21551.61	436.07
1991Q2	41.47	117.90	10.62	19779.52	430.85
1991Q3	42.77	118.15	16.23	18688.08	393.50
1991Q4	43.44	118.24	15.35	20945.64	489.02
1992Q1	44.20	120.51	13.04	17619.20	476.62
1992Q2	45.15	122.83	13.62	19538.31	689.93
1992Q3	46.31	123.57	15.60	18815.79	641.88
1992Q4	46.86	121.06	16.42	24468.63	581.48
1993Q1	47.44	119.74	11.11	20817.04	680.73
1993Q2	47.95	110.19	9.41	21697.33	745.15
1993Q3	49.34	102.50	11.24	44091.90	961.90
1993Q4	50.35	99.98	16.05	46699.44	1591.78
1994Q1	51.92	101.62	12.90	45130.40	1372.83
1994Q2	52.48	102.04	17.73	47903.45	1405.58
1994Q3	53.40	103.57	9.08	50047.20	1514.41
1994Q4	53.61	110.11	9.90	61676.97	1456.40
1995Q1	55.16	104.47	10.70	64470.50	1286.81
1995Q2	56.11	96.12	12.43	62049.90	1513.77
1995Q3	57.99	97.57	4.85	63845.05	1487.03
1995Q4	59.12	97.55	9.80	68813.97	1495.71
1996Q1	61.24	97.74	10.45	75851.70	1732.27
1996Q2	61.94	98.68	12.38	79181.26	1978.43
1996Q3	62.70	100.21	10.53	81026.20	1938.13
1996Q4	63.09	101.87	11.16	88994.06	1950.59

Quarterly	THE PHILIPPINES				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1997Q1	64.50	105.59	8.22	86718.17	2027.14
1997Q2	65.24	106.66	12.06	92347.61	1787.16
1997Q3	66.40	95.99	17.80	88535.85	1332.20
1997Q4	67.63	99.36	19.52	79648.88	1232.84
1998Q1	69.57	138.14	10.40	65078.30	1518.64
1998Q2	71.70	148.52	10.30	66511.69	1230.74
1998Q3	73.32	156.96	12.71	59311.69	900.69
1998Q4	74.77	128.40	12.03	61500.36	1435.49
1999Q1	76.55	138.14	10.35	59331.18	1514.01
1999Q2	76.55	133.65	10.23	62031.72	1856.46
1999Q3	77.37	122.44	7.88	61776.32	1581.69
1999Q4	78.11	113.40	7.77	60542.33	1632.44
2000Q1	75.42	118.47	12.21	61004.70	1236.97
2000Q2	76.09	121.29	8.75	62514.12	1138.30
2000Q3	77.40	116.02	8.80	58739.36	1082.79
2000Q4	79.22	111.03	12.06	53532.58	1154.66
2001Q1	81.07	118.08	9.08	52344.86	1143.58
2001Q2	81.69	127.06	8.67	50780.27	1123.33
2001Q3	82.87	113.51	7.83	48658.75	910.51
2001Q4	83.36	120.69	8.29	49304.98	949.56
2002Q1	83.90	124.78	6.75	47621.89	1148.42
2002Q2	84.39	117.37	6.47	48511.42	951.61
2002Q3	85.16	111.44	6.17	48328.38	937.87
2002Q4	85.44	110.92	6.73	49405.43	848.55
2003Q1	86.65	107.69	5.66	48257.51	878.50
2003Q2	87.39	106.57	6.27	48551.67	1042.13
2003Q3	88.24	101.65	5.86	48299.82	1116.44
2003Q4	88.67	100.95	6.35	49012.14	1247.31
2004Q1	89.96	99.10	5.48	48292.46	1249.55
2004Q2	91.50	102.63	5.43	48556.58	1409.32
2004Q3	94.27	101.34	4.06	46534.96	1619.52
2004Q4	95.89	98.08	5.30	48449.57	1704.60
2005Q1	97.56	99.95	5.28	47056.14	1859.73
2005Q2	98.97	102.35	5.76	45994.92	1857.25
2005Q3	100.98	103.02	5.22	44038.95	1912.41
2005Q4	102.54	111.95	6.22	44711.88	2096.04

Quarterly	THE PHILIPPINES				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
2006Q1	104.70	110.04	5.80	43578.89	2242.16
2006Q2	105.80	106.77	6.87	45099.54	2248.10
2006Q3	107.17	108.55	6.77	44528.32	2671.98
2006Q4	107.47	112.80	7.19	49071.97	3125.96
2007Q1	107.70	117.37	7.31	48255.95	3364.82
2007Q2	108.32	120.09	6.93	51541.05	3867.14
2007Q3	109.86	124.71	5.34	51975.60	3827.92
2007Q4	111.02	132.79	5.26	56789.08	3920.92

1. D. SINGAPORE

Quarterly	SINGAPORE				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1988Q1	76.71	9.28	2.70	20941.16	581.62
1988Q2	76.80	9.23	3.72	20620.29	667.37
1988Q3	77.41	9.31	4.25	21151.11	629.47
1988Q4	77.53	9.40	5.08	22836.72	655.76
1989Q1	77.68	9.71	5.12	23413.15	758.90
1989Q2	78.65	9.94	4.06	23458.83	860.58
1989Q3	79.35	10.01	4.33	22636.95	876.23
1989Q4	80.02	10.18	4.66	23618.17	924.43
1990Q1	80.70	10.85	5.51	26213.77	990.80
1990Q2	81.19	11.49	6.88	27085.74	1010.71
1990Q3	81.75	11.89	6.19	25869.17	699.56
1990Q4	82.98	12.03	4.23	28939.60	778.99
1991Q1	83.65	12.24	3.86	28853.94	992.21
1991Q2	84.33	12.36	4.77	29782.69	982.37
1991Q3	84.68	12.90	4.81	30968.45	934.25
1991Q4	85.15	13.43	3.02	33086.76	1024.63
1992Q1	85.53	13.84	3.01	33512.11	979.88
1992Q2	86.23	14.19	2.35	34880.55	1052.92
1992Q3	86.64	14.39	1.69	35325.98	945.66
1992Q4	87.05	14.20	1.69	35057.99	1069.79
1993Q1	87.64	14.31	1.27	34684.02	1133.27
1993Q2	88.08	14.52	2.29	35943.77	1219.13
1993Q3	88.52	14.65	2.20	36459.26	1428.85
1993Q4	89.13	14.97	1.87	39266.90	1842.79
1994Q1	89.89	15.21	2.36	39505.86	1521.57
1994Q2	90.83	15.63	2.71	41217.83	1633.48
1994Q3	91.53	16.12	2.92	44962.04	1752.77
1994Q4	92.06	16.53	3.47	46335.70	1691.05
1995Q1	92.15	17.05	2.80	49402.19	1601.29
1995Q2	92.73	17.35	1.16	53368.39	1627.01
1995Q3	92.79	17.72	2.77	53940.86	1625.62
1995Q4	92.91	18.20	2.61	55929.10	1764.82
1996Q1	93.35	18.98	1.92	58581.16	1911.48
1996Q2	93.82	19.33	2.11	60615.37	1840.21
1996Q3	94.11	19.67	3.08	62028.65	1765.81
1996Q4	94.43	20.10	2.95	65087.17	1863.47

Quarterly	SINGAPORE				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1997Q1	94.96	20.86	2.59	66911.15	1782.74
1997Q2	95.43	21.04	3.18	69124.09	1816.75
1997Q3	96.25	21.72	3.29	68624.71	1774.73
1997Q4	96.60	27.00	6.07	66971.73	1442.97
1998Q1	96.06	54.24	6.94	64565.67	1412.71
1998Q2	95.55	66.20	6.60	65578.70	955.36
1998Q3	95.42	82.25	5.22	61474.49	888.33
1998Q4	95.19	62.73	2.69	78001.08	1313.58
1999Q1	95.35	67.27	1.75	75692.96	1434.42
1999Q2	95.51	61.30	1.40	75658.18	2051.36
1999Q3	95.70	58.39	1.97	71073.08	1917.25
1999Q4	95.70	56.60	2.50	75242.90	2351.21
2000Q1	96.41	57.40	1.59	75737.31	2037.03
2000Q2	96.31	62.45	2.73	75404.23	1944.71
2000Q3	97.14	65.40	1.70	72011.25	1922.08
2000Q4	97.62	70.31	2.26	74349.05	1863.65
2001Q1	98.04	75.70	1.87	76921.06	1626.18
2001Q2	97.94	84.43	2.43	74692.91	1675.36
2001Q3	97.94	77.92	2.17	82301.41	1280.44
2001Q4	97.43	83.34	1.69	81327.35	1567.28
2002Q1	97.21	85.17	1.27	73645.59	1736.68
2002Q2	97.53	78.78	0.55	74089.76	1500.59
2002Q3	97.53	80.41	1.00	70677.03	1306.68
2002Q4	97.56	82.75	0.88	70337.32	1296.25
2003Q1	97.88	83.94	0.38	73265.96	1229.46
2003Q2	97.72	80.78	0.81	74468.35	1401.79
2003Q3	98.00	80.40	0.50	74991.81	1583.52
2003Q4	98.20	83.20	0.60	79142.68	1716.72
2004Q1	99.10	84.95	0.83	86554.98	1825.28
2004Q2	99.54	90.22	0.33	84303.47	1812.60
2004Q3	99.87	91.85	0.94	80500.00	1963.84
2004Q4	99.80	95.09	1.44	83388.89	2043.02
2005Q1	99.34	100.00	2.38	83118.98	2107.61
2005Q2	99.58	102.57	1.84	82474.54	2183.10
2005Q3	100.33	106.90	1.37	78461.29	2291.48
2005Q4	100.93	115.26	2.38	76125.84	2347.34

Quarterly	SINGAPORE				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
2006Q1	100.70	113.75	3.63	76848.69	2527.55
2006Q2	100.80	115.05	3.38	83639.63	2432.18
2006Q3	101.10	116.98	3.20	84549.81	2573.09
2006Q4	101.49	119.86	3.07	91382.41	3002.51
2007Q1	101.23	124.81	3.50	100174.98	3240.78
2007Q2	101.76	123.57	1.98	110349.51	3577.38
2007Q3	103.85	126.61	0.59	116027.48	3813.49
2007Q4	105.64	131.89	0.75	121121.54	3644.94

1. E THAILAND

Quarterly	THAILAND				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1988Q1	50.79	44.10	6.50	90099.72	193.27
1988Q2	51.34	43.30	6.41	92835.77	227.41
1988Q3	51.79	44.18	8.24	93898.06	225.31
1988Q4	52.28	42.70	9.85	99559.89	197.81
1989Q1	*52.97*	42.46	9.13	101407.09	228.52
1989Q2	53.55	44.17	8.72	104168.45	317.60
1989Q3	55.04	43.81	7.98	104956.15	371.35
1989Q4	55.61	44.09	10.32	112092.04	478.41
1990Q1	56.08	45.41	9.49	117729.28	467.23
1990Q2	57.11	47.04	10.17	123004.48	592.46
1990Q3	57.65	46.20	13.77	131776.80	361.87
1990Q4	59.07	43.92	11.96	138467.93	339.78
1991Q1	59.36	44.93	13.15	142933.48	502.80
1991Q2	60.61	45.03	10.71	140967.19	453.78
1991Q3	61.14	45.07	9.82	144199.99	401.25
1991Q4	61.93	44.54	6.18	152938.85	431.04
1992Q1	62.11	44.79	5.19	160230.75	499.95
1992Q2	63.03	45.42	6.17	162552.24	463.46
1992Q3	64.03	44.46	5.79	169374.96	530.67
1992Q4	63.93	44.16	7.37	180642.10	558.82
1993Q1	64.10	44.47	7.84	186141.73	542.69
1993Q2	65.00	43.22	7.21	195812.64	558.06
1993Q3	65.99	42.34	4.80	200212.38	627.28
1993Q4	66.39	42.59	2.51	218183.22	1093.12
1994Q1	67.17	42.75	6.06	225427.85	814.97
1994Q2	68.28	42.23	6.36	237573.26	850.67
1994Q3	69.38	41.68	5.73	248811.92	1008.62
1994Q4	69.85	41.63	5.74	271475.97	929.51
1995Q1	70.45	41.38	12.43	282173.84	838.72
1995Q2	71.99	39.43	8.96	297568.36	982.42
1995Q3	73.41	40.19	7.26	302286.20	929.68
1995Q4	74.81	40.74	8.27	314560.12	937.47
1996Q1	75.59	41.89	6.25	320392.05	953.90
1996Q2	76.45	42.21	6.11	323935.71	932.81
1996Q3	77.27	42.63	10.34	329296.87	830.87
1996Q4	78.23	42.90	9.73	338469.10	636.52

Quarterly	THAILAND				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
1997Q1	78.98	44.42	10.35	347683.94	545.14
1997Q2	79.73	44.83	11.04	354046.13	411.33
1997Q3	82.01	35.83	16.46	292157.60	436.96
1997Q4	84.12	35.89	17.58	245707.72	306.74
1998Q1	86.01	55.34	18.39	197559.80	386.36
1998Q2	87.93	73.20	15.79	231520.00	230.01
1998Q3	88.65	89.76	8.76	222440.39	220.15
1998Q4	88.22	74.56	4.33	250824.88	307.13
1999Q1	88.18	81.02	2.73	241474.04	303.72
1999Q2	87.54	75.90	2.20	235179.15	446.92
1999Q3	87.83	69.31	1.19	221844.15	334.70
1999Q4	88.25	65.14	0.92	211105.09	416.15
2000Q1	89.00	68.64	1.22	215442.09	348.62
2000Q2	88.97	72.81	2.02	201962.81	283.51
2000Q3	89.68	71.94	1.14	186115.40	199.44
2000Q4	89.75	73.44	1.72	175143.41	236.40
2001Q1	90.25	79.46	1.12	175802.30	257.80
2001Q2	91.18	85.46	0.73	164179.11	287.76
2001Q3	91.14	78.88	2.42	165279.50	247.06
2001Q4	90.64	87.06	2.73	164358.86	269.49
2002Q1	90.79	90.51	1.73	166453.99	332.18
2002Q2	91.50	84.35	0.94	169008.33	348.36
2002Q3	91.47	84.84	1.81	177669.83	296.93
2002Q4	92.00	84.55	1.08	174555.74	320.89
2003Q1	92.61	85.30	0.83	176406.02	330.32
2003Q2	93.03	83.24	1.13	177847.85	420.39
2003Q3	93.21	84.79	0.88	184567.73	528.05
2003Q4	93.50	88.99	0.78	195799.58	706.39
2004Q1	94.39	90.37	0.08	198789.62	597.82
2004Q2	95.53	92.68	0.19	191811.35	604.43
2004Q3	96.28	91.69	0.43	189701.95	607.32
2004Q4	96.42	93.83	1.51	194880.27	630.32
2005Q1	97.07	100.00	1.23	204236.03	647.24
2005Q2	99.03	98.24	0.18	193125.46	654.51
2005Q3	101.70	98.14	0.06	184605.76	719.69
2005Q4	102.20	107.14	3.12	188441.90	713.73

Quarterly	THAILAND				
	P (CPI.r)	E (REER)	R (Int.r)	L (crd.milUSD.r)	S(SECI.r)
2006Q1	102.60	106.00	3.76	197173.11	736.06
2006Q2	105.06	105.55	2.24	197382.81	697.07
2006Q3	105.38	107.85	4.57	199332.25	707.41
2006Q4	105.52	112.59	4.78	205421.88	701.90
2007Q1	105.13	118.47	5.05	212952.60	692.99
2007Q2	107.05	118.39	2.01	214820.23	813.66
2007Q3	107.13	124.98	3.20	218398.27	886.23
2007Q4	108.62	125.31	1.81	221578.61	912.01

2. GRAVITY MODEL

2.A INDONESIA

Quarterly	EXPORT INDONESIA TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	MAL	PHIL	SING	THAI	(2005=100)	(USD)		
1988Q1	39.9	22.8	383.7	29.5	138229.1	806.0	86.5	107.4
1988Q2	39.1	14.4	391.3	33.3	138493.0	807.6	87.2	108.2
1988Q3	57.4	15.8	460.1	43.2	137250.5	800.3	87.2	108.3
1988Q4	47.6	33.6	420.7	45.4	137916.5	804.2	89.6	110.9
1989Q1	46.9	26.2	397.6	57.1	148800.2	852.9	85.4	106.7
1989Q2	58.2	35.7	446.6	56.1	147129.3	843.4	83.0	104.4
1989Q3	58.2	40.6	457.0	67.0	148518.0	851.3	85.2	106.8
1989Q4	46.9	40.1	507.9	58.1	149301.1	855.8	84.3	106.0
1990Q1	57.6	30.4	458.0	39.3	155939.2	879.1	82.2	103.9
1990Q2	56.9	34.4	370.9	43.4	156004.2	879.5	83.8	105.5
1990Q3	60.3	43.8	502.6	49.4	157463.6	887.7	84.9	106.7
1990Q4	78.4	52.0	570.6	56.4	151715.0	855.3	88.6	110.5
1991Q1	74.6	43.4	590.5	61.3	158954.5	881.7	93.0	115.1
1991Q2	71.2	38.5	564.5	62.2	159138.1	882.8	83.6	105.8
1991Q3	91.5	52.1	621.0	71.8	161775.2	897.4	80.7	102.9
1991Q4	104.5	33.6	633.7	72.0	155892.7	864.8	82.0	104.1
1992Q1	129.3	43.9	789.8	89.6	156294.9	853.5	83.1	105.3
1992Q2	84.6	53.1	677.8	103.3	157106.7	857.9	82.0	104.2
1992Q3	130.3	34.0	883.9	74.7	165584.3	904.2	82.2	104.4
1992Q4	143.4	50.4	962.1	85.1	162590.5	887.9	81.8	104.0
1993Q1	133.5	57.0	816.9	149.0	161750.0	869.9	76.5	98.5
1993Q2	149.8	80.0	786.1	93.7	163633.2	880.1	78.2	100.4
1993Q3	153.0	72.0	878.8	97.3	170178.1	915.3	75.5	97.7
1993Q4	149.8	76.1	890.3	127.6	168726.4	907.5	75.4	97.6
1994Q1	122.3	62.4	841.5	74.4	165043.0	874.5	73.8	95.9
1994Q2	168.1	83.1	1117.9	96.6	169647.7	898.9	77.0	99.1
1994Q3	207.4	101.2	1109.0	99.9	176256.1	933.9	77.3	99.4
1994Q4	240.7	118.4	1081.3	130.4	174079.4	922.4	78.2	100.4
1995Q1	198.4	115.7	917.3	160.6	176393.4	921.1	78.1	100.3
1995Q2	206.0	188.2	869.0	158.4	177850.5	928.7	79.4	101.5
1995Q3	296.2	111.7	907.8	200.4	181659.3	948.6	79.2	101.3
1995Q4	285.9	174.6	1072.6	183.5	179685.0	938.3	79.6	101.8

Quarterly	EXPORT INDONESIA TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	MAL	PHIL	SING	THAI	(2005=100)	(USD)		
1996Q1	255.5	188.4	1129.9	186.2	174801.6	899.8	75.8	98.1
1996Q2	276.8	125.9	1133.7	193.6	180935.4	931.4	81.3	103.6
1996Q3	302.7	195.9	1124.4	211.3	190941.1	982.9	82.0	104.4
1996Q4	274.7	178.2	1176.5	231.6	198809.1	1023.4	80.5	102.8
1997Q1	251.3	151.5	1242.4	202.1	192071.1	974.9	77.5	99.9
1997Q2	395.7	223.7	1269.5	259.7	192406.7	976.6	80.7	103.1
1997Q3	508.7	201.3	1506.0	219.7	180184.2	914.6	109.2	131.5
1997Q4	242.8	217.6	1450.0	167.0	125700.0	638.0	101.9	124.1
1998Q1	379.2	191.4	1638.3	192.6	55681.7	278.7	94.9	116.5
1998Q2	322.4	151.8	1353.6	251.0	44685.6	223.7	101.3	122.7
1998Q3	322.4	185.5	1424.0	221.1	37688.8	188.7	103.7	124.8
1998Q4	334.4	178.6	1302.4	277.8	54217.9	271.4	100.9	121.8
1999Q1	269.6	135.3	1029.9	186.5	49201.9	243.0	86.0	106.0
1999Q2	330.5	189.0	1167.4	214.2	54948.4	271.3	81.6	101.8
1999Q3	367.6	179.0	1357.1	177.5	60420.5	298.4	68.0	87.5
1999Q4	368.4	191.4	1376.1	234.6	62803.9	310.1	65.1	85.0
2000Q1	430.8	218.6	1516.5	215.7	70239.8	342.2	59.0	78.5
2000Q2	520.0	179.4	1579.0	260.5	64330.9	313.4	59.9	79.4
2000Q3	526.6	225.1	1788.6	253.1	64214.0	312.8	58.5	78.4
2000Q4	494.3	196.4	1678.4	297.2	59745.4	291.0	57.9	77.8
2001Q1	413.2	165.7	1440.0	293.0	59584.8	286.4	62.3	82.3
2001Q2	453.9	197.3	1402.9	232.8	53799.0	258.6	59.5	79.3
2001Q3	453.0	244.9	1330.7	276.1	62060.8	298.3	61.2	81.1
2001Q4	458.5	206.9	1190.3	261.6	55083.3	264.7	61.4	81.1
2002Q1	430.8	184.0	1150.4	271.7	56519.2	268.0	61.1	80.8
2002Q2	506.8	215.7	1366.4	305.5	64212.3	304.5	63.5	83.1
2002Q3	574.7	193.3	1474.7	318.8	66875.1	317.2	59.9	79.5
2002Q4	517.6	185.1	1357.7	331.4	63465.2	301.0	55.6	75.2
2003Q1	534.5	227.9	1271.0	364.1	66422.5	310.9	57.9	77.4
2003Q2	525.1	280.3	1256.5	355.1	70199.0	328.6	57.3	77.0
2003Q3	596.2	238.6	1426.1	353.1	72798.1	340.7	54.1	73.8
2003Q4	708.1	197.9	1446.1	320.3	69373.0	324.7	51.8	71.5
2004Q1	633.5	243.7	1327.6	403.9	71673.7	331.1	53.0	72.7
2004Q2	758.8	282.0	1505.4	455.3	69563.5	321.4	50.3	70.0
2004Q3	822.5	359.0	1571.1	530.3	71370.0	329.7	51.1	70.8
2004Q4	801.2	352.9	1597.0	586.8	70988.0	328.0	51.7	71.3

Quarterly	EXPORT INDONESIA TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	MAL	PHIL	SING	THAI	(2005=100)	(USD)		
2005Q1	776.3	329.5	1855.4	596.7	71595.2	326.6	48.6	68.2
2005Q2	842.0	326.2	2024.9	580.4	72351.9	330.1	50.1	69.7
2005Q3	894.7	374.9	1996.6	540.7	72231.2	329.5	50.4	69.9
2005Q4	918.3	388.5	1959.7	528.6	69604.2	317.5	46.4	66.0
2006Q1	1017.7	321.9	1967.9	699.5	75798.7	341.5	52.3	71.8
2006Q2	1075.9	368.0	2320.7	661.1	79555.7	358.4	54.3	73.8
2006Q3	1076.3	330.1	2501.2	678.8	84095.1	378.9	53.6	73.1
2006Q4	940.9	385.6	2140.0	662.1	82824.3	373.2	48.5	67.9
2007Q1	968.8	427.1	2277.0	623.5	85203.2	379.2	47.5	67.0
2007Q2	1168.0	389.4	2618.3	730.4	90459.6	402.6	50.8	70.4
2007Q3	1399.8	495.3	2786.3	911.5	92362.1	411.1	48.1	67.6
2007Q4	1559.5	541.9	2820.0	789.0	91025.7	405.2	47.0	66.5

2.B MALAYSIA

Quarterly	EXPORT MALAYSIA TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	PHIL	SING	THAI	(2005=100)	(USD)		
1988Q1	67.2	84.7	890.6	150.3	14306.6	836.5	3.9	35.6
1988Q2	51.2	81.7	1064.3	98.7	14505.7	848.1	4.4	36.8
1988Q3	52.3	79.2	1049.1	90.8	14301.2	836.2	3.0	35.2
1988Q4	109.2	69.6	1076.6	76.8	14362.1	839.7	4.4	36.6
1989Q1	86.1	72.3	1074.1	117.5	14777.6	839.4	5.6	38.2
1989Q2	121.7	84.8	1144.0	157.6	15248.9	866.2	6.5	39.5
1989Q3	126.8	90.6	1287.6	124.8	15679.8	890.7	5.4	38.8
1989Q4	80.2	77.7	1442.7	215.5	15874.9	901.8	5.4	39.3
1990Q1	85.3	76.6	1441.1	215.2	16492.2	911.0	5.6	39.7
1990Q2	66.1	67.7	1487.2	150.5	16754.8	925.5	6.7	41.0
1990Q3	85.5	74.5	1718.4	299.6	17295.3	955.4	8.0	41.6
1990Q4	105.3	175.0	2106.1	367.4	17456.5	964.3	6.8	40.6
1991Q1	45.8	92.1	1816.5	298.6	17472.6	939.5	6.7	40.7
1991Q2	122.9	67.3	1852.5	250.1	16896.6	908.6	7.0	41.2
1991Q3	163.5	77.3	2084.0	261.6	18760.9	1008.8	8.7	42.5
1991Q4	170.4	63.9	2266.5	287.3	19563.1	1052.0	8.5	42.5
1992Q1	117.8	116.2	2144.1	279.1	19252.9	1008.7	8.0	42.4
1992Q2	133.7	108.6	2198.6	388.9	20132.7	1054.8	7.9	42.5
1992Q3	100.6	137.7	2542.2	412.6	22013.7	1153.3	8.6	43.3
1992Q4	153.8	114.0	2506.3	409.6	22201.4	1163.2	8.9	43.8
1993Q1	120.2	97.6	2196.8	363.6	21079.6	1076.7	8.4	43.5
1993Q2	133.0	120.4	2564.0	397.0	22611.5	1154.9	8.1	43.5
1993Q3	145.5	131.6	2703.0	472.0	24028.1	1227.3	8.0	44.0
1993Q4	144.5	130.7	2764.3	462.4	23720.8	1211.6	7.9	45.2
1994Q1	131.3	117.4	2553.9	462.4	21175.8	1054.6	3.3	39.5
1994Q2	175.9	194.2	2858.2	533.3	23470.7	1168.9	5.5	42.1
1994Q3	232.8	148.8	3419.0	598.8	26420.7	1315.8	4.8	41.8
1994Q4	174.5	150.6	3336.3	623.1	27106.3	1350.0	5.3	41.8
1995Q1	165.8	133.7	3265.9	693.1	25823.9	1254.0	5.5	42.0
1995Q2	246.3	156.3	3850.0	661.0	28254.3	1372.0	6.6	43.3
1995Q3	325.1	177.5	3980.5	703.7	29432.0	1429.2	6.6	43.4
1995Q4	232.7	183.8	3864.0	810.4	29465.3	1430.8	7.1	43.9
1996Q1	278.6	210.1	3740.6	774.1	28689.5	1358.0	7.3	44.8
1996Q2	286.0	272.9	3911.6	833.1	30535.5	1445.4	7.7	45.2
1996Q3	333.4	238.2	4099.8	755.8	32028.3	1516.1	8.0	45.6
1996Q4	320.9	217.6	4265.5	844.4	32663.3	1546.1	8.1	46.1

Quarterly	EXPORT MALAYSIA TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	PHIL	SING	THAI	(2005=100)	(USD)		
1997Q1	291.5	223.6	3905.3	893.1	31484.8	1453.0	7.7	45.8
1997Q2	284.9	248.7	4081.3	701.0	32496.9	1499.7	9.8	47.6
1997Q3	337.7	307.8	4232.3	670.5	30967.4	1429.1	9.1	46.0
1997Q4	310.7	368.0	3650.1	604.7	26252.2	1211.5	8.1	44.2
1998Q1	214.9	269.9	3084.4	545.4	20448.8	920.5	8.9	47.1
1998Q2	184.6	257.6	3095.5	624.7	20767.1	934.8	10.5	47.9
1998Q3	298.3	258.5	3077.6	596.8	20094.0	904.5	10.0	47.3
1998Q4	311.5	370.6	3186.8	550.2	20793.5	936.0	7.1	45.0
1999Q1	247.4	247.1	2897.1	617.8	19745.0	867.8	6.0	43.6
1999Q2	254.8	315.6	3384.7	615.7	21496.8	944.7	4.9	43.7
1999Q3	347.0	294.1	3465.9	743.4	22743.7	999.5	4.4	42.5
1999Q4	382.0	440.3	4226.5	781.1	23590.4	1036.8	4.0	42.5
2000Q1	386.2	361.7	3891.3	793.7	23792.7	1022.3	3.7	42.8
2000Q2	409.7	430.5	4361.9	853.5	24931.2	1071.2	4.5	43.4
2000Q3	459.4	507.0	5011.6	894.3	26620.4	1143.8	4.6	43.2
2000Q4	452.1	427.5	4785.3	1008.8	26867.5	1154.4	4.2	42.9
2001Q1	347.3	334.7	3872.5	911.4	24117.8	1014.6	4.2	43.0
2001Q2	412.9	324.8	3629.3	851.2	24839.8	1045.0	4.9	43.8
2001Q3	438.5	311.0	3639.5	762.4	25511.8	1073.2	4.9	43.7
2001Q4	364.4	317.0	3771.6	835.0	25244.4	1062.0	4.4	43.8
2002Q1	412.7	326.5	3701.2	955.6	24427.1	1007.3	3.9	43.7
2002Q2	480.0	331.9	4012.0	972.5	26050.8	1074.3	4.3	43.6
2002Q3	457.6	366.7	4225.8	1035.8	27942.6	1152.3	4.7	43.7
2002Q4	450.9	309.7	4019.5	1008.3	28017.4	1155.4	4.7	43.8
2003Q1	484.0	353.7	3889.4	1073.3	27364.1	1107.2	4.4	43.5
2003Q2	504.7	332.8	4109.6	1080.0	28090.5	1136.6	4.7	43.9
2003Q3	532.9	356.6	4128.8	1083.8	29347.3	1187.4	4.6	44.1
2003Q4	607.6	393.6	4394.8	1378.2	30381.1	1229.3	4.8	44.5
2004Q1	626.2	435.8	4330.5	1366.6	30143.0	1197.4	4.2	44.3
2004Q2	706.4	543.2	4457.1	1492.1	31692.5	1258.9	4.4	44.5
2004Q3	795.0	481.6	5137.1	1611.7	33247.0	1320.7	4.3	44.6
2004Q4	945.4	476.9	5069.2	1570.1	33329.9	1324.0	3.8	44.2
2005Q1	811.1	451.5	5196.9	1791.4	32449.7	1265.9	4.3	44.7
2005Q2	812.0	511.1	5254.2	1944.6	33470.1	1305.7	4.0	44.6
2005Q3	840.6	472.1	5720.1	1845.6	36011.1	1404.9	3.9	44.8
2005Q4	858.6	539.5	5838.4	2003.1	35990.2	1404.1	4.1	45.2

Quarterly	EXPORT MALAYSIA TO (Million USD)				GDP Riel (Million USD) (2005=100)	GDP/ capita (USD)	MCI	FCI
	INA	PHIL	SING	THAI				
2006Q1	791.0	538.9	6073.4	1998.4	35612.2	1364.7	4.2	45.2
2006Q2	961.5	524.0	6189.8	2134.9	37370.5	1432.1	4.4	45.4
2006Q3	1111.3	591.2	6563.9	2131.2	39104.3	1498.5	5.3	46.5
2006Q4	1210.3	519.2	5916.8	2237.3	39075.0	1497.4	5.3	47.0
2007Q1	1231.3	557.4	5727.7	2163.9	39255.0	1478.2	5.0	47.2
2007Q2	1214.2	589.1	6143.5	2022.4	42673.5	1606.9	5.7	48.1
2007Q3	1218.3	602.4	6731.7	2078.4	45043.5	1696.2	5.0	47.6
2007Q4	1507.6	799.5	7168.6	2465.0	49211.3	1853.1	5.0	47.9

2.C THE PHILIPPINES

Quarterly	EXPORT THE PHILIPPINES TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	SING	THAI	(2005=100)	(USD)		
1988Q1	6.3	27.2	50.2	34.3	31275.1	526.2	11.7	21.6
1988Q2	7.2	31.5	62.6	26.7	33418.2	562.2	14.1	24.1
1988Q3	5.3	37.3	60.6	36.8	31754.5	534.2	13.8	23.6
1988Q4	6.7	20.6	47.4	25.6	37092.7	624.0	17.6	27.6
1989Q1	19.5	21.6	56.2	37.3	31968.9	524.7	12.8	22.9
1989Q2	12.5	29.3	58.6	38.6	33537.7	550.4	15.5	25.6
1989Q3	14.1	29.5	53.5	41.0	31988.8	525.0	15.1	25.4
1989Q4	10.9	19.3	49.0	37.9	37344.4	612.9	12.9	23.2
1990Q1	20.3	26.8	53.6	37.3	31935.1	511.6	12.2	22.5
1990Q2	9.6	30.3	64.4	44.8	32038.8	513.2	14.6	24.7
1990Q3	18.5	37.3	66.5	35.0	29508.4	472.7	13.2	23.0
1990Q4	12.6	32.3	54.7	39.3	31011.1	496.8	15.8	25.7
1991Q1	13.9	33.6	49.8	49.7	25178.9	393.9	7.3	17.7
1991Q2	4.6	30.6	62.3	41.1	25843.1	404.3	12.7	23.1
1991Q3	12.9	27.6	53.2	51.4	25841.8	404.2	18.3	28.6
1991Q4	10.6	29.2	63.4	22.9	30988.8	484.8	17.4	27.9
1992Q1	11.1	28.0	56.3	19.5	27497.9	420.3	15.1	25.5
1992Q2	10.8	30.5	61.0	17.5	27527.0	420.7	15.7	26.3
1992Q3	9.3	31.2	69.4	32.8	28174.4	430.6	17.7	28.2
1992Q4	9.1	38.2	65.7	28.6	32916.6	503.1	18.5	29.0
1993Q1	13.5	36.8	76.3	19.8	28299.8	422.8	13.2	23.7
1993Q2	12.6	46.2	106.8	52.6	27165.0	405.9	11.4	22.1
1993Q3	13.6	41.8	105.8	48.8	25917.6	387.2	13.2	24.1
1993Q4	8.5	35.1	89.3	45.5	29907.9	446.8	18.0	29.4
1994Q1	14.0	44.4	123.2	78.8	27223.1	397.7	14.9	26.1
1994Q2	17.5	45.5	161.3	86.4	28373.9	414.6	19.7	30.9
1994Q3	16.6	55.6	205.6	88.9	29376.1	429.2	11.1	22.7
1994Q4	24.2	74.9	216.7	99.3	36840.9	538.3	11.9	23.5
1995Q1	31.2	59.6	209.2	141.2	31513.2	450.4	12.7	24.2
1995Q2	34.1	70.2	237.4	252.3	31117.4	444.8	14.4	26.0
1995Q3	32.6	91.7	261.7	208.9	30944.4	442.3	6.8	18.5
1995Q4	28.5	92.6	285.9	196.5	36002.0	514.6	11.8	23.5
1996Q1	34.8	95.9	320.2	180.3	31287.9	437.6	12.4	24.3
1996Q2	40.3	146.3	303.2	209.8	32185.0	450.2	14.4	26.3
1996Q3	34.1	216.6	280.6	196.1	32717.8	457.6	12.5	24.5
1996Q4	20.9	228.1	320.0	193.7	36822.7	515.0	13.1	25.2

Quarterly	EXPORT THE PHILIPPINES TO (Million USD)				GDP Riel (Million USD) (2005=100)	GDP/ capita (USD)	MCI	FCI
	INA	MAL	SING	THAI				
1997Q1	50.4	157.5	345.4	197.4	32799.1	449.1	10.2	22.3
1997Q2	52.8	144.2	408.0	266.7	33654.3	460.8	14.1	26.1
1997Q3	67.3	138.6	426.8	199.9	29884.8	409.2	19.8	31.6
1997Q4	43.6	199.8	440.4	192.0	29004.5	397.1	21.5	33.3
1998Q1	29.3	212.8	416.7	136.7	21615.4	289.8	12.5	24.5
1998Q2	22.4	208.1	535.9	140.3	22783.4	305.5	12.5	24.3
1998Q3	33.7	359.2	439.2	165.0	20961.9	281.0	14.9	26.5
1998Q4	25.8	361.5	440.4	192.4	25017.3	335.4	14.1	26.0
1999Q1	37.0	394.2	484.3	180.6	23089.3	303.3	12.5	24.3
1999Q2	27.6	297.9	630.8	189.0	24605.9	323.2	12.3	24.3
1999Q3	28.0	380.3	674.3	226.9	24146.5	317.1	10.0	21.8
1999Q4	30.7	406.9	677.3	245.1	26736.5	351.2	9.8	21.7
2000Q1	41.7	289.4	640.6	226.8	24734.8	318.4	14.3	25.9
2000Q2	38.9	396.9	701.8	252.3	24915.0	320.7	10.8	22.4
2000Q3	49.0	371.9	839.7	336.7	23458.7	302.0	10.8	22.4
2000Q4	53.9	319.1	942.1	390.6	24068.5	309.8	14.1	25.7
2001Q1	32.2	248.5	721.8	500.5	20988.8	264.9	11.1	22.7
2001Q2	33.9	244.1	482.1	287.4	21109.4	266.4	10.8	22.3
2001Q3	38.1	294.2	533.5	302.7	20857.9	263.2	9.9	21.2
2001Q4	28.4	324.8	570.1	267.4	23737.0	299.6	10.4	21.7
2002Q1	36.3	344.4	591.8	256.6	20973.0	259.6	8.8	20.3
2002Q2	63.7	423.2	642.3	253.9	22453.3	277.9	8.5	19.9
2002Q3	55.8	436.2	616.6	312.3	21525.8	266.4	8.2	19.5
2002Q4	48.8	448.8	621.1	260.5	24893.0	308.1	8.8	20.0
2003Q1	62.8	539.1	538.9	324.7	21150.3	256.9	7.7	18.9
2003Q2	74.4	654.0	575.6	316.8	22330.9	271.2	8.3	19.7
2003Q3	87.9	720.5	644.8	301.0	21959.4	266.7	7.8	19.3
2003Q4	70.6	549.0	671.9	291.5	25148.5	305.4	8.3	19.8
2004Q1	87.8	571.6	620.5	260.2	21853.7	260.4	7.5	19.0
2004Q2	85.0	532.0	707.0	255.1	22881.2	272.7	7.4	19.0
2004Q3	108.3	491.3	686.0	269.0	22702.8	270.6	6.0	17.8
2004Q4	94.6	475.0	616.9	279.4	25817.3	307.7	7.3	19.0
2005Q1	163.5	512.3	540.8	248.5	22965.3	268.6	7.3	19.1
2005Q2	135.9	643.3	654.7	309.1	24328.7	284.6	7.8	19.6
2005Q3	91.0	639.0	697.7	279.2	23584.1	275.9	7.2	19.0
2005Q4	85.9	662.6	812.7	331.8	27827.2	325.5	8.3	20.2

Quarterly	EXPORT THE PHILIPPINES TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	SING	THAI	(2005=100)	(USD)		
2006Q1	92.2	609.0	871.6	308.2	25525.7	293.1	7.8	19.8
2006Q2	89.4	636.7	956.0	362.1	26360.5	302.6	8.9	20.8
2006Q3	88.9	706.4	814.7	364.8	26809.0	307.8	8.8	20.9
2006Q4	93.4	663.4	806.7	289.5	32035.0	367.8	9.2	21.4
2007Q1	103.7	578.8	742.0	346.4	29114.0	328.2	9.4	21.6
2007Q2	132.7	621.7	766.4	347.5	31839.0	358.9	9.0	21.4
2007Q3	143.2	688.6	739.9	332.1	31972.8	360.4	7.4	19.8
2007Q4	144.8	617.7	890.4	377.0	39524.5	445.5	7.4	19.8

2.D SINGAPORE

Quarterly	EXPORT SINGAPORE TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	PHIL	THAI	(2005=100)	(USD)		
1988Q1	238.9	1168.9	123.5	473.2	7880.4	2734.4	2.9	57.5
1988Q2	226.7	1332.6	130.4	589.2	8096.5	2809.3	3.9	59.1
1988Q3	228.0	1352.2	138.1	508.9	8119.0	2817.1	4.4	59.5
1988Q4	202.3	1478.7	126.6	573.2	8589.3	2980.3	5.3	60.6
1989Q1	148.5	1266.4	140.8	587.4	9310.7	3161.5	5.3	60.9
1989Q2	297.3	1341.7	175.4	657.5	9345.8	3173.5	4.3	60.0
1989Q3	276.9	1629.9	183.0	560.6	9449.8	3208.8	4.5	60.5
1989Q4	315.3	1871.4	164.1	659.1	9691.4	3290.8	4.9	61.2
1990Q1	206.0	1729.4	170.8	839.4	10626.3	3523.3	5.7	62.4
1990Q2	191.2	1426.3	168.7	808.0	10930.2	3624.1	7.1	63.8
1990Q3	290.9	1555.0	155.1	848.7	11555.9	3831.5	6.4	62.3
1990Q4	595.5	2162.3	176.4	993.6	12151.2	4028.9	4.4	60.7
1991Q1	408.8	2442.0	180.5	1021.1	12335.7	3984.4	4.1	61.3
1991Q2	431.9	2175.6	178.8	887.9	12328.9	3982.2	5.0	62.3
1991Q3	403.7	2307.6	163.1	911.6	12903.6	4167.8	5.0	62.1
1991Q4	454.0	1874.8	158.4	885.0	13608.5	4395.5	3.3	61.0
1992Q1	390.6	1897.6	189.3	930.4	13907.3	4370.6	3.2	60.9
1992Q2	392.2	2017.4	189.3	1025.5	14178.6	4455.9	2.6	60.6
1992Q3	356.2	1941.6	202.7	1023.6	14769.9	4641.7	1.9	59.8
1992Q4	531.6	2075.2	227.2	975.3	14883.6	4677.4	1.9	60.4
1993Q1	372.2	2257.0	260.6	1041.7	15707.7	4796.2	1.5	60.1
1993Q2	441.7	2852.3	295.7	1044.5	16339.6	4989.2	2.5	61.5
1993Q3	512.2	2680.8	473.3	1070.3	16753.7	5115.6	2.4	61.8
1993Q4	467.2	2706.9	343.5	1056.4	17277.3	5275.5	2.1	62.0
1994Q1	416.5	3970.7	260.3	1167.1	18145.6	5376.5	2.6	62.0
1994Q2	397.0	4724.6	539.9	1376.1	18957.3	5617.0	3.0	62.7
1994Q3	516.1	5283.0	371.5	1368.2	19848.9	5881.1	3.2	63.1
1994Q4	547.4	5051.0	405.8	1443.8	20673.2	6125.4	3.7	63.9
1995Q1	554.9	4668.0	501.3	1711.8	21539.9	6189.6	3.1	63.2
1995Q2	560.7	5960.3	185.1	1784.9	22690.9	6520.4	1.4	61.8
1995Q3	578.5	6259.8	529.5	1655.7	22942.3	6592.6	3.0	63.8
1995Q4	673.3	5777.0	712.1	1671.4	23435.6	6734.4	2.9	63.9
1996Q1	694.8	5324.2	486.4	1960.8	23783.0	6619.3	2.2	63.7
1996Q2	646.6	5544.9	566.6	1833.5	24382.1	6786.0	2.4	64.1
1996Q3	688.5	5828.4	594.6	1664.4	24857.0	6918.2	3.4	65.1
1996Q4	845.4	5814.0	648.9	1636.9	25508.7	7099.5	3.2	65.2

Quarterly	EXPORT SINGAPORE TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	PHIL	THAI	(2005=100)	(USD)		
1997Q1	901.9	5270.2	678.5	1600.9	25392.6	6840.7	2.9	65.0
1997Q2	796.2	5820.7	727.3	1552.1	25664.0	6913.8	3.5	65.8
1997Q3	880.9	5700.8	782.4	1456.3	25158.0	6777.5	3.6	65.9
1997Q4	831.8	5086.9	761.0	1176.8	23947.2	6451.3	6.4	68.7
1998Q1	670.3	4010.3	604.8	1095.7	20610.3	5384.1	7.3	70.3
1998Q2	567.1	4178.0	600.5	1050.7	21662.5	5658.9	7.0	69.5
1998Q3	637.9	4385.5	623.8	1019.5	21155.0	5526.4	5.6	68.1
1998Q4	667.6	4152.3	633.6	1040.6	22853.4	5970.1	3.1	66.1
1999Q1	584.8	3777.2	575.5	1054.8	20752.6	5276.5	2.1	65.2
1999Q2	629.0	4567.8	662.0	1215.3	21132.4	5373.1	1.8	65.6
1999Q3	653.1	4925.6	745.8	1352.3	21904.4	5569.4	2.3	65.7
1999Q4	659.1	5723.8	847.9	1418.5	22671.3	5764.4	2.9	67.6
2000Q1	823.2	5286.0	859.0	1349.0	23518.4	5853.3	2.0	66.3
2000Q2	935.5	5961.6	836.5	1471.7	23794.8	5922.0	3.1	67.4
2000Q3	1096.5	7095.6	857.9	1538.0	24035.9	5982.1	2.1	66.1
2000Q4	933.4	6698.4	833.4	1513.4	24339.9	6057.7	2.6	66.9
2001Q1	836.9	5389.5	1073.0	1456.9	21523.3	5275.3	2.3	66.4
2001Q2	862.4	5181.7	694.8	1323.7	21330.8	5228.1	2.8	67.1
2001Q3	781.3	5377.1	655.3	1251.1	22308.4	5467.7	2.6	66.0
2001Q4	666.5	5173.7	662.2	1272.7	22384.2	5486.3	2.1	66.1
2002Q1	863.5	4828.0	692.5	1327.7	21360.0	5183.2	1.7	66.1
2002Q2	1005.4	5760.2	812.1	1474.3	22194.3	5385.7	0.9	64.8
2002Q3	1171.6	5916.3	749.2	1516.9	23357.1	5667.8	1.4	65.4
2002Q4	1059.2	5302.6	785.2	1390.8	23786.2	5771.9	1.3	65.3
2003Q1	970.9	5165.7	784.1	1469.3	23426.6	5639.5	0.8	64.3
2003Q2	1022.4	5620.1	764.4	1405.1	22491.5	5414.4	1.2	65.0
2003Q3	1082.3	5967.7	802.5	1585.6	23793.1	5727.8	0.9	64.7
2003Q4	1079.5	6039.7	885.0	1696.5	25462.8	6129.7	1.0	65.0
2004Q1	1333.8	6024.6	974.4	1830.3	26652.8	6347.4	1.2	65.5
2004Q2	1424.9	6634.3	982.1	1825.5	26209.3	6241.8	0.7	65.2
2004Q3	1683.1	7340.5	985.0	2022.9	27211.4	6480.5	1.3	66.0
2004Q4	1641.1	7281.0	974.6	2077.9	30118.4	7172.7	1.9	66.8
2005Q1	2204.6	6903.3	907.5	2139.4	29389.2	6887.6	2.8	68.2
2005Q2	2255.4	7319.7	1069.6	2352.1	29302.5	6867.2	2.3	67.7
2005Q3	2539.7	8008.6	1112.5	2415.7	30059.4	7044.6	1.8	67.2
2005Q4	2471.1	8173.4	1095.7	2524.1	32069.7	7515.7	2.8	68.4

Quarterly	EXPORT SINGAPORE TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	PHIL	THAI	(2005=100)	(USD)		
2006Q1	2216.3	7826.4	1256.9	2691.7	32097.7	7355.1	4.1	69.8
2006Q2	2358.9	8995.6	1285.4	2758.5	33492.0	7674.6	3.8	69.5
2006Q3	2873.7	9772.3	1336.4	2909.6	34860.8	7988.3	3.6	69.2
2006Q4	2585.6	8943.0	1201.0	2953.0	37419.2	8574.5	3.5	69.3
2007Q1	2231.7	8717.6	1357.1	2959.5	37625.7	8389.2	3.9	70.0
2007Q2	2343.9	9350.7	1462.8	3015.4	39145.4	8728.1	2.4	69.0
2007Q3	2460.0	10004.5	1654.9	3167.2	40847.6	9107.6	1.0	67.8
2007Q4	2804.3	10553.5	1655.8	3248.3	44361.4	9891.1	1.2	68.2

2.E THAILAND

Quarterly	EXPORT THAILAND TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	PHIL	SING	(2005=100)	(USD)		
1988Q1	23.1	122.5	11.6	317.0	29261.9	530.8	20.3	168.2
1988Q2	23.7	106.9	17.3	310.7	29780.5	540.2	20.2	167.9
1988Q3	17.5	112.0	18.8	299.2	29864.8	541.7	22.1	170.2
1988Q4	21.2	131.5	11.6	297.3	30699.0	556.8	23.6	171.9
1989Q1	76.6	135.5	14.6	343.1	33232.5	594.4	22.8	171.3
1989Q2	42.3	128.7	31.6	363.8	33275.1	595.2	22.6	171.9
1989Q3	17.8	160.7	19.8	357.1	32998.3	590.2	21.8	171.1
1989Q4	24.9	160.1	29.4	367.9	33546.8	600.0	24.1	174.1
1990Q1	58.7	141.3	51.3	397.4	36339.4	641.2	23.4	173.9
1990Q2	26.3	138.9	38.9	387.1	36430.8	642.8	24.2	175.4
1990Q3	28.2	140.7	53.5	435.4	37546.5	662.5	27.8	178.7
1990Q4	41.2	154.1	23.5	475.8	38174.0	673.6	25.8	176.7
1991Q1	65.0	196.8	25.5	477.0	40222.7	700.3	27.0	178.7
1991Q2	43.1	161.1	22.9	511.5	39802.3	693.0	24.6	176.7
1991Q3	37.0	172.6	25.2	608.5	40398.8	703.4	23.7	176.4
1991Q4	68.6	153.6	31.4	738.8	41226.4	717.8	20.0	173.1
1992Q1	137.1	225.7	30.3	646.7	43082.8	740.4	19.1	172.5
1992Q2	68.5	204.8	32.0	684.3	43452.9	746.8	20.1	173.5
1992Q3	35.6	213.4	45.8	689.8	44338.9	762.0	19.6	173.0
1992Q4	41.4	197.6	46.5	801.7	45243.7	777.6	21.2	175.0
1993Q1	56.4	194.2	37.5	757.5	46261.2	785.3	21.7	176.0
1993Q2	41.7	210.1	42.8	924.7	46097.3	782.6	21.0	175.1
1993Q3	56.7	416.9	75.8	1230.9	48718.8	827.1	18.5	172.7
1993Q4	47.3	219.7	41.9	1545.6	50081.0	850.2	16.2	171.2
1994Q1	72.9	196.7	44.8	1424.5	51934.8	871.9	19.8	175.0
1994Q2	64.7	246.1	55.1	1678.0	50625.9	850.0	20.0	175.6
1994Q3	130.2	285.6	58.2	1433.6	51721.1	868.3	19.3	174.9
1994Q4	173.3	939.6	65.2	1631.2	55835.3	937.4	19.4	175.7
1995Q1	275.6	362.8	77.7	1781.0	58810.9	977.9	26.0	182.6
1995Q2	162.7	381.4	83.0	1874.2	57886.5	962.5	22.4	178.8
1995Q3	141.2	399.7	154.2	2065.5	56416.3	938.1	20.7	177.8
1995Q4	231.1	409.9	99.4	2196.3	58121.3	966.4	21.8	179.8
1996Q1	271.2	397.0	200.7	1783.2	58485.7	964.8	19.9	178.6
1996Q2	207.5	498.2	140.0	1750.8	59256.7	977.5	19.8	179.1
1996Q3	159.3	550.5	133.3	1512.0	58982.1	973.0	24.0	183.6
1996Q4	208.3	568.8	157.1	1703.5	59888.4	987.9	23.4	183.4

Quarterly	EXPORT THAILAND TO (Million USD)				GDP Riel (Million USD) (2005=100)	GDP/ capita (USD)	MCI	FCI
	INA	MAL	PHIL	SING				
1997Q1	555.8	587.4	160.5	1705.7	56698.1	929.1	24.2	184.7
1997Q2	232.7	662.7	210.6	1645.9	56452.4	925.1	24.9	185.6
1997Q3	294.2	627.0	171.4	1513.9	43629.7	715.0	29.5	187.6
1997Q4	294.4	605.7	155.6	1540.5	35867.6	587.8	30.6	189.0
1998Q1	390.4	444.4	155.4	1250.3	29893.9	486.9	33.0	197.0
1998Q2	198.8	468.5	156.5	1182.2	31499.9	513.0	31.5	198.9
1998Q3	160.8	409.4	233.1	1138.7	30553.3	497.6	25.2	193.4
1998Q4	235.7	457.6	221.9	1126.9	36393.1	592.7	20.1	184.5
1999Q1	170.9	468.7	195.5	1064.6	35484.8	574.0	18.8	182.3
1999Q2	229.9	518.4	241.2	1252.7	34095.8	551.5	18.0	182.2
1999Q3	246.3	526.8	267.5	1297.2	34283.3	554.5	16.7	179.3
1999Q4	322.9	610.0	224.0	1458.6	35541.7	574.9	16.2	179.2
2000Q1	367.0	626.0	263.7	1378.3	36793.6	590.1	16.7	179.9
2000Q2	284.1	636.8	247.6	1344.5	34641.8	555.6	17.7	181.4
2000Q3	318.4	773.9	308.9	1571.1	33015.5	529.5	16.8	179.8
2000Q4	368.5	776.5	261.7	1702.9	33176.9	532.1	17.4	180.3
2001Q1	395.0	681.7	243.5	1235.2	32973.0	523.5	17.1	181.1
2001Q2	333.2	689.4	325.3	1316.4	30404.0	482.7	17.0	181.3
2001Q3	339.8	704.5	315.1	1394.5	31030.9	492.6	18.4	181.0
2001Q4	297.7	646.1	272.0	1341.3	32909.2	522.4	19.0	182.3
2002Q1	422.9	652.8	272.9	1255.6	34155.2	535.9	18.2	182.0
2002Q2	393.6	757.1	320.6	1524.3	33877.2	531.5	17.1	179.5
2002Q3	457.2	734.3	337.5	1383.4	34970.8	548.7	18.0	180.5
2002Q4	404.7	690.8	343.3	1390.3	35747.5	560.9	17.3	179.7
2003Q1	483.2	774.3	375.1	1363.8	37169.1	576.1	17.1	179.7
2003Q2	598.5	916.8	404.3	1433.3	36300.6	562.6	17.3	179.7
2003Q3	611.7	1028.2	417.5	1460.2	37898.4	587.4	17.1	180.2
2003Q4	580.1	1167.2	425.3	1615.7	42079.6	652.2	17.2	180.8
2004Q1	666.9	1223.1	441.5	1687.9	42838.2	656.2	16.5	180.4
2004Q2	775.7	1300.8	480.4	1683.2	40808.7	625.1	16.7	181.0
2004Q3	819.4	1340.3	468.3	1750.2	40436.4	619.4	16.9	181.4
2004Q4	945.5	1431.0	438.1	1887.7	44618.8	683.5	18.1	183.4
2005Q1	1032.8	1303.2	440.8	1723.9	45840.7	695.1	18.0	184.2
2005Q2	989.4	1400.6	528.3	1637.7	42668.6	647.0	16.9	182.6
2005Q3	1158.3	1572.0	562.5	2221.9	42405.9	643.0	16.8	182.4
2005Q4	773.0	1505.0	510.3	2057.5	45461.6	689.4	20.2	187.1

Quarterly	EXPORT THAILAND TO (Million USD)				GDP Riel (Million USD)	GDP/ capita	MCI	FCI
	INA	MAL	PHIL	SING	(2005=100)	(USD)		
2006Q1	805.1	1574.6	557.7	1934.7	48230.3	725.2	20.8	188.0
2006Q2	745.2	1628.3	592.5	2042.5	47493.1	714.1	19.2	185.9
2006Q3	858.2	1816.5	733.1	2416.6	49030.1	737.2	21.7	188.1
2006Q4	927.5	1636.7	704.5	2017.5	53261.4	800.8	22.0	189.2
2007Q1	1028.1	1826.2	662.4	1831.0	56107.1	837.7	22.5	190.7
2007Q2	1185.5	1862.6	711.8	2164.1	55196.5	824.1	19.4	187.7
2007Q3	1263.7	1940.7	704.4	2366.7	57471.6	858.1	20.8	189.8
2007Q4	1290.6	2162.7	820.8	3173.0	61304.9	915.3	19.4	188.7

3. REAL EFFECTIVE EXCHANGE RATE (REER)

3.A WEIGHT OF 15 COUNTRIES TRADING PARTNERS IN ASEAN 5 (1988-2008)
3.A 1 INDONESIA

No	Trading Partner	Export		Import		Trading	
		Volume	Weight	Volume	Weight	Volume	Weight
1	All Countries	1199474.2	100%	839560.5	100%	2039034.7	100%
2	Japan	289257.5	24.1%	131105.7	15.6%	420363.1	20.6%
3	USA	149055.0	12.4%	77987.8	9.3%	227042.7	11.1%
4	Singapore	111866.1	9.3%	96387.5	11.5%	208253.6	10.2%
5	Malaysia	39180.1	3.3%	35174.9	4.2%	74355.0	3.6%
6	China Mainland	69485.1	5.8%	61888.3	7.4%	131373.4	6.4%
7	Korea	80342.1	6.7%	44923.2	5.4%	125265.3	6.1%
8	Nederland	33994.2	2.8%	9853.5	1.2%	43847.8	2.2%
9	Australia	32050.1	2.7%	40180.6	4.8%	72230.7	3.5%
10	India	29725.1	2.5%	14388.5	1.7%	44113.7	2.2%
11	Germany	28662.1	2.4%	39293.7	4.7%	67955.9	3.3%
12	Hong Kong	27118.2	2.3%	7664.3	0.9%	34782.5	1.7%
13	Thailand	24546.1	2.0%	31040.1	3.7%	55586.3	2.7%
14	UK	22955.3	1.9%	14436.5	1.7%	37391.8	1.8%
15	Philippines	16190.8	1.3%	3284.0	0.4%	19474.8	1.0%
16	Saudi Arabia	10834.1	0.9%	29291.9	3.5%	40126.1	2.0%
	Share 15 Trading Partner Countries	965262.0	74.3%	636900.7	75.9%	1602162.6	78.6%

3.A.2 MALAYSIA

No	Trading Partners	Export		Import		Trading	
		Volume	Weight	Volume	Weight	Volume	Weight
1	All Countries	1834056.6		1579508.6		3413565.2	
2	Japan	207373.3	11%	297013.0	19%	504386.3	15%
3	USA	338810.9	18%	232976.0	15%	571786.8	17%
4	Singapore	315232.5	17%	199481.9	13%	514714.4	15%
5	Indonesia	38042.0	2%	48106.6	3%	86148.6	3%
6	China Mainland	98821.1	5%	114588.3	7%	213409.3	6%
7	Korea	62722.3	3%	73350.7	5%	136073.0	4%
8	Australia	47768.8	3%	35600.4	2%	83369.2	2%
9	Nederland	65107.7	4%	12199.7	1%	77307.4	2%
10	Germany	47719.8	3%	65943.7	4%	113663.5	3%
11	Hong Kong	90872.4	5%	40035.1	3%	130907.5	4%
12	UK	48115.6	3%	35390.0	2%	83505.6	2%
13	India	43165.1	2%	16791.4	1%	59956.5	2%
14	Saudi Arabia	7670.3	0%	14088.8	1%	21759.1	1%
15	Thailand	78510.8	4%	67582.7	4%	146093.5	4%
16	Philippines	25445.5	1%	30020.9	2%	55466.4	2%
	Share 15 Trading Partner Countries	1515377.9	83%	1283169.1	81%	2798547.0	82%

3.A.3 THE PHILIPPINES 1988-2008

No	Trading Partners	Export		Import		Trading	
		Volume	Weight	Volume	Weight	Volume	Weight
1	All Countries	564027.6		659737.5		1223765.0	
2	Japan	91127.4	16.2%	119215.1	18.1%	210342.4	17.2%
3	USA	144169.6	25.6%	120328.0	18.2%	264497.6	21.6%
4	Singapore	35247.4	6.2%	46803.4	7.1%	82050.8	6.7%
5	Malaysia	23447.8	4.2%	22577.3	3.4%	46025.1	3.8%
6	China Mainland	29973.5	5.3%	28820.5	4.4%	58794.0	4.8%
7	Korea	17342.9	3.1%	39627.6	6.0%	56970.5	4.7%
8	Australia	5414.1	1.0%	13158.0	2.0%	18572.1	1.5%
9	Nederland	43537.5	7.7%	6323.9	1.0%	49861.4	4.1%
10	Germany	22584.5	4.0%	18250.5	2.8%	40835.0	3.3%
11	Hong Kong	39054.0	6.9%	27520.7	4.2%	66574.7	5.4%
12	UK	16060.0	2.8%	8008.8	1.2%	24068.8	2.0%
13	India	1738.6	0.3%	5431.7	0.8%	7170.3	0.6%
14	Saudi Arabia	1034.3	0.2%	29432.0	4.5%	30466.3	2.5%
15	Thailand	16182.2	2.9%	19138.5	2.9%	35320.7	2.9%
16	Indonesia	4080.6	0.7%	13161.1	2.0%	17241.7	1.4%
	Share 15 Trading Partner Countries	490994.4	87.1%	517797.1	78.5%	1008791.5	82.4%

3.A.4 SINGAPORE

No	Trading Partners	Export		Import		Trading	
		Volume	Weight	Volume	Weight	Volume	Weight
1	All Countries	2911039.6		2780351.0		5691390.6	
2	Japan	186580.6	6.4%	386947.8	13.9%	573528.4	10.1%
3	USA	408871.0	14.0%	396914.6	14.3%	805785.7	14.2%
4	Malaysia	430872.4	14.8%	406349.7	14.6%	837222.1	14.7%
5	Indonesia	147020.5	5.1%	75518.5	2.7%	222539.0	3.9%
6	China Mainland	176767.2	6.1%	203784.7	7.3%	380551.8	6.7%
7	Korea	95827.6	3.3%	111556.9	4.0%	207384.5	3.6%
8	Australia	90117.6	3.1%	42493.0	1.5%	132610.5	2.3%
9	Nederland	73632.3	2.5%	27388.1	1.0%	101020.4	1.8%
10	Germany	83547.5	2.9%	89600.2	3.2%	173147.7	3.0%
11	Hong Kong	263914.9	9.1%	64628.8	2.3%	328543.7	5.8%
12	UK	79801.3	2.7%	60573.1	2.2%	140374.4	2.5%
13	India	69182.1	2.4%	38584.6	1.4%	107766.7	1.9%
14	Saudi Arabia	8679.7	0.3%	104787.2	3.8%	113466.9	2.0%
15	Thailand	131406.4	4.5%	112428.7	4.0%	243835.1	4.3%
16	Philippines	58116.1	2.0%	49009.9	1.8%	107126.1	1.9%
	Share 15 Trading Partner Countries	2304337.1	79.2%	2170565.8	78.1%	4474902.9	78.6%

3.A.5 THAILAND

No	Trading Partners	Export		Import		Trading	
		Volume	Weight	Volume	Weight	Volume	Weight
1	All Countries	1442159.7		1503235.5		2945395.2	
2	Japan	202392.8	14.0%	356518.3	23.7%	558911.1	19.0%
2	USA	246014.1	17.1%	143377.8	9.5%	389392.0	13.2%
3	Singapore	116130.6	8.1%	76149.2	5.1%	192279.8	6.5%
4	Malaysia	63320.0	4.4%	79291.3	5.3%	142611.3	4.8%
5	China Mainland	86001.3	6.0%	105352.6	7.0%	191353.9	6.5%
6	Korea	26138.4	1.8%	54870.2	3.7%	81008.6	2.8%
7	Australia	38039.0	2.6%	34400.7	2.3%	72439.7	2.5%
8	Nederland	42741.3	3.0%	11501.7	0.8%	54243.0	1.8%
9	Germany	34986.2	2.4%	55188.0	3.7%	90174.2	3.1%
10	Hong Kong	76674.8	5.3%	18866.7	1.3%	95541.5	3.2%
11	UK	42981.5	3.0%	22894.8	1.5%	65876.4	2.2%
12	India	14627.7	1.0%	17736.2	1.2%	32363.9	1.1%
13	Saudi Arabia	12510.5	0.9%	34170.1	2.3%	46680.6	1.6%
14	Indonesia	34589.2	2.4%	30953.2	2.1%	65542.4	2.2%
15	Philippines	22220.9	1.5%	18913.2	1.3%	41134.1	1.4%
	Share 15 Trading Partner Countries	1059368.5	73.5%	1060184.0	70.5%	2119552.6	72.0%

3.B REER CALCULATION

3.B.1 INDONESIA

PT	JP	US	SIN	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.21*	*0.11*	*0.10*	*0.04*	*0.06*	*0.06*	*0.04*	*0.02*	*0.03*	*0.02*	*0.02*	*0.02*	*0.02*	*0.03*	*0.01*			
1988Q1	0.09	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	1741.4	3.2
1988Q2	0.09	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	1668.1	3.2
1988Q3	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	1665.3	3.2
1988Q4	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	1563.1	3.2
1989Q1	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1520.2	3.2
1989Q2	0.09	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1547.4	3.2
1989Q3	0.09	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	1561.4	3.2
1989Q4	0.09	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1553.9	3.2
1990Q1	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	1575.3	3.2
1990Q2	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	1624.6	3.2
1990Q3	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1508.9	3.2
1990Q4	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1406.4	3.1
1991Q1	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1409.3	3.1
1991Q2	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1409.0	3.1
1991Q3	0.07	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1359.9	3.1
1991Q4	0.06	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	1311.8	3.1
1992Q1	0.06	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	1293.3	3.1
1992Q2	0.06	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	1304.0	3.1
1992Q3	0.06	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	1268.5	3.1
1992Q4	0.06	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	1236.5	3.1

PT	JP	US	SIN	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.21*	*0.11*	*0.10*	*0.04*	*0.06*	*0.06*	*0.04*	*0.02*	*0.03*	*0.02*	*0.02*	*0.02*	*0.02*	*0.03*	*0.01*			
1993Q1	0.05	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	1174.9	3.1
1993Q2	0.05	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	1123.5	3.1
1993Q3	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	1094.6	3.0
1993Q4	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	1092.4	3.0
1994Q1	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	1062.1	3.0
1994Q2	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	1026.5	3.0
1994Q3	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	984.6	3.0
1994Q4	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	952.1	3.0
1995Q1	0.03	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	911.8	3.0
1995Q2	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	831.1	2.9
1995Q3	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	847.4	2.9
1995Q4	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	852.4	2.9
1996Q1	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	837.1	2.9
1996Q2	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	842.2	2.9
1996Q3	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	865.5	2.9
1996Q4	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	879.4	2.9
1997Q1	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	895.4	3.0
1997Q2	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	896.3	3.0
1997Q3	0.03	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	774.4	2.9
1997Q4	0.02	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	627.3	2.8
1998Q1	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	293.5	2.5
1998Q2	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	206.2	2.3
1998Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	142.9	2.2
1998Q4	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	198.2	2.3

PT	JP	US	SIN	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.21*	*0.11*	*0.10*	*0.04*	*0.06*	*0.06*	*0.04*	*0.02*	*0.03*	*0.02*	*0.02*	*0.02*	*0.02*	*0.03*	*0.01*			
1999Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	161.0	2.2
1999Q2	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	181.2	2.3
1999Q3	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	192.0	2.3
1999Q4	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	195.8	2.3
2000Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	181.7	2.3
2000Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	159.9	2.2
2000Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	150.6	2.2
2000Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	143.2	2.2
2001Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	144.9	2.2
2001Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	127.5	2.1
2001Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	143.1	2.2
2001Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	128.8	2.1
2002Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	130.9	2.1
2002Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	141.0	2.1
2002Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	133.2	2.1
2002Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	131.6	2.1
2003Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	129.8	2.1
2003Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	137.1	2.1
2003Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	133.9	2.1
2003Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	129.4	2.1

PT	JP	US	SIN	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.21*	*0.11*	*0.10*	*0.04*	*0.06*	*0.06*	*0.04*	*0.02*	*0.03*	*0.02*	*0.02*	*0.02*	*0.02*	*0.03*	*0.01*			
2004Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	127.6	2.1
2004Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	118.5	2.1
2004Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	115.9	2.1
2004Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	109.1	2.0
2005Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	100.0	2.0
2005Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	95.4	2.0
2005Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	92.1	2.0
2005Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	85.0	1.9
2006Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	86.5	1.9
2006Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	85.9	1.9
2006Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	86.0	1.9
2006Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	83.4	1.9
2007Q1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	82.2	1.9
2007Q2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	83.4	1.9
2007Q3	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	79.6	1.9
2007Q4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	77.2	1.9

3.B.2 MALAYSIA

PT	JP	US	SING	INA	CHI	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.15*	*0.17*	*0.15*	*0.03*	*0.06*	*0.04*	*0.02*	*0.02*	*0.03*	*0.04*	*0.02*	*0.02*	*0.01*	*0.04*	*0.02*			
1988Q1	10.78	0.06	0.15	4.22	0.00	8.72	0.01	0.02	0.02	0.10	0.02	0.04	0.01	0.16	0.13	24.5	32.3	3.5
1988Q2	10.53	0.06	0.15	4.28	0.00	8.37	0.01	0.02	0.02	0.10	0.02	0.04	0.01	0.16	0.13	23.9	31.6	3.5
1988Q3	10.80	0.06	0.15	4.25	0.00	8.01	0.01	0.02	0.03	0.10	0.01	0.05	0.01	0.16	0.13	23.8	31.4	3.4
1988Q4	9.99	0.06	0.14	4.25	0.00	7.62	0.01	0.02	0.02	0.10	0.02	0.05	0.01	0.16	0.13	22.6	29.8	3.4
1989Q1	9.92	0.06	0.13	4.28	0.00	7.33	0.01	0.02	0.03	0.10	0.01	0.05	0.01	0.16	0.13	22.2	29.4	3.4
1989Q2	10.98	0.06	0.14	4.46	0.00	7.40	0.01	0.02	0.03	0.10	0.01	0.05	0.01	0.17	0.13	23.6	31.1	3.4
1989Q3	11.36	0.06	0.14	4.55	0.01	7.53	0.01	0.02	0.03	0.10	0.01	0.06	0.01	0.18	0.14	24.2	32.0	3.5
1989Q4	11.35	0.06	0.14	4.58	0.01	7.58	0.01	0.02	0.03	0.10	0.01	0.06	0.01	0.18	0.14	24.3	32.1	3.5
1990Q1	11.66	0.06	0.13	4.65	0.01	7.85	0.01	0.02	0.02	0.11	0.01	0.06	0.01	0.19	0.14	24.9	32.9	3.5
1990Q2	12.28	0.06	0.13	4.76	0.01	8.33	0.01	0.02	0.02	0.11	0.02	0.06	0.01	0.19	0.14	26.2	34.6	3.5
1990Q3	11.60	0.06	0.13	5.05	0.01	8.61	0.01	0.02	0.02	0.11	0.02	0.06	0.01	0.21	0.14	26.1	34.4	3.5
1990Q4	10.45	0.06	0.12	5.11	0.01	8.55	0.01	0.02	0.02	0.11	0.02	0.07	0.01	0.25	0.14	24.9	33.0	3.5
1991Q1	10.51	0.06	0.12	5.17	0.01	8.75	0.01	0.02	0.02	0.11	0.02	0.07	0.01	0.27	0.13	25.3	33.4	3.5
1991Q2	10.63	0.06	0.12	5.20	0.01	8.72	0.01	0.02	0.02	0.11	0.02	0.07	0.01	0.26	0.14	25.4	33.6	3.5
1991Q3	10.47	0.06	0.12	5.40	0.01	8.89	0.01	0.02	0.02	0.11	0.02	0.10	0.01	0.27	0.14	25.6	33.9	3.5
1991Q4	10.04	0.06	0.11	5.59	0.01	9.27	0.01	0.02	0.02	0.12	0.02	0.10	0.01	0.27	0.14	25.8	34.1	3.5
1992Q1	10.21	0.07	0.12	5.91	0.01	9.87	0.01	0.02	0.02	0.12	0.02	0.11	0.01	0.27	0.14	26.9	35.5	3.6
1992Q2	10.69	0.07	0.12	6.18	0.01	10.49	0.01	0.02	0.02	0.13	0.02	0.11	0.01	0.28	0.15	28.3	37.4	3.6
1992Q3	10.24	0.07	0.12	6.28	0.01	10.67	0.01	0.02	0.02	0.13	0.02	0.12	0.01	0.28	0.15	28.1	37.2	3.6
1992Q4	9.92	0.07	0.12	6.28	0.01	10.44	0.01	0.02	0.02	0.13	0.02	0.11	0.01	0.28	0.15	27.6	36.4	3.6

PT	JP	US	SING	INA	CHI	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.15*	*0.17*	*0.15*	*0.03*	*0.06*	*0.04*	*0.02*	*0.02*	*0.03*	*0.04*	*0.02*	*0.02*	*0.01*	*0.04*	*0.02*			
1993Q1	9.38	0.06	0.12	6.40	0.02	10.30	0.01	0.02	0.02	0.13	0.01	0.12	0.01	0.27	0.14	27.0	35.7	3.6
1993Q2	8.68	0.07	0.11	6.60	0.02	10.67	0.01	0.02	0.02	0.13	0.01	0.14	0.01	0.29	0.14	26.9	35.6	3.6
1993Q3	8.36	0.07	0.11	6.75	0.02	10.86	0.01	0.02	0.02	0.13	0.01	0.14	0.01	0.31	0.14	27.0	35.6	3.6
1993Q4	8.52	0.07	0.11	6.85	0.02	10.94	0.01	0.02	0.02	0.14	0.01	0.14	0.01	0.33	0.15	27.3	36.1	3.6
1994Q1	7.76	0.06	0.10	6.53	0.04	10.26	0.01	0.02	0.02	0.13	0.01	0.13	0.01	0.30	0.13	25.5	33.7	3.5
1994Q2	7.75	0.06	0.11	6.96	0.05	10.77	0.01	0.02	0.02	0.14	0.01	0.14	0.01	0.31	0.14	26.5	35.0	3.6
1994Q3	7.52	0.07	0.11	7.29	0.07	11.06	0.01	0.02	0.02	0.14	0.01	0.15	0.01	0.31	0.14	26.9	35.6	3.6
1994Q4	7.50	0.07	0.10	7.46	0.08	10.88	0.01	0.02	0.02	0.14	0.01	0.15	0.01	0.29	0.14	26.9	35.5	3.6
1995Q1	7.20	0.07	0.10	7.67	0.10	10.85	0.01	0.01	0.02	0.14	0.01	0.15	0.01	0.30	0.14	26.8	35.4	3.6
1995Q2	6.52	0.07	0.10	8.21	0.12	11.00	0.01	0.01	0.02	0.15	0.02	0.16	0.01	0.32	0.15	26.9	35.5	3.6
1995Q3	7.20	0.07	0.10	8.37	0.14	11.05	0.01	0.01	0.02	0.15	0.02	0.17	0.01	0.33	0.15	27.8	36.7	3.6
1995Q4	7.47	0.07	0.10	8.30	0.15	10.73	0.01	0.01	0.02	0.15	0.01	0.18	0.01	0.33	0.15	27.7	36.6	3.6
1996Q1	7.65	0.06	0.10	8.63	0.16	10.95	0.01	0.01	0.02	0.15	0.01	0.18	0.01	0.33	0.15	28.4	37.6	3.6
1996Q2	7.91	0.07	0.10	8.85	0.17	11.29	0.01	0.02	0.02	0.15	0.01	0.18	0.01	0.34	0.15	29.3	38.7	3.7
1996Q3	7.97	0.07	0.10	8.88	0.19	11.81	0.01	0.02	0.02	0.16	0.01	0.20	0.01	0.35	0.16	29.9	39.6	3.7
1996Q4	8.14	0.07	0.10	8.84	0.20	11.88	0.01	0.02	0.02	0.16	0.02	0.20	0.01	0.34	0.16	30.2	39.8	3.7
1997Q1	8.75	0.07	0.10	9.28	0.21	12.67	0.01	0.02	0.02	0.16	0.02	0.20	0.01	0.35	0.16	32.0	42.3	3.7
1997Q2	8.73	0.07	0.10	9.39	0.21	12.97	0.01	0.02	0.02	0.16	0.02	0.20	0.01	0.35	0.16	32.4	42.8	3.8
1997Q3	7.74	0.06	0.09	9.85	0.19	11.86	0.01	0.02	0.02	0.15	0.01	0.18	0.01	0.36	0.19	30.8	40.6	3.7
1997Q4	6.51	0.05	0.08	11.56	0.15	12.10	0.01	0.01	0.02	0.12	0.01	0.15	0.01	0.35	0.19	31.3	41.4	3.7
1998Q1	5.63	0.04	0.07	27.70	0.13	15.18	0.01	0.01	0.02	0.10	0.01	0.14	0.01	0.35	0.19	49.6	65.5	4.2
1998Q2	6.14	0.04	0.07	37.22	0.13	13.54	0.01	0.01	0.02	0.10	0.01	0.15	0.01	0.36	0.17	58.0	76.6	4.3
1998Q3	5.94	0.04	0.07	49.40	0.12	12.14	0.01	0.01	0.01	0.10	0.01	0.16	0.01	0.38	0.17	68.6	90.6	4.5
1998Q4	5.44	0.04	0.07	35.41	0.13	12.47	0.01	0.01	0.01	0.10	0.01	0.18	0.01	0.38	0.16	54.4	71.9	4.3

PT	JP	US	SING	INA	CHI	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.15*	*0.17*	*0.15*	*0.03*	*0.06*	*0.04*	*0.02*	*0.02*	*0.03*	*0.04*	*0.02*	*0.02*	*0.01*	*0.04*	*0.02*			
1999Q1	5.17	0.04	0.07	40.65	0.13	11.53	0.01	0.01	0.01	0.10	0.01	0.17	0.01	0.37	0.16	58.4	77.2	4.3
1999Q2	5.38	0.04	0.07	36.37	0.12	11.46	0.01	0.01	0.01	0.10	0.01	0.17	0.01	0.36	0.15	54.3	71.7	4.3
1999Q3	5.03	0.04	0.07	33.77	0.12	11.49	0.01	0.01	0.01	0.10	0.01	0.18	0.01	0.38	0.16	51.4	67.9	4.2
1999Q4	4.61	0.04	0.07	32.08	0.12	11.34	0.01	0.01	0.01	0.09	0.01	0.18	0.01	0.39	0.16	49.1	64.9	4.2
2000Q1	4.65	0.04	0.07	33.50	0.12	10.83	0.01	0.01	0.01	0.09	0.01	0.18	0.01	0.38	0.16	50.0	66.1	4.2
2000Q2	4.64	0.04	0.07	37.93	0.12	10.76	0.01	0.01	0.01	0.09	0.01	0.18	0.01	0.39	0.16	54.4	71.9	4.3
2000Q3	4.66	0.04	0.07	40.71	0.12	10.89	0.01	0.01	0.01	0.09	0.01	0.19	0.01	0.43	0.17	57.4	75.8	4.3
2000Q4	4.72	0.04	0.07	44.38	0.12	11.38	0.01	0.01	0.01	0.09	0.01	0.20	0.01	0.48	0.18	61.7	81.5	4.4
2001Q1	5.03	0.04	0.07	47.74	0.12	12.54	0.01	0.01	0.01	0.09	0.01	0.19	0.01	0.48	0.18	66.5	87.9	4.5
2001Q2	5.21	0.04	0.08	56.30	0.12	13.01	0.01	0.01	0.01	0.09	0.01	0.20	0.01	0.50	0.19	75.8	100.1	4.6
2001Q3	5.17	0.04	0.07	49.97	0.12	12.98	0.01	0.01	0.01	0.09	0.01	0.20	0.01	0.52	0.19	69.4	91.7	4.5
2001Q4	5.20	0.04	0.08	55.31	0.12	12.87	0.01	0.01	0.01	0.09	0.01	0.21	0.01	0.52	0.18	74.7	98.6	4.6
2002Q1	5.48	0.04	0.08	55.98	0.12	13.15	0.01	0.01	0.01	0.09	0.01	0.21	0.01	0.51	0.18	75.9	100.2	4.6
2002Q2	5.25	0.04	0.07	50.19	0.12	12.72	0.01	0.01	0.01	0.09	0.01	0.21	0.01	0.51	0.18	69.4	91.7	4.5
2002Q3	4.91	0.04	0.07	50.33	0.12	12.07	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.52	0.17	68.6	90.6	4.5
2002Q4	5.05	0.04	0.07	52.14	0.11	12.33	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.54	0.18	70.8	93.5	4.5
2003Q1	4.84	0.04	0.07	52.20	0.11	12.31	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.55	0.18	70.6	93.3	4.5
2003Q2	4.84	0.04	0.07	49.73	0.11	12.42	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.54	0.18	68.3	90.2	4.5
2003Q3	4.79	0.04	0.07	49.84	0.12	12.09	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.57	0.17	68.0	89.9	4.5
2003Q4	4.43	0.04	0.07	51.16	0.12	12.27	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.58	0.17	69.2	91.4	4.5
1999Q1	5.17	0.04	0.07	40.65	0.13	11.53	0.01	0.01	0.01	0.10	0.01	0.17	0.01	0.37	0.16	58.4	77.2	4.3
1999Q2	5.38	0.04	0.07	36.37	0.12	11.46	0.01	0.01	0.01	0.10	0.01	0.17	0.01	0.36	0.15	54.3	71.7	4.3
1999Q3	5.03	0.04	0.07	33.77	0.12	11.49	0.01	0.01	0.01	0.10	0.01	0.18	0.01	0.38	0.16	51.4	67.9	4.2
1999Q4	4.61	0.04	0.07	32.08	0.12	11.34	0.01	0.01	0.01	0.09	0.01	0.18	0.01	0.39	0.16	49.1	64.9	4.2

PT	JP	US	SING	INA	CHI	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.15*	*0.17*	*0.15*	*0.03*	*0.06*	*0.04*	*0.02*	*0.02*	*0.03*	*0.04*	*0.02*	*0.02*	*0.01*	*0.04*	*0.02*			
2004Q1	4.32	0.04	0.07	51.59	0.12	12.27	0.01	0.00	0.01	0.08	0.01	0.20	0.01	0.59	0.16	69.5	91.8	4.5
2004Q2	4.42	0.04	0.07	55.70	0.13	12.22	0.01	0.01	0.01	0.08	0.01	0.20	0.01	0.60	0.17	73.7	97.3	4.6
2004Q3	4.41	0.04	0.07	56.99	0.13	12.22	0.01	0.00	0.01	0.08	0.01	0.21	0.01	0.61	0.17	75.0	99.1	4.6
2004Q4	4.22	0.04	0.07	57.12	0.13	11.45	0.01	0.00	0.01	0.08	0.01	0.21	0.01	0.62	0.17	74.2	98.0	4.6
2005Q1	4.12	0.04	0.07	59.43	0.14	10.80	0.01	0.00	0.01	0.08	0.01	0.20	0.01	0.61	0.16	75.7	100.0	4.6
2005Q2	4.21	0.04	0.07	61.84	0.14	10.60	0.01	0.00	0.01	0.08	0.01	0.20	0.01	0.61	0.17	78.0	103.0	4.6
2005Q3	4.34	0.04	0.07	65.75	0.14	10.87	0.01	0.00	0.01	0.08	0.01	0.20	0.01	0.64	0.18	82.3	108.8	4.7
2005Q4	4.53	0.04	0.07	71.87	0.14	10.84	0.01	0.01	0.01	0.08	0.01	0.21	0.01	0.63	0.18	88.6	117.1	4.8
2006Q1	4.52	0.04	0.06	68.28	0.14	10.34	0.01	0.00	0.01	0.08	0.01	0.21	0.01	0.61	0.17	84.5	111.6	4.7
2006Q2	4.48	0.05	0.06	68.20	0.14	10.23	0.01	0.00	0.01	0.08	0.01	0.22	0.01	0.63	0.17	84.3	111.4	4.7
2006Q3	4.52	0.05	0.06	68.38	0.14	10.25	0.01	0.00	0.01	0.08	0.01	0.23	0.01	0.62	0.17	84.5	111.7	4.7
2006Q4	4.61	0.05	0.06	70.32	0.14	10.14	0.01	0.00	0.01	0.08	0.01	0.23	0.01	0.60	0.17	86.4	114.2	4.7
2007Q1	4.79	0.05	0.06	74.03	0.15	10.54	0.01	0.00	0.01	0.08	0.01	0.23	0.01	0.61	0.17	90.7	119.9	4.8
2007Q2	4.96	0.05	0.06	74.66	0.16	10.74	0.01	0.00	0.01	0.09	0.01	0.22	0.01	0.60	0.17	91.7	121.2	4.8
2007Q3	4.76	0.05	0.06	76.72	0.16	10.61	0.01	0.00	0.01	0.08	0.01	0.22	0.01	0.59	0.16	93.5	123.5	4.8
2007Q4	4.70	0.05	0.06	80.11	0.17	10.87	0.01	0.00	0.01	0.09	0.02	0.22	0.01	0.57	0.17	97.1	128.2	4.9

3.B.3 THE PHILIPPINES

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	THAI	INA	REER	INDEX	LN
Weight	*0.17*	*0.22*	*0.07*	*0.04*	*0.05*	*0.05*	*0.02*	*0.04*	*0.03*	*0.05*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*			
1988Q1	3.35	0.02	0.02	0.01	0.00	2.72	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.63	6.9	192.3	5.3
1988Q2	3.26	0.02	0.02	0.01	0.00	2.60	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.63	6.7	186.2	5.2
1988Q3	3.39	0.02	0.02	0.01	0.00	2.53	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.64	6.7	188.0	5.2
1988Q4	3.11	0.02	0.02	0.01	0.00	2.38	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.63	6.3	175.8	5.2
1989Q1	3.08	0.02	0.02	0.01	0.00	2.28	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.64	6.2	172.2	5.1
1989Q2	3.29	0.02	0.02	0.01	0.00	2.23	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.64	6.3	176.6	5.2
1989Q3	3.20	0.02	0.01	0.01	0.00	2.13	0.00	0.01	0.01	0.04	0.00	0.00	0.01	0.06	0.62	6.1	170.7	5.1
1989Q4	3.10	0.02	0.01	0.01	0.00	2.08	0.00	0.01	0.01	0.03	0.00	0.00	0.01	0.06	0.60	5.9	165.6	5.1
1990Q1	3.06	0.02	0.01	0.01	0.00	2.07	0.00	0.01	0.01	0.03	0.00	0.00	0.01	0.05	0.59	5.9	164.0	5.1
1990Q2	3.15	0.02	0.01	0.01	0.00	2.15	0.00	0.01	0.01	0.03	0.00	0.00	0.01	0.05	0.59	6.0	168.6	5.1
1990Q3	2.69	0.02	0.01	0.01	0.00	2.01	0.00	0.01	0.00	0.03	0.00	0.00	0.01	0.05	0.56	5.4	150.7	5.0
1990Q4	2.11	0.01	0.01	0.01	0.00	1.73	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.04	0.49	4.5	124.2	4.8
1991Q1	1.96	0.01	0.01	0.01	0.00	1.63	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.04	0.46	4.2	116.1	4.8
1991Q2	2.00	0.01	0.01	0.01	0.00	1.65	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.04	0.47	4.2	118.0	4.8
1991Q3	1.96	0.01	0.01	0.01	0.00	1.67	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.49	4.2	118.2	4.8
1991Q4	1.88	0.01	0.01	0.01	0.00	1.74	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.50	4.2	118.3	4.8
1992Q1	1.87	0.01	0.01	0.01	0.00	1.82	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.52	4.3	120.6	4.8
1992Q2	1.90	0.01	0.01	0.01	0.00	1.87	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.53	4.4	122.9	4.8
1992Q3	1.84	0.01	0.01	0.01	0.00	1.93	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.54	4.4	123.6	4.8
1992Q4	1.79	0.01	0.01	0.01	0.00	1.89	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.54	4.3	121.1	4.8

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	THAI	INA	REER	INDEX	LN
Weight	*0.17*	*0.22*	*0.07*	*0.04*	*0.05*	*0.05*	*0.02*	*0.04*	*0.03*	*0.05*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*			
1993Q1	1.72	0.01	0.01	0.01	0.00	1.90	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.56	4.3	119.8	4.8
1993Q2	1.48	0.01	0.01	0.01	0.00	1.82	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.54	4.0	110.3	4.7
1993Q3	1.33	0.01	0.01	0.01	0.00	1.73	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.51	3.7	102.6	4.6
1993Q4	1.30	0.01	0.01	0.00	0.00	1.68	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.50	3.6	100.0	4.6
1994Q1	1.30	0.01	0.01	0.01	0.00	1.72	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.52	3.6	101.7	4.6
1994Q2	1.26	0.01	0.01	0.01	0.01	1.75	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.54	3.7	102.1	4.6
1994Q3	1.22	0.01	0.01	0.01	0.01	1.81	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.57	3.7	103.6	4.6
1994Q4	1.30	0.01	0.01	0.01	0.01	1.90	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.62	4.0	110.2	4.7
1995Q1	1.20	0.01	0.01	0.01	0.01	1.81	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.61	3.8	104.5	4.6
1995Q2	1.01	0.01	0.01	0.01	0.01	1.71	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.61	3.5	96.2	4.6
1995Q3	1.09	0.01	0.01	0.00	0.01	1.68	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.61	3.5	97.6	4.6
1995Q4	1.14	0.01	0.01	0.00	0.01	1.64	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.61	3.5	97.6	4.6
1996Q1	1.14	0.01	0.01	0.00	0.02	1.64	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.62	3.5	97.8	4.6
1996Q2	1.15	0.01	0.01	0.00	0.02	1.65	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.62	3.5	98.7	4.6
1996Q3	1.15	0.01	0.01	0.00	0.02	1.71	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.61	3.6	100.3	4.6
1996Q4	1.18	0.01	0.01	0.00	0.02	1.73	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.62	3.7	101.9	4.6
1997Q1	1.24	0.01	0.01	0.00	0.02	1.80	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.63	3.8	105.7	4.7
1997Q2	1.23	0.01	0.01	0.00	0.02	1.84	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.64	3.8	106.7	4.7
1997Q3	1.06	0.01	0.00	0.00	0.02	1.63	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.04	0.65	3.4	96.0	4.6
1997Q4	0.93	0.01	0.00	0.00	0.01	1.73	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.04	0.79	3.6	99.4	4.6
1998Q1	0.80	0.01	0.00	0.00	0.01	2.17	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.04	1.89	5.0	138.2	4.9
1998Q2	0.85	0.01	0.00	0.00	0.01	1.89	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.04	2.49	5.3	148.6	5.0
1998Q3	0.79	0.01	0.00	0.00	0.01	1.62	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	3.14	5.6	157.0	5.1
1998Q4	0.70	0.01	0.00	0.00	0.01	1.62	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	2.20	4.6	128.5	4.9

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	THAI	INA	REER	INDEX	LN
Weight	*0.17*	*0.22*	*0.07*	*0.04*	*0.05*	*0.05*	*0.02*	*0.04*	*0.03*	*0.05*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*			
1999Q1	0.70	0.01	0.00	0.00	0.01	1.56	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	2.62	5.0	138.2	4.9
1999Q2	0.74	0.01	0.00	0.00	0.01	1.58	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	2.39	4.8	133.7	4.9
1999Q3	0.66	0.01	0.00	0.00	0.01	1.52	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	2.13	4.4	122.5	4.8
1999Q4	0.59	0.01	0.00	0.00	0.01	1.45	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	1.96	4.1	113.5	4.7
2000Q1	0.61	0.01	0.00	0.00	0.01	1.43	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.12	4.3	118.5	4.8
2000Q2	0.59	0.01	0.00	0.00	0.01	1.37	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.31	4.4	121.4	4.8
2000Q3	0.54	0.01	0.00	0.00	0.01	1.27	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.27	4.2	116.1	4.8
2000Q4	0.49	0.00	0.00	0.00	0.01	1.19	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.23	4.0	111.1	4.7
2001Q1	0.52	0.00	0.00	0.00	0.01	1.30	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.36	4.2	118.1	4.8
2001Q2	0.52	0.00	0.00	0.00	0.01	1.30	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.68	4.6	127.1	4.8
2001Q3	0.49	0.00	0.00	0.00	0.01	1.24	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.28	4.1	113.6	4.7
2001Q4	0.50	0.00	0.00	0.00	0.01	1.23	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.54	4.3	120.8	4.8
2002Q1	0.53	0.00	0.00	0.00	0.01	1.28	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.60	4.5	124.9	4.8
2002Q2	0.52	0.00	0.00	0.00	0.01	1.26	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.37	4.2	117.4	4.8
2002Q3	0.47	0.00	0.00	0.00	0.01	1.16	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.31	4.0	111.5	4.7
2002Q4	0.47	0.00	0.00	0.00	0.01	1.14	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	2.31	4.0	111.0	4.7
2003Q1	0.44	0.00	0.00	0.00	0.01	1.11	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.26	3.9	107.8	4.7
2003Q2	0.44	0.00	0.00	0.00	0.01	1.14	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.18	3.8	106.6	4.7
2003Q3	0.42	0.00	0.00	0.00	0.01	1.07	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.10	3.6	101.7	4.6
2003Q4	0.38	0.00	0.00	0.00	0.01	1.06	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.12	3.6	101.0	4.6

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	THAI	INA	REER	INDEX	LN
Weight	*0.17*	*0.22*	*0.07*	*0.04*	*0.05*	*0.05*	*0.02*	*0.04*	*0.03*	*0.05*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*			
2004Q1	0.37	0.00	0.00	0.00	0.01	1.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.10	3.6	99.2	4.6
2004Q2	0.37	0.00	0.00	0.00	0.01	1.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.23	3.7	102.7	4.6
2004Q3	0.36	0.00	0.00	0.00	0.01	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.23	3.6	101.4	4.6
2004Q4	0.34	0.00	0.00	0.00	0.01	0.92	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.20	3.5	98.1	4.6
2005Q1	0.34	0.00	0.00	0.00	0.01	0.88	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.32	3.6	100.0	4.6
2005Q2	0.34	0.00	0.00	0.00	0.01	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.41	3.7	102.4	4.6
2005Q3	0.34	0.00	0.00	0.00	0.01	0.85	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.46	3.7	103.1	4.6
2005Q4	0.36	0.00	0.00	0.00	0.01	0.86	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.74	4.0	112.0	4.7
2006Q1	0.37	0.00	0.00	0.00	0.01	0.85	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	2.68	4.0	110.1	4.7
2006Q2	0.36	0.00	0.00	0.00	0.01	0.82	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.61	3.8	106.8	4.7
2006Q3	0.36	0.00	0.00	0.00	0.01	0.83	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.65	3.9	108.6	4.7
2006Q4	0.38	0.00	0.00	0.00	0.01	0.84	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.78	4.0	112.9	4.7
2007Q1	0.39	0.00	0.00	0.00	0.01	0.86	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.90	4.2	117.4	4.8
2007Q2	0.41	0.00	0.00	0.00	0.01	0.89	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	2.96	4.3	120.2	4.8
2007Q3	0.40	0.00	0.00	0.00	0.01	0.90	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	3.12	4.5	124.8	4.8
2007Q4	0.41	0.00	0.00	0.00	0.01	0.95	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	3.35	4.8	132.9	4.9

3.B.4 SINGAPORE

PT	JP	US	MAL	INA	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	0.10	0.14	0.15	0.04	0.07	0.04	0.02	0.02	0.03	0.06	0.02	0.02	0.02	0.04	0.02			
1988Q1	7.38	0.05	0.15	6.57	0.00	8.00	0.01	0.01	0.02	0.15	0.02	0.05	0.04	0.16	0.16	22.8	9.3	1.0
1988Q2	7.30	0.06	0.15	6.73	0.00	7.78	0.01	0.01	0.02	0.15	0.02	0.05	0.04	0.16	0.16	22.7	9.2	1.0
1988Q3	7.61	0.05	0.15	6.81	0.00	7.57	0.01	0.02	0.02	0.15	0.01	0.05	0.04	0.16	0.16	22.8	9.3	1.0
1988Q4	7.42	0.06	0.16	7.17	0.00	7.59	0.01	0.02	0.02	0.16	0.02	0.06	0.04	0.17	0.16	23.1	9.4	1.0
1989Q1	7.71	0.06	0.17	7.55	0.00	7.64	0.01	0.02	0.03	0.17	0.02	0.06	0.04	0.18	0.17	23.8	9.7	1.0
1989Q2	8.30	0.06	0.16	7.67	0.01	7.49	0.01	0.02	0.03	0.17	0.02	0.06	0.04	0.18	0.17	24.4	9.9	1.0
1989Q3	8.44	0.06	0.16	7.68	0.01	7.50	0.01	0.02	0.03	0.17	0.02	0.07	0.04	0.19	0.17	24.6	10.0	1.0
1989Q4	8.55	0.06	0.16	7.83	0.01	7.65	0.01	0.02	0.03	0.17	0.02	0.07	0.04	0.20	0.17	25.0	10.2	1.0
1990Q1	9.12	0.06	0.17	8.27	0.01	8.23	0.01	0.02	0.02	0.18	0.02	0.07	0.04	0.22	0.18	26.6	10.9	1.0
1990Q2	9.73	0.06	0.17	8.57	0.01	8.84	0.01	0.02	0.02	0.19	0.02	0.07	0.04	0.23	0.18	28.2	11.5	1.1
1990Q3	9.41	0.07	0.17	9.30	0.01	9.36	0.01	0.02	0.02	0.20	0.02	0.08	0.05	0.26	0.19	29.2	11.9	1.1
1990Q4	8.83	0.07	0.18	9.81	0.01	9.68	0.01	0.01	0.02	0.21	0.02	0.09	0.05	0.31	0.20	29.5	12.0	1.1
1991Q1	8.91	0.07	0.18	9.96	0.01	9.94	0.01	0.01	0.02	0.21	0.02	0.09	0.05	0.33	0.19	30.0	12.2	1.1
1991Q2	9.06	0.07	0.18	10.06	0.01	9.96	0.01	0.02	0.03	0.21	0.02	0.10	0.05	0.33	0.20	30.3	12.4	1.1
1991Q3	9.17	0.07	0.19	10.74	0.01	10.44	0.01	0.02	0.03	0.22	0.02	0.14	0.05	0.34	0.20	31.7	12.9	1.1
1991Q4	9.03	0.07	0.19	11.42	0.01	11.17	0.02	0.02	0.03	0.23	0.02	0.14	0.05	0.35	0.21	33.0	13.4	1.1
1992Q1	9.02	0.07	0.19	11.86	0.02	11.70	0.02	0.02	0.03	0.24	0.02	0.15	0.05	0.35	0.21	34.0	13.8	1.1
1992Q2	9.22	0.07	0.19	12.10	0.02	12.12	0.02	0.02	0.03	0.24	0.02	0.15	0.05	0.36	0.21	34.8	14.2	1.2
1992Q3	8.94	0.07	0.19	12.46	0.02	12.50	0.02	0.02	0.03	0.25	0.02	0.16	0.05	0.35	0.22	35.3	14.4	1.2
1992Q4	8.69	0.07	0.19	12.49	0.02	12.25	0.02	0.02	0.03	0.25	0.02	0.16	0.05	0.35	0.22	34.8	14.2	1.2

PT	JP	US	MAL	INA	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.10*	*0.14*	*0.15*	*0.04*	*0.07*	*0.04*	*0.02*	*0.02*	*0.03*	*0.06*	*0.02*	*0.02*	*0.02*	*0.04*	*0.02*			
1993Q1	8.38	0.07	0.19	12.98	0.02	12.34	0.02	0.02	0.03	0.25	0.02	0.17	0.05	0.36	0.21	35.1	14.3	1.2
1993Q2	7.80	0.07	0.19	13.49	0.03	12.86	0.02	0.02	0.03	0.26	0.02	0.19	0.05	0.39	0.22	35.6	14.5	1.2
1993Q3	7.52	0.07	0.19	13.79	0.03	13.09	0.02	0.02	0.03	0.27	0.02	0.20	0.05	0.41	0.22	35.9	14.6	1.2
1993Q4	7.73	0.07	0.20	14.12	0.03	13.31	0.02	0.02	0.03	0.27	0.02	0.21	0.05	0.43	0.22	36.7	15.0	1.2
1994Q1	7.62	0.07	0.21	14.57	0.06	13.51	0.02	0.02	0.03	0.28	0.02	0.21	0.05	0.43	0.22	37.3	15.2	1.2
1994Q2	7.48	0.08	0.21	15.26	0.08	13.93	0.02	0.02	0.03	0.29	0.02	0.22	0.05	0.44	0.23	38.3	15.6	1.2
1994Q3	7.30	0.08	0.21	16.10	0.10	14.41	0.02	0.02	0.03	0.30	0.02	0.23	0.05	0.44	0.24	39.5	16.1	1.2
1994Q4	7.45	0.08	0.21	16.84	0.13	14.49	0.02	0.02	0.03	0.31	0.02	0.24	0.05	0.42	0.24	40.5	16.5	1.2
1995Q1	7.35	0.08	0.22	17.77	0.16	14.83	0.02	0.02	0.03	0.33	0.02	0.24	0.06	0.45	0.25	41.8	17.0	1.2
1995Q2	6.63	0.09	0.22	18.97	0.19	14.99	0.02	0.02	0.03	0.34	0.02	0.26	0.06	0.48	0.26	42.6	17.4	1.2
1995Q3	7.27	0.08	0.22	19.21	0.22	14.96	0.02	0.02	0.03	0.34	0.02	0.27	0.06	0.49	0.26	43.5	17.7	1.2
1995Q4	7.81	0.08	0.23	19.70	0.24	15.04	0.02	0.02	0.03	0.35	0.02	0.30	0.06	0.50	0.27	44.7	18.2	1.3
1996Q1	8.10	0.09	0.23	20.76	0.26	15.55	0.02	0.02	0.03	0.35	0.02	0.30	0.06	0.52	0.27	46.6	19.0	1.3
1996Q2	8.29	0.09	0.23	21.07	0.29	15.86	0.02	0.02	0.03	0.36	0.02	0.30	0.06	0.53	0.28	47.4	19.3	1.3
1996Q3	8.33	0.09	0.23	21.10	0.31	16.56	0.02	0.02	0.03	0.36	0.02	0.32	0.06	0.53	0.28	48.2	19.7	1.3
1996Q4	8.66	0.09	0.23	21.38	0.33	16.95	0.02	0.02	0.03	0.37	0.02	0.33	0.06	0.54	0.28	49.3	20.1	1.3
1997Q1	9.14	0.09	0.23	22.01	0.34	17.73	0.02	0.02	0.03	0.36	0.02	0.33	0.06	0.54	0.29	51.2	20.9	1.3
1997Q2	9.07	0.08	0.22	22.17	0.34	18.06	0.02	0.02	0.03	0.37	0.02	0.33	0.06	0.54	0.28	51.6	21.0	1.3
1997Q3	8.55	0.08	0.24	24.73	0.34	17.57	0.02	0.02	0.03	0.35	0.02	0.32	0.05	0.59	0.36	53.3	21.7	1.3
1997Q4	8.46	0.08	0.28	34.15	0.31	21.08	0.02	0.02	0.03	0.33	0.02	0.32	0.05	0.67	0.42	66.2	27.0	1.4
1998Q1	8.25	0.07	0.32	92.28	0.30	29.82	0.02	0.02	0.03	0.32	0.02	0.33	0.05	0.75	0.47	133.1	54.2	1.7
1998Q2	9.00	0.08	0.32	124.05	0.31	26.62	0.02	0.02	0.03	0.33	0.02	0.36	0.05	0.77	0.42	162.4	66.2	1.8
1998Q3	8.80	0.07	0.32	166.16	0.29	24.09	0.02	0.02	0.03	0.32	0.02	0.38	0.05	0.82	0.42	201.8	82.2	1.9
1998Q4	8.02	0.08	0.32	118.47	0.30	24.61	0.02	0.02	0.03	0.33	0.02	0.41	0.05	0.83	0.39	153.9	62.7	1.8

PT	JP	US	MAL	INA	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.10*	*0.14*	*0.15*	*0.04*	*0.07*	*0.04*	*0.02*	*0.02*	*0.03*	*0.06*	*0.02*	*0.02*	*0.02*	*0.04*	*0.02*			
1999Q1	7.44	0.07	0.31	132.76	0.28	22.21	0.02	0.01	0.02	0.31	0.02	0.38	0.05	0.78	0.38	165.0	67.3	1.8
1999Q2	7.69	0.07	0.31	118.15	0.28	21.96	0.02	0.01	0.02	0.31	0.02	0.39	0.05	0.76	0.37	150.4	61.3	1.8
1999Q3	7.28	0.07	0.31	111.01	0.28	22.28	0.02	0.01	0.02	0.30	0.02	0.40	0.05	0.80	0.39	143.2	58.4	1.8
1999Q4	6.77	0.08	0.32	107.01	0.28	22.33	0.02	0.01	0.02	0.31	0.02	0.42	0.05	0.84	0.40	138.9	56.6	1.8
2000Q1	6.74	0.08	0.31	110.37	0.27	21.04	0.02	0.01	0.02	0.30	0.02	0.41	0.05	0.80	0.39	140.8	57.4	1.8
2000Q2	6.64	0.08	0.31	123.26	0.27	20.63	0.02	0.01	0.02	0.29	0.02	0.41	0.04	0.82	0.39	153.2	62.5	1.8
2000Q3	6.58	0.07	0.30	130.51	0.26	20.59	0.02	0.01	0.02	0.29	0.02	0.42	0.04	0.89	0.41	160.4	65.4	1.8
2000Q4	6.63	0.07	0.30	141.56	0.26	21.42	0.02	0.01	0.02	0.28	0.02	0.43	0.04	0.98	0.43	172.5	70.3	1.8
2001Q1	7.05	0.07	0.30	152.21	0.26	23.59	0.02	0.01	0.02	0.28	0.02	0.43	0.04	1.00	0.43	185.7	75.7	1.9
2001Q2	7.07	0.07	0.29	173.53	0.25	23.66	0.02	0.01	0.02	0.27	0.02	0.42	0.04	1.00	0.44	207.1	84.4	1.9
2001Q3	7.14	0.07	0.30	156.99	0.26	24.06	0.02	0.01	0.02	0.27	0.02	0.45	0.04	1.06	0.44	191.2	77.9	1.9
2001Q4	7.08	0.07	0.29	170.98	0.26	23.48	0.02	0.01	0.02	0.26	0.02	0.45	0.04	1.04	0.43	204.5	83.3	1.9
2002Q1	7.52	0.07	0.30	174.37	0.25	24.17	0.02	0.01	0.02	0.26	0.02	0.45	0.04	1.03	0.42	209.0	85.2	1.9
2002Q2	7.33	0.07	0.30	159.21	0.25	23.81	0.02	0.01	0.02	0.26	0.02	0.46	0.04	1.04	0.42	193.3	78.8	1.9
2002Q3	7.05	0.08	0.31	163.98	0.26	23.21	0.02	0.01	0.02	0.27	0.02	0.48	0.04	1.10	0.42	197.3	80.4	1.9
2002Q4	7.22	0.08	0.31	169.13	0.26	23.60	0.02	0.01	0.02	0.26	0.02	0.48	0.04	1.13	0.44	203.0	82.8	1.9
2003Q1	7.02	0.08	0.31	171.87	0.26	23.91	0.02	0.01	0.02	0.27	0.02	0.48	0.04	1.18	0.44	205.9	83.9	1.9
2003Q2	7.02	0.08	0.31	163.90	0.26	24.16	0.02	0.01	0.02	0.26	0.02	0.48	0.04	1.16	0.43	198.2	80.8	1.9
2003Q3	6.93	0.08	0.31	163.76	0.26	23.44	0.02	0.01	0.02	0.26	0.02	0.47	0.04	1.20	0.42	197.2	80.4	1.9
2003Q4	6.49	0.08	0.32	170.35	0.27	24.11	0.02	0.01	0.01	0.26	0.02	0.48	0.04	1.24	0.41	204.1	83.2	1.9

PT	JP	US	MAL	INA	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	THAI	REER	INDEX	LN
Weight	*0.10*	*0.14*	*0.15*	*0.04*	*0.07*	*0.04*	*0.02*	*0.02*	*0.03*	*0.06*	*0.02*	*0.02*	*0.02*	*0.04*	*0.02*			
2004Q1	6.43	0.08	0.32	174.29	0.28	24.45	0.02	0.01	0.01	0.26	0.03	0.48	0.04	1.28	0.41	208.4	84.9	1.9
2004Q2	6.54	0.08	0.32	187.29	0.29	24.24	0.02	0.01	0.01	0.26	0.03	0.48	0.04	1.29	0.43	221.3	90.2	2.0
2004Q3	6.51	0.08	0.32	191.27	0.31	24.20	0.02	0.01	0.01	0.26	0.03	0.50	0.04	1.33	0.44	225.3	91.8	2.0
2004Q4	6.50	0.08	0.33	199.70	0.33	23.61	0.02	0.01	0.01	0.27	0.03	0.50	0.05	1.40	0.44	233.3	95.1	2.0
2005Q1	6.49	0.09	0.34	212.55	0.34	22.79	0.02	0.01	0.01	0.28	0.03	0.50	0.05	1.42	0.43	245.3	100.0	2.0
2005Q2	6.57	0.09	0.34	219.37	0.34	22.20	0.02	0.01	0.01	0.27	0.03	0.49	0.05	1.40	0.45	251.6	102.6	2.0
2005Q3	6.67	0.08	0.33	229.65	0.33	22.41	0.02	0.01	0.01	0.27	0.03	0.50	0.04	1.44	0.47	262.3	106.9	2.0
2005Q4	6.93	0.08	0.33	250.07	0.33	22.26	0.02	0.01	0.02	0.26	0.03	0.52	0.04	1.41	0.46	282.8	115.3	2.1
2006Q1	7.17	0.09	0.34	246.30	0.35	22.00	0.02	0.01	0.02	0.28	0.03	0.53	0.05	1.42	0.46	279.1	113.7	2.1
2006Q2	7.22	0.09	0.35	249.28	0.36	22.05	0.02	0.01	0.02	0.28	0.03	0.56	0.05	1.48	0.47	282.3	115.1	2.1
2006Q3	7.37	0.09	0.35	253.45	0.36	22.42	0.02	0.01	0.02	0.29	0.03	0.59	0.05	1.48	0.47	287.0	117.0	2.1
2006Q4	7.52	0.09	0.35	260.65	0.37	22.17	0.02	0.01	0.02	0.29	0.03	0.59	0.05	1.45	0.46	294.1	119.9	2.1
2007Q1	7.74	0.10	0.35	271.87	0.38	22.83	0.02	0.01	0.02	0.30	0.03	0.59	0.05	1.45	0.45	306.2	124.8	2.1
2007Q2	7.86	0.10	0.34	268.81	0.39	22.81	0.02	0.01	0.02	0.30	0.03	0.56	0.05	1.40	0.45	303.2	123.6	2.1
2007Q3	7.56	0.10	0.34	276.82	0.40	22.59	0.02	0.01	0.01	0.30	0.03	0.56	0.05	1.37	0.43	310.6	126.6	2.1
2007Q4	7.47	0.10	0.34	289.27	0.43	23.15	0.02	0.01	0.01	0.31	0.04	0.56	0.05	1.33	0.45	323.6	131.9	2.1

3.B.5 THAILAND

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	INA	REER	INDEX	LN
Weight	*0.19*	*0.13*	*0.07*	*0.05*	*0.06*	*0.03*	*0.02*	*0.02*	*0.03*	*0.03*	*0.02*	*0.01*	*0.02*	*0.02*	*0.01*			
1988Q1	1.68	0.01	0.01	0.01	0.00	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.45	0.01	2.9	44.1	3.8
1988Q2	1.64	0.01	0.01	0.01	0.00	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.46	0.01	2.9	43.3	3.8
1988Q3	1.71	0.01	0.01	0.01	0.00	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.46	0.01	2.9	44.2	3.8
1988Q4	1.62	0.01	0.01	0.01	0.00	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.47	0.01	2.8	42.7	3.8
1989Q1	1.62	0.01	0.01	0.01	0.00	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.48	0.01	2.8	42.5	3.7
1989Q2	1.74	0.01	0.01	0.01	0.00	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.49	0.01	2.9	44.2	3.8
1989Q3	1.74	0.01	0.01	0.01	0.00	0.62	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.48	0.01	2.9	43.8	3.8
1989Q4	1.75	0.01	0.01	0.01	0.00	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.48	0.01	2.9	44.1	3.8
1990Q1	1.80	0.01	0.01	0.01	0.00	0.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.49	0.01	3.0	45.4	3.8
1990Q2	1.87	0.01	0.01	0.01	0.00	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.50	0.01	3.1	47.0	3.9
1990Q3	1.76	0.01	0.01	0.01	0.00	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.53	0.01	3.0	46.2	3.8
1990Q4	1.60	0.01	0.01	0.01	0.00	0.70	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.54	0.01	2.9	43.9	3.8
1991Q1	1.63	0.01	0.01	0.01	0.00	0.73	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.55	0.01	3.0	44.9	3.8
1991Q2	1.64	0.01	0.01	0.01	0.00	0.72	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.55	0.01	3.0	45.0	3.8
1991Q3	1.61	0.01	0.01	0.01	0.00	0.73	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.57	0.01	3.0	45.1	3.8
1991Q4	1.53	0.01	0.01	0.01	0.00	0.76	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.59	0.01	2.9	44.5	3.8
1992Q1	1.51	0.01	0.01	0.01	0.00	0.79	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.60	0.01	3.0	44.8	3.8
1992Q2	1.53	0.01	0.01	0.01	0.00	0.80	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.61	0.01	3.0	45.4	3.8
1992Q3	1.45	0.01	0.01	0.01	0.00	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.61	0.01	2.9	44.5	3.8
1992Q4	1.43	0.01	0.01	0.01	0.00	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.62	0.01	2.9	44.2	3.8

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	INA	REER	INDEX	LN
Weight	*0.19*	*0.13*	*0.07*	*0.05*	*0.06*	*0.03*	*0.02*	*0.02*	*0.03*	*0.03*	*0.02*	*0.01*	*0.02*	*0.02*	*0.01*			
1993Q1	1.40	0.01	0.01	0.01	0.00	0.82	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.65	0.01	2.9	44.5	3.8
1993Q2	1.28	0.01	0.01	0.01	0.00	0.84	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.67	0.01	2.9	43.2	3.8
1993Q3	1.21	0.01	0.01	0.01	0.00	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.67	0.01	2.8	42.3	3.7
1993Q4	1.22	0.01	0.01	0.01	0.00	0.84	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.68	0.01	2.8	42.6	3.8
1994Q1	1.20	0.01	0.01	0.01	0.01	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.70	0.01	2.8	42.8	3.8
1994Q2	1.15	0.01	0.01	0.01	0.01	0.86	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.71	0.01	2.8	42.2	3.7
1994Q3	1.09	0.01	0.01	0.01	0.01	0.86	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.73	0.01	2.7	41.7	3.7
1994Q4	1.09	0.01	0.01	0.01	0.01	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.74	0.01	2.7	41.6	3.7
1995Q1	1.05	0.01	0.00	0.01	0.01	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.76	0.01	2.7	41.4	3.7
1995Q2	0.91	0.01	0.00	0.01	0.01	0.83	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.79	0.01	2.6	39.4	3.7
1995Q3	0.98	0.01	0.00	0.01	0.02	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.78	0.01	2.7	40.2	3.7
1995Q4	1.03	0.01	0.00	0.01	0.02	0.79	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.78	0.01	2.7	40.7	3.7
1996Q1	1.05	0.01	0.00	0.01	0.02	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.82	0.01	2.8	41.9	3.7
1996Q2	1.07	0.01	0.00	0.01	0.02	0.82	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.82	0.01	2.8	42.2	3.7
1996Q3	1.07	0.01	0.00	0.01	0.02	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.82	0.01	2.8	42.6	3.8
1996Q4	1.09	0.01	0.00	0.01	0.02	0.85	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.81	0.01	2.8	42.9	3.8
1997Q1	1.14	0.01	0.00	0.00	0.02	0.88	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.83	0.01	2.9	44.4	3.8
1997Q2	1.13	0.01	0.00	0.00	0.02	0.90	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.84	0.01	3.0	44.8	3.8
1997Q3	0.85	0.00	0.00	0.00	0.02	0.70	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.74	0.01	2.4	35.8	3.6
1997Q4	0.72	0.00	0.00	0.00	0.01	0.72	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.88	0.01	2.4	35.9	3.6
1998Q1	0.62	0.00	0.00	0.00	0.01	0.89	0.00	0.00	0.00	0.01	0.00	0.01	0.00	2.09	0.01	3.7	55.3	4.0
1998Q2	0.75	0.00	0.00	0.00	0.01	0.89	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.13	0.01	4.8	73.2	4.3
1998Q3	0.75	0.00	0.00	0.00	0.01	0.82	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.29	0.01	5.9	89.8	4.5
1998Q4	0.72	0.00	0.00	0.01	0.01	0.89	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.24	0.01	4.9	74.6	4.3

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	INA	REER	INDEX	LN
Weight	*0.19*	*0.13*	*0.07*	*0.05*	*0.06*	*0.03*	*0.02*	*0.02*	*0.03*	*0.03*	*0.02*	*0.01*	*0.02*	*0.02*	*0.01*			
1999Q1	0.70	0.00	0.00	0.01	0.01	0.83	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.75	0.01	5.3	81.0	4.4
1999Q2	0.73	0.00	0.00	0.01	0.01	0.83	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.38	0.01	5.0	75.9	4.3
1999Q3	0.66	0.00	0.00	0.00	0.01	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.04	0.01	4.6	69.3	4.2
1999Q4	0.60	0.00	0.00	0.00	0.01	0.79	0.00	0.00	0.00	0.01	0.00	0.01	0.00	2.85	0.01	4.3	65.1	4.2
2000Q1	0.62	0.00	0.00	0.01	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.07	0.01	4.5	68.6	4.2
2000Q2	0.60	0.00	0.00	0.00	0.01	0.75	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.39	0.01	4.8	72.8	4.3
2000Q3	0.57	0.00	0.00	0.00	0.01	0.71	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.41	0.01	4.7	71.9	4.3
2000Q4	0.55	0.00	0.00	0.00	0.01	0.71	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.53	0.01	4.8	73.4	4.3
2001Q1	0.58	0.00	0.00	0.00	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.81	0.01	5.2	79.5	4.4
2001Q2	0.57	0.00	0.00	0.00	0.01	0.77	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.24	0.01	5.6	85.5	4.4
2001Q3	0.57	0.00	0.00	0.00	0.01	0.77	0.00	0.00	0.00	0.01	0.00	0.01	0.00	3.80	0.01	5.2	78.9	4.4
2001Q4	0.59	0.00	0.00	0.00	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.31	0.02	5.7	87.1	4.5
2002Q1	0.64	0.00	0.00	0.00	0.01	0.82	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.46	0.02	6.0	90.5	4.5
2002Q2	0.62	0.00	0.00	0.00	0.01	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.08	0.02	5.6	84.4	4.4
2002Q3	0.59	0.00	0.00	0.00	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.16	0.02	5.6	84.8	4.4
2002Q4	0.59	0.00	0.00	0.00	0.01	0.77	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.16	0.02	5.6	84.6	4.4
2003Q1	0.57	0.00	0.00	0.00	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.22	0.02	5.6	85.3	4.4
2003Q2	0.58	0.00	0.00	0.00	0.01	0.79	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.06	0.02	5.5	83.2	4.4
2003Q3	0.58	0.00	0.00	0.00	0.01	0.79	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.16	0.02	5.6	84.8	4.4
2003Q4	0.56	0.00	0.00	0.00	0.01	0.83	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.42	0.02	5.9	89.0	4.5

PT	JP	US	SING	MAL	CHN	KOR	AUS	NED	GER	HK	UK	IND	SA	PHIL	INA	REER	INDEX	LN
Weight	*0.19*	*0.13*	*0.07*	*0.05*	*0.06*	*0.03*	*0.02*	*0.02*	*0.03*	*0.03*	*0.02*	*0.01*	*0.02*	*0.02*	*0.01*			
2004Q1	0.55	0.00	0.00	0.00	0.01	0.84	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.51	0.02	6.0	90.4	4.5
2004Q2	0.54	0.00	0.00	0.00	0.01	0.81	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.70	0.02	6.1	92.7	4.5
2004Q3	0.53	0.00	0.00	0.00	0.01	0.78	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.67	0.02	6.0	91.7	4.5
2004Q4	0.52	0.00	0.00	0.00	0.01	0.76	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4.84	0.02	6.2	93.8	4.5
2005Q1	0.53	0.00	0.00	0.00	0.01	0.75	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.25	0.02	6.6	100.0	4.6
2005Q2	0.52	0.00	0.00	0.00	0.01	0.70	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.20	0.02	6.5	98.2	4.6
2005Q3	0.50	0.00	0.00	0.00	0.01	0.68	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.23	0.02	6.5	98.1	4.6
2005Q4	0.53	0.00	0.00	0.00	0.01	0.68	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.79	0.02	7.1	107.1	4.7
2006Q1	0.55	0.00	0.00	0.00	0.01	0.68	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.70	0.02	7.0	106.0	4.7
2006Q2	0.54	0.00	0.00	0.00	0.01	0.67	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.68	0.02	7.0	105.6	4.7
2006Q3	0.56	0.00	0.00	0.00	0.01	0.68	0.00	0.00	0.00	0.01	0.00	0.01	0.00	5.81	0.02	7.1	107.9	4.7
2006Q4	0.58	0.00	0.00	0.00	0.01	0.69	0.00	0.00	0.00	0.01	0.00	0.01	0.00	6.09	0.02	7.4	112.6	4.7
2007Q1	0.60	0.00	0.00	0.00	0.02	0.72	0.00	0.00	0.00	0.01	0.00	0.01	0.00	6.42	0.02	7.8	118.5	4.8
2007Q2	0.62	0.00	0.00	0.00	0.02	0.72	0.00	0.00	0.00	0.01	0.00	0.01	0.00	6.40	0.02	7.8	118.4	4.8
2007Q3	0.62	0.00	0.00	0.00	0.02	0.74	0.00	0.00	0.00	0.01	0.00	0.01	0.00	6.82	0.02	8.2	125.0	4.8
2007Q4	0.59	0.00	0.00	0.00	0.02	0.73	0.00	0.00	0.00	0.01	0.00	0.01	0.00	6.88	0.02	8.3	125.3	4.8

4. MCI CALCULATION

Quarterly	Indonesia			Malaysia			Philippines		
	R	E	MCI	R	E	MCI	R	E	MCI
Weight	*1.0*	*10.4*		*1.0*	*0.5*		*1.0*	*0.4*	
1988Q1	11.9	7.5	86.5	2.2	3.5	3.9	9.4	5.3	11.7
1988Q2	13.0	7.4	87.2	2.8	3.5	4.4	11.9	5.2	14.1
1988Q3	13.0	7.4	87.2	1.4	3.4	3.0	11.6	5.2	13.8
1988Q4	16.1	7.4	89.6	2.8	3.4	4.4	15.4	5.2	17.6
1989Q1	12.1	7.3	85.4	4.0	3.4	5.6	10.6	5.1	12.8
1989Q2	9.5	7.3	83.0	4.9	3.4	6.5	13.3	5.2	15.5
1989Q3	11.6	7.4	85.2	3.8	3.5	5.4	12.9	5.1	15.1
1989Q4	10.8	7.3	84.3	3.8	3.5	5.4	10.7	5.1	12.9
1990Q1	8.5	7.4	82.2	4.0	3.5	5.6	10.0	5.1	12.2
1990Q2	9.9	7.4	83.8	5.0	3.5	6.7	12.4	5.1	14.6
1990Q3	11.7	7.3	84.9	6.4	3.5	8.0	11.1	5.0	13.2
1990Q4	16.1	7.2	88.6	5.2	3.5	6.8	13.7	4.8	15.8
1991Q1	20.5	7.3	93.0	5.1	3.5	6.7	5.3	4.8	7.3
1991Q2	11.1	7.3	83.6	5.4	3.5	7.0	10.6	4.8	12.7
1991Q3	8.5	7.2	80.7	7.1	3.5	8.7	16.2	4.8	18.3
1991Q4	10.2	7.2	82.0	6.9	3.5	8.5	15.4	4.8	17.4
1992Q1	11.4	7.2	83.1	6.4	3.6	8.0	13.0	4.8	15.1
1992Q2	10.2	7.2	82.0	6.2	3.6	7.9	13.6	4.8	15.7
1992Q3	10.8	7.1	82.2	6.9	3.6	8.6	15.6	4.8	17.7
1992Q4	10.6	7.1	81.8	7.3	3.6	8.9	16.4	4.8	18.5
1993Q1	5.8	7.1	76.5	6.7	3.6	8.4	11.1	4.8	13.2
1993Q2	8.0	7.0	78.2	6.4	3.6	8.1	9.4	4.7	11.4
1993Q3	5.5	7.0	75.5	6.3	3.6	8.0	11.2	4.6	13.2
1993Q4	5.4	7.0	75.4	6.3	3.6	7.9	16.0	4.6	18.0
1994Q1	4.1	7.0	73.8	1.7	3.5	3.3	12.9	4.6	14.9
1994Q2	7.6	6.9	77.0	3.9	3.6	5.5	17.7	4.6	19.7
1994Q3	8.3	6.9	77.3	3.2	3.6	4.8	9.1	4.6	11.1
1994Q4	9.6	6.9	78.2	3.6	3.6	5.3	9.9	4.7	11.9
1995Q1	10.0	6.8	78.1	3.8	3.6	5.5	10.7	4.6	12.7
1995Q2	12.2	6.7	79.4	4.9	3.6	6.6	12.4	4.6	14.4
1995Q3	11.7	6.7	79.2	5.0	3.6	6.6	4.9	4.6	6.8
1995Q4	12.1	6.7	79.6	5.4	3.6	7.1	9.8	4.6	11.8
1996Q1	8.5	6.7	75.8	5.7	3.6	7.3	10.4	4.6	12.4
1996Q2	14.0	6.7	81.3	6.0	3.7	7.7	12.4	4.6	14.4
1996Q3	14.4	6.8	82.0	6.3	3.7	8.0	10.5	4.6	12.5
1996Q4	12.7	6.8	80.5	6.4	3.7	8.1	11.2	4.6	13.1

Quarterly	Indonesia			Malaysia			Philippines		
	R	E	MCI	R	E	MCI	R	E	MCI
Weight	*1.0*	*10.4*		*1.0*	*0.5*		*1.0*	*0.4*	

1997Q1	9.5	6.8	77.5	6.0	3.7	7.7	8.2	4.7	10.2
1997Q2	12.7	6.8	80.7	8.0	3.8	9.8	12.1	4.7	14.1
1997Q3	42.6	6.7	109.2	7.3	3.7	9.1	17.8	4.6	19.8
1997Q4	37.5	6.4	101.9	6.4	3.7	8.1	19.5	4.6	21.5
1998Q1	38.1	5.7	94.9	7.0	4.2	8.9	10.4	4.9	12.5
1998Q2	48.0	5.3	101.3	8.4	4.3	10.5	10.3	5.0	12.5
1998Q3	54.1	5.0	103.7	7.9	4.5	10.0	12.7	5.1	14.9
1998Q4	48.0	5.3	100.9	5.2	4.3	7.1	12.0	4.9	14.1
1999Q1	35.2	5.1	86.0	4.0	4.3	6.0	10.4	4.9	12.5
1999Q2	29.6	5.2	81.6	2.9	4.3	4.9	10.2	4.9	12.3
1999Q3	15.5	5.3	68.0	2.5	4.2	4.4	7.9	4.8	10.0
1999Q4	12.3	5.3	65.1	2.1	4.2	4.0	7.8	4.7	9.8
2000Q1	7.0	5.2	59.0	1.7	4.2	3.7	12.2	4.8	14.3
2000Q2	9.2	5.1	59.9	2.5	4.3	4.5	8.7	4.8	10.8
2000Q3	8.3	5.0	58.5	2.6	4.3	4.6	8.8	4.8	10.8
2000Q4	8.3	5.0	57.9	2.1	4.4	4.2	12.1	4.7	14.1
2001Q1	12.6	5.0	62.3	2.1	4.5	4.2	9.1	4.8	11.1
2001Q2	11.0	4.8	59.5	2.7	4.6	4.9	8.7	4.8	10.8
2001Q3	11.6	5.0	61.2	2.8	4.5	4.9	7.8	4.7	9.9
2001Q4	12.8	4.9	61.4	2.3	4.6	4.4	8.3	4.8	10.4
2002Q1	12.4	4.9	61.1	1.8	4.6	3.9	6.8	4.8	8.8
2002Q2	14.1	4.9	63.5	2.2	4.5	4.3	6.5	4.8	8.5
2002Q3	10.9	4.9	59.9	2.7	4.5	4.7	6.2	4.7	8.2
2002Q4	6.8	4.9	55.6	2.6	4.5	4.7	6.7	4.7	8.8
2003Q1	9.2	4.9	57.9	2.3	4.5	4.4	5.7	4.7	7.7
2003Q2	8.1	4.9	57.3	2.6	4.5	4.7	6.3	4.7	8.3
2003Q3	5.1	4.9	54.1	2.6	4.5	4.6	5.9	4.6	7.8
2003Q4	3.2	4.9	51.8	2.7	4.5	4.8	6.3	4.6	8.3
2004Q1	4.5	4.8	53.0	2.1	4.5	4.2	5.5	4.6	7.5
2004Q2	2.5	4.8	50.3	2.3	4.6	4.4	5.4	4.6	7.4
2004Q3	3.5	4.8	51.1	2.2	4.6	4.3	4.1	4.6	6.0
2004Q4	4.7	4.7	51.7	1.7	4.6	3.8	5.3	4.6	7.3
2005Q1	2.5	4.6	48.6	2.2	4.6	4.3	5.3	4.6	7.3
2005Q2	4.5	4.6	50.1	1.9	4.6	4.0	5.8	4.6	7.8
2005Q3	5.1	4.5	50.4	1.8	4.7	3.9	5.2	4.6	7.2
2005Q4	2.0	4.4	46.4	1.9	4.8	4.1	6.2	4.7	8.3

Quarterly	Indonesia			Malaysia			Philippines		
	R	E	MCI	R	E	MCI	R	E	MCI
Weight	*1.0*	*10.4*		*1.0*	*0.5*		*1.0*	*0.4*	

2006Q1	7.7	4.5	52.3	2.0	4.7	4.2	5.8	4.7	7.8
2006Q2	9.7	4.5	54.3	2.2	4.7	4.4	6.9	4.7	8.9
2006Q3	9.1	4.5	53.6	3.1	4.7	5.3	6.8	4.7	8.8
2006Q4	4.3	4.4	48.5	3.1	4.7	5.3	7.2	4.7	9.2
2007Q1	3.4	4.4	47.5	2.8	4.8	5.0	7.3	4.8	9.4
2007Q2	6.6	4.4	50.8	3.4	4.8	5.7	6.9	4.8	9.0
2007Q3	4.3	4.4	48.1	2.8	4.8	5.0	5.3	4.8	7.4
2007Q4	3.5	4.3	47.0	2.7	4.9	5.0	5.3	4.9	7.4

Quarterly	Singapore			Thailand		
	R	E	MCI	R	E	MCI
Weight	*1.0*	*0.1*		*1.0*	*3.7*	
1988Q1	2.7	2.2	2.9	6.5	3.8	20.3
1988Q2	3.7	2.2	3.9	6.4	3.8	20.2
1988Q3	4.2	2.2	4.4	8.2	3.8	22.1
1988Q4	5.1	2.2	5.3	9.9	3.8	23.6
1989Q1	5.1	2.3	5.3	9.1	3.7	22.8
1989Q2	4.1	2.3	4.3	8.7	3.8	22.6
1989Q3	4.3	2.3	4.5	8.0	3.8	21.8
1989Q4	4.7	2.3	4.9	10.3	3.8	24.1
1990Q1	5.5	2.4	5.7	9.5	3.8	23.4
1990Q2	6.9	2.4	7.1	10.2	3.9	24.2
1990Q3	6.2	2.5	6.4	13.8	3.8	27.8
1990Q4	4.2	2.5	4.4	12.0	3.8	25.8
1991Q1	3.9	2.5	4.1	13.2	3.8	27.0
1991Q2	4.8	2.5	5.0	10.7	3.8	24.6
1991Q3	4.8	2.6	5.0	9.8	3.8	23.7
1991Q4	3.0	2.6	3.3	6.2	3.8	20.0
1992Q1	3.0	2.6	3.2	5.2	3.8	19.1
1992Q2	2.3	2.7	2.6	6.2	3.8	20.1
1992Q3	1.7	2.7	1.9	5.8	3.8	19.6
1992Q4	1.7	2.7	1.9	7.4	3.8	21.2
1993Q1	1.3	2.7	1.5	7.8	3.8	21.7
1993Q2	2.3	2.7	2.5	7.2	3.8	21.0
1993Q3	2.2	2.7	2.4	4.8	3.7	18.5
1993Q4	1.9	2.7	2.1	2.5	3.8	16.2
1994Q1	2.4	2.7	2.6	6.1	3.8	19.8
1994Q2	2.7	2.7	3.0	6.4	3.7	20.0
1994Q3	2.9	2.8	3.2	5.7	3.7	19.3
1994Q4	3.5	2.8	3.7	5.7	3.7	19.4
1995Q1	2.8	2.8	3.1	12.4	3.7	26.0
1995Q2	1.2	2.9	1.4	9.0	3.7	22.4
1995Q3	2.8	2.9	3.0	7.3	3.7	20.7
1995Q4	2.6	2.9	2.9	8.3	3.7	21.8
1996Q1	1.9	2.9	2.2	6.3	3.7	19.9
1996Q2	2.1	3.0	2.4	6.1	3.7	19.8
1996Q3	3.1	3.0	3.4	10.3	3.8	24.0
1996Q4	3.0	3.0	3.2	9.7	3.8	23.4
1997Q1	2.6	3.0	2.9	10.4	3.8	24.2

Quarterly	Singapore			Thailand		
	R	E	MCI	R	E	MCI
Weight	*1.0*	*0.1*		*1.0*	*3.7*	
1997Q2	3.2	3.0	3.5	11.0	3.8	24.9
1997Q3	3.3	3.1	3.6	16.5	3.6	29.5
1997Q4	6.1	3.3	6.4	17.6	3.6	30.6
1998Q1	6.9	4.0	7.3	18.4	4.0	33.0
1998Q2	6.6	4.2	7.0	15.8	4.3	31.5
1998Q3	5.2	4.4	5.6	8.8	4.5	25.2
1998Q4	2.7	4.1	3.1	4.3	4.3	20.1
1999Q1	1.7	4.2	2.1	2.7	4.4	18.8
1999Q2	1.4	4.1	1.8	2.2	4.3	18.0
1999Q3	2.0	4.1	2.3	1.2	4.2	16.7
1999Q4	2.5	4.0	2.9	0.9	4.2	16.2
2000Q1	1.6	4.0	2.0	1.2	4.2	16.7
2000Q2	2.7	4.1	3.1	2.0	4.3	17.7
2000Q3	1.7	4.2	2.1	1.1	4.3	16.8
2000Q4	2.3	4.3	2.6	1.7	4.3	17.4
2001Q1	1.9	4.3	2.3	1.1	4.4	17.1
2001Q2	2.4	4.4	2.8	0.7	4.4	17.0
2001Q3	2.2	4.4	2.6	2.4	4.4	18.4
2001Q4	1.7	4.4	2.1	2.7	4.5	19.0
2002Q1	1.3	4.4	1.7	1.7	4.5	18.2
2002Q2	0.6	4.4	0.9	0.9	4.4	17.1
2002Q3	1.0	4.4	1.4	1.8	4.4	18.0
2002Q4	0.9	4.4	1.3	1.1	4.4	17.3
2003Q1	0.4	4.4	0.8	0.8	4.4	17.1
2003Q2	0.8	4.4	1.2	1.1	4.4	17.3
2003Q3	0.5	4.4	0.9	0.9	4.4	17.1
2003Q4	0.6	4.4	1.0	0.8	4.5	17.2
2004Q1	0.8	4.4	1.2	0.1	4.5	16.5
2004Q2	0.3	4.5	0.7	0.2	4.5	16.7
2004Q3	0.9	4.5	1.3	0.4	4.5	16.9
2004Q4	1.4	4.6	1.9	1.5	4.5	18.1
2005Q1	2.4	4.6	2.8	1.2	4.6	18.0
2005Q2	1.8	4.6	2.3	0.2	4.6	16.9
2005Q3	1.4	4.7	1.8	0.1	4.6	16.8
2005Q4	2.4	4.7	2.8	3.1	4.7	20.2

Quarterly	Singapore			Thailand		
	R	E	MCI	R	E	MCI
Weight	*1.0*	*0.1*		*1.0*	*3.7*	
2006Q1	3.6	4.7	4.1	3.8	4.7	20.8
2006Q2	3.4	4.7	3.8	2.2	4.7	19.2
2006Q3	3.2	4.8	3.6	4.6	4.7	21.7
2006Q4	3.1	4.8	3.5	4.8	4.7	22.0
2007Q1	3.5	4.8	3.9	5.1	4.8	22.5
2007Q2	2.0	4.8	2.4	2.0	4.8	19.4
2007Q3	0.6	4.8	1.0	3.2	4.8	20.8
2007Q4	0.8	4.9	1.2	1.8	4.8	19.4

6. FCI CALCULATION

Quarterly	Indonesia					Malaysia				
	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*10.9*	*1.3*	*0.1*		*1.0*	*3.5*	*0.5*	*3.0*	
1988Q1	11.9	7.5	11.5	2.6	107.4	2.2	3.5	11.1	5.1	35.6
1988Q2	13.0	7.4	11.6	2.8	108.2	2.8	3.5	11.1	5.4	36.8
1988Q3	13.0	7.4	11.6	3.0	108.3	1.4	3.4	11.1	5.3	35.2
1988Q4	16.1	7.4	11.7	3.8	110.9	2.8	3.4	11.2	5.4	36.6
1989Q1	12.1	7.3	11.7	3.9	106.7	4.0	3.4	11.2	5.5	38.2
1989Q2	9.5	7.3	11.8	3.9	104.4	4.9	3.4	11.2	5.6	39.5
1989Q3	11.6	7.4	11.9	4.3	106.8	3.8	3.5	11.2	5.7	38.8
1989Q4	10.8	7.3	11.9	4.2	106.0	3.8	3.5	11.2	5.9	39.3
1990Q1	8.5	7.4	11.9	4.6	103.9	4.0	3.5	11.2	5.9	39.7
1990Q2	9.9	7.4	11.9	4.6	105.5	5.0	3.5	11.2	5.9	41.0
1990Q3	11.7	7.3	12.1	4.4	106.7	6.4	3.5	11.3	5.7	41.6
1990Q4	16.1	7.2	12.2	4.3	110.5	5.2	3.5	11.3	5.8	40.6
1991Q1	20.5	7.3	12.3	4.3	115.1	5.1	3.5	10.7	6.0	40.7
1991Q2	11.1	7.3	12.5	4.1	105.8	5.4	3.5	10.7	6.0	41.2
1991Q3	8.5	7.2	12.5	3.8	102.9	7.1	3.5	10.7	5.9	42.5
1991Q4	10.2	7.2	12.5	3.9	104.1	6.9	3.5	10.8	5.9	42.5
1992Q1	11.4	7.2	12.5	4.0	105.3	6.4	3.6	10.8	6.0	42.4
1992Q2	10.2	7.2	12.5	4.1	104.2	6.2	3.6	10.8	6.0	42.5
1992Q3	10.8	7.1	12.5	4.1	104.4	6.9	3.6	10.9	6.0	43.3
1992Q4	10.6	7.1	12.5	4.0	104.0	7.3	3.6	10.9	6.1	43.8
1993Q1	5.8	7.1	12.4	4.2	98.5	6.7	3.6	11.4	6.1	43.5
1993Q2	8.0	7.0	12.5	4.4	100.4	6.4	3.6	11.4	6.3	43.5
1993Q3	5.5	7.0	12.6	4.5	97.7	6.3	3.6	11.4	6.4	44.0
1993Q4	5.4	7.0	12.6	4.9	97.6	6.3	3.6	11.5	6.8	45.2
1994Q1	4.1	7.0	12.5	4.7	95.9	1.7	3.5	11.4	6.6	39.5
1994Q2	7.6	6.9	12.5	4.7	99.1	3.9	3.6	11.5	6.6	42.1
1994Q3	8.3	6.9	12.6	4.8	99.4	3.2	3.6	11.5	6.7	41.8
1994Q4	9.6	6.9	12.6	4.7	100.4	3.6	3.6	11.5	6.6	41.8
1995Q1	10.0	6.8	12.6	4.7	100.3	3.8	3.6	11.5	6.6	42.0
1995Q2	12.2	6.7	12.6	4.8	101.5	4.9	3.6	11.5	6.7	43.3
1995Q3	11.7	6.7	12.7	4.9	101.3	5.0	3.6	11.6	6.7	43.4
1995Q4	12.1	6.7	12.7	4.9	101.8	5.4	3.6	11.6	6.7	43.9
1996Q1	8.5	6.7	12.7	5.1	98.1	5.7	3.6	11.7	6.8	44.8
1996Q2	14.0	6.7	12.7	5.1	103.6	6.0	3.7	11.8	6.8	45.2
1996Q3	14.4	6.8	12.8	5.1	104.4	6.3	3.7	11.8	6.8	45.6
1996Q4	12.7	6.8	12.8	5.2	102.8	6.4	3.7	11.8	6.9	46.1

Quarterly	Indonesia					Malaysia				
	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*10.9*	*1.3*	*0.1*		*1.0*	*3.5*	*0.5*	*3.0*	

1997Q1	9.5	6.8	12.8	5.3	99.9	6.0	3.7	11.9	6.9	45.8
1997Q2	12.7	6.8	12.8	5.4	103.1	8.0	3.8	12.0	6.8	47.6
1997Q3	42.6	6.7	12.8	5.1	131.5	7.3	3.7	12.0	6.5	46.0
1997Q4	37.5	6.4	12.9	4.8	124.1	6.4	3.7	12.1	6.2	44.2
1998Q1	38.1	5.7	12.9	5.3	116.5	7.0	4.2	12.1	6.4	47.1
1998Q2	48.0	5.3	12.9	5.3	122.7	8.4	4.3	12.2	6.0	47.9
1998Q3	54.1	5.0	12.9	5.0	124.8	7.9	4.5	12.1	5.8	47.3
1998Q4	48.0	5.3	12.5	5.4	121.8	5.2	4.3	12.0	6.2	45.0
1999Q1	35.2	5.1	11.9	5.4	106.0	4.0	4.3	11.8	6.1	43.6
1999Q2	29.6	5.2	11.9	5.9	101.8	2.9	4.3	11.8	6.6	43.7
1999Q3	15.5	5.3	11.4	5.7	87.5	2.5	4.2	11.8	6.4	42.5
1999Q4	12.3	5.3	11.7	5.9	85.0	2.1	4.2	11.8	6.6	42.5
2000Q1	7.0	5.2	11.4	5.8	78.5	1.7	4.2	11.8	6.8	42.8
2000Q2	9.2	5.1	11.5	5.7	79.4	2.5	4.3	11.8	6.6	43.4
2000Q3	8.3	5.0	11.9	5.5	78.4	2.6	4.3	11.8	6.5	43.2
2000Q4	8.3	5.0	12.0	5.5	77.8	2.1	4.4	11.8	6.4	42.9
2001Q1	12.6	5.0	12.0	5.5	82.3	2.1	4.5	11.8	6.4	43.0
2001Q2	11.0	4.8	11.9	5.6	79.3	2.7	4.6	11.8	6.3	43.8
2001Q3	11.6	5.0	11.9	5.6	81.1	2.8	4.5	11.8	6.3	43.7
2001Q4	12.8	4.9	11.8	5.6	81.1	2.3	4.6	11.9	6.5	43.8
2002Q1	12.4	4.9	11.8	5.8	80.8	1.8	4.6	11.8	6.6	43.7
2002Q2	14.1	4.9	11.6	5.9	83.1	2.2	4.5	11.8	6.5	43.6
2002Q3	10.9	4.9	11.7	5.7	79.5	2.7	4.5	11.9	6.4	43.7
2002Q4	6.8	4.9	11.7	5.8	75.2	2.6	4.5	11.9	6.4	43.8
2003Q1	9.2	4.9	11.7	5.7	77.4	2.3	4.5	11.9	6.4	43.5
2003Q2	8.1	4.9	11.8	6.0	77.0	2.6	4.5	11.9	6.5	43.9
2003Q3	5.1	4.9	11.8	6.1	73.8	2.6	4.5	11.9	6.5	44.1
2003Q4	3.2	4.9	11.8	6.3	71.5	2.7	4.5	11.9	6.6	44.5
2004Q1	4.5	4.8	11.8	6.4	72.7	2.1	4.5	11.9	6.8	44.3
2004Q2	2.5	4.8	11.8	6.4	70.0	2.3	4.6	12.0	6.7	44.5
2004Q3	3.5	4.8	11.8	6.5	70.8	2.2	4.6	12.0	6.7	44.6
2004Q4	4.7	4.7	11.8	6.7	71.3	1.7	4.6	12.0	6.8	44.2
2005Q1	2.5	4.6	11.8	6.9	68.2	2.2	4.6	12.0	6.7	44.7
2005Q2	4.5	4.6	11.8	6.9	69.7	1.9	4.6	12.0	6.8	44.6
2005Q3	5.1	4.5	11.8	6.9	69.9	1.8	4.7	12.0	6.8	44.8
2005Q4	2.0	4.4	11.8	7.1	66.0	1.9	4.8	12.0	6.8	45.2
2006Q1	7.7	4.5	11.8	7.2	71.8	2.0	4.7	12.0	6.8	45.2
2006Q2	9.7	4.5	11.8	7.2	73.8	2.2	4.7	12.0	6.8	45.4

Quarterly	Indonesia					Malaysia				
	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*10.9*	*1.3*	*0.1*		*1.0*	*3.5*	*0.5*	*3.0*	
2006Q3	9.1	4.5	11.8	7.4	73.1	3.1	4.7	12.0	6.9	46.5
2006Q4	4.3	4.4	11.7	7.6	67.9	3.1	4.7	12.0	7.0	47.0
2007Q1	3.4	4.4	11.7	7.6	67.0	2.8	4.8	12.0	7.2	47.2
2007Q2	6.6	4.4	11.8	7.8	70.4	3.4	4.8	12.0	7.2	48.1
2007Q3	4.3	4.4	11.8	7.9	67.6	2.8	4.8	12.1	7.2	47.6
2007Q4	3.5	4.3	11.8	8.0	66.5	2.7	4.9	12.1	7.3	47.9

Quarterly	Philippines					Singapore				
	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*0.6*	*0.5*	*0.8*		*1.0*	*1.0*	*4.0*	*2.1*	
1988Q1	9.4	5.3	10.3	5.3	21.6	2.7	2.2	9.9	6.4	57.5
1988Q2	11.9	5.2	10.2	5.4	24.1	3.7	2.2	9.9	6.5	59.1
1988Q3	11.6	5.2	10.1	5.3	23.6	4.2	2.2	9.9	6.4	59.5
1988Q4	15.4	5.2	10.2	5.5	27.6	5.1	2.2	10.0	6.5	60.6
1989Q1	10.6	5.1	10.1	5.6	22.9	5.1	2.3	9.9	6.6	60.9
1989Q2	13.3	5.2	10.1	5.7	25.6	4.1	2.3	9.9	6.8	60.0
1989Q3	12.9	5.1	10.1	5.9	25.4	4.3	2.3	10.0	6.8	60.5
1989Q4	10.7	5.1	10.1	5.9	23.2	4.7	2.3	10.0	6.8	61.2
1990Q1	10.0	5.1	10.1	5.9	22.5	5.5	2.4	10.1	6.9	62.4
1990Q2	12.4	5.1	10.2	5.7	24.7	6.9	2.4	10.1	6.9	63.8
1990Q3	11.1	5.0	10.1	5.3	23.0	6.2	2.5	10.0	6.6	62.3
1990Q4	13.7	4.8	10.2	5.5	25.7	4.2	2.5	10.1	6.7	60.7
1991Q1	5.3	4.8	10.1	6.1	17.7	3.9	2.5	10.2	6.9	61.3
1991Q2	10.6	4.8	10.2	6.1	23.1	4.8	2.5	10.2	6.9	62.3
1991Q3	16.2	4.8	10.2	6.0	28.6	4.8	2.6	10.2	6.8	62.1
1991Q4	15.4	4.8	10.1	6.2	27.9	3.0	2.6	10.3	6.9	61.0
1992Q1	13.0	4.8	10.0	6.2	25.5	3.0	2.6	10.3	6.9	60.9
1992Q2	13.6	4.8	9.9	6.5	26.3	2.3	2.7	10.3	7.0	60.6
1992Q3	15.6	4.8	9.8	6.5	28.2	1.7	2.7	10.3	6.9	59.8
1992Q4	16.4	4.8	9.9	6.4	29.0	1.7	2.7	10.4	7.0	60.4
1993Q1	11.1	4.8	9.8	6.5	23.7	1.3	2.7	10.4	7.0	60.1
1993Q2	9.4	4.7	9.9	6.6	22.1	2.3	2.7	10.5	7.1	61.5
1993Q3	11.2	4.6	9.8	6.9	24.1	2.2	2.7	10.5	7.3	61.8
1993Q4	16.0	4.6	10.1	7.4	29.4	1.9	2.7	10.5	7.5	62.0
1994Q1	12.9	4.6	9.9	7.2	26.1	2.4	2.7	10.5	7.3	62.0
1994Q2	17.7	4.6	10.0	7.2	30.9	2.7	2.7	10.5	7.4	62.7
1994Q3	9.1	4.6	10.7	7.3	22.7	2.9	2.8	10.5	7.5	63.1
1994Q4	9.9	4.7	10.8	7.3	23.5	3.5	2.8	10.6	7.4	63.9
1995Q1	10.7	4.6	10.7	7.2	24.2	2.8	2.8	10.6	7.4	63.2
1995Q2	12.4	4.6	10.8	7.3	26.0	1.2	2.9	10.6	7.4	61.8
1995Q3	4.9	4.6	10.8	7.3	18.5	2.8	2.9	10.7	7.4	63.8
1995Q4	9.8	4.6	11.0	7.3	23.5	2.6	2.9	10.7	7.5	63.9
1996Q1	10.4	4.6	11.1	7.5	24.3	1.9	2.9	10.8	7.6	63.7
1996Q2	12.4	4.6	11.0	7.6	26.3	2.1	3.0	10.9	7.5	64.1
1996Q3	10.5	4.6	11.1	7.6	24.5	3.1	3.0	10.9	7.5	65.1
1996Q4	11.2	4.6	11.1	7.6	25.2	3.0	3.0	10.9	7.5	65.2

Quarterly	Philippines					Singapore				
	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*0.6*	*0.5*	*0.8*		*1.0*	*1.0*	*4.0*	*2.1*	
1997Q1	8.2	4.7	11.2	7.6	22.3	2.6	3.0	11.0	7.5	65.0
1997Q2	12.1	4.7	11.3	7.5	26.1	3.2	3.0	11.0	7.5	65.8
1997Q3	17.8	4.6	11.3	7.2	31.6	3.3	3.1	11.0	7.5	65.9
1997Q4	19.5	4.6	11.4	7.1	33.3	6.1	3.3	11.1	7.3	68.7
1998Q1	10.4	4.9	11.4	7.3	24.5	6.9	4.0	11.1	7.3	70.3
1998Q2	10.3	5.0	11.4	7.1	24.3	6.6	4.2	11.1	6.9	69.5
1998Q3	12.7	5.1	11.4	6.8	26.5	5.2	4.4	11.1	6.8	68.1
1998Q4	12.0	4.9	11.3	7.3	26.0	2.7	4.1	11.1	7.2	66.1
1999Q1	10.4	4.9	11.1	7.3	24.3	1.7	4.2	11.1	7.3	65.2
1999Q2	10.2	4.9	11.1	7.5	24.3	1.4	4.1	11.1	7.6	65.6
1999Q3	7.9	4.8	11.0	7.4	21.8	2.0	4.1	11.0	7.6	65.7
1999Q4	7.8	4.7	11.0	7.4	21.7	2.5	4.0	11.3	7.8	67.6
2000Q1	12.2	4.8	11.0	7.1	25.9	1.6	4.0	11.2	7.6	66.3
2000Q2	8.7	4.8	11.0	7.0	22.4	2.7	4.1	11.2	7.6	67.4
2000Q3	8.8	4.8	11.0	7.0	22.4	1.7	4.2	11.2	7.6	66.1
2000Q4	12.1	4.7	11.0	7.1	25.7	2.3	4.3	11.2	7.5	66.9
2001Q1	9.1	4.8	11.0	7.0	22.7	1.9	4.3	11.2	7.4	66.4
2001Q2	8.7	4.8	11.0	7.0	22.3	2.4	4.4	11.2	7.4	67.1
2001Q3	7.8	4.7	11.0	6.8	21.2	2.2	4.4	11.2	7.2	66.0
2001Q4	8.3	4.8	10.9	6.9	21.7	1.7	4.4	11.2	7.4	66.1
2002Q1	6.8	4.8	10.9	7.0	20.3	1.3	4.4	11.3	7.5	66.1
2002Q2	6.5	4.8	10.8	6.9	19.9	0.6	4.4	11.2	7.3	64.8
2002Q3	6.2	4.7	10.8	6.8	19.5	1.0	4.4	11.3	7.2	65.4
2002Q4	6.7	4.7	10.8	6.7	20.0	0.9	4.4	11.3	7.2	65.3
2003Q1	5.7	4.7	10.8	6.8	18.9	0.4	4.4	11.2	7.1	64.3
2003Q2	6.3	4.7	10.8	6.9	19.7	0.8	4.4	11.2	7.2	65.0
2003Q3	5.9	4.6	10.8	7.0	19.3	0.5	4.4	11.2	7.4	64.7
2003Q4	6.3	4.6	10.8	7.1	19.8	0.6	4.4	11.2	7.4	65.0
2004Q1	5.5	4.6	10.8	7.1	19.0	0.8	4.4	11.2	7.5	65.5
2004Q2	5.4	4.6	10.8	7.3	19.0	0.3	4.5	11.2	7.5	65.2
2004Q3	4.1	4.6	10.8	7.4	17.8	0.9	4.5	11.2	7.6	66.0
2004Q4	5.3	4.6	10.8	7.4	19.0	1.4	4.6	11.3	7.6	66.8
2005Q1	5.3	4.6	10.8	7.5	19.1	2.4	4.6	11.4	7.7	68.2
2005Q2	5.8	4.6	10.8	7.5	19.6	1.8	4.6	11.3	7.7	67.7
2005Q3	5.2	4.6	10.7	7.6	19.0	1.4	4.7	11.3	7.7	67.2
2005Q4	6.2	4.7	10.8	7.6	20.2	2.4	4.7	11.3	7.8	68.4

Quarterly	Philippines	Singapore

	R	E	L	S	FCI	R	E	L	S	FCI
Weight	*1.0*	*0.6*	*0.5*	*0.8*		*1.0*	*1.0*	*4.0*	*2.1*	
2006Q1	5.8	4.7	10.8	7.7	19.8	3.6	4.7	11.3	7.8	69.8
2006Q2	6.9	4.7	10.7	7.7	20.8	3.4	4.7	11.3	7.8	69.5
2006Q3	6.8	4.7	10.7	7.9	20.9	3.2	4.8	11.3	7.9	69.2
2006Q4	7.2	4.7	10.7	8.0	21.4	3.1	4.8	11.2	8.0	69.3
2007Q1	7.3	4.8	10.7	8.1	21.6	3.5	4.8	11.2	8.1	70.0
2007Q2	6.9	4.8	10.7	8.3	21.4	2.0	4.8	11.3	8.2	69.0
2007Q3	5.3	4.8	10.7	8.3	19.8	0.6	4.8	11.3	8.2	67.8
2007Q4	5.3	4.9	10.8	8.3	19.8	0.8	4.9	11.4	8.2	68.2

Quarterly	Thailand				
	R	E	L	S	FCI
Weight	*1.0*	*15.9*	*9.0*	*0.1*	
1988Q1	6.5	3.8	11.3	5.3	168.2
1988Q2	6.4	3.8	11.3	5.4	167.9
1988Q3	8.2	3.8	11.3	5.4	170.2
1988Q4	9.9	3.8	11.4	5.3	171.9
1989Q1	9.1	3.7	11.4	5.4	171.3
1989Q2	8.7	3.8	11.4	5.8	171.9
1989Q3	8.0	3.8	11.4	5.9	171.1
1989Q4	10.3	3.8	11.5	6.2	174.1
1990Q1	9.5	3.8	11.5	6.1	173.9
1990Q2	10.2	3.9	11.6	6.4	175.4
1990Q3	13.8	3.8	11.6	5.9	178.7
1990Q4	12.0	3.8	11.6	5.8	176.7
1991Q1	13.2	3.8	11.7	6.2	178.7
1991Q2	10.7	3.8	11.7	6.1	176.7
1991Q3	9.8	3.8	11.8	6.0	176.4
1991Q4	6.2	3.8	11.8	6.1	173.1
1992Q1	5.2	3.8	11.9	6.2	172.5
1992Q2	6.2	3.8	11.9	6.1	173.5
1992Q3	5.8	3.8	11.9	6.3	173.0
1992Q4	7.4	3.8	11.9	6.3	175.0
1993Q1	7.8	3.8	12.0	6.3	176.0
1993Q2	7.2	3.8	12.0	6.3	175.1
1993Q3	4.8	3.7	12.0	6.4	172.7
1993Q4	2.5	3.8	12.1	7.0	171.2
1994Q1	6.1	3.8	12.1	6.7	175.0
1994Q2	6.4	3.7	12.2	6.7	175.6
1994Q3	5.7	3.7	12.2	6.9	174.9
1994Q4	5.7	3.7	12.3	6.8	175.7
1995Q1	12.4	3.7	12.3	6.7	182.6
1995Q2	9.0	3.7	12.4	6.9	178.8
1995Q3	7.3	3.7	12.4	6.8	177.8
1995Q4	8.3	3.7	12.5	6.8	179.8
1996Q1	6.3	3.7	12.6	6.9	178.6
1996Q2	6.1	3.7	12.6	6.8	179.1
1996Q3	10.3	3.8	12.6	6.7	183.6
1996Q4	9.7	3.8	12.7	6.5	183.4

Quarterly	Thailand				
	R	E	L	S	FCI
Weight	*1.0*	*15.9*	*9.0*	*0.1*	

1997Q1	10.4	3.8	12.7	6.3	184.7
1997Q2	11.0	3.8	12.7	6.0	185.6
1997Q3	16.5	3.6	12.7	6.1	187.6
1997Q4	17.6	3.6	12.7	5.7	189.0
1998Q1	18.4	4.0	12.8	6.0	197.0
1998Q2	15.8	4.3	12.8	5.4	198.9
1998Q3	8.8	4.5	12.6	5.4	193.4
1998Q4	4.3	4.3	12.4	5.7	184.5
1999Q1	2.7	4.4	12.2	5.7	182.3
1999Q2	2.2	4.3	12.4	6.1	182.2
1999Q3	1.2	4.2	12.3	5.8	179.3
1999Q4	0.9	4.2	12.4	6.0	179.2
2000Q1	1.2	4.2	12.4	5.9	179.9
2000Q2	2.0	4.3	12.4	5.6	181.4
2000Q3	1.1	4.3	12.3	5.3	179.8
2000Q4	1.7	4.3	12.3	5.5	180.3
2001Q1	1.1	4.4	12.3	5.6	181.1
2001Q2	0.7	4.4	12.2	5.7	181.3
2001Q3	2.4	4.4	12.1	5.5	181.0
2001Q4	2.7	4.5	12.1	5.6	182.3
2002Q1	1.7	4.5	12.1	5.8	182.0
2002Q2	0.9	4.4	12.0	5.9	179.5
2002Q3	1.8	4.4	12.0	5.7	180.5
2002Q4	1.1	4.4	12.0	5.8	179.7
2003Q1	0.8	4.4	12.0	5.8	179.7
2003Q2	1.1	4.4	12.0	6.0	179.7
2003Q3	0.9	4.4	12.1	6.3	180.2
2003Q4	0.8	4.5	12.1	6.6	180.8
2004Q1	0.1	4.5	12.1	6.4	180.4
2004Q2	0.2	4.5	12.1	6.4	181.0
2004Q3	0.4	4.5	12.1	6.4	181.4
2004Q4	1.5	4.5	12.2	6.4	183.4
2005Q1	1.2	4.6	12.2	6.5	184.2
2005Q2	0.2	4.6	12.2	6.5	182.6
2005Q3	0.1	4.6	12.2	6.6	182.4
2005Q4	3.1	4.7	12.2	6.6	187.1

	Thailand				
	R	E	L	S	FCI
Weight	*1.0*	*15.9*	*9.0*	*0.1*	
2006Q1	3.8	4.7	12.2	6.6	188.0

2006Q2	2.2	4.7	12.2	6.5	185.9
2006Q3	4.6	4.7	12.1	6.6	188.1
2006Q4	4.8	4.7	12.1	6.6	189.2
2007Q1	5.1	4.8	12.2	6.5	190.7
2007Q2	2.0	4.8	12.2	6.7	187.7
2007Q3	3.2	4.8	12.2	6.8	189.8
2007Q4	1.8	4.8	12.2	6.8	188.7

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International Conference

2009	"The Global Financial Crisis and Economic Integration: Evidence on ASEAN-5 Countries" presented at The 34th Annual Conference Federation of ASEAN Economic Association (FAEA), at Phnom Penh Cambodia, December, 15-16, 2009.
2010	"The Effect of Optimal Monetary Transmission and Financial Market Performance on ASEAN-5 Economic Integration" presented at Sixth Annual Conference of The Asia Pacific Economic Association (APEA) at Hong Kong, July, 8-9, 2010.
2010	" The Effect of Monetary And Financial Condition on ASEAN-5 Economic Integration" presented at The 35th Annual Conference Federation of ASEAN Economic Association (FAEA), at Bali Indonesia, December, 1-3. 2010.
2011	"The Role of Financial Deepening and Condition on ASEAN 5 Economic Integration: Finance-Growth Nexus Perspective" presented at he 3rd IRSA International Institute, Andalas University, Padang, July, 19-21, 2011

Publications

2011	Assessing The ASEAN 5 Common Currency Area: Generalized Purchasing Power Parity (G-PPP) Approach. Vol.1 No.1, *Southeast Asian Journal of Social and Political Issues*.
2009	The Global Financial Crisis and Economic Integration: Evidence on ASEAN-5 Countries, Vol. 24 No.3, *Journal of Indonesian Economy and Business*, Gadjah Mada University.
2009	Book of *Visi Perekonomian Indonesia 2030* published by BPEP, FE UNS, Solo
2004	Book of *Beberapa Agenda Perekonomian Indonesia* published by DRFE, Usakti Jakarta