Globalization and Change of Investment Environment in ASEAN

Khaing Sape Saw Khaing

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CHAPTER 1
INTRODUCTION

1.1 FDI, globalization, and development
Globalization is the most significant driver of change the world today. Asian Development Bank defined Globalization as “a process of economic integration of the entire world through the removal of barriers to free trade and capital mobility, as well as through the diffusion of knowledge and information. It is a historical process moving at different speeds in different countries and in different sectors.” (Asian Development Outlook 2003)

Therefore, in this globalization era, Countries’ economic growths are divided by along with their capacity of innovation, creation and adoption of technologies knows how. Foreign direct investment (FDI) plays a vital role for many developing countries to increase their foreign capital inflows. FDI can provide technology transfer, technical know how, human resource management as well as economic development.

According to the overview of World Investment Report 2008, Global FDI inflows into developed countries reached $1,248 billion. The United States maintained its position as the largest recipient country, followed by the United Kingdom, France, Canada and the Netherlands. The European Union (EU) was the largest host region, attracting almost two thirds of total FDI inflows into developed countries. Among developing and transition economies, the three largest recipients were China, Hong Kong (China) and the Russian Federation.
Figure 1.1. FDI inflows, global and by group of economies, 1980–2005

(Billions of dollars)

Note: CIS (Commonwealth and Independent States) consists of 11 former Soviet Republics: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine, and Uzbekistan.

Recorded Greenfield FDI in developed countries fell in 2005 declined from 4,144 in 2004 to 3,981 in 2005 (see chapter 2, page 87, World Investment Report, UNCTAD, 2006). However, investments flows into South-East Asia countries improve to 39091 US$ million in 2005, compared with the investments flows into South-East Asia 35245 US$ million in 2004. (see table 1-1)

But this investment flows were declined in Percentage of total world FDI flows; 5 percent in 2004 to 4 percent in 2005 that showed declining of FDI inflows to South-East Asia region. the value of FDI among South, East and South-East Asia countries decreased from 23 percent in 1995 to 17 percent in 2005. (See table 1-2)

According to overview of World Investment Report, UNCTAD, 2006, FDI inflows into South, East and South-East Asia reached $167 billion in 2005, corresponding to 17% of world inflows. Most of these flows were dominated by more developed South-East Asian countries, largely dominated by China. Inflows to South Asia were much lower ($10 billion), though they grew significantly in several countries, with the highest level ever for India of $7 billion. About two thirds went to two economies: China ($72 billion) and Hong Kong, China ($36 billion). The South-East Asian sub region received $37 billion,
led by Singapore ($20 billion) and followed by Indonesia ($5 billion), Malaysia and Thailand ($4 billion each). Among ASEAN countries, Singapore is the fourth largest source of FDI from developing and transition economies. Among developing countries, South, East and South-East Asia countries have significant source of FDI with outflows of $68 billion in 2005. South-East Asia (ASEAN) countries’ governments attempt to promote investment, continue to open up and create a sound investment climate that attracts foreign investors to their economies. Among developing economies, both year 2005 and 2006 the most inward FDI receiving are China and Hong Kong (China), followed by Singapore, Mexico and Brazil.

Resulting from the above factors, the conclusions can be drawn out as the globalization is needed for any economies to become fast-growing economy in the international trade for conglomerated global business and increasing shares in worldwide market.
1.2 Definition of FDI
The definition of Foreign Direct Investment is particularly regarded by The IMF Balance of Payments Manual, 5th edition (BPM5) and the OECD Benchmark Definition of Foreign Direct Investment, 4th edition (Benchmark Definition).

The fifth edition of the IMF’s Balance of Payments Manual (BPM5)\(^2\) (1993, #359, page86) defines FDI as a category of investment that reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct investor or source economy) in an enterprise (direct investment enterprise or host economy) that is resident in an economy other than that of the direct investor. The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the investor on the management of the enterprise. Direct investment comprises not only the initial transaction establishing the relationship between the investor and the enterprise but also all subsequent transactions between them and among affiliated enterprises, both incorporated and unincorporated.

This concept of direct investment presented in BPM5\(^3\) definition is come from the second edition of OECD Detailed Benchmark Definition of Foreign Direct Investment. Regarding to the 4th Edition of the OECD Benchmark Definition of Foreign Direct Investment (April, 2008), the lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise. The direct or indirect ownership of 10% or more of the voting power of an enterprise resident in one economy by an investor resident in another economy is evidence of such a relationship. Some compilers may argue that in some cases an ownership of as little as 10% of the voting power may not lead to the exercise of any significant influence while on the other hand, an investor may own less than 10% but have an effective voice in the management. Nevertheless, the recommended methodology does not allow any qualification of the

\(^2\) The fifth edition of the Balance of Payments Manual (the Manual) continues the series of international standards that have been issued by the International Monetary Fund (IMF) for providing guidance to member countries in the compilation of balance of payments and related data on the international investment position.

\(^3\) [www.oecd.org/daf/investment/statistics](http://www.oecd.org/daf/investment/statistics)
10% threshold and recommends its strict application to ensure statistical consistency across countries.

### 1.3 Types of FDI

<table>
<thead>
<tr>
<th>By Direction</th>
<th>Inward FDI</th>
<th>• foreign capital is invested in local resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outward FDI</td>
<td>• local capital is invested in foreign resources.</td>
</tr>
<tr>
<td>By Target</td>
<td>Greenfield investment</td>
<td>• Direct investment in new facilities or the expansion of existing facilities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• the primary target of a host nation’s promotional efforts, this can create new production capacity and jobs, transfer technology and know-how, and can lead to linkages to the global marketplace.</td>
</tr>
<tr>
<td></td>
<td>Mergers and Acquisitions</td>
<td>• Transfers of existing assets from local firms to foreign firms takes place.</td>
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<td></td>
<td></td>
<td>• Cross-border mergers occur when the assets and operation of firms from different countries are combined to establish a new legal entity.</td>
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<tr>
<td></td>
<td></td>
<td>• Unlike Greenfield investment, acquisitions provide no long term benefits to the local economy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mergers are the most common way for multinationals to do FDI.</td>
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<tr>
<td></td>
<td>Horizontal FDI</td>
<td>• Investment in the same industry abroad as a firm operates in at home.</td>
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<tr>
<td></td>
<td>Vertical FDI</td>
<td>• Where an industry abroad provides inputs for a firm's domestic production process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Where an industry abroad sells the outputs of a firm's domestic production.</td>
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<tr>
<td>By Motive</td>
<td>Resource-Seeking</td>
<td>• Investments which seek to acquire factors of production that is more efficient than those obtainable in the home economy of the firm. (E.g. cheap labor and natural resources).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• seeking natural resources FDI into developing countries; e.g. in the Middle East and Africa, or cheap labor in Southeast Asia and Eastern Europe.</td>
</tr>
<tr>
<td></td>
<td>Market-Seeking</td>
<td>• Investments at either searching new markets or maintaining existing ones.</td>
</tr>
<tr>
<td></td>
<td>Efficiency-Seeking</td>
<td>• Investments which firms hope will increase their efficiency by exploiting the benefits of economies of scale and scope, and also those of common ownership. e.g. membership of the a regional integration such as ASEAN</td>
</tr>
<tr>
<td></td>
<td>Strategic-Asset-Seeking</td>
<td>• A tactical investment to prevent the loss of resource to a competitor.</td>
</tr>
</tbody>
</table>

1.4 Motivation of the Research
Empirical evidence on inward FDI and restructuring in developing countries is limited and there has been limited research on the determinants of FDI in ASEAN. Previous research addressed factors that are important to FDI in the ASEAN. However, these studies focused only on the foreign investment at selected countries and at either the sectoral level or national level. No research has focused on all ASEAN countries determinants of FDI at national level.

1.5 Purpose of the Research
The general objective of this research is to provide an overview of foreign direct investment (FDI) studies and to evaluate the determinants of FDI in ASEAN countries using the related FDI theories and empirical Model, which help to explain the bilateral relationship of FDI between ASEAN countries.

In this research, Panel data is used to estimate for which variables have been the significant in determining ASEAN FDI over time and evaluate the empirical results based on the data for the years 1995 to 2005.

This research also examines the bilateral FDI flows between different locations and their geographical distances among ASEAN countries. The primary research question addresses which factors persuade sustain FDI in ASEAN countries. In addition, this study also examines the effects of globalization in ASEAN countries’ FDI.

The specific objectives of this research are:
1. To analyse how effect of Countries official language, Distance (km) and Share Border to FDI by using Gravity Model.
2. To study the determinants of FDI in ASEAN countries using the Eclectic Paradigm and extended Gravity Model.
3. To evaluate the determinants of FDI inflows Into ASEAN countries yearly period over 1995 to 2005.
4. To examine the effects of globalization on the inflows of FDI into ASEAN countries.
5. To analyze the main empirical studies of the country-pair determinants of FDI.
6. To provide policy recommendations to attract inflow of FDI into ASEAN countries for promoting investment climate.

1.6 Organisation of the Research
This research is categorized into six chapters. Chapter 1 presents the introduction including sub title of FDI, globalization, and development, Definition and Types of FDI, Motivation, Purpose and Organisation of the Research. Chapter 2 describes literature review on FDI theory based on the Eclectic Paradigm concept. Chapter 3 provides an overview of the Gravity Model and FDI, that concept will take into account in empirical models analysis. Chapter 4 describes empirical models and research methodology together with detail description of Determinants used in empirical model. Chapter 5 describes empirical results and summary of research findings. Chapter 6 presents policy implications and summarizes the research findings. The chapter also discusses Limitations of the Study, and Suggestions for Future Study.
CHAPTER 2
LITERATURE REVIEW ON FOREIGN DIRECT INVESTMENT THEORIES

This chapter reviews on the relevant literature related to FDI theories with an emphasis on its potential determinants of FDI. The chapter consists of three sections. The first section analyses Application of FDI Theory over Eclectic Paradigm. The second section provides Applications of determinants by Eclectic Paradigm Concept. Section three presents The Benefits of FDI Theory.

This chapter provides an overview of Foreign Direct Investment and presents the applications of the FDI theory introducing with Eclectic Paradigm theory concept that provides a three-combination framework for a MNEs to accomplish beneficial determinants of FDI. A broader literature list can be found in the references.

2.1. Application of FDI Theory

2.1.1 Eclectic Paradigm

John. H. Dunning (1976, 1980) introduced the FDI theory via the Eclectic Paradigm. Eclectic Paradigm means “the multinational firm that posits three types of advantages benefiting the multinational corporation: ownership-specific (O), location-specific (L), and internalization advantages (I).”

There are three - combination framework “O, L, I”. The followings Advantages must be present for Host countries In order to get beneficial FDI,
1. MNEs’ ownership-specific advantages or a comparative advantage for example product. (O)
2. Location specific advantages - where the greater benefit that are available in a particular place through foreign financial Institutions. (L)
3. Internalization-incentive - that allows for the MNEs to utilize a foreign opportunity efficiently (I).
Therefore, we can examine that MNEs are searching for taking advantages over OLI Framework;

O – Ownership-specific
  • Tangible assets, such as natural resources, the size of national markets, the quality of infrastructure, capital and country specific conditions.
  • Intangible assets, such as technology and information, managerial skills, marketing and human resources.

L – Location-specific
  • Market structure, government policies, and political, legal, and cultural environment.

I–Internationalization
  • Essential characteristic such as flexibility, economy openness capacity to produce and market through with internal supplement.

The concept of the eclectic paradigm of international production was emphasizing on the significance of the factors influencing of foreign production and the growth of such production. It was meant to convey the idea that FDI is just one of a number of possible channels of international economic involvement. All possible channels have a number of common factors determinants. Therefore, transnational activities of MNEs need to draw upon several economic theory such as Eclectic Paradigm theory, theory concerning with gravity model.

Most researchers agree that there exists a positive causal relationship between FDI and economic performance, either in the short run or the long run, or both. Therefore based on the FDI theories, there would be useful to study the key determinants of FDI for attracting FDI.

According to Sanjaya Lall (1997), there are three key determinants, its related patterns and the factors explaining these patterns of FDI in developing host economies. (See table
2-1) The author suggests that host country FDI determinants is closely related with the globalization, and others related factors such as determinants of economic conditions, host country policies, MNE strategies.

Table 2.1. Key determinants of FDI for Host country

<table>
<thead>
<tr>
<th>Economic conditions</th>
<th>Markets</th>
<th>Size; income levels; urbanization; Stability and growth prospects; access to regional markets; distribution and demand patterns.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td></td>
<td>Natural resources; location</td>
</tr>
<tr>
<td>Competitiveness</td>
<td></td>
<td>Labour availability, cost, skills, trainability; managerial technical skills; access to inputs; physical infrastructure; supplier base; technology support.</td>
</tr>
<tr>
<td>Host country policies</td>
<td>Macro policies</td>
<td>Management of crucial macro variables; ease of remittance; access to foreign exchange.</td>
</tr>
<tr>
<td>Private sector</td>
<td></td>
<td>Promotion of private ownership; clear and stable policies; easy entry/exit policies; efficient financial markets; other support.</td>
</tr>
<tr>
<td>Trade and industry</td>
<td></td>
<td>Trade strategy; regional integration and access to markets; ownership controls; competition policies; support for SMEs.</td>
</tr>
<tr>
<td>FDI policies</td>
<td></td>
<td>Ease of entry; ownership, incentives; access to inputs; transparent and stable policies.</td>
</tr>
<tr>
<td>MNE strategies</td>
<td>Risk perception</td>
<td>Perceptions of country risk, based on political factors, macro management, labour markets, policy stability.</td>
</tr>
<tr>
<td></td>
<td>Location, sourcing, integration transfer</td>
<td>Company strategies on location, sourcing of products/inputs, integration of affiliates, strategic alliances, training, technology</td>
</tr>
</tbody>
</table>

2.2 Applications of Determinants by Eclectic Paradigm Concept

The economic determinants relating to size of national markets can induce a large share of worldwide FDI flows. Also access to the regional market is an important for FDI determinant. For example most of ASEAN countries FDI are come from regional market and that are related to bilateral investment.

For foreign investors, the host country’s market size, access to foreign exchange rate, Interest Rate, Inflation rate, how much globalize (Economy Openness), country’s traditional variables (Countries official language, Distance (km), Share Border ) and globalization factors (Economic, Political, social) are particularly important.

Agarwal & Ramaswami (1992), Chris Milner, Geoff Reed, Pawin Talerngsri (2004) and Roberto (2004) analysed market size and potential effect on FDI by using Eclectic Paradigm Concept and the authors suggested that higher returns on investment brings from larger market size.

Many empirical studies such as Deichman (2004), Gao (2005), Dunning (1988) and others empirical researchers analyse correlation between GDP and inward FDI flows and the authors proved that GDP is significant to the determinants of FDI in the host countries. For example, Kravis and Lipsey (1982) suggested that economic variables, economy openness and the GDP level of country can influence on FDI in several ways.

Jeffrey H. Bergstrand (1989) analysed on The Generalized Gravity Equation, Monopolistic Competition, and the Factor-roporitions Theory in International Trade. The author used exchange rate, GDP, GDP per capita, distance, exchange rate, tariff rate effect on investment flows by Gravity Model. The author find out that exchange rate affects negative and statistically significant on FDI and relevant to the investing countries.

A.H Baharom, Muzafar Shah Habibullah and R.C Royfaizal (2008) examined the role of trade openness and foreign direct investment in influencing economic growth in Malaysia during 1975-2005. Their empirical results prove that trade openness is positively
associated and statistically significant determinant of FDI, both in short run and the long run. The authors also suggested that both in the short run and long run trade openness is positively and statistically significant with the determinant of growth. The authors investigated relation between FDI and other control variables such as trade openness and exchange rate. The authors also found that exchange rate is significant to the determinant of FDI both in the short run and in the long run.

Bevan, A. A., & Estrin, S. (2004) analyses the Determinants of Foreign Direct Investment into European Transition Economies by using Gravity Model. In that paper, the authors use information about flows between source and host economies to analyze FDI between developed Western countries, primarily those of the EU, and several transition countries. The authors identify the determinants of both the choice of investment and the location decision, including gravity factors. The paper used a panel dataset of bilateral flows of foreign direct investment (FDI) on the Central and Eastern European countries (CEEC). The data set includes between 1994 and 2000 to analyze empirically the determinants of inward FDI to CEEC. In the data set, the authors used CEECs as the host countries and US, Switzerland, EU, Korea, and Japan as the source countries. For the theoretical framework, the author used form of the gravity equation controls for factor cost, openness, and development. FDI reacts most likely from these explanatory variables;

$$ FDI_{ij} = f ( GDP_i, GDP_j, dist_{ij}, trade_j, ULC_j, r_{ij}, risk_j ) $$

where $t$ represent year, $i$ represent source country, $j$ represent host country, GDP$_i$ and GDP$_j$ represent the size of the source and host country, dist$_{ij}$ represents the distance between source and host country, trade$_j$ measures the openness of the host economy, ULC$_j$ represent unit labor costs, $r_{ij}$ measures the interest rate differential between the source and host countries, and risk$_j$ captures a vector of institutional, legal, and political factors in the host country.

The results proved FDI related positively to both source and host country GDP and related inversely to unit labor costs and the distance between source and host country.
The authors also suggested that the integration with the EU is important for FDI in transition economies and FDI generates more growth and development. Therefore, FDI contribute more to the economic growth than domestic investment in the host country.

Bajo-Rubia and Sosvilla-Rivero 1994, Yih Yun Yang et al. 2000 have discussed regarding the role of inflation on FDI flows. High inflation means a large and uncontrollable increase in the price level that must reflect on the macroeconomic policy instability of the host country and uncertainty in the investment climate. On the other hand, deflation means falling price levels that must reflect on domestic investors who might sell their companies to foreign investors. But for that we can conclude deflation can expand inflow of FDI. (see; Ivohasina Razafimahefa and Shigeyuki Hamori (2005).

The Economy Openness of a host country and the flows of inward investment is taken into account in most FDI empirical studies such as David Barlow (2006), Arvind Panagariya (2004), Chui, Levine, Murshed and Pearlman (2002).

David Barlow (2006) found that the level of Economy Openness was significant to the determinants of FDI in the host countries and it raises the economic growth rate in European Union.

Moreover, Arvind Panagariya (2004) provided both in the short run and long run, Economy Openness is strongly significant for the inflow of foreign investment as well as growth. E.g; Singapore and Hong Kong.

Blanca Sánchez-Robles and Marta Bengoa-Calvo (2002) analyzed the relation between FDI, Economy freedom and growth: evidence on 18 Latin America countries over the period 1970–1999 followed by the Heritage Foundation using panel data analysis. The authors found that economic freedom in the host country is a positive determinant of FDI inflows and the authors also found that foreign direct investment is positively correlated with economic growth in the host countries.
Richard Portes, He`le`ne Rey (2005) rely on the theory of the existence of asymmetric information between investors in different countries. They examine gross bilateral equity flows and use distance to capture information costs. They also find that geography of information heavily determines the pattern of international transactions.

Clark (2000), Norris (2000) and Keohane and Nye (2000): defines “globalization to be the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods. Globalization is conceptualized as a process that erodes national boundaries, integrates national economies, cultures, technologies and governance and produces complex relations of mutual interdependence.” Followed by the authors, The KOF Index of Globalization was introduced in 2002 (Dreher, 2006) and is updated and described in detail in Dreher, Gaston and Martens (2008)4.

Axel Dreher 2002 presents an index of globalization covering its three main dimensions: economic integration, social integration, and political integration using panel data for 123 countries in 1970-2000. The author analyzed empirically globalization effect on economic growth. The author proved that Globalization raise up growth but that could not reduce poverty on a large scale.

Joseph Stiglitz (2003) 5, journalist, defines Globalization as: “Globalization is the closer integration of the countries and peoples of the world brought about by the enormous reduction of costs of transportation and communication, and the breaking down of artificial barriers to the flows of goods, services, capital, knowledge, and people across borders.” (From Globalization and its Discontents)

Globalization is paradigm shifts from the Cold War to the Age of Globalization. We can compare the contemporary world to the Cold War by the book of The Lexus and the

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4 See , The KOF Index of Globalization; http://globalization.kof.ethz.ch/

5 an economist and winner of the Nobel Prize
Olive Tree by Thomas L. Friedman (2000). The following table is Paradigm Shifts from the Cold War to the Age of Globalization referred from Thomas Friedman's book The Lexus and the Olive Tree.

Paradigm Shifts from the Cold War to Globalization

<table>
<thead>
<tr>
<th>Cold War</th>
<th>Globalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>division</td>
<td>Integration (of nations, markets and technologies)</td>
</tr>
<tr>
<td>the Wall</td>
<td>the Web</td>
</tr>
<tr>
<td>8% of world's countries have free markets</td>
<td>28% of world's countries have free markets</td>
</tr>
<tr>
<td>Different cultures</td>
<td>Global culture</td>
</tr>
<tr>
<td>Weight (megatons)</td>
<td>Speed (megabits)</td>
</tr>
<tr>
<td>Power of nations</td>
<td>Power of individuals, markets</td>
</tr>
</tbody>
</table>

Moghadam, V.M. (2005) defines Political globalization: refers to an increasing trend toward multilateralism (in which the United Nations plays a key role), toward an emerging ‘transnational state apparatus,’ and toward the emergence of national and international nongovernmental organizations that act as watchdogs over governments and have increased their activities and influence” (p.35).


Morten Ougaard 2004, examine on Political Globalization in particular with theoretically and empirically. The author emphasized on the emerging state function of persistence towards the increasingly integrated world society, relations of power between states and social forces and the prospects and realities of transnational class formation along with Political Globalization.
CHAPTER 3
GRAVITY MODEL AND FDI

The literature review on FDI theory, Applications of Eclectic Paradigm Concept and The Advantages of FDI Theory have been discussed in Chapter 2. The Eclectic Paradigm Concept was based on the Dunning (1980). Ownership-specific, Location specific and Internalization-incentive Characteristics such as market size by GDP, Foreign Exchange Rate, Interest Rate, Inflation rate discussed in the Eclectic Paradigm concept are used to analyse FDI determinants in our empirical model to identify potential factors influencing FDI in ASEAN countries, also examine the impact of the openness and globalization effect as well as certain traditional variables such as geographical distance language and share border. The traditional variables are come from the gravity model. The purpose of this research is to identify the factors determining FDI in ASEAN countries.

This chapter provides the gravity model to analyze the effect of certain determinants in the flows of bilateral trade with specific attention to ASEAN countries bilateral trade from the 1995 to 2005.

3.1 Background of the Gravity Model
The concept of The Gravity Model was developed from Newton law of gravitation. In 1687, English mathematician Sir Isaac Newton found out hypothesis on the Inverse square law of universal gravitation. Gravitation is a natural phenomenon by which between two objects (i and j) that attracts each other.
In 1954, Walter Isard introduced the gravity model of international trade in economics. It estimates bilateral trade flows based on the economic sizes and distance between home and host country.

The Gravity Model of Trade equation is as follows:
\[ F_{ij} = G \times M_i \times M_j / D_{ij} \]

Where

\( F = \) trade flow between home and host countries
\( G = \) constant
\( M = \) economic mass or dimensions of each country
\( D = \) distance

When the equation changed into simpler approach to generalize linear form by employing logarithms, the Gravity Model of Trade would be as follows:

\[ \ln F_{ij}(\text{Bilateral Trade Flow}) = \alpha + \beta \ln(GDP_{Country1}) + \beta \ln(GDP_{Country2}) - \beta \ln(\text{Distance}) + e_{ij} \]

Where \( e_{ij} \) is the error terms.

Recent years, the Gravity Model of Trade has performed an important role in the estimation of trade patterns and the model is used to analyse the trends of bilateral trade. The model extend including other variables and particularly take into account measurement of economic variables such as income level (GDP per capita), price levels, language relationships, tariffs, contiguity. The model has been used also to examine international relations by treaties, alliances on trade, and the effectiveness of trade agreements for example trade agreements among the “Association of Southeast Asian Nations” (ASEAN).

### 3.2 Theoretical Framework of Gravity Model analysis and FDI

In recent years, to explain the flow of FDI, the Gravity Model has become in popular. Trade flow between two countries is explained by their economic size (GDP), population (openness), geographical distance and a set of variables on common institutional characteristics such as languages, culture, trade agreements, and law system are explained by According to the gravity model for international trade.

Giuseppina MariaChiara Talamo (2007) investigate the possible link between Institution, FDI and the Gravity Model. The authors analysed by the simplest form of the bilateral trade gravity model to analyse international trade flows. The authors follow Tinbergen (1962), who introduced this formula for analysing international trade flows.
\[ F_{ij} = \frac{A Y_i Y_j}{D_{ij}} \]  \hspace{1cm} (3.1)

Where:
- \( F_{ij} \) represents the flows (i.e. migration, tourism, trade, foreign direct investment) between the home country \( i \) and the host country \( j \);
- \( A \) is a constant of proportionality;
- \( Y_i \) and \( Y_j \): are the relevant economic sizes (GDP, GDP per capita, Population) of countries \((i,j)\);
- \( D_{ij} \): is the distance between countries’ capitals or economic/financial centre

**Equation (3.1)** states that bilateral flows between country \( i \) and country \( j \) are directly related to the countries’ GDP and inversely related to the countries’ distance.

By taking log linear form to analyse elasticity of bilateral trade,

Where:
- \( \ln X_{ij} \) is log of trade or foreign direct investment flows;
- \( \ln Y_i, Y_j, \ln POP_i, \ln POP_j \) are logs of the relevant economic size;
- \( \ln D_{ij} \), is the distance between countries’ capitals or economic/financial centre;
- \( \varepsilon_{ijt} \): normal error terms with mean zero and variance \( \sigma^2 \)

The authors put other explanatory variables such as for linguistic, cultural and historical similarities, regional integration, common financial development and structure, and common currency by the expanded gravity model. Specific expanded gravity equation for the FDI study is:

\[ \ln X_{ij} = \alpha_0 + \beta_1 \ln Y_i + \beta_2 \ln POP_i + \beta_3 \ln Y_j + \beta_4 \ln POP_j + \beta_5 \ln D_{ij} + \beta_6 \ln Language + \beta_6 \ln Institutional + \varepsilon_{ij} \]  \hspace{1cm} (3.2)

The authors suggested that by the simple cross-sectional regression analysis, the level of trade relationship is raised by country specific institutional, cultural, and political variables and are correlated with other country specific traditional gravity variables such as GDP, population, and distance.
Stone, S. F., & Jeon, B. N. (1999) analysed the bilateral flows of FDI over 200 panel data observations of during 1987-1993 by using Gravity Model Specification on the Case of the Asia-Pacific Economies. The authors used the log-linear FDI equation to specify FDI flows between home country $i$ and host country $j$.

The authors follow of the gravity equation of Anderson (1979) and the particular extended gravity model for the FDI study can be seen by the following equation:

$$ FDI_{ij} = \beta_0 + \beta_1 GDP_i + \beta_2 Pop_i + \beta_3 GDP_j + \beta_4 Pop_j + \beta_5 Distance_{ij} + \beta_6 Trade_{ij} + \beta_7 APEC + \beta_8 ASEAN + \beta_9 DAE + \epsilon_{ij} $$

(3.3)

Where

- $i$ = home country
- $j$ = host country
- $FDI_{ij}$ = total bilateral FDI
- $Trade_{ij}$ = trade flows between two countries

$GDP$ = gross domestic product,

$Pop$ = population,

$Distance$ = the geographical distance between the home $i$ and host $j$.

$APEC$, $ASEAN$, and $DAE$ = Dynamic Asian Economies

The authors used dummy variables for the estimation of Dynamic Asian Economies and the estimated result proved that the geographic location factor was not a significant for FDI flows and FDI flows in the region was influenced by home country factors than that of host country factors. Market size and income are the most influential factors of home country.

3.3 Summary table of FDI variables using Gravity Model

Summary table of FDI variables using Gravity Model can be seen in table 3-1.
This chapter will examine determinants of FDI in ASEAN countries by using a Linear Regression Model. This is followed by a description of the empirical model and technique used to determine the FDI flows to ASEAN countries. The chapter is divided into five main sections. Summary of Variables Used in the Linear Regression Model and Empirical Models are discussed in Sections 4.1 and 4.2, respectively. Section 4.3 discusses the Model Specification. Data Source used in this research is presented in Section 4.4. Section 4.5 provides the Relationship between FDI and ASEAN countries.

Two kinds of methodologies will be used in this chapter. The First methodology is to examine explanatory variables overtimes to evaluate determinants of ASEAN countries’ bilateral FDI. The second methodology is to analyse the factors determining FDI in ASEAN countries by using Simple regression model.

**4.1 Summary of Variables Used in the Linear Regression Model**

Many empirical studies have tried to explain the determinants of FDI flows using different explanatory variables. Hence, different studies use different combinations of explanatory variables to explain the determinants of FDI flows. This research considers FDI with the relative importance of GDP and economic variables such as Foreign Exchange Rate, Interest Rate, Inflation and economy openness.

There are four categories in the Linear Regression Model. The first and second include characteristics of Source country affecting FDI variables and characteristics of Host country affecting FDI variables; market size (GDP), Foreign Exchange Rate, Interest Rate, Inflation and Economy Openness. The third includes factors that are related to the countries Joint Variables; common language, Distance (km) and Share Border. The forth measures the factors that are related to globalization (economic globalization, political globalization and social globalization) effect on FDI.
4.2 Empirical Model

The panel country-level data for the estimation are collected from different sources among home country and host country over the period 1995-2005. Such observations constitute a bilateral relation among a home country (all ASEAN 10 countries) and a host country (all ASEAN 10 countries). Therefore, our sample consists of 990 variables of bilateral FDI among ASEAN member countries.

\[
FDI_{ijt} = f[X_{i\cdot t-k}, X_{j\cdot t-k}, W_{ij\cdot t-k}, G_{t-k}] \tag{4.2}
\]

Where:

- \( FDI_{ijt} \) (from i to j within t period) \( i = \)source countries \( J = \)host countries
- \( FDI_{jit} \) (from j to i within t period)
- \( X_i \) = characteristics of Source country affecting \( FDI_{ij} \)
- \( X_j \) = characteristics of Host country affecting \( FDI_{ij} \)
- \( W_{ij} \) = characteristics of Source and Host country affecting \( FDI_{ij} \)
- \( G_t \) = globalization effect

The detailed description of variables can be seen in table 4-1.

4.2.1 The Determinant of FDI

The empirical model is developed to investigate the determinants of FDI in ASEAN countries followed by the two FDI theories: Explanatory variables for source and host countries are followed by the Eclectic Paradigm discussed in Chapter 2 and Joint Variables between two countries are followed by the gravity model discussed in Chapter 3. Recent years, gravity model has become widely held to analyse bilateral trade flows of FDI. The traditional gravity model is used to explain FDI with market size and level of development, distance, common language as main variables.

The concept of gravity model was pioneered by Isaac Newton's Law of Gravitation that denotes two celestial bodies are subjected to a force of attraction that is directly proportional to their mass and indirectly proportional to their distance. The model was first used by Walter Isard in 1954. In regard to the gravity model of trade in international
economics, bilateral trade flows between two countries are based on economic sizes (often using GDP measurements), distance and economy openness. Therefore analysing Joint Variables between two countries are followed by the gravity model.

Distance, national incomes, population and trade are estimated by using the Gravity Model in many empirical studies (see table 2). Some researchers put other significant variables to the empirical model, therefore many possible factors can add to examine the hypotheses.

**4.3 Model Specification**

The model examine with the explanatory variables; Gross domestic Product, Foreign Exchange Rate, Interest Rate, Inflation, Economy Openness, Countries official language, Distance (km), Share Border, economic globalization, political globalization and social globalization effect on FDI.

**4.3.1 Foreign Direct Investment**

The analysis involved in this research covers the period 1995 to 2005 for annual FDI Bilateral net FDI flows among ASEAN countries. FDI in ASEAN countries, as a dependent variable, will be tested for causality with the choice of explanatory variables. The choices of explanatory variables are based on the existing theoretical and empirical literature and the gravity model analysis.

**4.3.2 Market Size by Gross domestic Product**

A large local market provides an opportunity for to gain profit and to cover foreign entry cost. Therefore, to study the determinants of FDI flow, the nation’s market size has been one of the explaining variables that are a measure of the country’s economic development showing that high income countries have higher level of international investment flows. To analyse market size, researchers are using GDP, GDP Per Capita, and GDP Growth Rate or both.
If everything is equal, the MNCs will choose larger market to invest, therefore Market size is one of the important determinants of FDI flows. For example China attracts FDI because of its larger markets comparing with others small markets such as Lao, Myanmar, Cambodia. According to Quan Li and Adam Resnick (2003) concludes that countries with larger markets should be associated with more FDI inflows. Thus, study of FDI inflows, market size is typically one of explanatory variables.

A country’s Gross Domestic Product (GDP) is a measure of the total flow of goods and services produced over a specified time period, usually a year. GDP is the standard measure of the size of the economy and it also measure domestic market opportunities for investors. Therefore, in the long run strong and stable GDP more likely to attract FDI. Market size and its potential are expected to be strongly significant for the inflow of foreign investment to ASEAN countries. In this research we will use GDP for to explain market size of the one country. The GDP data are given in US$ at constant 2000 prices and expected to be positive and statistically significant.

4.3.3 Exchange Rate

One of the most essential determinants affecting FDI is Exchange rate. Exchange rate instability may affect on foreign direct investment negatively. Therefore, a volatile exchange rate can reduce investment.

An exchange rate is the current market price for which one currency can be exchanged for another. The number of units of a foreign currency that can be bought with one unit of the domestic currency, or vice versa; In terms of trade, an increase in the value of an importing country’s currency implies a depreciation of the ASEAN countries and is expected to have a positive impact on exporting products that are produced in ASEAN countries. A higher value investing partner currency enables investors to invest in the ASEAN countries economy more inexpensively, thus the amount of FDI will rise. A higher value currency from an investing partner also makes exporting products more expensive to ASEAN purchasers, so again FDI in ASEAN countries would be stimulated to overcome this cost disadvantage. Therefore we can conclude that The Exchange Rate
has positive effects on an export-oriented FDI but negative effects on an import-substitution FDI.

The coefficient of Exchange Rate is expected to be positive to investing countries because most investors take advantage of the depreciation of currency in ASEAN countries and in vise visa the inflows of FDI have been negatively affected by the exchange rate when the appreciation of the ASEAN countries currencies.

If one country can control its exchange rate fluctuation and then that country FDI will improve. Also, foreign investors will not encounter the exchange rate risk when host country has stable strong economy. Finally, it may improve the confidence of foreign investors and this can increase FDI.

Exchange rate is an important determinant of the inflows of FDI in different industrial categories. Exchange rate has a negative impact on import-substitution FDI, but a positive impact on export-oriented FDI. The negative impact on import-substitution FDI indicates that import-substitution FDI focuses on production to cater to the domestic market rather than external markets. In contrast, the positive impact on export-oriented FDI suggests that FDI takes advantage of the low price of goods in the global market generated from the depreciation of the ASEAN countries currencies.

**4.3.4 Interest Rate**

Interest rate is included in our model and as one of the essential determinants affecting FDI. There are two type of theories; easy money policy and tight money policy to control interest rate. By controlling interest rate, the country can maintain inflation and investment. According to tight money policy, when central bank increases in interest rate that reduce the money supply and reduce investment spending and inflation. According to easy money policy, central bank reduces in interest rate that that increases the money supply and increase investment spending and increase real GDP. Therefore interest rate is one of the key factors for domestic investment as well as the inflow of FDI.
4.3.5 Inflation Rate

Inflation rate is considered one of the determinants of FDI as a proxy variable for macroeconomic instability. This variable is expected to have a negative impact on FDI inflows according to Claudia M. Buch, Alexander Lipponer (2004); Inflation is a negative impact upon FDI due to the high inflation rates implies macroeconomic instabilities.

On the other hand, the sign of the coefficient of Inflation is ambiguous. Inflation may have positive effects on FDI via exchange rate changes; for example An appreciation of the home country’s currency changes to the price for acquiring host country’s currency and it may lead to no longer negatively effect on FDI because it lead for acquiring assets in the host country and a substitution of exports for foreign production. Anyhow a higher inflation rate may lead to a decline in FDI in the host country, because that condition is not secure for investors whether they can get profits or not from investment. Therefore, the stability of the inflation rate is important factor for to persuade FDI.

According to numerous studies of the determinants of FDI flows, we include a country’s inflation rate to our model measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.

4.3.6 Economy Openness

Economy Openness or trade openness is the variable representing the level of economic freedom and it is expected to appear with a positive and significant sign and it is believed that higher Economy Openness must attract more FDI. According to definition of Economy Openness, Market-economy mostly free from trade barriers and where exports and imports form a large percentage of the GDP. No economy is totally open or closed in terms of trade restrictions, and all governments have varying degrees of control over movements of capital and labor. Degree of openness of an economy determines a government's freedom to pursue economic policies of its choice, and the susceptibility of the country to international economic cycles.
According to Heritage Foundation, Economy Openness is the key to create to increase of foreign investment. Economy Openness provides an opportunity for foreign investors’ entry to host country that influences the flow of FDI. The Heritage Foundation analyses Index of Economic Openness. The research is to develop a systematic, empirical measurement of economic freedom in countries throughout the world have been used to study since 1995. In the 2008 Index of Economic Freedom covers 162 countries across 10 specific factors of economic freedom. High scores approaching 100 represent higher levels of freedom. The higher the score on a factor, the lower the level of government interference in the economy.

The Heritage Foundation analyses 10 specific factors of economic freedom and which are listed in the followings;
The 10 Economic Freedoms are,

• Business Freedom
• Trade Freedom
• Fiscal Freedom
• Government Size
• Monetary Freedom
• Investment Freedom
• Financial Freedom
• Property Rights
• Freedom from Corruption
• Labor Freedom

Taken together, these 10 freedoms offer an empirical depiction of a country’s degree of Economic freedom. Economies with higher levels of Economy Openness can induce higher FDI inflows that allow a virtuous cycle of entrepreneurship, innovation, and sustained economic growth and development to flourish.
In this research, we calculated economy openness yearly basics from sum of total imports and total exports, measured as percentage of real GDP and expected to be positively and statistically significant with the determinant of FDI inflows.

**4.3.7 Countries official language**
Language is a dummy variable that equals to one if the two countries have the same language. Common language is expected to facilitate FDI flows. It is expected to be typically positive and statistically significant.

**4.3.8 Distance (kilometers)**
Distance is the variable representing the resistance to trade flow between source and host Countries and it is expected to appear with a negative and significant sign. Usually, distance is measured by considering the geographic or minimum distance between the centers (often assumed to be the capital cities) of source and host countries.

Recent studies claim that physical distance between countries may be much more than a geography measure: it is history, culture, language, social relations (some of these aspects are captured by dummy variables), transport and transaction costs. For example, considering trade as dependent variable, authors conclude that greater distance between source and host country could imply high transport costs which in turn should be associated with a reduced trade flow (because more expensive) and an increasing foreign direct investment flows, or that larger distance can be associated with higher information and search costs.

In this research, we calculate distance considering the geographic distance between the capital cities and expected to be positive and statistically significant.

**4.3.9 Share Border**
Share border is a dummy variable that equals to one if the two countries have same border and it is expected to appear with a positive and significant sign.
For Economic globalization, political globalization and social globalization, we use KOF index of Globalization.

In this research emphasize three dimensions of globalization: economic globalization, political globalization and social globalization by using KOF index of Globalization. The three dimensions of the KOF index are defined as:

Economic globalization, characterized as long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges;

Political globalization, characterized by a diffusion of government policies;

Social globalization, expressed as the spread of ideas, information, images and people.

Limitation to get data on Globalization, in our research, we analyse followed by KOF Index of Globalization for six ASEAN countries only; Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand.

4.3.10 economic globalization
Economic globalization can be defined as the process of increasing economic integration between two countries, leading to the emergence of a global marketplace or a single world market. Depending on the paradigm, globalization can be viewed as both a positive and a negative phenomenon.

The trend of global economy today is getting momentum and the interdependence among nations has increased considerably. Foreign direct investment (FDI) constitutes an essential factor in this process. Foreign investment not only can facilitate the economic restructuring and optimization, but also can accelerate the integration of regional economy with the world economy. Each nation needs to take action to encourage thereby, FDI, promoting the development of the developing countries and enhancing co-operation between developed and developing countries.
The KOF index of Globalization measures the degree of economic globalization by two indexes. One index measures actual flows: trade, foreign direct investment and portfolio investment (all in percent of GDP). The second index measures restrictions on trade and capital using hidden import barriers mean tariff rates, taxes on international trade (as a share of current revenue) and an index of capital controls. Given a certain level of trade, a country with higher revenues from trade taxes is less globalized.

We considered economic globalization for the country’s elements of openness and expected to be positively and statistically significant with the determinant of FDI inflows.

4.3.11 political globalization
According to Nicos Poulantzas (2001) the political globalization is the state as a set of institutionalized political arenas consisting also of a legal order, legitimacy, ideology, and a set of functions. There can be difficulty of treating globalization as one variable to analyze the determinant of FDI inflows.

Key Policy Dimensions of Globalization on development of greatest significance for national policy are analysed by Shahid Yusuf in 2001: “Growth of trade, Capital Flows and Financial Capability, migration, IT and the Web diffusion of technology; all parts of the world are affected by globalization through these channels.”

Broadly speaking, the process of globalization has two aspects. The first refers to factors such as trade, investment, technology, cross-border production systems, flows of information and communication - which bring societies and citizens closer together.

The KOF Index of Globalization measure Political Globalization followed by A.T. Kearney (2001-2006), through over Data on the number of embassies Country, to which the country is a Membership in International Organizations and the number of a country participated in UN peace missions.

Political globalization is expected to be negative and statistically significant with the determinant of FDI flows.
4.3.12 Social globalization

The International Labour Organization (ILO) defines social globalization as “the social dimension of globalization refers to the impact of globalization on the life and work of people, on their families, and their societies. Concerns and issues are often raised about the impact of globalization on employment, working conditions, income and social protection. Beyond the world of work, the social dimension encompasses security, culture and identity, inclusion or exclusion and the cohesiveness of families and communities.”

We believe that Globalization creates new potentials for development and wealth creation but there have different views and perceptions among countries. If one country has sustainable economic and political condition that can gain more impact to country’s people living standard. Hence, by social globalization, people will meet their needs.

The World Commission on the Social Dimension of Globalization released its Report, *A Fair Globalization: Creating Opportunities for All*, in February 2004. The report examined the process of globalization through the eyes of ordinary people, drawing on extensive consultations with broad range actors in different parts of the world. The report includes comprehensive analysis and set of recommendations contained in the Report constitute the foundations for a common platform for action, and the basis for future multi-stakeholder dialogue as an essential vehicle for solid and sustainable change.

In this research, we use The KOF Index of Globalization and it classifies social globalization in three categories as follows;

- Data on Personal Contacts,
- Data on Information flows, and
- Data on Cultural Proximity.

Data on Personal Contacts is to measure direct interaction among people living in different countries through over data on Outgoing Telephone Traffic (international telecom traffic), Government and workers’ transfers received and paid (in percent of GDP), International Tourism, foreign population (interactions with people from other countries), and
International letters per capita that included to capture measurement of sent and received direct interaction among people living in different countries.

data on Information flows is to measure potential for receiving news, the global spread of ideas and images through over data on the number of internet hosts and users, cable television subscribers, number of radios (all per 1000 people), and international newspapers traded in percent of GDP.

Data on Cultural Proximity is the most difficult to analyse. According to Saich (2000, p.209) and Rosendorf (2000, p.111), cultural globalization mostly refers to the domination of U.S. cultural products and United States is the trend-setter in much of the global socio-cultural realm. (see; Method of calculation, 2008 KOF Index of Globalization6)

Following the analysis of these authors, KOF Index of Globalization measure Cultural Proximity through over data on Number of McDonald's Restaurants (per capita), Number of Ikea (per capita), imported and exported books (relative to GDP).

6 http://globalization.kof.ethz.ch/
<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Exchange Rate</td>
<td>Value of bilateral exchange rate with investing partner $i$’s currency units per U.S. dollar (Market Rate)</td>
<td>+/-</td>
</tr>
<tr>
<td>Gross domestic Product</td>
<td>GDP (constant 2000 US$)</td>
<td>+, +</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>Interest rate spread: calculated from interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits.</td>
<td>+/-</td>
</tr>
<tr>
<td>Inflation</td>
<td>Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.</td>
<td>+/-</td>
</tr>
<tr>
<td>Economy Openness</td>
<td>as sum of real exports and imports divided by real GDP.</td>
<td>+, +</td>
</tr>
<tr>
<td>Countries official language</td>
<td>dummy variable; if they use same language = 1 otherwise=0</td>
<td>+, +</td>
</tr>
<tr>
<td>Distance (km)</td>
<td>distance kilometer between source and host countries' capital cities</td>
<td>-, -</td>
</tr>
<tr>
<td>Share Border</td>
<td>dummy variable; if they use share border = 1 otherwise=0</td>
<td>+, +</td>
</tr>
<tr>
<td>economic globalization</td>
<td>characterized as long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges.</td>
<td>+, +</td>
</tr>
<tr>
<td>political globalization</td>
<td>characterized by a diffusion of government policies.</td>
<td>-, -</td>
</tr>
<tr>
<td>social globalization</td>
<td>expressed as the spread of ideas, information, images and people.</td>
<td>+, +</td>
</tr>
</tbody>
</table>
Equations (4.1) suggests that bilateral FDI investment depends on each country’s Foreign Exchange Rate, Gross domestic Product, Interest Rate, Inflation, Economy Openness, common language, Distance (km), Share Border, economic globalization, political globalization and social globalization.

Table 4-1 summarises the expected signs of the parameter estimates on the explanatory variables used in modeling the model equations. A positive sign (+) indicates an anticipated positive effect on FDI investment. A negative sign (−) indicates an anticipated negative effect on FDI investment.

Table 4-1 shows the hypothesized signs of the variable on FDI models. For example, Gross domestic Product is hypothesized to be positively related to the FDI investment.

### 4.4 Data Source and Methodology

This study examines a number of countries involved in FDI activity in ASEAN countries. The data set is limited by the amount of information available for each country involved. Equation (4.1) covers the period from 1995 to 2005.

The data are obtained from the “ASEAN Statistics Data Base, International Financial Statistics, IMF, World Development Indicators, The World Bank.”

Common language and Distance (km) are collected from the Centre D'Etudes Prospectives et D'Informations Internationales, the French Research Center in International Economics. CEPII([http://www.cepii.fr](http://www.cepii.fr)).

Additional data Share Border is analysed from Data and research report, The World Bank and Economic, social and political globalization data are obtained from [KOF index of Globalization](http://globalization.kof.ethz.ch/).
The data set consisted of ASEAN 10 countries including Brunei Darussalam, Cambodia Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. For Globalization Index Data, only can get for six ASEAN countries including Indonesia, Malaysia, Myanmar, Philippines, Singapore, and Thailand. Other countries are missing due to the low quality of the database system, political policy, and low degree of openness.

The summary of data sources and descriptive statistics for the variables are presented in Appendix B.

There are two kinds of methodologies in our research model implication. The first methodology is examining effective determinants of FDI for ASEAN countries overtime. The second methodology is examining various variables trends in overtime among ASEAN countries.

Finally, the empirical analysis is divided into 2 groups of investing partners; bilateral 10 economies and bilateral 6 economies. The empirical analysis for determinants of FDI without globalization index is analysed by all bilateral among 10 ASEAN countries. The empirical analysis for globalization effect on FDI is analysed by six ASEAN countries including Indonesia, Malaysia, Myanmar, Philippines, Singapore, and Thailand.
Table 4-2
Summary of FDI literature using variables related to my research.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic uncertainty (inflation)</td>
<td>Negative</td>
<td></td>
</tr>
<tr>
<td>Country risk</td>
<td>Negative</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors.
CHAPTER 5
EMPIRICAL ESTIMATION

This chapter examines empirical findings in determinants of FDI in ASEAN countries by using simple regression model. The results of the empirical models and discussion of findings are followed by the previous chapter on literature review and FDI theories discussed in Chapter 2, Gravity Model and FDI discussed in Chapter 3, and empirical models and methodology discussed in Chapter 4.

The chapter is divided into two parts. The first part discusses the results of the determinants of FDI in ASEAN countries and the second part discusses the conclusions of the empirical findings.

5.1 FDI Empirical Models Analysis

This section presents the results of the estimated coefficient determinants of the bilateral net FDI flows among ASEAN 10 countries. We analyse by pairs with bilateral net FDI flows basics.

The basic model specified for FDI flows is as presented by Equation (4.2) in chapter 4.

\[ \text{FDI}_{ijt} = f [X_{i-t-k}, X_{j-t-k}, W_{ijt-k}, G_{t-k}] \]

The estimated results using Equation (4.2) are presented in Table 5-1. Panel data from 1995-2005 are used in the analysis. The extended Gravity Model is estimated by pooling Data across over 10 ASEAN countries using four different baseline models. The model includes 11 explanatory variables: Gross domestic Product, Foreign Exchange Rate, Interest Rate, Inflation, Economy Openness, Countries official language, Distance (km), Share Border, economic globalization, political globalization and social globalization.

Model 1 shows the estimated coefficients of the basic Gravity Model which consists of Gross domestic Product, Countries official language, Distance (km), and Share Border.
The model estimates the effects of macroeconomic status between bilateral investing among ASEAN countries. Two dummy variables, Countries official language and Share Border are included in Models 1.

Model 2 shows the estimated coefficients including Gross domestic Product, Foreign Exchange Rate, Interest Rate, Inflation, Economy Openness, Countries official language, Distance (km) and Share Border. Model 2 investigates the effects of bilateral investing partners’ economies over the inflows of FDI into ASEAN countries. Two dummy variables, Countries official language and Share Border are included in Models 2. In order to taking account of barriers to investment among members’ countries, the two dummy variables of Countries official language and Share Border are included in Model 1 and 2. Model 2 shows the empirical results for all explanatory variables.

In addition, we also test for globalization effect on ASEAN countries FDI. Model 3 shows the estimated coefficients of the globalization effect on FDI which consists of economic globalization, political globalization and social globalization.

Model 4 shows the estimated coefficients including Gross domestic Product, Foreign Exchange Rate, Interest Rate, Inflation, Economy Openness, Countries official language, Distance (km) and Share Border over from 1995 to 2005 yearly basics. In model 4, to test how affect the estimated coefficients on FDI yearly, we use dummy variables for 11 years 1995 to 2005. We use year 2005 for control variable.

The results in Table 5-1 show that the fixed effects of Generalized least squares on the most reliable results used in this study. All models show that most of the estimated coefficients have statistically significant signs.

Most of the variables have the hypothesized signs with significantly at 0.1 percent level and 1 percent level. Some variables are significant at 10 percent level. In Model 1, we test the estimated coefficients of the basic Gravity Model and all variables such as Gross domestic Product, Countries official language, and Distance (km) are significant on FDI
at 0.1percent level. Share Border is significant on FDI at 1 percent level. Distance (km) and Share Border are significant on FDI with negatively; all others are positively effect on FDI.

In Model 2, we test all explanatory variables and Gross domestic Product, Foreign Exchange Rate, Interest Rate, Inflation, Economy Openness, Countries official language, Distance (km) and Share Border. Gross domestic Product, Economy Openness are positively significant on FDI at 0.1percent level while Distance is negatively significant on FDI at 0.1percent level.

In Model 3, we test the estimated coefficients of the globalization effect on FDI and economic globalization is positively significant on FDI at 1percent level while political globalization is negatively significant on FDI at 1percent level. Social globalization is insignificant to FDI in ASEAN countries.

In model 4, we test how effect the estimated coefficients on FDI yearly from 1995 to 2005. After controlling year 2005 for control variable, all selected variables are significant as same as model 2 on FDI at 0.1percent level. Among ASEAN countries, year 1995, 1996, 1999, 2001 and 2002 are significant on FDI at 1 percent level. Year 1997 is the best booming in FDI before the ASIA financial crisis. Therefore in year 1998, ASEAN countries FDI is going down to significant at 5 percent level but in year 2000, 2003 and 2004 are insignificant to FDI according to our result. (See graph 5-1)
Then, we analyze ASEAN countries’ Inward FDI and Outward FDI from year 1995 to 2005. (See graph 5-2, 5-3). According to graph 5-2: Inward FDI flow Analysis among ASEAN countries, Malaysia, Singapore and Thailand FDI are the highest respectively. Vietnam, Indonesia and Philippines are followings but Brunei Darussalam and Myanmar have not much FDI. Lao PDR and Cambodia get the least FDI among ASEAN countries.

According to graph 5-3: outward FDI flow Analysis among ASEAN countries, Singapore, Malaysia, and Indonesia FDI are the highest respectively. Thailand is the following. Brunei Darussalam and Philippines are leveling. Vietnam is increasing in FDI and higher FDI than that of other least developed countries - Myanmar, Lao PDR and Cambodia.

We analyze bilateral net FDI on ASEAN all ten countries with 990 observations. Our data set includes pairs of entities (dyadic data) which are bilateral variables among ASEAN countries. To analyze the data, we combine matrices and turn this into a data set where each pair is an observation. We analyse by OLS regression but the dilemma is that our error terms in the regression are correlated across observations because of typically
observations in the same row or column is positively correlated. Therefore, our empirical results of standard errors are too small and the p-values are optimistic, for that to solve dyadic data error, we control by Generalized Least Squares instead of OLS regression.

5.2 Summary of Empirical Findings

The results of the extended Gravity Model show that Gross domestic Product, Economy Openness, Distance (km), economic globalization, and political globalization have a significant impact on the inflows of FDI into ASEAN countries. However, Foreign Exchange Rate, Interest Rate, Inflation, Share Border and social globalization do not have significant impacts on the inflows of FDI into ASEAN countries. But Share Border and Countries official language are significant impacts on the inflows of FDI into ASEAN countries in traditional gravity model 1.

Gross domestic Product, Economy Openness, Countries official language, Distance (km), economic globalization, and political globalization are important factors influencing in the FDI model. The results also show that Distance is negatively and significantly related to FDI into ASEAN countries.
graph 5-2: ASEAN countries (1995-2005) Inward FDI flow Analysis

Source: ASEAN Statistics Data Base

graph 5-3: ASEAN countries (1995-2005) Outward FDI flow Analysis

Source: ASEAN Statistics Data Base
Table 5-1: Determinants of FDI in ASEAN Using Equation (4.2)
Estimates for 1995-2005
Dependent Variable : FDI

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficients</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Source Gross domestic Product</td>
<td>.00054655***</td>
<td>.00044481***</td>
<td>-</td>
<td>.00058558***</td>
</tr>
<tr>
<td>Source Foreign Exchange Rate</td>
<td>-</td>
<td>0.00073362</td>
<td>-</td>
<td>0.00149121</td>
</tr>
<tr>
<td>Source interest rate</td>
<td>-</td>
<td>-1.5695177</td>
<td>-</td>
<td>0.88720488</td>
</tr>
<tr>
<td>Source inflation rate</td>
<td>-</td>
<td>0.14072003</td>
<td>-</td>
<td>0.00497656</td>
</tr>
<tr>
<td>Source economy openness</td>
<td>-</td>
<td>46.482179***</td>
<td>-</td>
<td>56.614804***</td>
</tr>
<tr>
<td>Host Foreign Exchange Rate</td>
<td>-</td>
<td>0.00119809</td>
<td>-</td>
<td>0.0020748</td>
</tr>
<tr>
<td>Host Gross domestic Product</td>
<td>.00059324***</td>
<td>.0004995***</td>
<td>-</td>
<td>.00064406***</td>
</tr>
<tr>
<td>Host interest Rate</td>
<td>-</td>
<td>-1.4407924</td>
<td>-</td>
<td>1.0626884</td>
</tr>
<tr>
<td>Host inflation rate</td>
<td>-</td>
<td>0.21684186</td>
<td>-</td>
<td>0.0732161</td>
</tr>
<tr>
<td>Host economy openness</td>
<td>-</td>
<td>47.749436***</td>
<td>-</td>
<td>58.586004***</td>
</tr>
<tr>
<td>Countries official language</td>
<td>135.61703***</td>
<td>31.334569</td>
<td>-</td>
<td>28.503809</td>
</tr>
<tr>
<td>Distance (km)</td>
<td>-.05838799***</td>
<td>-.04559181***</td>
<td>-</td>
<td>-.04086726***</td>
</tr>
<tr>
<td>Share border</td>
<td>-13.669964</td>
<td>-</td>
<td></td>
<td>-11.842649</td>
</tr>
<tr>
<td>economic globalization</td>
<td>-</td>
<td>-</td>
<td>134.13844***</td>
<td>-</td>
</tr>
<tr>
<td>political globalization</td>
<td>-</td>
<td>-</td>
<td>-85.091691**</td>
<td>-</td>
</tr>
<tr>
<td>social globalization</td>
<td>-</td>
<td>-</td>
<td>45.450705</td>
<td>-</td>
</tr>
<tr>
<td>year1995</td>
<td>-</td>
<td>-</td>
<td></td>
<td>89.068638**</td>
</tr>
<tr>
<td>year1996</td>
<td>-</td>
<td>-</td>
<td></td>
<td>99.066214**</td>
</tr>
<tr>
<td>year1997</td>
<td>-</td>
<td>-</td>
<td></td>
<td>117.4203***</td>
</tr>
<tr>
<td>year1998</td>
<td>-</td>
<td>-</td>
<td></td>
<td>92.675767*</td>
</tr>
<tr>
<td>year1999</td>
<td>-</td>
<td>-</td>
<td></td>
<td>97.559513**</td>
</tr>
<tr>
<td>year2000</td>
<td>-</td>
<td>-</td>
<td></td>
<td>56.621003</td>
</tr>
<tr>
<td>year2001</td>
<td>-</td>
<td>-</td>
<td></td>
<td>93.947919**</td>
</tr>
<tr>
<td>year2002</td>
<td>-</td>
<td>-</td>
<td></td>
<td>81.873289**</td>
</tr>
<tr>
<td>year2003</td>
<td>-</td>
<td>-</td>
<td></td>
<td>43.805601</td>
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<tr>
<td>year2004</td>
<td>-</td>
<td>-</td>
<td></td>
<td>27.867471</td>
</tr>
<tr>
<td>year2005</td>
<td>-</td>
<td>-</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>constant</td>
<td>75.7792***</td>
<td>-59.668204</td>
<td>-183.93972</td>
<td>-221.15778***</td>
</tr>
</tbody>
</table>

Before Dyadic error control,
Number of observations                  | 990          | 990 | 330 | 990 |
After Dyadic error control,
Number of observations                   | 495          | 495 | 165 | 495 |

NOTE:  * p< 5% level ;   ** p< 1% level ;   *** p<0.1% level
CHAPTER 6
CONCLUSIONS AND IMPLICATIONS

This chapter represents a summary of the study, including the empirical results and the empirical issues. Section 6.1 discusses the Policy Implications of the Study Findings by the empirical models analysis. Section 6.2 discusses Limitations of the Study. Section 6.3 provides suggestions for future research.

6.1 Summary of Empirical Findings

The objectives of this research are to provide an overview of foreign direct investment (FDI) studies and to evaluate the determinants of FDI in ASEAN countries using the related FDI theories and empirical Model. This research also examines the bilateral FDI flows between different locations and their geographical distances among ASEAN pair countries. The primary research question addresses which factors persuade sustain FDI in ASEAN countries. In addition, this study also examines the effects of globalization in ASEAN countries’ FDI. The specific objectives of this research include to study the determinants of FDI in ASEAN countries by using Gravity Model and Eclectic Paradigm concept. In addition, this research also examines the effects of globalization on the inflows of FDI into ASEAN countries.

The literature on Eclectic Paradigm and Gravity Model is reviewed thoroughly in Chapter 2 and chapter 3. The Eclectic Paradigm provides the logical basis for foreign direct investments. Eclectic Paradigm concept is based on three - combination framework “O, L, I”: ownership, location, and internalization. The Eclectic Paradigm concept is useful for researchers and investors to analyse the nature of FDI through global mode of entry as well as to analyse the specific determinants of host country. The extended form of Gravity Model derived from the traditional Gravity Model is utilized to answer the objectives of the research with the panel data covering the time period of 1995-2005 among ASEAN 10 countries.
Table 6-1 presents the summary of the estimated results of the FDI model. In our model, we include a time-specific element analysis by dummy variables in model 4 and by the result we can see the FDI model is significantly affected by a time-specific element where inflows of FDI investment into ASEAN countries years 1995 to 2005. In our model (+), (-) and (0) represent positive, negative, and no significant effect respectively. The summary of FDI model is based on Model 4 (see Table 5-1).

**Table 6-1: Variables Affecting the Determinants of FDI**

<table>
<thead>
<tr>
<th>Variables</th>
<th>FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Exchange Rate</td>
<td>(0)</td>
</tr>
<tr>
<td>Gross domestic Product</td>
<td>(+)</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>(0)</td>
</tr>
<tr>
<td>Inflation</td>
<td>(0)</td>
</tr>
<tr>
<td>Economy Openness</td>
<td>(+)</td>
</tr>
<tr>
<td>Countries official language</td>
<td>(0)</td>
</tr>
<tr>
<td>Distance (km)</td>
<td>(-)</td>
</tr>
<tr>
<td>Share Border</td>
<td>(0)</td>
</tr>
<tr>
<td>economic globalization</td>
<td>(+)</td>
</tr>
<tr>
<td>political globalization</td>
<td>(-)</td>
</tr>
<tr>
<td>social globalization</td>
<td>(0)</td>
</tr>
<tr>
<td>year1995</td>
<td>(+)</td>
</tr>
<tr>
<td>year1996</td>
<td>(+)</td>
</tr>
<tr>
<td>year1997</td>
<td>(+)</td>
</tr>
<tr>
<td>year1998</td>
<td>(+)</td>
</tr>
<tr>
<td>year1999</td>
<td>(+)</td>
</tr>
<tr>
<td>year2000</td>
<td>(0)</td>
</tr>
<tr>
<td>year2001</td>
<td>(+)</td>
</tr>
<tr>
<td>year2002</td>
<td>(+)</td>
</tr>
<tr>
<td>year2003</td>
<td>(+)</td>
</tr>
<tr>
<td>year2004</td>
<td>(+)</td>
</tr>
<tr>
<td>year2005</td>
<td>(0)</td>
</tr>
</tbody>
</table>

**Note:**
1. (+), (-) and (0) represent positive, negative, and no significant effect, respectively.
2. The summary of FDI model is based on Model 4 (see Table 5-1).
According to our result table 6-1, the followings are the estimated results of FDI in ASEAN countries.

- The model suggests that market sizes by GDP in ASEAN countries played a significant role in determining the level of FDI in ASEAN countries.

- This model also implies that the inflows of FDI into ASEAN countries are influenced by the investing bilateral other ASEAN countries.

- Gross domestic Product, Economy Openness, Distance (km), economic globalization, and political globalization have a significant impact on the inflows of FDI into ASEAN countries by our investment model.

- Foreign Exchange Rate, Interest Rate, Inflation, Share Border and social globalization have insignificant impacts on the inflows of FDI into ASEAN countries.

- Distance is negatively and significantly related to FDI into ASEAN countries that indicate that distance impacts on the FDI investment models inversely. This means if distance between bilateral countries increase, the transaction costs, investment cost will increase and inflows of foreign investment will decrease into ASEAN countries.

6.2 Limitations of the Study

The followings are limitations of in this study concerning to the data set, the estimation techniques, and the variables used.

The sample size used in this study is among 10 ASEAN countries’ bilateral data and we try to have no missing value. Although, globalization effect analyzing data set, some investing partners such as, Brunei, Cambodia, Lao and Vietnam are excluded due to the lack of available information.
The models of this research do not consider some other variables such as government expenditures, infrastructure, wage rate, human capital endowment and investment risks. Regional treaties also do not consider in this research. However, some macroeconomic variables are considered such as inflation rate, exchange rate, interest rate, and that can be influenced by government policies and political changes.

There are restrictions on data set because data are collected from various data sources with a variety of definitions regarding to the different facts and data criteria. According to some instances, therefore, the findings’ interpretations need to be caution since data may not be accurate. There may occur over estimate or under estimate on the determinants of FDI investment due to the data.

6.3 Policy Implications of the research Findings

FDI in developing countries has a long lasting history and it has fluctuated over time by globalization effect. For example, if the world FDI investment improve, FDI into ASEAN countries also improve. If the world face with financial difficulties, FDI into ASEAN countries also going down. Therefore globalization is directly affected on FDI. Moreover, by analyzing FDI into ASEAN countries, we can know change of investment environment in ASEAN. In this research, we are analyzing all together globalization and change of investment environment in ASEAN relating to FDI. We believe that the empirical findings can help the government to formulate the best way to improve FDI as well as economic development. The findings of this research would like to suggest the important implications for policy makers in ASEAN countries, foreign investors as well as domestic investors.

Inward FDI flows to ASEAN countries have two forms; the one form is coming from regional source, normally from ASIA such as China, India, Republic of Korea, Hong Kong, Taiwan and especially comes from regional trade among Southeast Asian Nations.
or ASEAN countries. The other form is coming from the rest of the world such as Japan, North America and Europe, Australia, and central and South America.

The MNEs are seeking the most favorable investment climate including government policies toward FDI with broader economic structure. Therefore, ASEAN countries need to strike the right policy balance to persuade FDI.

The extended Gravity Model has been widely used to examine the determinants of bilateral flows by the authors such as L Márquez-Ramos, 2008, Buch 2003, Filippini and Molini, 2003, Loungani, P., & Razin, A, 2001. However, previous Gravity Model studies have largely emphasized on distance and ignored some economic indicators. This research considers some others economic indicators such as inflation rate, GDP, interest rate, economy openness, exchange rate and economic globalization, political globalization and social globalization effect.

Previous researchers found out that Exchange rate has a negatively effect on import-substitution FDI but positively effect on export-oriented FDI. Previous researchers also found out that Inflation rate is inversely related with Exchange rate. This means, Inflation rate has a negatively effect on export-oriented FDI. But in this research, Exchange rate and Inflation rate have no impact on FDI. This shows foreign investors have no risk upon Exchange rate and Inflation rate when investing in ASEAN countries.

6.4 Suggestions for Future Studies

There has been limited Empirical evidence on the determinants of FDI in ASEAN countries as well as empirical evidence on inward FDI and restructuring in developing countries is also limited. A couple of researchers addressed factors that are important to FDI in the ASEAN. However, these studies focused only on the foreign investment at selected countries and at either the sectoral level or national level. Regarding to our motivation, in this research, therefore, we focus on all ASEAN countries determinants of FDI at national level. Any how, we also have limitation of study and by this section we would like to suggest for future studies.
According to the Business Network Theory, Regional integration is one of considering important variables for FDI. Business Network Theory explains the benefits of Relationships between regional integrations. (E.g. ASEAN, APEC and ASEM\(^7\)). Therefore, Future studies should include Regional integration effect among ASEAN countries.

Moreover, Future studies should compare determinants of Foreign Direct Investment (FDI) and determinants of Foreign Portfolio Investment (FPI) among ASEAN countries.

Odele Peter (June, 2001) investigated a Literature Review and Bibliography on Foreign Direct Investment and Development through over recent literature with emphasizing on its potential role in the development process; the objective of author’s studies is to determine what country-specific factors are correlated with incoming FDI.

Odele Peter\(^8\) suggested on FDI determinants by the following group:

<table>
<thead>
<tr>
<th>country characteristics</th>
<th>institutional variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>market size*</td>
<td>policies</td>
</tr>
<tr>
<td>openness*</td>
<td>laws and law enforcement</td>
</tr>
<tr>
<td>physical infrastructure</td>
<td>FDI-related incentives and regulations</td>
</tr>
<tr>
<td>distance from home country*</td>
<td>education and level of human capital</td>
</tr>
<tr>
<td>proximity to regional market</td>
<td></td>
</tr>
<tr>
<td>natural resources</td>
<td></td>
</tr>
</tbody>
</table>

\(^7\) Association of South East Asian Nations (ASEAN) [http://www.aseansec.org/](http://www.aseansec.org/)

Asia-Pacific Economic Cooperation (APEC) [www.apec.org/](http://www.apec.org/)

The Asia-Europe Meeting (ASEM) [http://www.aseminfoboard.org/](http://www.aseminfoboard.org/)

\(^8\) Odele Peter (page 5, 2001) investigated a Literature Review and Bibliography on Foreign Direct Investment and Development
<table>
<thead>
<tr>
<th>economic variables</th>
<th>labor costs and productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>economic and political stability*</td>
</tr>
<tr>
<td></td>
<td>economic growth rate</td>
</tr>
<tr>
<td></td>
<td>level of technological development</td>
</tr>
<tr>
<td></td>
<td>balance of payment constraints</td>
</tr>
<tr>
<td>inflation*</td>
<td>sector size</td>
</tr>
<tr>
<td>competition</td>
<td>level of domestic protection</td>
</tr>
</tbody>
</table>

Note; * variables are considered in this research.

According to the FDI determinants group table, the future research should consider by including institutional variables such as country FDI related policies (e.g. tax policy), laws and law enforcement, FDI-related incentives and regulations, education and level of human capital. Besides these, country characteristics such as infrastructure and natural resources should be considered in order to capture comparative efficiency.

Joong-Wan Cho (2003)\(^9\) considered host country policies could effectively help developing countries and economies in transition to attract FDI and benefited by implementation of host country policies such as;

- Create a sound and stable macroeconomic and political environment, including a transparent and predictable business environment
- Develop physical and technical infrastructure, and promote clusters
- Develop human resources
- Develop domestic enterprise capabilities, especially SMEs
- Address environmental and social concerns
- Adopt competition laws and reduce restrictive business practices

• Influence the behaviour of investors by offering investment incentives and imposing performance requirements

• Create larger markets through regional and bilateral cooperation

• Protect investment, including intellectual property rights

The author also suggested that Specific objectives for the use of performance requirements include:

• Deepening and broadening of the industrial base

• Generation of employment opportunities

• Linkage promotion

• Export generation and performance

• Trade balancing

• Regional development promotion

• Avoidance of restrictive business practices

• Technology transfer

Therefore, ASEAN countries should aware policies formulation and by doing so, countries can achieve economic development.

The more advanced is the country; the more it is profited by globalization. This is a true philosophical concept. However the less advanced ones must also embrace it unavoidably because only by that way it can achieve improvement and progress in very short time. One can’t be left in Stone Age. Finally, we will have to conclude and evaluate globalization as favorable on the conditions that it must be handled with great care and knowledge.

“This Time is the right to invest in ASEAN”
REFERENCES


Odele Peter (2001). Foreign Direct Investment and Development: A Literature Review and Bibliography, the International Development Research Centre, Ottawa, Canada.


