# **Determinants of FDI in Selected Asian Countries**

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### **ABSTRACT**

This thesis aims to examine the determinants of foreign direct investment (FDI) in 20 selected Asian countries in the time period of 2013 to 2017 by using panel data model. Fixed and random two types of panel data techniques have used during the analysis for the classical eight determinants of FDI, to see whether they are also relevant in the case of Asian countries. The determinants tested are GDP as representative of the market size, GDP per capita, labor force, inflation as macroeconomic stability, fuel exports as natural resources, domestic credit to private sectors as financial development, trade openness and economic growth rate. The findings show that economic growth, GDP, trade openness and labor force are the significant determinants of FDI in the sample Asian countries. While, GDP per capita, inflation, fuel exports, domestic credit to private sectors have no significant impact on FDI. Based on these results, policy recommendations are put forward to the 20 Asian countries. In order to increase FDI, additional improvements should be made in GDP, labor force, trade openness and economic growth.

**Keywords:** FDI, GDP, GDP per capita, trade openness, fuel exports, labor force, economic growth, inflation, Asian countries

ÖZ

Bu tez, 2013-2017 döneminde seçilen 20 Asya ülkesinde doğrudan yabancı yatırımın

(DYY) belirleyicilerini panel veri modelini kullanarak incelemeyi amaçlamaktadır.

Analiz sırasında, DYY'nin klasik sekiz belirleyicisinin Asya ülkeleri durumunda da

uygun olup olmadıklarını görmek için sabit ve rastgele iki tür panel veri tekniği

kullanılmıştır. Test edilen belirleyiciler; pazar büyüklüğünü temsil eden GSYİH, kişi

başına GSYİH, işgücü, makroekonomik istikrar enflasyonu, doğal kaynaklar olarak

yakıt ihracatı, finansal gelişme olarak özel sektörlere iç kredi, ticaret açıklığı ve

ekonomik büyüme oranıdır. Bulgular, ekonomik büyüme, GSYİH, dışa açıklık ve

işgücünün, örnek Asya ülkelerinde doğrudan yabancı yatırımın önemli belirleyicileri

olduğunu göstermektedir. Kişi başına GSYİH, enflasyon, akaryakıt ihracatı, özel

sektöre verilen yurt içi kredilerin doğrudan yabancı yatırımlar üzerinde önemli bir

etkisi yoktur. Bu sonuçlara dayanarak, 20 Asya ülkesine politika önerileri sunulmuştur.

Doğrudan yabancı yatırımın arttırılması için GSYİH, iş gücü, dışa açıklık ve ekonomik

büyüme konularında ilave iyileştirmeler yapılmalıdır.

Anahtar kelimeler: DYY, GSYİH, Kişi başına GSYİH, dışa açıklık, akaryakıt

ihracatı, işgücü, ekonomik büyüme, enflasyon, Asya ülkeleri

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# Chapter 1

#### INTRODUCTION

#### 1.1 Introduction

Foreign direct investment (FDI) is a major topic in the world economy. Because, as globalization spreads people start to be interested in exported products and have developed on enthusiasm for foreign cultures. Then foreign investors began to take a step forward in this pursuit. They began to bring their own products, technologies, services and culture to other countries, bringing them from a distance and making great contributions to world trade. In this trend, Asian countries in particular have become the focus of investors from the USA, the EU and other developed countries.

Countries like China and South Korea attracted a large number of foreign businessmen sooner. However, there are also some countries in Asia that are not well-known and also want to improve their economic level through this channel and attract more foreign investors, but the effect of these attempts are often not very obvious. However, due to the regional, energy and cultural advantages of these places, there are still great hopes for them. They just need some entrepreneurs to change their assets into commercial use.

#### 1.2 Statement of the problem

The thesis investigates what factors have contributed to the growth and which of them delayed the development of FDI in these Asian countries, that is to say, by improving which aspects can the amount of FDI in the region be gradually increased?

Generally, the following factors are considered as the major determinants of FDI inflows to markets (Hang Bich Phung, 2016). Those are the factors tested to see how effective they are in the case of Asian countries:

- 1. GDP Market size
- 2. GDP per capita
- 3. Labor force
- 4. Trade openness
- 5. Natural resources fuel exports
- 6. Financial development level Domestic credit to the private sector
- 7. Macroeconomic stability- Inflation
- 8. Economic growth

#### 1.3 Background of the study

Historically, the countries in Asia, which have been regarded as relatively slow and backward in economic and human development, are usually called "developing countries" and are often regarded as regions with weak economic potential and low economic status by the world. However, in recent decades, the rise of the Asian region is not only set off by its long history and colorful culture but also remarkable for its increasingly accelerating economic development. As a result, the status of Asian countries and Asian nations in the world has been newly evaluated. Of course, when it comes to economic development, it comes from the progress made by Asian countries which open up to trade in recent decades. Especially, the developed countries frequent direct investment is the greatest opportunity for them, thus the Asian region has opened its eyes to a new understanding of "The World". The region has not only made many economic improvements but also made a great leap forward in scientific, technological and cultural exchanges.

The development of the previously conservative and closed Asian region is now obvious. Asians can easily and conveniently enjoy imported food and services in their own countries. European and American people can also frequently see confident and free-walking Asian groups in the streets, thus gaining an understanding of Asian culture. Two worlds, previously separated by a wall, began to build an integration of water and blood.

In the past 50 years, Asia has accomplished remarkable economic achievements. Hundreds of millions of people have been lifted out of poverty and groups of economies have entered the ranks of middle-income and even developed economies. Although the region used to rely almost entirely on foreign expertise, several economies are now at the forefront of technological progress. What is even more shocking is that all this happened over a period of only two or three generations. Its success stems from the perfect combination of the following factors: integration with the global economy through trade and FDI, high savings rate, large investment in human and physical capital, and reasonable macroeconomic policies.

FDI is the principal form of the modern internationalization of capital. According to the definition of the International Monetary Fund (IMF), FDI refers to an investment behavior in which investors in one country use their capital to produce or assume management in other countries and have a certain degree of management control. (Zhao, 2016) This kind of investment involves not only the first-time transfer between two countries but also all later transactions between the two countries and foreign branches, whether joint or non-joint.

There are mainly three types of global investment in Asian countries. One is foreign investors establishing a transnational company directly, commonly called it "greenfield investment". Two is the establishment of transnational united ventures, which referred as joint venture; The last one is cross-border Merger and Acquisitions.

It is generally believed that FDI has a positive contribution to Asia's economy. It can provide resources, such as capital, technology and management skills which the host country lacks, thus improving the country's economic growth rate.

- (1) Capital: Many Asian multinational companies have financing channels that cannot be obtained by smaller domestic enterprises due to the global firm's huge scale and financial strength. Multinational companies, with their good reputation, are easier to raise funds from the capital markets than the domestic enterprises. Therefore, international direct investment is an important way to utilize foreign capital.
- (2) Technology: The key role played by technological progress in economic growth has been widely accepted. However, many Asian countries, especially developing Asian countries, lack the necessary research and development resources and skills to develop their own products and production technologies. Through international direct investment, necessary technologies can be introduced to these countries.
- (3) Management skills: If a local person who has been trained in a subsidiary of a foreign multinational company and has held managerial, financial or technical positions, then he is considered as an experienced manager leaves the company and helps to establish a local enterprise, this way the management know how is transferred to the local firm.

#### 1.4 Aim of the study

The aim of this paper is to investigate and study 20 selected Asian countries as research objects and to study more deeply the determinants of FDI, as well as the contributions and shortcomings of these determinants in the selected Asian region's economy and foreign trade. 20 Asian countries selected as samples are China, Japan, South Korea, Hong Kong, Indonesia, Cambodia, Myanmar, Lao, Malaysia, Philippines, Singapore, Thailand, Vietnam, India, Pakistan, Bangladesh, Sri Lanka, Nepal, Mongolia and Kazakhstan. The determinants for conducting the research are selected based on empirical studies to see if they are also relevant to Asian countries. They are GDP representing the market size, GDP per capita, labor force, inflation as macroeconomic stability, fuel exports as natural resources, domestic credit to the private sector as financial development, trade liberalization and economic growth rate.

## 1.5 Structure of the study

At the beginning of the thesis, the introduction chapter expresses general information about FDI in the Asian region and states the aims of the study. A review of the empirical and theoretical literature in the following chapter has pointed out what kind of relevant researches has done before and what was the results of the studies. Chapter three is an overview of the Asian economy, it helps to see the main problem with FDI in each group of countries and effectively guide the final policy recommendations. In chapter four, the data, model, methodology and the empirical results have been interpreted. Chapter five provides a conclusion by contrast with empirical studies presents in chapter two. Finally, are the policy recommendations based on the results.

# Chapter 2

# REVIEW OF EMPIRICAL AND THEORETICAL LITERATURE

# 2.1 Introduction to the determinants of FDI in selected Asian countries

One of the economic problems in the Asian region, especially in developing countries, is that they do not have enough national savings for investments. They constantly need foreign capital in the form of direct and indirect investment. At first, they borrowed money from international commercial banks. However, in the 1980s, due to the debt crisis, commercial bank loans dried up, forcing many countries to reform their investment policies to attract more stable forms of foreign capital.

Capital moves across borders due to different returns on this capital. The neo-classical international trade theory mainly focuses on the improvement of efficiency, the premise of which is the improvement of international division of labor and the increase of relative skill returns. Capital does not play any role, either because capital has withdrawn from the two-factor model to support high-skilled and low-skilled labor, or because the return on capital is assumed to be global parity due to increased international capital mobility. This is in sharp contrast to the classic view, which focuses on the income distribution between labor and capital (Deborah, 2011).

FDI seems to be one of the most effective ways to obtain foreign capital without taking any debt risks. Therefore, as a source of capital inflow, it has become an attractive alternative to bank loans. In the beginning of the 21st Century, China's economic rise effects world economy mostly. According to particular evaluations, China has added more than 25% to the growth of overall GDP in latest years. As the sixth largest trading country of the world's, it supplying over 6% of the world's exports (Xinhua, 2007) and being a major object of FDI through its huge domestic market and production unity with low labor costs (Barry &Hui, 2007).

The financial crisis in East Asian countries has highlighted the need for FDI as an important source of capital for developing countries. FDI has always been viewed as a beneficial part for developing countries' economic growth. Some reasons are that it is relatively fixed and therefore accounts for a large share of long-term profits. Therefore, the dependence on FDI in the total capital stock of developing countries can frequently show the stability of their economies in situations like external unexpected shocks. (Nakamura & Oyama, 1998).

The distance and the features of the home and host countries influence FDI flows into South Asia significantly. Repeated factors in investing and receiving economies appear to be have a significant impact on FDI flows; There might be other causes like human development, population, infrastructure and trade openness are also perceived as vital factors to promote the inflow of FDI from countries that located in South Asia. Additionally, FDI is oppositely proportional to the distance among investing country and the receiving country, which supports the vision that distance means additional costs united with FDI behaviours (Changsheng & Chunping, 2011).

FDI has an important function in the economic growth and industrial progress of developing countries. A number of developing countries have been taking measures to attract FDI, for instance providing a package of incentives and liberating their trading regimes, only a few countries, mainly low-and middle-income countries plus Asian countries that hold large domestic markets, have successfully attracted FDI (Khondoker, 2010). Small developing countries around the world can attract large amounts of FDI as long as they adopt additional export-oriented trade policy and provide an extra friendly business environment for foreign investors (Khondoker, 2010).

Domestic market is the main basis of China's attractiveness of FDI from OECD countries. But for India, the cost of cheap labor also plays a role in its attraction of FDI from OECD countries. Compared with India, China has superior performance in attracting FDI from OECD countries, because of larger domestic market and more developed global trade ties with OECD countries. In addition to this, India has advantages in terms of cheaper labor costs, lower national risks, geographical proximity to OECD countries and cultural similarities. These advantages have helped India narrow the gap in FDI with China (Wenhui, 2005).

The research approves the hypothesis that FDI can improve economic growth through certain causes like infrastructure, financial development, high human capital level and high trade openness appropriately. Therefore, the advantages of high-income economies more than low-income economies in this respect and benefit more from FDI inflows. Invest more in education and infrastructure in middle-and low-income countries is relatively necessary. Low-income countries, especially Laos, Cambodia

and Myanmar need to formulate strategies to stimulate greater trade openness ( Polpat, 2010).

FDI brings an increase in economic activities, expand the market size, provide opportunities for foreign investors and reap economies of scale in the larger market economy. Using Granger Causality Analysis, Malaysia confirms Granger neutrality, while Thailand has a two-way relationship. Countries such as China and India can compete for higher growth potential. Therefore, the study consists of a group of selected Asian countries that have similar development strategies and focus on the importance of foreign investment in achieving growth and vice versa (Samrat, 2012).

Only in high-income and middle-income countries, FDI has a positive relationship with economic growth. Well-educated labor force, trade liberalization and infrastructure investment all is the advantage factors of those countries in this case. These results are consistent with (Kose, 2006), he proved that economic situations are an important part in supporting FDI to promote the development of the economy. Educated population's level is high, government investment and trade openness benefit in high-income countries are attracting more FDI than middle-income countries with high levels of government investment and trade openness but insufficient education. The results show that there is no positive relationship between FDI and the economic growth of low-income groups, the investment facilities of low-income groups are inappropriate, and the level of trade openness and education investment is low. It causes low-income countries hard to attract FDI as a channel for developed countries transfer technology to them (Polpat, 2010). Perhaps they remain poor because they don't have the resources the other Asian countries have. In the

following section, the relationship between FDI and eight determinants of FDI inflows are defined and described within the context of the thesis.

#### 2.2 GDP- market size

In the findings of the thesis, it is founded that countries with larger markets (high GDP) are receiving large amounts of overseas investments. The most important factor strongly and positively affecting FDI inflows in the selected Asian countries is GDP; that is the market size. The highest GDP countries are also those countries attracting highest FDI. According to Deng Ning's OLI paradigm, a large number of market-seeking investments flow into countries through larger markets. (Khachoo & Imran, 2012). Similarly, so as to attract more FDI and to maximize the gains from it, the adequacy of foreign exchange reserves, improvement in infrastructure and growth of GDP supposed to be the key agenda of the foreign policy in the countries that still developing (Khachoo & Imran, 2012).

Since 1980, China's GDP has increased by 8-9% every year. Research indicates that the market size measured by GDP and GDP per capita which have a significant effect on the FDI. The fast economic growth has promoted a bigger domestic market and business opportunities for foreign firms to invest in China. Swain (1997) used GDP and real GDP growth rates to analyze China's FDI data from 1978 to 1992. Liu et al, (1997) used GDP, GDP growth and wages to draw the conclusion that market size is the fourth largest economic factor in China's commitment to FDI. Their research results are that the real GDP has significantly correlated with China's highest FDI figures. Zhang (2000) and Wei Liu (2001) also confirmed the positive correlation between market size and FDI inflows.

Kolstad and Villanger (2008) found that service departments with higher GDP per capita will attract and stimulate more FDI. Xing (2006) pointed out from another perspective that variables such as the rise in GDP could not explain the short-term fluctuations in FDI inflows, especially the decline in FDI. In a theoretical framework, the market size is expected to have positive effects on the inflow of FDI. Research done by many scholars like Agwall (1980), Bevan (2000) confirms that the market size of receiving country is the most obvious factor that positively effecting FDI inflow. Empirical Research by Liu Wei (2001) also proved that when a country's market size is large, FDI inflows will be more. Empirical evidence from Janitsky and Vannava (2004) shows that FDI inflows are expected to be larger in larger economies with well-developed markets. Thus, the findings of this thesis confirm with most of the literature on the topic. Also, the results of this thesis show that the global trend of FDI trajectory applies to Asian countries as well as relating to the market size.

#### 2.3 Labor force

According to Vinit Ranjan (2011) Total Labor Force is not important in determining labor mobility index inflow, which may mean that it is not an important consideration for foreign investors investing in India and China.

The effect of income rate on FDI is not uniform, because it also relies on the labor force. Modi (1992), Frey (1985), Lore (1995) confirm the positive relationship between skilled labor costs and FDI. The more skilled labor force will lead to the more FDI flow in. A positive and significant correlation is found in this thesis, at 5% level, between the labor force and FDI inflows to selected Asian countries. Thus, Asian countries follow the general trend in FDI in the labor force, as well.

In addition to labor costs, labor quality and labor availability are also very important factors that affect the selection of location to the foreign investors. Foreign companies mainly invest in labor-intensive activities such as clothing and footwear in Vietnam (Jenkins, 2006). Therefore, the quality and availability of labor force may be positively related to the inflow of FDI in each different province.

Hang Bich Phung (2016) has mentioned in his paper that Dunning calls the huge and cheap labor force can be considered as an advantage in terms of location for developing countries since the location factor is fixed and distinct to the host country. Location motivates investors to locate their production process in the resources and markets of the host country to decrease costs of production, avoid trade barriers imposed on imports, or take advantage of their trade openness. With his research, Hang Bich Phung (2016) has proved that the labor force is the leading determinant of FDI in developing countries.

## 2.4 Macroeconomic stability- Inflation

When inflation is regarded as a representative of economic stability, fiscal or monetary mismanagement is assumed to lead to uncontrolled inflation. Related to inflation, investors are assumed to be more willing to invest in more stable economies that reflect less uncertainty (Noemberg & Mendonca, 2004).

Another important macroeconomic variable that has a significant impact on FDI is the inflation rate (Pillai, 2013). The relationship between inflation rate and FDI inflow is not always consistent. The study did not provide conclusive evidence, and the coincidence of high inflation rate and low FDI with low inflation rate and high FDI inflow was recorded (Shamsuddin, 1994). Empirical research (Sayak, 2009) pointed

out the purchasing power of income erodes by inflation before it is transformed into consumption. Therefore, as inflation rises, the net effect of inflation will decrease. As a result, inflation may be regarded as having a direct negative impact on the inflow of FDI. Similarly, higher inflation is not a healthy indicator of sustainable development. However, some people suggest that controlled inflation is a good indicator for investors in two aspects. First, the profit share increases with inflation. Secondly, as borrowers, businessmen need to repay less during the period of inflation.

In the thesis, a significant correlation is not found between inflation and FDI among the 20 Asian countries. Thus, the findings of this thesis confirm with Pillai's (2013) research.

#### 2.5 Natural resources -Fuel exports

As a developing country, it is necessary to explore how the natural resource affects the FDI amount received by the host country. Newman (2005) used mineral rents as a substitute for natural resources in the research, but Asiedu (2006) used fuel exports as a natural resource export. These two reflect the accessibility of natural resources and indicate the natural resources might be an important driver of FDI. Since data on the latter measure are more readily available, the study of Asiedu (2006) and Montero (2008) is followed in this thesis and fuel exports as a percentage of commodity exports as a substitute for natural resources are used in this thesis.

Elizabeth Asiedu (2013) found that natural resources have a negative impact on FDI. Even after controlling the quality of institutions and other important determinants of FDI, FDI resources still exist. In addition, an increase in the share of natural resources in total merchandise exports means a decrease in trade diversification, which makes a

country more susceptible to shocks from external. These factors will cause an unstable macroeconomic status, thus reducing FDI. Conclusively, FDI from countries that hold rich natural resources is often concentrated in the natural resources sector. In this thesis, there was no significant correlation between the fuel exports and FDI inflows, positive or negative.

#### 2.6 Financial development level - Domestic credit to the private sector

As the model of FDI shifts from natural resources to efficiency, the significance of development on finance becomes more evident for the following purposes: Firstly, investors seeking efficiency decide which efficient markets they want to be part of and guarantee capital for their production facilities. Therefore, to decrease the financial wind efficiency-seeking investors search for a flexible and more advanced financial market (Nouira, 2014). Second is multinational companies depend on the national firms of the receiving countries to obtain inputs and intermediate products. Countries with more developed financial markets will promise to establish these backward linkages more quickly (Alfaro, Chanda, Kalemli Ozcan, Sayak, 2004). Therefore, host countries with developed financial markets will be more attractive to investors. However, in this thesis no significant correlation is found between financial development level and FDI inflows for 20 Asian countries. Maybe this finding is specific for Asian countries, but not for other countries. This relationship requires further investigation.

From experience, financial development is regarded as one of the determinants and drivers of FDI respectively. Alberta Lescu, Briciu and Korochu (2010) considered a large number of financial variables, up to 20, when studying the impact of financial markets on FDI, and found that financial development has a significant impact on FDI.

One of the variables used by Alberta Lescu, Briciu and Korochu (2010) is the interest spread. This factor is also been studied by Brada, Kutan and Yigit (2006) and found to be statistically significant. In addition, Gouidar and Nouira (2014), Githaiga, Nyauncho and KABIRU (2015) as well as Noorbakhsh (2001) believe that for representatives financial development, domestic credit in the private sector is statistically significant. They believe that domestic credit in the private sector is contrary to stagnation in the financial market and therefore is an appropriate measure of financial development. Between the various representatives of financial development, considering the developing countries studied in this thesis it is more appropriate to use the ration domestic credit to the private sector, because it captures the theoretic arguments regarding financial development more fully: the openness degree of markets in the host countries, the accessibility of funding for private business and the implicit financial growth of the receiving country. Therefore, this is a better measure than interest rate spread for the development level of the financial industry.

#### 2.7 Trade openness

Trade openness is an indicator to measure the intensity of international economic relations. In terms of value, prosperous global trade is a suitable sign of an economy growing its international level, which measured by the percentage of total imports plus exports to GDP and expected to have a positive impact on FDI. Economic openness can be demonstrated by lifting restrictions on FDI and trade barriers (Mateev, 2008). Since the implementation of the economic restructuring policy in the early 1990s, India has been gradually opening its information with a vision to build an endless FDI environment in the region. A lot of research by Bewan and Estrin (2000); Janicki (2004); Carbaugh (2008) and Goldar (2007) acknowledge that economic openness is a positive and important determinant of FDI. However, researchers are in dichotomy

using open agents. The ratio of exports plus imports to GDP is used by a group as an open agent (Sahoo, 2006) and (Mateev, 2008), while the other group (Bevan & estrin, 2000) and (Janicki & Wunnava, 2004) favor the ratio of imports to GDP. This study takes into account the ratio of exports and imports to GDP. The results of this research confirm the previous research which finds a correlation between FDI and trade openness. In this thesis, trade openness and FDI are strongly and positively correlating.

Carbaugh (2008) proved that economic liberalization has led to outward-oriented growth with regular inflows of FDI. Dawson (2006) examined the positive role of trade liberalization to FDI, which improved productivity, capacity of export and performance regimes brought about by liberalized trade. Free policies on foreign ownership, return of profits and barrier-free closure of enterprises, coupled with sufficient political and stability of economy will attract FDI (Wunnava, 2004). Also, these firms which are looking for cheap labor to cut down their production costs may have been invested in the countries analyzed in this thesis.

#### 2.8 Economic growth rate

A country with a stable macroeconomic environment and high and constant growth rate will attract more FDI than a more unstable economy. Related to this issue, investors are more willing to invest in more stable economies that reflect less uncertainty (Nonnenberg & Mendonca, 2004). Therefore, it is expected that GDP growth rate, industrial production index and interest rate will have a positive impact on FDI flows, while the inflation rate will have a positive or negative impact. GDP and the growth rate of GDP are appropriate indicators of the country's economic situation.

Growth rate of GDP is an unquestionable sign of economic growth and is the only figure representing the impact of activities in an economy. It conveys the trend of economic performance in an assumed period. Higher growth rates lead to the vitality of favorable macroeconomic indicators, such as higher employment level, consumption, investment and savings. Under such circumstances, business confidence will be promising and will lead to disposable investment at home and abroad. An empirical Study on FDI (Shamsuddin, 1994; Janicki, 2004; Zhao, 2003; Vijayakumar, 2010; Mateev, 2008) identified the positive impact of GDP growth rate on FDI inflows. However, any correlation between GDP growth rate and FDI in Asian countries has found by Nunnenkamp (2002).

In the panel data analysis, the results confirm that FDI inflows and economic growth are positively, significantly and powerfully correlating for 20 Asian countries analyzed. Thus, the findings in this thesis and Nunnenkamp's (2002) results are contradicting about Asian countries. However, the data in this thesis is much more recent than Nunnenkamp's which was written in 2002. Many things changed in the last 20 years in Asian countries and maybe the importance and realization of economic growth in the 20 Asian countries are more pronounced and much higher in the last 20 years than before. Maybe economic growth was not as impressive in those days as it is today.

# Chapter 3

## AN OVERVIEW OF THE ASIAN ECONOMIES

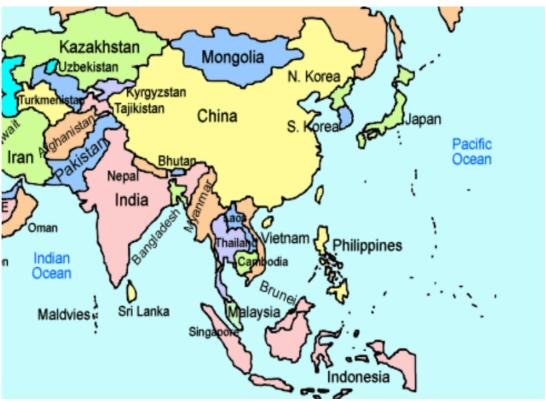


Figure 1: Selected Asian countries on the map (from Google images)

Global economic growth and Asia's economic growth are driven by several factors. The first factor is the growth of international investments and the second is the expansion in trade. In addition, the US fiscal stimulus has also had an impact on the governments of the developing countries. Fourth, in terms of finance, the financial market environment is still relatively relaxed.

The Asian countries are taking their places in the global economy and their performance takes their place in the global economic output. Some smaller island

countries are affected by some natural disasters and it is expected that it will slow down their economic growth. On the positive side, we can see that Japan's growth has maintained a good level in the past eight quarters (World Bank, 2018).

Let's take a look at China's development. At present, China is reducing its leverage and China's economic growth is slowing down slightly. In 2018, China's economic growth was 6.6%, while in 2019 it will be 6.4% (Xinhua, 2018). Of course, the gradual slowdown of China's economy is also in line with the policy of reducing leverage put forward by the Chinese government (Xinhua, 2018).

The reason why these countries are chosen in this thesis is that Asian economies have made great progress and Asian countries have progressively become the center of the world's concern nowadays. Therefore, FDI projects are also increasing, so it is of great significance to conduct more research on them. The following 20 countries selected in this research are assumed to be representing Asian countries.

#### 3.1 The economic growth of ASEAN countries

The Association of Southeast Asian Nations (ASEAN) was established on August 8, 1967, in Bangkok, Thailand. At present, the association has nine permanent members (Hemant, 2018). In contradiction to the background of a slow global economy, the ASEAN countries' economies have steadily stabilized and most countries have sustained moderate growth. According to statistics from major ASEAN countries, in 2018, Indonesia's economic growth rate was 5.15%, Cambodia's 7.30 %, Myanmar 6.70%, Lao 6.50%, Malaysia's 4.9%, Philippines's 6.20%, Singapore's 3.30%, Thailand's 4.2%, and Vietnam's 7.08% (Xinhua, 2019). These growth rates are very impressive and higher than most of the growth rates

exhibited by other countries. In fact, they are undreamt-of by many other countries. In 2019, the ASEAN countries will continue to grow, and mostly expected to grow quicker than last year. Indonesia's economy is basically looking good, Malaysia's economy is growing steadily, Philippines's economy is still eye-catching, Singapore's economy is growing unexpectedly fast, Thailand's economy has delivered its greatest report card in nearly five years, and Vietnam has fully completed the 13 economic targets set by the government. Vietnam's 7.08% growth rate has attracted extensive reports from domestic and foreign media. However, when Cambodia released its data, it overtook Vietnam at one stroke to become the top of the ASEAN countries' GDP growth list. Vietnamese policymakers say that Vietnam's economic growth was so obvious mainly due to foreign manufacturing (QIAN, 2019).

According to the Myanmar Times (2018), a research company said that although Myanmar's business environment which is still the weakest in Southeast Asia, the business environment is gradually improving because the government has begun to adopt correct industrial policies. Supported by manufacturing and construction, Myanmar's economic growth is expected to continue to expand in 2019 (CHEN, 2018).

However, the above rankings are only based on the GDP growth rate. If the ranking is based on the total economic volume, Indonesia is the country with the highest GDP among the ASEAN countries, with a total economic volume of 7.2 trillion yuan (i.e., 1.07 trillion US dollars), nearly twice that of Thailand, the second largest country (QIAN, 2019).

Laos is dominated by agriculture and has a weak industrial base. After 1997, the Lao economy was severely hit by the Asian financial crisis. The Lao Government has basically maintained social and economic stability through measures such as strengthening macro-control, rectifying financial order and expanding agricultural production. The economy grew by 6.9% and the GDP will be about 17 billion US dollars, with around per capita of 2,472 US dollars in 2017. The economy grew by 6.7% in the first half of 2018 and is willing to grow by 6.5% for the year (CHEN, 2018). GDP is 17.9 billion US dollars, with an average per capita of 2,599 US dollars (CHEN, 2018).

However, looking at these ASEAN countries from the score of FDI in total GDP, we can see that Singapore is the most active among them, with its FDI reaching 28% of GDP in 2017 under the continuous growth year after year. Secondly, Cambodia, even though the proportion of FDI in GDP in this country does not have a rising trend, still maintains a proportion of more than 10% (World Bank). However, the economic profits of other countries from FDI account for a small proportion as seen in Table 1.

Table 1: ASEAN countries FDI inflows (%GDP)

	2013	2014	2015	2016	2017
Cambodia	13.6	11.1	10.1	12.4	12.6
Singapore	20.9	21.8	22.7	23.1	28.0
Malaysia	3.5	3.1	3.3	4.5	3.0
Myanmar	3.7	3.3	6.8	5.2	6.0
Thailand	3.8	1.2	2.2	0.7	1.8
Vietnam	5.2	4.9	6.1	6.1	6.3
Indonesia	2.6	2.8	2.3	0.5	2.0
Philippines	1.4	2.0	1.9	2.7	3.3
Lao PDR	5.7	6.5	7.5	5.9	10.0

(From World Bank, 2017)

#### 3.2 Leader Economies of Asia

#### China

After 1995, China has become one of the world's largest economic countries with the greatest potential for development through systematic and large-scale construction. The people's life has generally reached a relatively comfortable level. According to the scheduled plan, by 2020, an advanced market economy system will be started in China (Xinhua, 2019).

From 1953 to 2010, China has successively completed eleven "five-year plans" and achieved remarkable achievements, laying a solid foundation for the development of the national economy. The form of common development of the non-public economy, with the public economy as the core body, individual, private and foreign investment, has mainly taken shape and the mode of economic growth has slowly changed from extensive to intensive (Xinhua, 2019).

#### Japan

After the bubble economy (1980s), the growth rate has never recovered in Japan. In the early 21st Century, there was a warning about employment slowdown, but the unemployment rate did not drop significantly. Most of the growth rate originated from the management of large enterprises' profit. Japan has taken third-largest place in World's economy, with 531.4 trillion yen GDP in 2017, growth rate is 1.7% (Wai, 2019).

#### South Korea

Recently, South Korea's economic growth has continued to slow down, unemployment has risen, and market worries have spread. South Korea's Central Bank recently released data showing that the preliminary estimate of GDP in the third quarter of this

year was 400.2 trillion won, up 0.6% from the previous quarter, with no significant improvement, up 2.0% from the previous year, the lowest year-on-year increase in nine years considering other countries' growth rates in Asia (Xinhua, 2018).

However, the scale of FDI in South Korea has continued to increase recently because South Korea has signed the Korea-China FTA, launched summit diplomatic activities and adopted various policies to strengthen economic cooperation, attracting capital investment from emerging countries such as China and the Middle East, and increasing investment in service industries such as logistics and cultural content (Xinhua, 2018).

Investment in high value-added fields such as global corporate headquarters, research, and development centers and cutting-edge materials is also expanding. At present, 16,000 foreign-invested enterprises have entered Korea's financial, technological, automobile and spare parts industries, medical and other fields. Among these enterprises, 223 have entered the Fortune 500 (Xinhua, 2018).

#### Hong Kong

Hong Kong's overall economic situation remained good in 2018. Although there was a downward trend in the third quarter of 2017, the real economic growth forecast for the whole year remained at 3.2%, still higher than the average trend growth rate of 2.7% per year in the past 10 years. Unemployment also hit a 20-year low. Hong Kong ranked third with US\$ 104.3 billion among the top 15 countries and regions receiving FDI in early 2019 (Liu, 2019).

The Heritage Foundation, an American think tank, and The Wall Street Journal published the 2019 Index of Economic Freedoms. For the 25th consecutive year, Hong Kong ranked first with a score of 90.2, the same as last year. The foundation believes

that Hong Kong's scores on trade freedom, financial freedom and government integrity have all risen. Analysis of the report said that Hong Kong's loose monetary policy helped Hong Kong's economic growth last year, but global trade frictions may bring negative effects (Liu, 2019).

China, Japan, South Korea and Hong Kong are known as economic tigers among Asian countries. China's FDI reached a peak in 2013 and Hong Kong's highest FDI in 2015. However, by 2017, FDI in both countries had fallen to their lowest points. Looking at Japan and South Korea's FDI, there is no prominent fluctuation (World Bank). This may be because the economic and production conditions of these countries are sufficiently developed that's why the amount of foreign investment is far higher than the amount of FDI as shown in Figure 2.



Figure 2: CHINA, JAPAN, HONG KONG, KOREA FDI net inflows (billion US\$) (From World Bank, 2017)

#### 3.3 South Asia- India, Pakistan, Sri Lanka, Bangladesh, Nepal

Economic industries in India are diversified, which cover handicrafts, farming, textiles and service industries. As one of the world's fastest growing economies and listed in

the world's ten largest economies, India's economy exceeded Britain's in 2016 for first time and became the sixth largest in the world economy in terms of GDP (Xinhua,2015). India's GDP grew by 9.3% in the year 2018, Surpassing China as the fastest growing economy among the world's main economies. Forecast: "From 2007 to 2020, the GDP of the Indian people will double" and the economic growth will surpass that of the United States in 2043. Despite this high growth rate, the report still points out that if the expected growth rate is reached, India will maintain a low income for decades to come, but it can become "a force in the world economy." (Xinhua, 2016).

As an emerging market in Asia, Agriculture is the mainstay of Pakistan's economy. Rice, wheat, sugar cane, cotton, sugar, and other grain and cash crops are the main income of citizens. They also exploit natural gas, oil, coal, iron, copper and other resources. In addition, there are many marble and gem export markets in South Asia. (Xinhua News, 2019). From 2015 to 2018, the economic growth rate was 3.6%, 3.5%, 5.0% and 7.2% respectively (Xinhua, 2019). The growth rate in emerging markets was slow, with a trade deficit of 17.1 billion US dollars and a total foreign debt of 58.3 billion US dollars. GDP in total is 3049.52 million US dollars (Xinhua, 2019).

Sri Lanka's economy continues to accelerate in the process of liberalization. The reason why the mining industry has given it many opportunities in the early stages of the economy is that the mining industry and its geographical location are Sri Lanka's greatest advantages. As an island rich in precious stones, it is listed as one of the world's five largest producers of precious stones and is known as "gem island". The annual export value of precious stones can reach 500 million US dollars yearly, with ruby, sapphire and cat's eye being the most famous (Xinhua, 2013).

Textile and tea are in their early stages of development, but tea is very famous in the European markets. Black tea is well-known in the world, holding an annual production of 284.9 million kilograms. Sri Lanka is considered as the main black tea production source in the world. Tea exports reached 1.03 billion US dollars. Sri Lanka is regarded as an entry point for foreign investment in emerging countries. GDP totaled US\$ 87.175 billion (2017, US dollar) (Xinhua, 2017).

Bangladesh is one of the poorest agricultural countries in the world. The vast majority of the population is engaged in agriculture and fishing. Agricultural production dominates the country's products and is also the source of raw materials for most small industries. The main objective of economic development is to meet the growing food demand. However, floods often spread, causing food and cash crops to suffer and reduce production, increasing food imports and declining industrial exports, seriously damaging the entire economy. At the same time, it needs to import a large amount of non-agricultural raw materials, machinery and equipment, and fuel, which limits economic development. Due to the trade deficit and its continuous expansion, economic development has to rely on foreign aid.

Bangladesh has implemented a planned economy and has implemented a two-year plan and three five-year plans. The Fifth Plan actually went bankrupt. The two-year plan has an average annual growth rate of 3.1%, and the two-year plan and the three-to-five year plan have an average annual growth rate of 3.8% and 3.9% respectively (Xinhua, 2019).

Nepal is an agricultural country with an economically backward and is one of the minimum developed countries in the world. From the early 1990s, a market-oriented

free economic policy has implemented. However, as a result of unexpected political situations and poor infrastructure, the results are not very good. Relying heavily on foreign aid, 25% of the budget comes from foreign donations and loans (Xinhua, 2018). The main economic data for fiscal year 2017/2018 are as follows:

The overall GDP is 29.3 billion US \$; per capita GDP is 1003.6 US \$; GDP grew by 5.89% (World Bank, 2018).

Main trade partners include the United States, India, the European Union, China, etc. The major import products are petroleum products, coal, wool, machinery, pharmaceuticals, chemical fertilizers, electrical appliances. Mainly export products are copper wire, vegetable oil carpets, ready-made clothes, handicrafts, leather, agricultural products, cashmere products.

According to the data on FDI (%GDP) provided by the World Bank (2013-2017), the performance of South Asian countries is obviously not very impressive. This shows that these countries should do more to attract foreign investment as observed in Table 2.

Table 2: South Asia countries FDI inflows (%GDP)

	2013	2014	2015	2016	2017
India	1.5	1.7	2.1	1.9	1.5
Pakistan	0.6	0.8	0.6	0.9	1.1
Sri Lanka	1.3	1.1	0.8	1.1	1.6
Bangladesh	1.7	1.5	1.5	1.1	0.7
Nepal	0.4	0.2	0.2	0.5	0.8

(From World Bank, 2017)

## 3.4 The Descendant of Empire-Mongolia

Mongolia's economy is relatively backward, with GDP per capita (2011) ranking 118th in the world. Before the Soviet Union disintegrated, Mongolia received a large amount of aid from the Soviet Union. After the Soviet Union was disintegrated, the country could not recover from economic contraction, because Mongolia's industrial foundation was weak, production technology was backward, the ecological environment was destroyed, desertification was serious, and infrastructure was insufficient (Xinhua, 2017). In recent years, Mongolia's economy has continued to develop since 2002, with GDP growing by about 6% every year. GDP grew by 9% in 2007. At the same time, about 36% of the people live below the poverty line, and the unemployment rate and inflation rate are currently high (World Bank). In latest years, with the development of mineral resources, the economy has grown rapidly. In 2017, Mongolia has traded with 163 countries in the world and earned US\$ 10.5 billion, up 27.3% year on year. Of this total, exports totaled 6.2 billion US dollars, up 26.1% year on year. Imports totaled US\$ 4.3 billion, up 29.1%% year on year. The trade surplus was US\$ 1.9 billion, up 19.7% year on year (World Bank).

Mongolia's FDI is also sluggish from 2013 to 2017. Compared with attracting FDI, the amount of outward FDI is larger. In order to improve the country's economic situation, the introduction of FDI should be noticed. Mongolia used to belong to the Soviet bloc and underwent great changes after the peaceful revolution in 1990. Subsequently, Mongolia's rich natural resources attracted a large number of foreign investors, thus Mongolia achieved rapid economic development between 2010 and 2012. However, since 2012, Mongolia's economic development has slowed down suddenly, making the role of international mining groups including Rio Tinto in Mongolia questionable.

Until 2016, Mongolia's largest opposition party which was referred to as "the People's Party", won the just-held parliamentary voting and returned to power. Economic issues were the main topic of this election, and then various relevant departments began to implement the economic opening plan (BBC News, 2016). Therefore, Mongolia's FDI has increased significantly in 2016. (Figure.3)

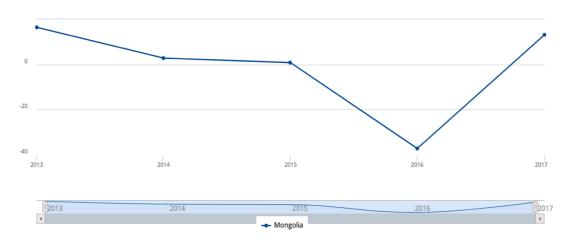


Figure 3: Mongolia FDI net inflows (%GDP) (From World Bank,2017)

## 3.5 Oil country Kazakhstan

Kazakhstan's economy is dominated by oil, natural gas, mining, coal, and agriculture, and its processing industry and light industry are relatively backward. Most consumer goods are imported. Kazakhstan implemented economic reform after independence and implemented market economy and privatization in stages. Influenced by the former Soviet Union, Kazakhstan could practice a market economy and privatization only after independence.

After the financial crisis broke out, Kazakhstan's economic growth slowed down sharply. From 2010 to 2012, the world economy has recovered, the demand of international markets and stable international prices like energy and metals,

Kazakhstan's economy starts to return powerfully and the number of exports starts to grow. On the other hand, the exports of the commodity have also promoted to a certain level by the recovering economy and growth of the main trading partners' demand in Kazakhstan. At the same time, the growth of its trade has been promoted by the further development of the customs union (Xinhua, 2016).

Judging from the development trend of FDI (World Bank), in Kazakhstan (2013-2017), the country still has great potential in attracting FDI, reaching a peak of more than 1.5 billion in 2016, but falling to 500 million in 2017. This may be due to a series of terrorist attacks in Kazakhstan in 2016 (Xinhua, 2016).

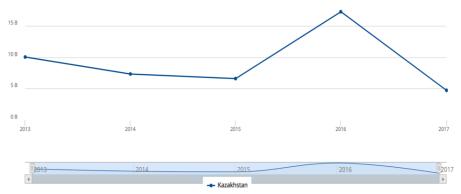


Figure 4: Kazakhstan FDI net inflows (billion US\$) ( From World Bank)

## 3.6 Discussion on Labor Force in Asian Countries

Due to unbalanced economic development, high unemployment rate and lack of development opportunities, some Asian countries regard the development of overseas employment market as an important political, economic and social strategy. Workers' remittances for some Asian countries are important earnings. It can be considered exporting services. They have taken various measures to develop the overseas

employment market and promote their citizens to engage in gainful employment overseas. The main methods are: sending overseas agencies, developing publicity materials, strengthening publicity work, overseas job market research, liaising with overseas missions, and participating in international migration conferences or forums. Philippine's measures in overseas job market development include "job introduction plan, industry liaison and signing of bilateral and multilateral agreements"; Sri Lanka's bilateral cooperation companies are responsible for collecting overseas employment information from various missions abroad. As the government has been actively committed to the development of the markets in the Middle East, Japan and South Korea, Sri Lanka's relevant missions abroad are required to send back the labor market information report of the host country to the domestic bilateral cooperation companies every month in order to obtain information about labor market development in these countries. With the government's initiative and encouragement, overseas employment in Asia has achieved rapid development (CHEN, 2018).

However, it also faces some problems and challenges. In order to meet these challenges, they have mainly strengthened the following four aspects of work: first, to protect migrant workers from exploitation in the process of recruitment and employment, and to provide them with appropriate assistance in terms of preemployment, overseas employment and reintegration into society after returning home; The second is to maximize the benefits of migrant workers, especially the need to increase the formal channels of remittance to ensure a reasonable investment channel for remittance; The third is to strengthen institutional capacity-building and interdepartmental cooperation to deal with new problems of overseas employment. The fourth is to strengthen cooperation with overseas employment host countries to protect migrant workers, develop new markets and prevent illegal immigration. In

order to achieve the above goals, protect their migrant workers and promote the orderly flow of migrants, major Asian labor exporting countries have all introduced corresponding policies and measures. These policies and measures mainly focus on exit control, prevention of illegal operations in the recruitment process, formulation of employment contract standards, pre-service training, repatriation assistance and repatriation services (CHEN, 2018).

In general, the freedom to leave a country (including one's own home country) is a basic right of every citizen. In order to protect migrant workers, some labor exporting countries in Asia have implemented different levels of exit control. In the Philippines, migrant workers must go through customs clearance procedures with the Philippine Overseas Employment Administration before leaving the country. Pakistan, Bangladesh and Indonesia have imposed various restrictions on the exit of female migrant workers (CHEN, 2018). In the past, some countries also banned their own workers from working in destination countries because of abuses against migrant workers. Standardizing private recruitment in Asia, private recruitment agencies have played an important role in expanding overseas employment, but they are also generally considered to be the root cause of the problem. Violations of recruitment agencies occur from time to time, which has led many governments to implement stricter control measures on private recruitment agencies. An Indian NGO even called for the abolition of private recruitment agencies, especially in the field of domestic workers (CHEN, 2018).

Almost all Asian labor exporting countries prohibit organizations that have not been certified by national labor administrative departments from engaging in overseas employment recruitment. Agency accreditation generally requires that the legal

representative of an agency engaged in overseas employment recruitment is a national citizen and can be responsible for his own recruitment. In addition, it is also common practice in various countries to require certification bodies to provide security deposit and to limit the fees charged in the recruitment process. Strengthening the management of employment contracts and ensuring a fair salary and basic working conditions through employment contracts is an important part of protecting the rights and interests of migrant workers. Most Asian labor exporting countries have formulated "model employment contracts", and some have also formulated different "model employment contracts" for different countries of employment and different occupations (CHEN, 2018). Some countries require foreign enterprises to provide a contract that meets certain standards when recruiting workers through intermediary organizations, otherwise these workers cannot leave the country for employment. However, although all countries have stricter regulations on the signing of employment contracts, in fact, it is difficult to ensure that these contracts can be implemented without signing corresponding labor agreements between labor exporting countries and importing countries. If the employing enterprise violates the contract signed with the foreign worker but is not punished by the host country, the minimum requirements of the labor exporting country for the overseas employment contract will not play its due role.

Strengthening pre-job training Pre-job adaptability training can take various forms, which can be mandatory or voluntary. Since 1983, the Philippines has had mandatory pre-employment training for overseas workers. The contents of such training include: working and living in conditions abroad, rights and obligations of migrant workers, plans and services of migrant workers and their families, how to seek help, etc. In addition, the government has designated some non-governmental organizations to

provide more targeted training to vulnerable groups of migrant workers, such as domestic workers (most of whom are women).

In the Philippines, in addition to government agencies, non-governmental organizations are also playing an increasingly active role in the affairs of migrant workers. At present, in the Philippines, at least 38 non-governmental organizations provide various services and assistance to migrant workers and their families (CHEN, 2018). Similarly, some qualified agencies also provide various kinds of preemployment adaptation information through mass media and some community programs. In Sri Lanka, the government's Bureau of Foreign Employment has implemented a unified syllabus for pre-employment training through a network of public and private training facilities. Non-governmental organizations and labor organizations in China are also increasingly participating in the training program. Nepal has also recently introduced pre-employment training based on the Sri Lanka Bureau of Foreign Employment model (CHEN, 2018).

# Chapter 4

## METHODOLOGY AND DATA ANALYSIS

This thesis aims to analyze the factors that affect FDI, namely GDP, GDP per capita, labor force, inflation, fuel exports, domestic credit, trade openness and economic growth. In this study, 20 Asian countries were selected as observation objects, within the years 2013-2017, was observed 100 times. In order to carry out this research, a complete data set was collected that meets the requirements about both years and the countries. The second step is to determine which data pattern to use, that is, paneling or time series, and then to determine which data analysis system to use for the study. The conclusion is then compared and commented with previous research results.

#### 4.1 Data set

The most comprehensive, reliable and toll-free data source used in this two-year master's study is the World Bank. The World Development Index (WDI) is the World Bank's first set of development indicators, compiled based on officially recognized data from international sources. It provides the latest and most accurate global development data available, including national, regional and global data. All the indicators used in the study come from the World Bank's World Development Indicators to have consistent data. Countries included in the data set are listed in Table 3.

Table 3: List of Countries

China	India	Nepal	Cambodia	Singapore
Japan	Pakistan	Mongolia	Myanmar	Thailand
South Korea	Sri Lanka	Kazakhstan	Malaysia	Vietnam
Hong Kong	Bangladesh	Indonesia	Philippines	Lao

These countries are chosen as representatives of Asian economy, because they achieved economic development, including the increase of FDI, so it is of great significance to do more research on them. When it comes to why 20 countries are chosen as examples of Asian countries, it is because there is the problem of finding consistent data on other countries, because Asian countries are not publicizing their domestic data, so the countries that have complete data on determinants in the last five years (2013-2017) are preferred as samples to make the research more accurate and reliable.

The data set collected for the research contains indicators of all the determinants required in this thesis. These indicators are domestic credit to the private sector as (% of GDP); represents financial development, inflation, GDP deflator (annual %); represents macroeconomic stability, export plus import (% GDP); represents trade openness, fuel exports (% of merchandise exports) for natural resources, GDP per capita and GDP (constant 2010 US\$); represents market size, GDP growth rate as economic growth and labor force participation rate, total (% of total population ages 15+) for the labor factor. The research analyzes these above indicators between 2013 to 2017 of the above 20 Asian countries. This data set is the most complete data set

given by the World Bank that conforms to the year and country, as observed in Table 4.

Table 4: Data sources and measurements

Determinants	Variables	Measurement	Abbreviation	Data sources
FDI	dependent	Foreign direct investment, net inflows (BoP, current US\$)	FDI	World bank
Market size	GDP GDP per capita	GDP (constant 2010 US\$)  GDP per capita (constant 2010 US\$)	GDP GDPPC	World bank World bank
Financial development	Domestic credit	Domestic credit to private sector (% of GDP)	DMCD	World bank
Labor factor	Labor force	Labor force participation rate, total (% of total population ages 15+) (modeled ILO estimate)	LFPR	World bank
Natural resources	Fuel exports	Fuel exports (% of merchandise exports)	FUELEX	World bank
Macroeconomics Stability	Inflation	Inflation, GDP deflator	INFL	World bank
Trade level	Trade openness	Exports plus imports (% of GDP)	OPEN	World bank
Economic growth	Growth rate	GDP growth (annual %)	ECONGO	World bank

# 4.2 Methodology

The above mentioned variables can be expressed as an econometric equation as below,

Equation 1. The subscripts indicate that observations are in panel data format.

$$l(FDI)it = \beta_0 + \beta_1 lGDP_{it} + \beta_2 lGDPPC_{it} +$$

$$\beta_3 DMCD_{it} + \beta_4 LFPR_{it} + \beta_5 INFL_{it} + \beta_6 FUELEX_{it} + \beta_7 OPEN_{it} + \beta_8 ECONGO_{it} + \epsilon_{it} \qquad (1)$$

Table 5: The summarize of expected signs for each variable

Definition	Signs
Dependent variable foreign direct investment	
GDP indicates market size of the country	+
GDP per capita shows the income level	+
Domestic credit to private sector indicates financial development	+
Labour force participation rate	+
Inflation refers macroeconomic stability	_
Fuel exports represent natural resources	+
Trade openness (summation of exports and imports )	+
Economic growth rate (GDP growth rate)	+
	GDP indicates market size of the country  GDP per capita shows the income level  Domestic credit to private sector indicates financial development  Labour force participation rate  Inflation refers macroeconomic stability  Fuel exports represent natural resources  Trade openness (summation of exports and imports )

Not: In the equation, l is logarithmic, and  $\varepsilon$  is error component which changes randomly from country to country over time, I is country (i.e. 20 selected Asian countries),  $\beta$  is regression coefficients, t is the year (2013-2017).

As can be seen in Table 5, we expect that, for example, if there is an increase in GDP, there will be an increase in FDI. Because it is assumed that the bigger market could attract more investors, such as in China. Labour force participation also is expected to have a positive effect on FDI, because it is assumed that investors care about labor availability in the country that they are going to invest in. In addition, domestic credit to the private sector is representative of a country's financial development and since the host country with the higher developed financial market is expected to attract more investors, there might be a positive relationship among these two variables as well. Trade openness and economic growth also playing an important role in FDI, due to host country's openness to trading with foreign nations and has a high sustainable economic growth will be a huge advantage for FDI inflows. On the other hand, if the inflation of the country is going up, FDI is assumed to decrease, because the investors may interpret the high inflation rate as a sign of macroeconomic instability.

Macroeconomic stability is one of the points that investors attach great importance to. They always plan to have sustainable development in their businesses and usually they will try not to take risks in their investment. In addition, fuel exports, i.e. natural resources, may have a negative impact on FDI, because an increase in the share of natural resources in total merchandise exports means a decrease in diversified trade, which makes a country more helpless to external threats. These factors will cause macroeconomic instability, thus reducing FDI.

# 4.3 Descriptive data analysis

Table 6: Descriptive analysis

Table 6: Descriptive analysis  Veriable Mean Std Day Min May					
Variable		Mean	Std. Dev	Min	Max
FDI	Overall	2.86e+10	5.68e+10	-4.16e+09	2.91e+11
	Between		5.62e+10	-3.41e+07	2.29e+11
	Within		1.39e+10	-3.21e+10	9.06e+10
GDP	Overall	1.15e+12	2.52e+12	1.12e+10	1.22e+13
	Between		2.56e+12	1.18e+10	1.09e+13
	Within		2.13e+11	-1.60e+11	2.47e+12
GDPPC	Overall	11263.11	15949.75	688.62	57714.3
	Between		16249.55	744.402	56248.91
	Within		1007.507	7450.565	15240.4
LFPR	Overall	65.74775	9.021124	52.05	83.17
	Between		9.185762	52.178	83.108
	Within		0.6416313	63.16975	67.51975
INFL	Overall	3.451439	2.715523	-0.586573	13.63843
	Between		2.045699	0.719206	7.866124
	Within		1.832557	-2.591135	9.223749
FUELEX	Overall	11.90873	17.38188	0.0000288	76.70113
	Between		17.40043	0.0020706	69.10444
	Within		3.404139	0.3478263	25.02493
DMCD	Overall	83.66668	57.24568	12.83853	233.211
_	Between		58.10893	16.12991	215.7683
	Within		6.070437	64.20236	101.6752
OPEN	Overall	1.044393	0.9833186	0.2530623	4.4262
	Between	1011070	0.9987866	0.2859678	4.009601
	Within		0.0982185	0.75187	1.460992

Mean = estimate the overall average of each variable. i.e. overall FDI of these 20 selected Asian countries in five years is 2.86e+10.

Min = is minimum data, it gives results by overall, between countries and within the year. In other words, the minimum GDP per capita in 100 observations is 688.62, it is between countries is 744.402, within year is 7450.565 which is unrealistic because between countries minimum value is 744.402 the differences of them are so big, so this result is not suitable for our definition.

Max = is opposite of minimum, it counts out maximum value of overall, between countries and within year. Openness has overall maximum value with 4.4262, maximum between countries with 4.009, but within year again shows smaller value than between countries which is 1.460992. So between countries results are more reliable then within year results.

Std . Dev = is standard deviation it calculated by following Equation (2):

$$S^{2} = \Sigma(x - \bar{x})^{2}/n - 1 = (FDI - \bar{F}DI)^{2}$$
 (2)

As seen from Table 9 the standard deviation between countries always higher than the within year standard deviation, because the variance of each factor is depending on countries (i.e. China GDP and FDI much higher than some small countries). But year to year variables show relatively less difference. This result also confirms with the general understanding, because macro variables selected in this analysis are not quickly changing variables, most of the time.

#### 4.4 Panel data

Panel data is a data set for observing the behavior of objects in time. These objects can be countries, individuals, companies, etc. Panel data accepts control of variables that couldn't be observed or measured, such as cultural influences or differences in business applies between firms; Or a variable that changes over time but does not cross the objects, such as policies, international agreements, federal regulations, etc.

In panel data, variables suitable for multilevel or hierarchical modeling can be included at different analysis levels (i.e. students, schools, regions and states). Some shortcomings appear as data collection problems (i.e. sample design, coverage), lack of response from micro-groups or cross-border dependency of macro-groups (i.e. correlation between countries).

In this thesis, since countries are selected and observed in five years period, secondly to increase the number of observations and estimate the most important problem also for estimate autocorrelation analysis appears to be more appropriate with the panel data for the regression analysis, as expressed in Equation (1). Two types of techniques are used for analyzing the panel data:

- 1. Fixed effects
- 2. Random effects

#### 4.5 Fixed effects

Fixed effects (FE) are used when analyzing the effects of time-varying variables. FE explores the relationship between predictive variables and outcome variables within entities (countries, individuals, companies, etc.). Each entity has its own special characteristics, which may or may not affect the predictive variables (e.g. age may

affect the judgment of certain problems; the political system of a particular country may have some impact on trade or on GDP; the company's economic wellbeing may affect its stock price).

When using the fixed-effect method, we assume that some factors within the individual factor may affect or bias the predicted variables or result variables, and we need to control this. This is the basic principle behind assuming the correlation between the error term of the entity and the prediction variable. The fixed effect method eliminates the influence of these time-invariant features, so we can evaluate the net influence of the independent variables on the dependent variable.

The equation for the fixed model is expressed in Equation (3) in general form :

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$$
(3)

Where;

 $\alpha_{i}$  (i=1....n) is the separate constant term for each object (n object-specific intercepts);

 $Y_{it}$  is the dependent variable where i = object and t = time;

 $X_{it}$  represents an independent variable;

 $\beta_1$  is the coefficient for that independent variable,  $X_{it}$ :

 $u_{it}$  is the error term.

In analyzing FDI, the Equation (4) for fixed effects model will written as:

 $l(FDI)it = \beta_1 lGDP_{it} + \beta_2 lGDPPC_{it}$ 

 $+\beta_3 DMCD_{it} + \beta_4 LFPR_{it} + \beta_5 INFL_{it} + \beta_6 FUELEX_{it} + \beta_7 OPEN_{it} + \beta_8 ECONGO_{it} + v_i + \epsilon_{it} \quad (4)$ 

where  $v_i$  - is the error component which changes from country to country.

 $\epsilon_{\text{it}}$  - is the error component which changes randomly from country to country over time.

Report for the fixed effect regression estimation results:

Table 7: Research of the FE analysis

R-square:  Within = 0.2586  Between = 0.0006  Overall = 0.0044		Number of observation = 100 Number of groups = 20  Prob > F = 0.0401		
GROWTH	0.6504782	3.40	0.001	
IGDP	0.1652521	0.01	0.995	
IGDPPC	-0.3611042	-0.01	0.990	
DMCD	0.0294741	0.63	0.534	
FUELEX	0.0090674	0.13	0.898	
INFL	0.2227083	1.75	0.084	
OPEN	-0.4989048	-0.17	0.863	
LFPR	0.340798	1.04	0.304	

R-square shows that 25.86% of results within year can be explain by this regressions, while for between countries and overall the proportion of valid explain part is very less.

F- test result is <0.05, so the model is representative. It is to see whether all the coefficients in the model are different than zero.

In order to judge the significance of the results, t-value has to be bigger than 1.96 and p-value has to be smaller than 0.05. However the results show that only growth rate held a 3.40 t-value that bigger than 1.96 and 0.001 p-value that smaller than 0.05. So under the fixed model only growth rate has a significant relationship with FDI, Coefficient of regression indicate that 0.65 unit FDI will goes up when growth rate increase by one.

As seen in Table 6 the result of the fixed effect is not very ideal, so a random effect model is tested next.

#### 4.6 Random effects

The basic principle of the random effect is different from the fixed-effect, the changes between objects are expected to be random and not related to the dependent or independent variables. If there is a reason to believe that differences between objects have certain effects on dependent variables, then we need to use random effects.

The good point of random effects is that it can include time-invariant variables (i.e. country). In fixed effects, the intercept absorbed these variables. The random effect assumes that the error term of the object is not related to the predictor that accepts time-invariant variables as explanatory variables.

In random effects, need to identify those individual features that may or may not affect the predicted variables. In this case, the point is some variables may not be available, thus causing ignoring variable bias in the model.

Random effects model is:

$$Y_{it} = \beta X_{it} + \alpha + v_i + \varepsilon_i$$
(5)

Where;

vi is between entity error;

 $\varepsilon$ it is within entity error;

Cov 
$$(v_i, X_{it}) = 0$$
 for all t, because  $v_i$  and  $X_{it}$  are independent.

Therefore, the equation for FDI analyzing random effects is became:

$$l(FDI)it = \beta_0 + \beta_1 lGDP_{it} + \beta_2 lGDPPC_{it}$$

 $+\beta_{3}DMCD_{it}+\beta_{4}LFPR_{it}+\beta_{5}INFL_{it}+\beta_{6}FUELEX_{it}+\beta_{7}OPEN_{it}+\ \beta_{8}ECONGO_{it}+v_{i}+\epsilon_{it}\ (6)$ 

The estimation result of random effects model:

Table 8: Research of the random effects analysis

R-square: Within = 0.2361		Number of observation = 100 Number of groups = 20		
Between = 0.8671 Overall = 0.6141		<b>Prob</b> > F = 0	0.0000	
IFDI	Coef.	z	P >  z	
GROWTH	0.4790274	3.75	0.000	
IGDP	1.360015	6.53	0.000	
IGDPPC	0.5335755	1.39	0.164	
DMCD	-0.0122285	-1.38	0.169	
FUELEX	-0.0106932	-0.63	0.531	
INFL	0.1879964	1.88	0.061	
OPEN	1.401137	3.57	0.000	
LFPR	0.0597384	1.98	0.048	

R- square shows that 23.61% within year, 86.71% between countries and 61.41% of overall result can be explained by the changes among dependent and independent variables.

F-test result is 0.0000 which is smaller than 0.05, so the model is acceptable even more representative than FE model.

1. Growth rate: p-value = 0.000 < 0.05 z-value=3.75 > 1.96 significant, so as GDP increase by 1% FDI will go up by 0.47% when growth rate increase across time and

Using random effects model, there are four significant results, as observed in Table 8.

between country by one unit. The variables have the expected sign.

2. GDP: p-value =0.000<0.05 z-value =6.53 >1.96 highly significant, so as GDP grows by one percent FDI will go up by 1.36 percent. (because of GDP is logarithmic so it influences by %). Variables correlated with the expected sign. The major determinant of FDI in the selected 20 Asian countries is found to be the GDP (signifying the market size) in this thesis.

3. Openness: p-value =0.000< 0.05 z-value = 3.57 >1.96 significant, so 1.4 unit FDI will goes up when openness increase by one unit. Variables correlated with the expected sign.

4. Labor force: p-value =0.048<0.05 z-value =1.98 >1.96 significant, so 0.05% FDI

will goes up when labor force participation increased by 1%. Variables correlated

with the expected sign.

- 5. GDP per capita: p-value = 0.164 > 0.05 z-value = 1.39 < 1.69 insignificant, so GDP per capita doesn't have an impact on FDI. Not conform with the expected sign.
- 6. Domestic credit: p-value = 0.169 > 0.05 z- value = -1.38 < 1.69 insignificant, so domestic credit doesn't have an impact on FDI. Not conform with the expected sign.
- 7. Fuel exports: p value = 0.531 > 0.05 z- value = 0.63 < 1.69 insignificant, so fuel exports doesn't have an impact on FDI. Not conform with the expected sign.
- 8. Inflation: p-value =0.061 > 0.05 z- value =1.88 < 1.69 but since p- value insignificant, so the result is insignificant and inflation doesn't have an impact on FDI. Not conform with the expected sign.

After testing fixed effects and random effects to decide which of them is more reliable, Hausman Test was utilized.

#### 4.7 Hausman Test

To make a decision between fixed effect and random effect, the Hausman Test can be run, in which the null hypothesis is that the preferred model is a random effect instead of replacing the fixed effect.

It mainly tests whether the unique error (ui) is correlated with regression, and the null hypothesis is that they are not correlated. The time-invariant characteristics of fixed effects models are distinctive to individuals and couldn't be associated with other individual characteristics.

If the error terms are related, then the fixed effects method is not suitable because the inference may be incorrect and the relationship needs to be modeled (random effects may be used), which is the main principle of Hausman test.

After saving the estimation results of FE and RE performed the Hausman test, the results are below in Table 9:

Table 9: Hausman Test analysis

Ho: Both fixed and random effects are efficient and random effects is consistent under the null hypothesis.

HA: Random effects is inconsistent under alternative hypothesis.

Hausman test gives the probability result 0.9759 that is bigger than 0.05. so do not reject the null hypothesis and the preferred model is random effect instead of replacing fixed effects. Therefore, the results of random effects are the final conclusion for this study that is GDP, labor force, trade openness and growth rate significantly affect FDI in 20 sample Asian countries. However, GDP per capita, fuel exports, inflation and domestic credit to the private sector don't have significant impact on FDI in these region.

# Chapter 5

# **CONCLUSION & POLICY RECOMMENDATION**

#### 5.1 Conclusion

This thesis mainly studies the situation of FDI in 20 selected Asian countries and the determinants that have positive and negative effects on FDI. The purpose of this research is to see what happens as Asian countries are increasingly moving towards open trade, and what unprecedented changes have taken place in Asian countries due to the arrival of foreign investors. Therefore, in order to improve the efficiency and amount of FDI in these countries, an analysis of a decisive element should be carried out.

To find the major determinants of FDI in 20 selected Asian countries panel data analysis is used. Panel data analysis has two types of techniques, first fixed effects model is used and the result obtained display that only growth rate affects FDI positively, other determinants influence all are insignificant which seems not very reliable. So random effects analysis is utilized and the Hausman test result also confirm random model are more explanatory, that is GDP, labor force, trade openness and growth rate significantly affect FDI in 20 sample Asian countries. However, GDP per capita, fuel exports, inflation and domestic credit to the private sector don't have significant impact on FDI in these region.

The most important factor affecting FDI in 20 Asian countries is the market size. Larger GDP is leading FDI growth since the big market size is an attractive point for the investors in general. Liu Wei (2000) and Zhang (2001) in their empirical research also confirmed that countries with a large market size will attract more FDI. For example, nowadays the second largest economy in the world is China with its large market size, so a big amount of investors want to invest in there, work in there, even live in there. The originality in this thesis is that market size is the most important determinant in attracting FDI in Asian economics too. The results also show that growth rate positively influence FDI, because economic growth is one of the major reasons attracting foreign investors. As Zhao (2003), Janicki and Wunnava (2004) identified in their empirical study of FDI. But Kose (2006) proposed that only in highincome and middle-income countries FDI has a positive relationship with economic growth. Because those countries have appropriate economic factors like well-educated labor force, infrastructure investment opportunity and trade liberalization. On the contrary, in this thesis there are some countries with low income and low educated labor force such as Philippines, Vietnam, Bangladesh, Lao, etc. The findings in this thesis are unique in the way that the determinants have similar results for developed and developing countries selected in Asia. Economic growth is significantly effecting FDI according to the finding of this thesis. Openness is the third positive determinant of FDI, which is measured by the summation of the exports and imports and their ratio to GDP. Bewan and Estrin (2000), Janicki (2004), Carbaugh (2008), Sahoo (2006), Mateev (2008) also researched and proved that trade openness is a very important factor for attracting FDI. Carbough (2008) mentioned that trade liberalization has led to export-oriented growth through regular inflows of FDI which means trade openness and FDI effects each other positively. Like Nepal and Sri Lanka, these kinds of small lands, since they start trading with the US, China and Europe, start to export their commodity to those countries. As these smaller and more closed economies started participating in international trade, more foreign investors started to be attracted by them. The last significant variable in this study is labor force, labor force participation is usually the top problem for investors because when an investor opens a business abroad, they have to consider about workers and their costs, but in most of cases, finding qualified main power is more difficult to solve than the cost of these workers. As some countries do not have sufficient labor force to participate in production, this has become an advantage for countries with large populations such as India. Hang Bich Phung (2016) mentioned in his paper that Deng Ning calls the huge and cheap labor force to offer a location advantage for developing countries since location factor is unshakable and distinct to the receiving country. After research, Hang Bich Phung (2016) proved that labor is the main determinant of FDI in developing countries. The research result in this thesis also matches his conclusion that is labor force has a positive impact on FDI. However, as found in this thesis the main factor attracting FDI to Asian countries is the market size expressed by GDP. Hence the specific factor which is the market size comes out as the most important determinant of FDI in Asian countries and this result is the novelty of this thesis.

There are four factors that are expected to significantly affect FDI, but the findings in this thesis show that they don't have significant influences on FDI, those factors that have no significant effect on FDI in 20 countries are: GDP per capita, domestic credit to the private sector, fuel exports and inflation. Kolstad and Villange (2008) found that in the service sector, higher GDP per capita will attract and stimulate more FDI. Since GDP per capita may represent the income level of citizens, the service industry may

be directly affected by it. However, from a macro perspective, investors may care more about the overall economic development of the country than about the economic level of individuals. Also, GDP per capita is a mathematical calculation telling very little about the purchasing power of the individuals living in that country. Maybe this is the reason why the impact of GDP per capita on FDI in this study is insignificant. Noorbakhsh, Paloni and Youssef (2001) believe that domestic credit to the private sector is representing the financial development of the country and it positively affects FDI, but in the results of this study domestic credit to the private sector is not a significant factor to attracting FDI. It maybe because in some poor economy countries like Bangladesh and Nepal they have relatively fewer loans to support firms, but still, there is a rise in FDI day by day. Thus, the results for Asian countries differ from general findings. Moreover, foreign investors will feel less competitive stress in poorer countries so they will more be attracted to them. Thus, financial development effectiveness is not a serious factor for foreign investors in Asian countries.

Fuel exports figure shows the endowments of natural sources in the host country. Elizabeth Asidou (2013) has found the negative impact of natural resources on FDI in her empirical research. Elizabeth Asidou (2013) concluded that the number of resources exported will promote the country's macroeconomic instability so that foreign investors will skip unstable countries. But in this study, it is founded that fuel exports, which are natural resources do not significantly impact FDI. Why? Because the investors are from various industries and some care about natural resources and some don't have any interest in it in the case of Asia. Therefore, the share of natural resources cannot be considered as an important factor for FDI development, it's more related to trade patterns preferences. Similar research may have a different result for African countries maybe. The last analysis is about inflation which is assumed to

reveal macroeconomic stability. Noemberg and Mendonca (2004) mentioned that when the low and stable inflation rate is regarded as a representative of economic stability and typical symptoms of fiscal or monetary expansion will lead to uncontrolled inflation. Generally, investors are more willing to invest in more stable economies that reflect less uncertainty. It is to say high inflation rate effects FDI negatively. However, in the research, the results show that inflation has an insignificant impact on FDI. The reason may be that foreign businessmen usually do business in US dollars, so they can still maintain their financial stability in terms of prices. Therefore, inflation is not expected to be an important factor for foreign businesses in the case of Asian countries.

A descriptive data analysis also conducted examines the countries over time as FDI and other determinants change. It is found that the standard deviation of variables vary greatly from one country to another country, which means that different countries display different data due to different backgrounds, but the data of a single country will not change so much year after year.

## **5.2 Policy Recommendation**

In this thesis, four significant and important determinants that have an impact on FDI development in selected Asian countries have found. Which are GDP, labor force participation, trade openness and economic growth. Based on the findings the study suggests Asian countries pay more attention to improve their GDP, labor force, trade openness and economic growth status for attracting a higher amount of FDI.

In particular, some of the Asian countries need to be more active and liberalize their trade with foreign countries if they want to attract FDI, since this thesis has proved

one of the major factor to improve FDI is trade openness. Especially Nepal and Sri Lanka these kinds of small lands, they could be more actively trading with the US, China and Europe, start to export their commodity to those countries. Also some closed countries like Pakistan, Bangladesh and Mongolia have a lot of available sources and advantages that they could improve their places in the world trade, but maybe due to lack of experience and lack of well-trained labor and domestic sector as well, they lose a lot of good opportunities to open their doors to the world. Therefore, they have to work on trade openness more specifically and one addition suggestion could be to train their labor force. At the same time, educate more business people and let them go abroad, introduce their home town to improve imports and exports day by day.

Countries such as Philippines, Myanmar, Malaysia, Indonesia, Thailand, Vietnam and India have experienced a relatively large loss of labor. People choose to work abroad because they cannot get jobs in their hometowns. These countries should pay more attention to utilize labor in their own countries and create more job opportunities for them through FDI channels so as to make full use of labor resources because as proved in previous content labor force is the important determinant for attracting FDI.

China, South Korea, Japan, Hong Kong, Kazakhstan should also make good use of their position and advantages in world trade, grasp their own development potential and make more efforts to increase their GDP so as to increase the economic growth rate, because research result of this thesis has confirm that GDP and economic growth are positively affect FDI development.

Lao and Cambodia these small and not very well known countries have to improve themselves with those four factors, they need much more well organized economy, that is to say they need higher GDP, larger and well- trained labor force and more imports and exports. So the economic leaders of these countries should make a comprehensive economic optimization plan to implement some improvement in these important factors, which will lead them to attract more FDI.

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