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THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN ASIAN COUNTRIES

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THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN ASIAN COUNTRIES

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ABSTRACT

FDI is an investment from the international organizations and individual investors in the host countries to acquire the control on the invested firms and return. In theory, FDI stimulates economic development and improve the well-being of societies. The objectives of this study are to determine the effect of economic growth, inflation, exchange rate, interest rate and financial development on FDI inflows in 26 Asian countries for the duration of 16 years (2000 to 2015). The dependent variable is the FDI net inflows meanwhile the independent variables are economic growth, inflation, exchange rate, interest rate and financial development. This study finds a positive link between financial development and FDI inflows in the 26 Asian countries. This implies that a sound financial development would allow easier accessibility to the international financial market and thereby attract more foreign investors in the domestic financial system, hence improves the FDI inflows in the host country. Moreover, inflation has found to accelerate the FDI inflows while higher economic growth dampens the level of international funds flowing into the host countries. In addition, this study discovers that exchange rate and interest rate are not significant in influencing the inflows of FDI. Thus, this study will assist the policy makers in improving and monitoring the current regulations on the FDI inflows.

Keywords: FDI Inflows, Economic Growth, Inflation, Exchange Rate, Interest Rate, Financial Development.

ABSTRAK

FDI adalah pelaburan dari organisasi antarabangsa dan pelabur individu di negara tuan rumah untuk memperoleh kawalan ke atas syarikat yang dilaburkan dan pulangan. Secara teori, FDI merangsang pembangunan ekonomi dan meningkatkan kesejahteraan masyarakat. Objektif kajian ini adalah untuk mengkaji kesan pertumbuhan ekonomi, inflasi, kadar pertukaran, kadar faedah dan pembangunan kewangan ke atas aliran masuk FDI di 26 negara Asia untuk tempoh 16 tahun (2000 hingga 2015). Pemboleh ubah bergantung adalah aliran masuk bersih FDI sementara itu pembolehubah bebas adalah pertumbuhan ekonomi, inflasi, kadar pertukaran, kadar faedah dan pembangunan kewangan. Kajian ini mendapati hubungan positif antara pembangunan kewangan dan aliran masuk FDI di 26 negara Asia. Ini menujukkan bahawa pembangunan kewangan yang kukuh akan mempermudahkan akses ke pasaran kewangan antarabangsa dan dengan itu menarik lebih banyak pelabur asing dalam sistem kewangan domestik dan meningkatkan aliran masuk FDI di negara tuan rumah. Tambahan lagi, inflasi telah ditemui dapat mempercepat aliran masuk FDI sementara pertumbuhan ekonomi yang tinggi dapat melemahkan tahap dana antarabangsa yang mengalir ke negara-negara tuan rumah. Di samping itu, kajian ini mendapati bahawa kadar pertukaran dan kadar faedah bukanlah penentu aliran masuk FDI. Oleh itu, kajian ini akan membantu penggubal undang undang dalam memantau undang undang semasa mengenai aliran masuk FDI.

Kata kunci: Aliran masuk FDI, Pertumbuhan Ekonomi, Inflasi, Kadar Pertukaran, Kadar Faedah, Pembangunan Kewangan.

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Abbreviation   **Meaning**

FDI   =   Foreign Direct Investment

GDP   =   Gross Domestic Product

CPI   =   Consumer Price Index

INF   =   Inflation

OER   =   Official Exchange Rate

INT   =   Interest Rate

FD   =   Financial Development

USD   =   United States Dollar

CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND OF THE STUDY

Foreign direct investment (FDI) is defined as an objective of creating a lasting interest by a direct investor in an enterprise and economy which is other than investor's country. The lasting interest here indicates that a long term relationship exists between direct investors and the enterprise with the significant degree of influence on the enterprise's management (OECD, 2008). FDI is considered to be an important economic factor because it stimulates economic development and improve the well-being of societies (Ali & Hussain, 2017; Pandya & Sisombat, 2017; Zekarias, 2016). Moreover, with a proper policy framework, FDI can offer financial stability to the participated countries because it is considered to be an important driver of the international economic integration (OECD Report, 2008).

Main components of FDI are debt instruments and equity. Debt instruments include bonds, non-participating preference shares, promissory notes, debentures and commercial paper. In addition, the instruments also comprise of other tradable non-equity securities, trade credit, accounts payable, account receivable, deposits and loans. Meanwhile, equity includes preferred shares, common shares, reinvestment of earnings, reserves and capital contributions.

According to Blomstrom and Kokko (1997) and Ponomareva (2000), FDI benefits the economy through the transfer of technology to the host country. Since, many countries have difficulties in producing their own technology, technology transfer from the FDI activities can be incorporated into the local firms. The integration of foreign technology into the local firms' production increases the productivity, efficiency and helps to preserve the environment through the environmental-friendly production processes.

The presence of foreign firms in the host country assists the host country by increasing the competition and resulting into higher efficiency, lower production cost and higher productivity. Wang and Blomstrom (1992) state that an increase in competition leads to the efficient market structure. In addition Julius (1990) argues that FDI inflows encourage growth by increasing the competition which leads to higher efficiency in production. OECD (1998) contends that FDI is a tool to increase the domestic competition and innovation that resulted into a reduction of production cost. Moreover, Hussain (2017) agrees that FDI improves the level of competition, hence, it benefits the quality of the products and reduction in prices in the countries.

Next, the FDI increases the level of capital provided to the local firms. According to Jenkins and Thomas (2002), FDI contributes to the economic development by providing foreign capital into the domestic investment. Bosworth and Collins (1999) find that a dollar of FDI capital inflow increases the domestic investment by 50 percent. In addition, Feldstein (2000) argues that the FDI brings several advantages to the country by improving the corporate governance practices legal and regulations and investment risk diversification.

Moreover, FDI also improves the economy from the transfer of knowledge, managerial skills and organizational practices. According to Hill (2000), FDI has created new job opportunities for the local market. According to Aaron (1999) FDI has created 20 million of new employments in developing countries. Thus, as the new job is being created further economic activities are encouraged.

Despite the benefits of FDI to the host country, there are also some risks associated with the inflow of FDI. Firstly is the political risk. Investors are concerned with the political risk of the host countries as it may negatively impact their profitability. According to Erramilli and Rao (1993), political risk is considered to be one of the weaknesses of FDI. In addition, Zhao (2003) states that political uncertainties deteriorate operating positions and prevent profit expectations.

Secondly, although competition brings benefits to the country, its detrimental consequences should also be considered. This is due to the fact that the foreign companies with better technology and skills would outperform the local firms in their operation (Arnold & Javorcik, 2009). Lastly, due to certain conditions such as economic and financial crises, the international investors may withdraw their investment from the local market. This condition could drive the domestic companies to having the capital shortage problem. The disadvantages caused by the FDI could have impacted the local firms and economy negatively.

Despite of its risks, FDI is still considered to be an important variable for the country. Due to that, this study investigates factors that influence the FDI. Among the factors of FDI in the previous studies are economic growth (Ang, 2008; Boateng, Hua,

Nisar & Wu, 2015; Koojaroenprasit, 2013; Othman, 2013; Shahmoradi, Thimmaiah and Indumati, 2010), inflation (Abolghasemi, 2014; Anitha, 2012; Arbatli, 2011; Boateng *et al.,* 2015; Krifa, Schneider & Matei, 2010), exchange rate (Alam & Shah, 2013; Boateng *et al.*, 2015; Hussain, 2011; Koojaroenprasit, 2013; Nordin & Ghani, 2015), interest rate (Abolghasemi, 2014; Boateng *et al.,* 2015; Kiplagat, 2016; Koojaroenprasit, 2013; Jeon & Rhee, 2008) and financial development (Ang, 2008; Deichmann, Karidis & Sayek, 2003; Desbordes & Wei 2014; Duarte, Kedong & Xuemei, 2017; Shahrudin, Yusof & Satar, 2010). Therefore, these five factors are being investigated to examine their impact on the FDI.

1.2   OVERVIEW OF FDI IN ASIAN COUNTRIES

This section elaborates the evidences of FDI activities in Asian countries. According to Unctad Report (2000), in 2000, the FDI inflows in Asia reached a record level of USD143 billion. The significant increase was took place in East Asia; Hong Kong (China), in particular, experienced an extraordinary FDI boom, with inflows amounting to USD64 billion, making it the top FDI recipient in Asia as well as in developing countries. The incline in FDI inflows is because of the recovery from the economic turmoil and the opportunities to invest in telecommunication industry in mainland China through cross-border mergers and acquisition (M&A).

Moreover, in 2003, the FDI inflows in Asia Pacific region has increased by 14 percent to USD107 billion because of the domestic economic growth and improvements in the investment environment. During this time, China became the world's largest FDI

recipient, overtaking the United States as the traditionally largest recipient (Unctad, 2003).

Meanwhile, in 2004, East Asian countries have experienced an increase of 46 percent in FDI inflows making them the main sub-region for the FDI inflows recipients. With that, the West Asia has noted a boost of 51 percent in FDI inflows while South-East Asia experiencing growth of 48 percent and 31 percent for South Asia. In addition, China remains as the important FDI recipient due to the policy changes that have encouraged more foreign investment in that country (Unctad, 2004).

According to Unctad Report (2005), in 2005, the increment in FDI inflows are recorded as follows: South-East Asia (45 percent), South Asia (34 percent) and East Asia (12 percent). The rapid economy development in those countries has contributed significantly to the increase in the foreign capital investment. Meanwhile, in 2009, the global financial crisis has impacted the FDI inflows in Asian region. A significant reduction in external demand has resulted in exports decline, the domestic economic has declined and the foreign investors have withdrawn their investments from those countries. However, in 2008 the FDI inflows started to grow in a slower pace.

In 2016, there are few drops in the FDI inflows. Overall reduction of FDI in the Asian region is 15 percent to USD443 billion. The weakening of FDI inflows are influenced by different factors for different regions. In East Asia, the stable flow of FDI inflows to China failed to offset the reduction of international funds in Hong Kong. In Hong Kong itself, the FDI has dropped from USD174 billion in 2015 to only USD108 billion in 2016. The dropped in the foreign investment is due to the weakening of Yuan

following the new exchange rate policy in August 2015. In West Asia, a political uncertainty and falling in oil prices lead to declining of FDI inflows (Unctad, 2016).

In conclusion, the overview of FDI activities in the Asian countries has shown both improvement and deployment of FDI inflows to the host countries. However, the role of FDI in the Asian region is still remained important and significant.

1.3   ISSUES AND PROBLEM STATEMENT

Great emphasized has been placed by the policy makers on increasing the level of FDI to the local markets. The FDI efforts are aimed at improving the economy by increasing the capital, technology and skills transfer and knowledge sharing. However, the evidences from the various parts of Asian countries have shown a reduction in FDI levels due to many factors.

For example, according to Unctad Report (2009), ASEAN countries have faced a significant dropped in FDI inflows from USD74.39 billion in 2007 to USD49.49 billion in 2008 and USD39.62 in 2009. This is due to the negative impact of US 2007/2008 financial crisis that happened within that period of time. According to Diaconu (2014), the countries that depend more on external funds such as Singapore and Malaysia experienced bigger losses as compared to the countries that rely more on the internal funds such as Indonesia, Philippines and Vietnam.

In 2009, FDI inflows in South, East and South-East Asia dropped by 17 percent to USD233 billion reflecting a decline in cross-border mergers and acquisitions (M&A). Moreover, in West Asia, the decreased in FDI inflows of 24 percent which is equivalent

to USD68 billion. The reasons for the reduction of FDI inflows are because of the decrease in the international trade and also the tightening of international credit market (Unctad, 2009).

In addition, India experienced a 44 percent drops in FDI between 2008 and 2010. In the same period, Pakistan has a significant dropped of FDI by 63 percent. During that period of time, the foreign investors especially from Europe and United States were suffering from an intense economic uncertainty which have resulted in a significant dropped of FDI (Unctad, 2010).

Furthermore, in 2012, FDI inflows have declined to USD326 billion in East and South Asia. This is due to the recession in major economies such as China, Hong Kong, Malaysia and Republic of Korea. Moreover, a significant reduction in global M&A activities and greenfield investments are also the key reasons behind this condition (Unctad, 2012).

The above discussions have highlighted few issues on the significant reduction of FDI in various Asian countries. Since FDI is considered to be an important driver for economic growth of a country, the factors affecting the level of FDI should be considered in detail by the policy makers. Thus, this study intends to investigate the determinants of FDI. Based on previous studies, five determinants are selected which are economic growth (Koojaroenprasit, 2013; Pantelidis & Paneta, 2016), inflation (Anitha, 2012; Arbatli, 2011) exchange rate (Alam & Shah, 2013; Boateng *et al.*, 2015), interest rate (Abolghasemi, 2014; Boateng *et al.,* 2015) and financial development (Ang, 2008; Duarte *et al.,* 2017). Therefore, factors that influence the flows of FDI into a country

should be taken seriously by regulators to ensure the success of the FDI activities in the country.

1.4   RESEARCH QUESTIONS

According to prior discussion, the research questions are developed as follows:-

1. Does economic growth influence FDI inflows in selected Asian countries?

2. What is the impact of inflation on the FDI inflows in selected Asian countries?

3. What is the impact of exchange rate on FDI inflows in selected Asian countries?

4. Does interest rate affect the FDI inflows in selected Asian countries?

5. What is the impact of financial development on FDI inflows in selected Asian countries?

1.5   RESEARCH OBJECTIVES

The research objectives for this study are as follows:-

1. To examine the impact of economic growth on FDI inflows in selected Asian countries.

2. To investigate the effect of inflation on FDI inflows in selected Asian countries.

3. To assess the impact of exchange rate on FDI inflows in selected Asian countries.

4. To study the impact of interest rate towards FDI inflows in selected Asian countries.

5. To analyze the impact of financial development on FDI inflows in selected Asian countries.

1.6   SIGNIFICANT OF THE STUDY

The significance of the study is divided into two aspects. As for the policy maker, the findings could provide assistance in reviewing and formulating the current policy on FDI in 26 countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan). Moreover, the findings of the relationship between FDI and its determinants would also add to the current literature in this area.

1.7   SCOPE OF THE STUDY

This study is only focusing on 26 countries in Asia (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan) with the duration of 16 years (2000-2015). Furthermore, the proxy used for the FDI activities is the net inflows of FDI (percentage of GDP).

1.8   STRUCTURE OF THE STUDY

The structure of the study is organized as follows. Chapter One provides the discussion on the introduction, overview of FDI in Asian countries, issues and problem statement. Next, Chapter Two discusses the past literatures that have investigated the relationship between FDI and its determinants. The data description and research methodology have been described in Chapter Three. Meanwhile, Chapter Four elaborates on the findings of the study and lastly, Chapter Five is the conclusion of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter consists of the literature review that is associated with the determinants of FDI. Section 2.2 discusses the theoretical aspect of FDI. Section 2.3 explains the empirical evidences on the determinants (economic growth, inflation, exchange rate, interest rate and financial development) of FDI. Finally, Section 2.4 concludes the chapter.

2.2 THEORY RELATED TO FDI

This study employs the eclectic paradigm theory or also known as OLI-Model which has been developed by Dunning (1979). Moreover, this theory is an extension of the internalization theory. OLI stands for ownership, location and internalization. This OLI-Model theory implies three potential sources of advantage that may influence a firm's decision in becoming a multinational. According to Rugman (2010), the theory explains an outward FDI. The first advantage is ownership, which addresses the question of why firms go abroad and states that a successful MNE has firm-specific advantages which allow the firms to overcome the operational cost in foreign country. Meanwhile location advantages are referring to where multinational enterprise chooses to locate. Lastly, internalization advantages signify how firm chooses to operate in foreign countries and monitoring cost of a wholly-owned subsidiary.

2.3   DETERMINANTS OF FDI

Prior studies have identified several determinants of FDI. Among the determinants are economic growth (Alshamsi, Hussin & Azam, 2015; Koojaroenprasit, 2013; Pantelidis & Paneta, 2016), inflation (Abolghasemi, 2014; Alam & Shah, 2013; Udoh & Egwaikhide, 2008), exchange rate (Amuedo-Dorantes & Pozo, 2001; Chakrabarti, 2001; Parajuli & Kennedy, 2010), interest rate (Jeon & Rhee, 2008; Jimborean & Kelber, 2017; Yang, Groenewold, & Tcha (2000), and financial development (Ang 2008; Desbordes & Wei, 2017; Duarte, Kedong & Xuemei, 2017). Consistent with the objectives of this study, the following discussions will be made based on the literature that examines the impact of economic growth, inflation, interest rate, exchange rate and financial development on FDI.

2.3.1   The Impact of Economic Growth on FDI

The impact of the economic growth on FDI has been a major focus of the current literature. The discussion on this part is divided into two parts in accordance to the groups of countries; developed countries and developing countries. Firstly, the strand of literature on the impact of economic growth on FDI in developed countries has produced mixed findings. On the positive impact, a study by Koojaroenprasit (2013) examines the determinants of FDI in Australia for 26 years starting from 1986 to 2011. The finding indicates that the size of the economy which is measured by GDP has a positive and significant impact on FDI in Australia. This implies that higher economic development attracts more foreign investors in the Australian economy.

Furthermore, Pantelidis and Paneta (2016) find that economic growth increases the level of FDI in Greece from the year 1982 to 2013. Using the gross national income as the proxy for economic growth, this study agrees with Koojaroenprasit (2013) that the foreign investors incline towards investing in a country which has a booming economy. Moreover, in United Arab Emirates, Alshamsi *et al.* (2015) discover a positive link between economic growth and FDI for the duration of 33 years (1980-2013). Additionally, Boateng *et al.* (2015) have conducted a study in Norway which covers a period of 1986 to 2009 using the co-integrating regressions. They also find that higher economic growth leads to greater FDI inflows to the country.

Similarly, a cross-country study conducted in the Organisation for Economic Co-operation and Development (OECD) countries (including Spain, Australia, Italy, Canada, France, Japan, Norway, Belgium, the UK and the USA) discovers that economic growth encourages the flow of funds from the foreign countries to the selected countries from 1985 to 2009 (Alam & Shah, 2013).

Besides that, on the negative side, Katrakilidis, Tabakis and Varsakelis (1997) have conducted a study on eight countries (Italy, Germany, Spain, Japan, Ireland, France, Portugal, and the USA) from the period of 1981 to 1988 and found a negative link between economic growth and FDI inflows. The result indicates that lower economic growth enhances the level of FDI inflows in the countries. They argue that this condition happened because of the exploitation in the reduction of capital and labor cost during the economic slowdown.

On the other hand, few studies in the developed countries discover an insignificant relationship between economic growth and FDI. Shahmoradi *et al.* (2010) conduct a study in few countries which include Australia, Austria, Canada, Denmark, Finland, France, Germany, Italy, Japan, Korea and Netherland for a period of 1990 to 2007. The regression results show that GDP is not a determinant that explains the level of FDI inflow in the countries. Moreover, in Australia, Yang *et al.* (2000) examine the determinant of foreign investment in Australia from the period of 1985 to 1994 using augmented DickeyFuller (ADF) and Phillips-Perron (PP) methods. Similarly, they also find that economic growth is not the determinant of the FDI.

The second part of the discussion is made on the literature that examines the impact of economic growth on FDI in developing countries. On the positive side, few studies agree that economic growth enhances FDI. A study by Duarte *et al.* (2017) in Cabo Vede discovers a positive and significant influence of economic growth on FDI. Using the long term data from 1987 to 2014, this study suggests that the government should focus on developing the local economy in order to attract more FDI from other countries. Similarly, in Malaysia, Ang (2008) discovers that larger economic size as measured by GDP attracts more inwards FDI to the local market. In addition, Othman (2013) agrees with the conclusion made earlier by Ang (2008). Despite using different time periods (Ang, 2008-1960 to 2005 & Othman, 2013-1983 to 2012), both studies conclude that economic development is a condition for higher level of FDI in Malaysia.

Moreover, in Kazakhstan, Sattarov (2012) concludes a significant and positive relationship between GDP and FDI suggesting that economic development is an important FDI's determinant in the country. In India, Anitha (2012) has examined the

impact of economic growth on FDI between 1890 and 2010. Using the multivariate regression method, the study finds a positive and significant relationship between these two variables. It indicates that larger economic size attracts more FDI flows into the country. Similarly, Saleem *et al.* (2013) also agree on the positive relationship between GDP and FDI in Pakistan for a period of 1990 to 2011.

A cross country study by Mottaleb and Kalirajan (2010) investigates the determinants of FDI in 68 developing countries including Africa, Malaysia, India, Thailand, Cuba, Peru, Bangladesh, Kazakhstan and Haiti from 2005 to 2008. They use a simple pooled OLS estimation method to examine the relationship between independent variables and FDI. The finding shows that there is a positive and significant impact of economic growth on FDI.

In addition, few studies in developing countries find an insignificant relationship between economic growth and FDI. Awan, Khan and Zaman (2010) discover that economic growth does not influence the FDI in Pakistan using the data from 1971 to 2008. Similarly, Sattarov (2012) also agrees that economic growth is not a determinant of FDI in Uzbekistan from 1996 to 2010. Thus, both studies reach with an agreement that economic growth is not the factor affecting FDI.

The third group of discussion is conducted on studies that incorporate both developing and developed countries as their sample of study. A study conducted by Economou, Hassapis, Philippas and Tsionas (2017) from 1980 to 2012 in 24 OECD countries (including Japan, Korea, Australia, Ireland, Austria, Denmark, Finland, Italy, Canada, and Belgium) and 22 non-OECD developing countries (including China,

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Philippines Indonesia, Malaysia, Singapore, Colombia, Egypt, Hong Kong, India, and Thailand) finds that there is positive and significant impact of market size (GDP as a proxy) towards FDI. Similarly, Parletun (2008) discovers a positive link between economic growth and FDI from 2002 and 2006 in 16 developed and developing countries (including Belarus, Turkmenistan, Tajikistan, Kyrgyzstan, Kazakhstan, Armenia, Russia, Georgia, Estonia, Latvia and Poland). The study supports that economic development matters for FDI inflows.

Other than that, Hunady and Orviska (2014) conduct a study in Bulgaria, Lithuania, Luxembourg, Czech Republic, Netherlands, Denmark, France, Germany and Greece for a period of eight years (2004 to 2011). The result shows that there is a positive and significant relationship between these two variables. Moreover, Norris, Honda, Lahreche and Verdier (2010) examine the determinants of FDI inflows in a 100 countries (including China, Malaysia, Indonesia, India, Jordan, Turkey, Mali, Brazil and Kazakhstan) from 1985 to 2007 and find that economic growth affects the FDI inflows positively.

2.3.2 The Impact of Inflation on FDI

Inflation is recognized as one of the determinants of FDI by previous studies (Abolghasemi, 2014; Alam & Shah, 2013; Alshamsi *et al.*, 2015; Anitha, 2012; Boateng *et al.*, 2015). Since inflation influences the financial market stability (Arbatli, 2011; Krifa, Schneider & Matei, 2010), thus the fluctuations in the level of inflation may also have an impact on the FDI activities.

On the positive side, few studies discover a positive and significant relationship between inflation and FDI. In India, Anitha (2012) examines the impact of inflation on FDI between the period of 1980 to 2010. Using the multivariate regression, she finds that inflation influences the FDI positively. Contradict to expected finding, this relationship indicates that higher inflation leads to higher FDI. From the findings, the study discovers that when the level of inflation increases by 1 percent, FDI inflows to the country would increase by 0.20 percent.

A similar result is found by Awan *et al.* (2010). This study discovers a positive and significant link between inflation and FDI in Pakistan between 1971 and 2008. Similarly, the subsequence study conducted by Saleem *et al.* (2013) in the period of 1990 to 2011 agrees with the earlier conclusion made by Awan *et al.* (2010). Although both studies using different time periods, the positive relationship between inflation and FDI in Pakistan remain unchanged.

In addition, Shahrudin *et al.* (2010) examine the determinants of FDI in Malaysia from a period of 1970 to 2008. They find that for the period of study, the inflation enhances the FDI in Malaysia. Higher inflation could increase the rate of return to the investors and thereby attract higher FDI inflows in the local economy.

On the negative side, there is a group of studies concludes that higher inflation reduces FDI. A study conducted by Sattarov (2012) indicates a negative relationship between inflation and FDI in Uzbekistan. The author suggests that high inflation signifies weak economic stability, therefore, discourage the FDI inflows in the country.

In addition, Cevis and Camurdan (2007) conducted a study in 17 countries including developing and transition economies from 1989 to 2006. Among the countries are Czech Republic, Argentina, Chile, China (P.R.:Hong Kong), South Africa, Thailand, Hungary, Malaysia, Latvia, Poland, Mexico, Russia, Croatia, Turkey, Slovenia, Lithuania and Slovak Republic. Using a fixed effect model analysis, they find a negative and significant relationship between inflation and FDI. It shows that for these 17 countries the inflation brings a negative impact on the FDI inflows.

Similarly, Hussain (2011) discovers a detrimental effect of inflation on FDI in India between 1991 and 2009 using multiple regression method. He argues that higher inflation represents government failure in balancing its budget and unable to conduct appropriate monetary policy and thus discourage the FDI. In Nigeria, Udoh and Egwaikhide (2008) also find a negative association between inflation and FDI.

Although the previous discussion has concluded that inflation influence FDI, but there are few studies that discover an insignificant relationship between these two variables. Studies conducted in United Arab Emirates by Alshamsi *et al.* (2015), OECD countries (Alam & Shah, 2013), Norway (Boateng *et al.*, 2015) and Germany (Abolghasemi, 2014) agree with the conclusion that inflation is not one of the determinants of FDI. It indicates that inflation does not influence the FDI decisions by foreign investors.

2.3.3   The Impact of Exchange Rate on FDI

Another determinant of foreign direct investments is an exchange rate. Exchange rate is defined as the price of a country's currency against other currency. The fluctuations of the exchange rate would have an impact on the FDI activities. Literatures in the developed countries have produced mixed findings on the relationship between exchange rate and FDI. On the positive side, Pantelidis and Paneta (2016) examine the determinants of FDI in Greece from the year of 1982 to 2013. The finding shows that there is a positive and significant relationship between exchange rate and FDI in Greece. Besides that, in Norway, Boateng *et al.* (2015) also agree that exchange rate influences the FDI positively. Athukorala and Rajapatirana (2003) point out that an increase in exchange rate indicates a real depreciation of the local currency against USD. Thus, these studies have concluded that depreciation in the local currency against USD attracts higher level of FDI activities in the host countries.

As for a single-country, Koojaroenprasit (2013) has conducted an assessment of the relationship between exchange rate and FDI in Australia for 26 years (1986 to 2011). The result indicates that exchange rate has a negative and significant impact on FDI in Australia. The finding implies that this condition has favored the price competitiveness of the Australian exports, thus attracting more international investors in this country.

In addition, three studies agree that exchange rate does not influence the level of FDI. Amuedo-Dorantes *et al.* (2001) have tested the relationship between exchange rate and FDI in United States from the year 1976 to 1998. The result proves that there is no relationship between exchange rate and FDI. Similarly, a study by Alam and Shah (2013)

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discovers an insignificant relationship between exchange rate and FDI in OECD countries including Spain, Australia, Italy, Canada, France, Japan, Norway, Belgium, the UK and the USA from the period of 1985 to 2009. In addition, Parajuli and Kennedy (2010) have selected a quarterly dataset between 1995 and 2007 in 25 OECD developed and developing countries including Korea, Japan, Italy, Finland, Denmark, Norway, Poland, Portugal, Spain and Sweden. This study also discovers no relationship between exchange rate and FDI.

As for studies conducted in developing countries, Nordin and Ghani (2015) examine the relationship between exchange rate and FDI in Malaysia from 1970 to 2009. They find that there is a significant and negative impact of exchange rate towards FDI. This implies that a depreciation of Ringgit Malaysia (RM) decreases the flow of FDI in Malaysia.

On the other hand, Hussain (2011) conducts a study in India for a period between 1991 and 2009 and discovers a significant and indirect relationship between exchange rate and FDI. This study argues that lower level of exchange rate increases the FDI inflows.

2.3.4 The Impact of Interest Rate on FDI

Interest rate is a cost of fund for the borrowers or issuers. Previous studies have identified that interest rate is a factor that determines the FDI (Abolghasemi, 2014; Jeon & Rhee, 2008; Koojaroenprasit, 2013; Udoh & Egwaikhide, 2008; Yang *et al.*, 2000). Literature in the developed countries has produced mixed findings. On the positive side, Yang *et al.* (2000) conduct a study in Australia from 1985 to 1994 and discover a positive and

significant impact of interest rate on FDI. This signals that higher interest rate in the host country attracts investors to invest in the domestic financial market, thus, lead to higher foreign investment. Similarly, Jeon and Rhee (2008) find that interest rate influences the FDI positively in Korea. This study argues that higher interest rate is a precondition for higher FDI inflows.

On the negative side, Koojaroenprasit (2013) examines the determinants of FDI in Australia from 1986 to 2011. The study indicates a negative link between interest rate and FDI which shows that lower interest rate encourages FDI. According to this study, higher interest rate reflects an increase in market risk and therefore, less FDI is expected to be received by the host country. Likewise, Abolghasemi (2014) finds a similar conclusion of the impact of interest rate on FDI in Germany. The study concludes that 1 percent increases in interest rate results in the decrease of 0.27 percent in FDI. This is because the local borrowers tend to choose the countries that can offer the lower interest rate in order to reduce their financing costs. Therefore, the reduction in interest rate enhances the FDI.

There are also a few studies conducted in both developed and developing countries that found a negative association between interest rate and FDI. Those studies are Jimborean and Kelber (2017) conducted in Eastern European countries and Norris *et al.* (2010) performed in 100 developing and developed countries. However, for Jimborean and Kelber (2017), higher interest rate reduces FDI inflows but for Norris *et al.* (2010) lower interest resulted in higher FDI outflows.

Meanwhile Boateng *et al.* (2015) and Pantelidis and Paneta (2016) agree that interest rate does not have any impact on the level of FDI in Norway and Greece, respectively. They argue that interest rate is not a determinant that encourages FDI inflows in those specific countries. Similarly, two studies conducted in developing countries also discover that interest rate has no influence on FDI. The studies are by Udoh and Egwaikhide (2008) in Mexico and Kiplagat (2016) in Kenya.

Besides that, a study in both developed and developing countries by Parajuli and Kennedy (2010) which employed the quarterly data from 1995 to 2007 in 25 OECD countries (including Korea, Japan, Italy, Finland, Denmark, Norway, Poland, Portugal, Spain and Sweden into Mexico) and conclude that there is no significant relationship between interest rate and also FDI.

2.3.5 The Impact of Financial Development on FDI

The last determinant of FDI is financial development. Financial development is a condition of which the financial instruments, markets and intermediaries work together in order to reduce cost of information and transactions. From the developing countries perspective, the relationship between financial development on FDI is nominated by positive findings. In Malaysia, Ang (2008) examines the determinants of FDI using a data set from 1960 to 2005. He finds a positive and significant influence of financial development on FDI. This study argues that a sound and developed financial system encourages more foreign investors in a domestic financial market. Moreover, Shahrudin *et al.* (2010) also agree with the conclusion made by Ang (2008) which indicates that higher financial development leads to higher FDI in the country

Similarly, a study conducted in Cabo Vede by Duarte *et al.* (2017) posits a positive link between financial development and FDI. Financial development which is measured by domestic credit has proved to attract more FDI in the country. Besides that, Deichmann *et al.* (2003) conduct a study by employing the multinational firms in Turkey from 1954 to 1995. This study also finds that financial development influences the FDI positively.

Likewise, a cross-country study by Desbordes and Wei (2014) conducted in BRICS (an acronym that refers to Brazil, Russia, India, China and South Africa) and United States within the period of 2003 to 2006. This study suggests that higher financial development leads to an increasing in the volume of FDI. Moreover, they also state that financial development is the key determinant of FDI.

2.4 CONCLUSION

This chapter provides the discussion on the related theory on the FDI and its determinants. The elaborations on the past literatures started with the studies conducted in developed countries followed by the discussions in developing countries. Based on the previous findings, the relationship between FDI and its determinants (economic growth, inflation, exchange rate, interest rate and financial development) are found to be mixed in both developing countries and developed countries.

CHAPTER THREE

METHODOLOGY

3.1   INTRODUCTION

This chapter discusses the methodology used in this study. Section 3.2 describes the data which includes the sources and countries employed in the study. Section 3.3 defines the variables that are dependent variable (FDI net inflows) and FDI potential determinants (economic growth, inflation, exchange rate, interest rate and financial development). Section 3.4 presents the research framework while the methods of estimations are discussed in Section 3.5. Lastly, Section 3.6 summarizes this chapter.

3.2   DATA DESCRIPTION

This study covers 26 Asian countries which are Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan. The selection of these countries is based on the data availability.

This study applies the unbalanced panel data for 16 years from 2000 to 2015 which resulted in 408 observations. The data for FDI net inflows, inflation, exchange rate, interest rate and domestic credit are extracted from the International Monetary Fund (IMF) while the data for GDP is collected from the World Bank database.

3.3 DEFINITION OF VARIABLES

This section discusses the variables employed in this study which are dependent variable (FDI net inflows) and independent variables (economic growth, inflation, exchange rate, interest rate and financial development). The selection of these variables are made based on the suggestions made by previous studies.

3.3.1 Dependent Variable (FDI Net Inflows)

FDI is the dependent variable of this study. This variable is represented by the FDI net inflows as a proportion of Gross Domestic Product (percentage of GDP). According to the World Bank (2017), the FDI net inflow is an investment by the foreign investors in the host countries. Therefore, an increased in level of FDI net inflow indicates higher level of FDI activities. Moreover, this variable has also been used in previous studies such as Ang (2008), Koojaroenprasit (2013), Pantelidis and Paneta (2016) and Sattarov (2012).

3.3.2 Independent Variables

This section presents a discussion on the independent variables that have been selected in this study which are economic growth, inflation, exchange rate and interest rate and financial development. Based on the previous studies these variables are considered as the determinants of FDI.

3.3.2.1 Economic Growth

The first determinant of FDI is economic growth. This study uses GDP per capita as a proxy for economic growth. This variable is denoted by the log transformation of GDP per capita in US Dollar. This proxy has also been used by the previous studies such as Pantelidis and Paneta (2016) and Alshamsi *et al.,* (2015). Furthermore, there is a group of studies that proves a positive effect of economic growth towards FDI (Alam & Shah, 2013; Boateng *et al.*, 2015; Koojaroenprasit, 2013). They suggest that better economic growth leads to greater FDI inflows. Hence, the relationship between FDI and economic growth is expected to be positive.

3.3.2.2 Inflation

The second FDI determinant is inflation. Inflation is measured using consumer price index. This variable is also employed by Anitha (2012) and Awan *et al.* (2010). Based on the previous studies, Cevis and Camurdan (2007), Hussain (2011) and Udoh and Egwaikhide (2008) agree that inflation reduces the FDI activities. They argue that higher inflation signifies the economic instability that shows the failure of government in balancing the budget and also indicates the incapability of the regulator to conduct an appropriate monetary policy (Hussain, 2011; Sattarov, 2012). Therefore, this study expects that the inflation would influence the FDI negatively.

3.3.2.3 Official Exchange Rate

The third independent variable is an official exchange rate. This study uses the official exchange rate stated in local currency unit (LCU) relative to 1 USD. This variable enters into the regression in the log transformation. Athukorala and Rajapatirana (2003) argue that an increase in exchange rate in local currency indicates a real depreciation of the local currency against USD. In addition, following a study by Boateng *et al.* (2015) in Norway, this study also agrees that there is a positive relationship between exchange rate and FDI. Therefore, this study argues that when exchange rate increases (local currency depreciates), the level of international funds into the host countries also increase. Thus, the relationship between the exchange rate and FDI is expected to be positive.

3.3.2.4 Interest Rate

The fourth FDI determinant is interest rate. This variable is represented by the percentage of lending interest rate as suggested by Abolghasemi (2014), Pantelidis and Paneta (2016) and Tolentino (2010). According to Abolghasemi (2014) and Koojaroenprasit (2013), lower interest rate increases the FDI inflows in the country. It indicates that borrower would seek financing from the countries that offer the lowest lending rate. Hence, this study expects a negative sign of relationship between interest rate and FDI.

3.3.2.5 Financial Development

The last independent variable is financial development. Domestic credit to private sector by banks (percentage of GDP) is used as a proxy for financial development as suggested by Duarte *et al.* (2017) and Shahrudin *et al.* (2010). Consistent with previous studies Ang (2008), Desbordes and Wei (2014) and Duarte *et* al. (2017), the relationship between financial development and FDI is expected to be positive. It means that a well-developed financial system attracts more foreign investments into the local market.

Table 3.1 summarizes the variables, definition, sources of the data collection and the expected signs of results in this study.

Table 3.1: Data Description

Variables	Symbol used	Definition	Sources of data	Expected Sign
Foreign Direct Investment	FDI	FDI, net inflows (% of GDP)	IMF	
Economic Growth (GDP)	GDP	Logarithm transformation of GDP per capita	World Bank	Positive
Inflation (CPI)	CPI	Consumer price index	IMF	Negative
Official Exchange Rate	OER	Logarithm transformation of official exchange rate (local currency per USD)	IMF	Positive
Lending Interest rate	INT	Lending interest rate (%)	IMF	Negative
Financial Development	FD	Domestic credit to private sector by banks (% of GDP)	IMF	Positive

3.4 RESEARCH FRAMEWORK

This section presents the research framework for this study. The research framework shows the relationship between FDI and its determinants which are economic growth, inflation, exchange rate, interest rate and financial development. Figure 3.1 presents the research framework of this study.

Figure 3.1: Research Framework
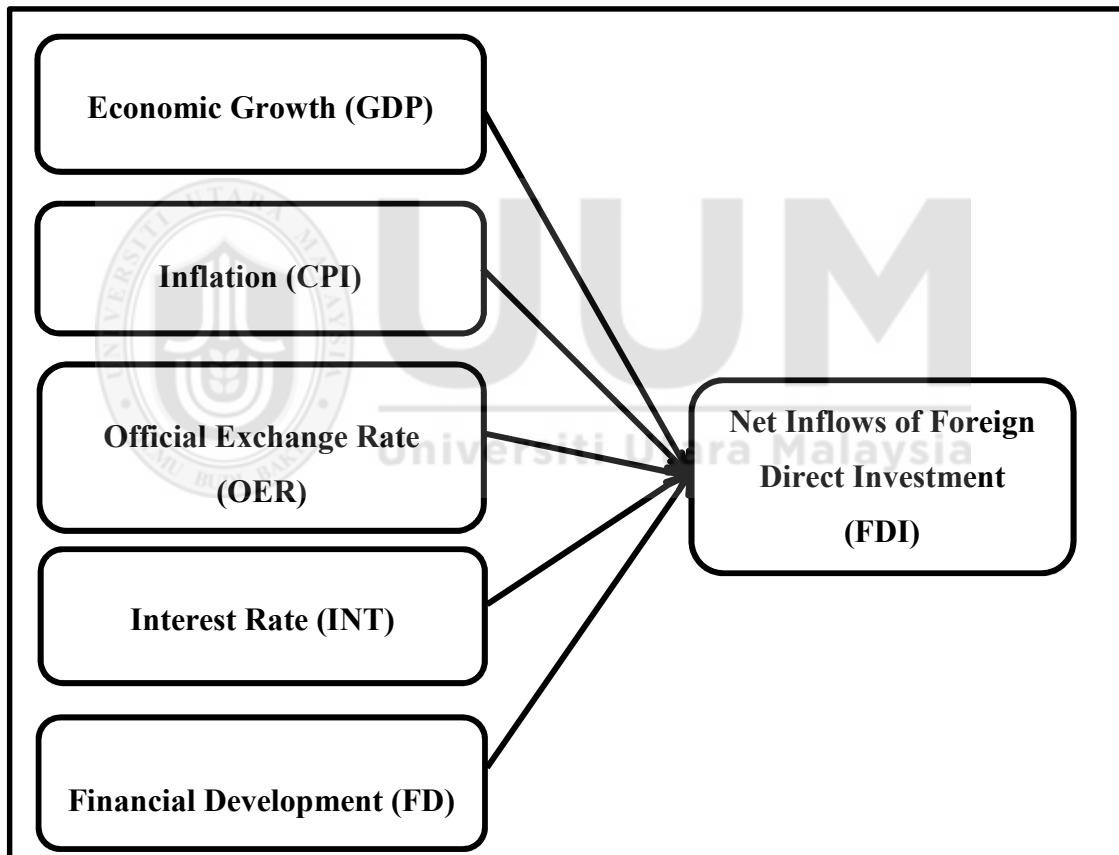
Based on the previous discussion, economic growth, exchange rate and financial development are expected to have a positive link on FDI. However, the relationships between FDI and inflation and interest rate are expected to be negative.

3.5   ECONOMETRICAL METHODOLOGY

This part elaborates the methods used in this study. The methods are 1) descriptive analysis, 2) correlation analysis, 3) panel data OLS analysis and 4) diagnostic tests.

3.5.1   Descriptive Statistic

Descriptive statistic is a method that measures mean, standard deviation, minimum and maximum values that describe the basic characteristics of the variables. Mean indicates an observation of the central tendency by dividing sum of observation with the number of observation. Meanwhile, a standard deviation measures the dispersion of values and it is used to observe how data is circulated around the mean. Minimum and maximum values represent the lowest and the highest value of the data collected (Zikmund, Babin, Carr & Griffin, 2013).

3.5.2   Correlation Analysis

According to Zikmund *et al.* (2013), correlation coefficient signifies the strength of the linear relationship between two variables. Moreover, the correlation analysis has a range which lies between -1 to 1. The -1 implies a perfect negative relationship between variables. Meanwhile, +1 indicates a perfect positive relationship and 0 represents no relationship occurs between variables.

3.5.3   Panel Data OLS

Regression analysis is a method of determining the relationship between dependent variable which is FDI inflows and independent variables which are economic growth, inflation, interest rate, exchange rate and financial development. Stata version 8 is utilized to regress the panel Ordinary Least Squares (OLS) in this study. As for the panel data OLS regression model, the formula can be expressed as follows:-

$$FDI_{it} = \beta_0 + \beta_1\,GDP_{it} + \beta_2\,CPI_{it} + \beta_3\,OER_{it} + \beta_4\,INT_{it} + \beta_5\,FD_{it} + \text{\EUR}$$

Where,

FDI   = Foreign Direct Investment inflows over the period of the study for country i

GDP   = Level of economic growth over the period of the study for selected country i

CPI   = Inflation rate represented by CPI over the period of the study for country i

OER   = Official exchange rate over the period of the study for country i

INT   = Lending interest rate over the period of the study for country i

FD   = Financial development represented by domestic credit over the period of the
   study for country i

Є   = Epsilon (Error Term) or other factors

3.5.4   Diagnostic Test

This study conducts diagnostic tests to check whether there is any problem occurs that might result into the misspecification of the OLS regression model in this study. There are several tests performed which are multicollinearity test, heterocedasticity test and also auto-correlation test.

3.5.4.1   Multicollinearity Test

Multicollinearity is a situation of which two or more independent variables in the OLS model are linearly associated. Furthermore, this test is used to check the presence of high correlation between variables that may reduce the predictive power of OLS model (Zikmund *et al.,* 2013). The result of VIF should not be more than 10 to denote that the model is free from the multicollinearity problem.

3.5.4.2   Heteroscedasticity Test

According to Sattarov (2012), the regression model is not efficient with the presence of the heteroscedasticity problems. Due to this, it is important to analyze the existence heteroscedasticity problem. The Wald test is utilized with the aim to have the p-value of more than 0.05 to indicate a regression model without this problem.

3.5.4.3   Auto-correlation Test

The last diagnostic test to be employed in this study is auto-correlation test. The auto-correlation problem is a situation in which there are linkages among the values of the variable within certain interval of times. The OLS regression should be free from auto-

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correlation when the p-value is more than 0.05. In order to test the auto-correlation, the technique that will be used in this study is the Wooldridge test.

3.6   CONCLUSION

This chapter discusses the data selection and description, the research framework and the methodology used in this study. Moreover, this study utilized 26 Asian countries including both developed and developing countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan). Lastly, the elaborations on the methodology and diagnostic test are also being presented in this chapter.
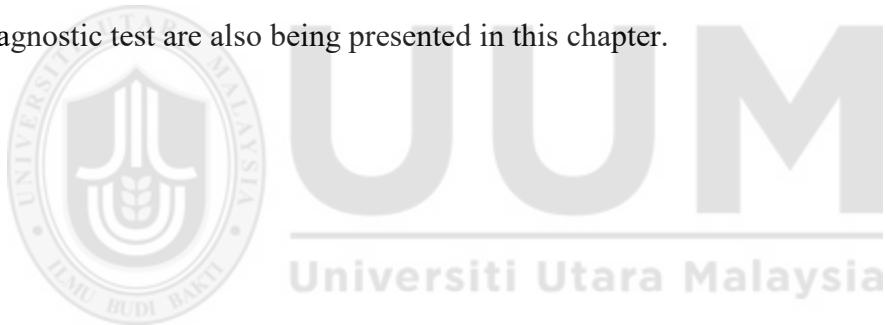
CHAPTER FOUR

RESULTS AND DISCUSSION

4.1   INTRODUCTION

This chapter discusses the findings of this study. Descriptive statistic results are presented in Section 4.2. Moreover, in Section 4.3, the discussion is made on the correlation analysis. Meanwhile, the results for Pooled OLS Regression are explained in Section 4.4. The findings of the diagnostic tests for this study are discussed in Section 4.5. Lastly, the conclusion is presented in Section 4.6.

4.2   DESCRIPTIVE ANALYSIS

This part discusses the results for the descriptive statistics of all variables used in this study. The values of mean, minimum, maximum and standard deviation for each variable are summarized in Table 4.1.

Table 4.1: Summary of Descriptive Analysis

Variable	Mean	Minimum	Maximum	Standard Deviation
FDI (%)	5.03	-4.70	58.51	7.69
GDP (USD billion)	55,300	43.90	1,110,000	148,000
Inflation (%)	4.57	-18.11	38.60	4.87
Exchange Rate (LCU/USD)	1,190.27	0.27	21,697.57	3,815.55
Interest Rate (%)	10.86	1.14	51.90	7.15
Financial Development (%)	61.91	3.76	233.21	43.29

According to the Table 4.1, FDI has the minimum value of -4.70 percent and the maximum value of 58.51 percent. Furthermore, the mean value for FDI is 5.03 percent and it has a standard deviation of 7.69 percent. For the first independent variable which is GDP, the test shows that the minimum value is USD43.90 billion and the highest value is USD1,110,000 billion. The mean and standard deviation values for GDP are USD55,300 billion and USD148,000 billion respectively. Moreover, inflation has a mean value of 4.57 percent and a standard deviation of 4.87 percent. Meanwhile, the highest value for inflation is 38.60 percent and the lowest value is -18.11 percent. The third variable which is exchange rate has a mean value of 1,190.27 for 1 unit of USD and the standard deviation value is 3,815.55 for 1 unit of USD. The minimum and maximum values for exchange rate are 0.27 for 1 unit of USD and 21,697.57 for 1 unit of USD respectively. Interest rate has the lowest value of 1.14 percent and the highest value of 51.90 percent. In addition, interest rate has a standard deviation of 7.15 percent and the mean value is

10.86 percent. Finally, financial development has the mean value of 60.91 percent and 43.29 percent for the standard deviation. The highest value for this variable is 233.21 percent and the lowest is 3.76 percent.

4.3   CORRELATION ANALYSIS

Table 4.2 summarizes the results for the Pearson correlation between the variables. The dependent variable of this study is FDI inflow and the independent variables are economic growth, inflation, exchange rate, interest rate and financial development. According to Zikmund *et al.* (2013), this analysis is used to test the strength of linear relationship among the variables.

Table 4.2: Pearson Correlation Matrix

Variables	FDI	GDP	Inflation	Exchange Rate	Interest rate	Financial Development
FDI	1.0000					
GDP	-0.0509	1.0000				
Inflation	0.0016	-0.2424	1.0000			
Exchange Rate	-0.1151	0.0949	0.3004	1.0000		
Interest rate	-0.0514	-0.6245	0.5321	0.3731	1.0000	
Financial Development	0.3920	0.6192	-0.3736	-0.1527	-0.6374	1.0000

The Table 4.2 shows that the GDP, exchange rate and interest rate are negatively correlated with FDI inflows. Among the variables, the strongest negative correlation is between exchange rate and FDI. Meanwhile, inflation and financial development are

positively related to FDI inflows. The strongest positive relationship is found between financial development and FDI.

4.4   POOLED OLS REGRESSION

Table 4.3 presents the results for pooled OLS and corrected-panel OLS for this study.

Table 4.3: Result for Pooled OLS and Corrected-Panel OLS

Variables	Pooled OLS	Corrected-Panel OLS
GDP	-1.456677 (-6.47)*	-1.456677 (-2.74)**
Inflation	0.2143021 (2.75)*	0.2143021 (1.81)***
Exchange Rate	-0.1234209 (-0.95)	-0.1234209 (-0.41)
Interest Rate	0.1405599 (1.82)**	0.1405599 (1.00)
Financial Development	0.1376796 (13.39)*	0.1376796 (2.70)**
Constant	30.74979 (5.38)*	30.74979 (2.55)**
R-squared	0.3228	0.3228
Adjusted R-squared	0.3144	N/A
F-statistic	38.3300	N/A
Prob (F-statistics)	0.0000	N/A
N	408	408

Note: * significant at 1% level, ** significant at 5% level, *** significant at 10% level, N/A indicates that the value is not provided by the Stata. The dependent variable is FDI inflows, (% of GDP).

For the discussion, only results from the corrected-panel OLS will be deliberated in this section. The results are more robust because the heteroscedasticity and auto-correlation problems have been corrected. Based on the results, the R-squared shows the value of 0.3228 which indicates that independent variables (economic growth, inflation, exchange

rate, interest rate and financial development) explain the dependent variable (FDI inflows) by 32.28 percent.

Furthermore, only GDP, inflation and financial development are statistically significant towards FDI inflows. The findings show that inflation and financial development have a positive relationship with FDI. Meanwhile economic growth (GDP) has a negative impact on FDI inflows. In addition, exchange rate and interest rate are not significant determinants of FDI.

4.4.1 Economic Growth

Contradict to the expected finding, the result indicates that economic growth has a significant and negative relationship with the FDI inflows. Hence, this shows that lower economic growth attracts higher level of FDI inflows in the country. This result is supported by Katrakllidis *et al.* (1997). They argue that the negative link between these variables is caused by the intention of the firms that wish to exploit the export opportunities in the host country. Among the opportunities are the reduction in the costs of financing and labor due to the recessionary condition in the host countries. Thus, lower economic growth leads to higher FDI inflows in the recipient countries.

4.4.2 Inflation

The result shows that inflation has a positive and significant relationship with FDI inflows. Contradict to the expected finding, this result indicates that higher inflation leads to higher FDI inflows in the host countries. This negative and significant result is in line with prior studies: Anitha (2012); Awan *et al.* (2010); Shahrudin *et al.* (2010). In

addition, higher inflation promotes greater FDI inflows as the investors expect greater return associated with the higher investment risk. Furthermore, higher risk due to the higher inflation attracts the investors that seek for above than average return.

4.4.3 Exchange Rate

This study discovers a negative and insignificant relationship between exchange rate and FDI inflows. This implies that there is no relationship between exchange rate and FDI inflows in this study. The finding is consistent with Parajuli and Kennedy (2010) which also agrees that exchange rate is not a determinant of FDI inflows.

4.4.4 Interest Rate

Interest rate is found to have a positive but insignificant relationship with FDI inflows. This study employs the lending interest rate that measures the cost of borrowing offered by the countries. Since investors choose to borrow in a country that offers lower interest rate to attract FDI inflows, the expected relationship should be negative. However, the result shows that the interest rate is not influencing the level of FDI inflows. The similar result is also found by Boateng *et al.* (2015), Pantelidis and Paneta (2016) and Parajuli and Kennedy (2010). Thus, with respect to the data and time period employed in this study, lending rate is not one of the determinants of FDI.

4.4.5 Financial Development

Based on the finding, financial development which is measured by the domestic credit over GDP, has a positive and significant link with FDI inflows. This implies that greater financial development enhances the level of FDI to the host countries. This result is also supported by the previous findings: Ang (2008), Duarte *et al.* (2017) and Deichmann *et al.* (2003). Therefore, it can be concluded that a sound financial development allows easier accessibility to the local financial market and thereby attract more foreign investors in the domestic financial system, hence improves the FDI inflows in the host country.

4.5 DIAGNOSTIC TESTS

This section presents the results for the diagnostic tests in order to check the robustness of the standard error. The tests conducted in this study are multicollinearity test, heteroskedasticity test and auto-correlation test.

4.5.1 Multicollinearity Test

In order to detect the multicollinearity problem in the regression model, VIF is the most common method employed. Multicollinearity problem occurs when two or more variables are highly correlated to each other. Besides that, the optimum value of VIF should be in range of 1 to 10. Table 4.4 shows the results for multicollinearity test.

Table 4.4: Results for Multicollinearity

Variables	VIF
GDP	2.39
Inflation	1.45
Exchange Rate	1.47
Interest Rate	3.04
Financial Development	1.98
Mean VIF	2.07

The results show that the multicollinearity problem does not exist for all variables as the VIF values are not exceeding 10. The mean VIF for all variables is 2.07.

4.5.2   Heteroscedasticity Test

In order to check the heteroscedasticity problem, the method used in this study is the Modified Wald test. The result should be more than 0.05 to indicate that there is no heteroscedasticity problem. Table 4.5 shows the Modified Wald test result for this study.

Table 4.5: Results for Modified Wald Test

Chi-sq	Prob
13.0000	0.0000

Since the value is below 0.05, thus, the heteroscedasticity problem exists in the regression model.

4.5.3 Auto-Correlation Test

Woolridge Test is a technique employed to test the existence of autocorrelation problem. In addition, the P-value should be more than 0.05 to indicate that the autocorrelation problem does not present.

Table 4.6: Results for Woolridge Test

Chi-sq	Prob
11.0760	0.0027

Table 4.6 shows that the value is below than 0.05 level. Hence, the auto-correlation problem exist. Since the model exhibits heteroscedasticity and auto correlation problems, panel corrected OLS was conducted.

4.6   CONCLUSION

In conclusion, this study indicates that financial development enhances the inflows of FDI in the 26 countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan). Furthermore, higher inflation encourages more international funds in the host countries. Nevertheless, contradict to the expected finding, lower economic growth attracts higher level of FDI inflows. In addition, this study also discovers that exchange rate and interest rate are not determinants of FDI in these 26 countries between 2000 and 2015.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1   INTRODUCTION

Foreign direct investment (FDI) is defined as an investment made by investors in an enterprise and economy which is other than the investor's economy. Theoretically, it is noted that FDI is an important economic stimulus and improves the well-being of the societies. According to Blomstrom and Kokko (1997) and Ponomareva (2000), FDI could benefit the economy from the transfer of technology to the host country. The transfer of technology enhances the productivity thus helps to preserve the environment through the environmental-friendly production processes. Moreover, FDI increases the level of competition which leads to better quality of the products and offers lower prices in countries (Hussain, 2017). Besides that, FDI also contributes to the economic development by providing foreign capital into the domestic investment (Jenkins & Thomas, 2002). FDI also benefits the economy since the transfer of knowledge, managerial skills and organizational practices create job opportunities in the local market (Hill, 2000).

As FDI brings benefits to the local economy, this study investigates the determinants (economic growth, inflation, exchange rate, interest rate and financial development) of FDI in 26 Asian countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan) from 2000 to 2015. Thus, the first objective of

this study is to examine the relationship between economic growth and FDI inflows, whereas the second objective is to investigate how inflation affects the FDI inflows. The third objective is to assess the relationship between exchange rate and FDI inflows meanwhile the fourth objective is to study the impact of interest rate towards FDI inflows. The last objective is to analyze the relationship between financial development and FDI inflows.

In order to answer the research objectives, this study employs the unbalanced panel data from 2000 to 2015 for 26 Asian countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan). In addition, to investigate the relationship between the FDI and its determinants the ordinary least square (OLS) method was employed.

This chapter is structured as follows. Section 5.2 discusses the summary of the findings. Next, Section 5.3 provides the policy implications whereas the contributions of the study are presented in Section 5.4. Section 5.5 addresses the limitations and directions for future researches. Finally, Section 5.6 concludes this chapter.

5.2 SUMMARY OF THE FINDINGS

The first objective of this study is to examine the relationship between economic growth and FDI inflows in selected Asian countries. The finding shows that economic growth has a negative and significant impact on FDI inflows. According to Katrakllidis *et al.* (1997), the negative link between these variables is due to the intention of the firms that wish to take advantages from export opportunities in the host country.

The second objective is to investigate how inflation affects the FDI inflows in selected Asian countries. The result shows that inflation has a positive and significant relationship with FDI inflows. This result indicates that higher inflation leads to higher FDI inflows in the host countries. Anitha (2012), Awan *et al.* (2010) and Shahrudin *et al.* (2010) agree that investors expect higher return associated with the higher risk when the inflation is high. Thus, higher inflation encourages greater FDI inflows into the host countries. Furthermore, higher risk due to the higher inflation attracts the investors that seek for above than average return.

The third objective is to assess the relationship between exchange rate and FDI inflows. This study discovers a negative and insignificant relationship between exchange rate and FDI inflows. This implies that there is no relationship between exchange rate and FDI inflows in this study. The finding is consistent with Parajuli and Kennedy (2010) which agree that exchange rate is not a significant determinant of FDI inflows.

The fourth objective is to study the impact of interest rate towards FDI inflows. The result shows that the interest rate is not influencing the level of FDI inflows. The similar result is also found by Boateng *et al.* (2015), Pantelidis and Paneta (2016) and

Parajuli and Kennedy (2010). Thus, with respect to the data and time period employed in this study, lending rate is not one of the determinants of FDI.

The last objective of this study is to analyze the relationship between financial development and FDI inflows in selected Asian countries. This study finds that greater financial development improve the level of FDI to the host countries. According to Ang (2008), Duarte *et al.* (2017) and Deichmann *et al.* (2003), the sound financial development would make the accessibility to the financial market easier and thereby attract more foreign investors to invest in domestic market, hence improves the FDI inflows in the host country.

In summary, economic growth, inflation and financial development are the determinants of FDI while exchange rate and interest rate are not significant factors affecting the FDI inflows.

5.3   POLICY IMPLICATION

Since financial development is found to be an important variable in determining the FDI inflows in Asian countries, the policy maker should take more initiative to develop the local financial system in order to attract more FDI inflows in the country. Thus, policy maker should develop more strategies to develop the financial system to encourage FDI inflows.

This study also discovers that lower economic development and higher inflation promote FDI inflows in 26 Asian countries. Therefore, policy maker should take this information into consideration when revising and developing strategies on FDI.

Precautionary measures during higher economic development and inflation should be considered in order to attract foreign investors.

5.4   CONTRIBUTION OF THE STUDY

There are several contributions made by this study. Firstly, the results obtained from the study would add into the existing literatures on the FDI determinants especially in Asian countries. Lastly, the findings could provide assistance for the policy maker in reviewing and formulating the current policy on FDI in Asian countries.

5.5   LIMITATIONS AND DIRECTIONS FOR THE FUTURE RESEARCH

There are some limitations occur in the present study. Firstly, the data set is only limited to 26 Asian countries (Japan, India, China, Vietnam, Korea, Singapore, Thailand, Israel, Philippines, Indonesia, Hong Kong, Malaysia, Sri Lanka, Bangladesh, Yemen, Macao, Oman, Kuwait, Jordan, Mongolia, Bhutan, Bahrain, Armenia, Kyrgyz, Brunei and Tajikistan). Hence, the future researches are recommended to focus on wider range of countries which cover both developed and developing countries. Secondly, this study employs domestic credit to GDP as a proxy to measure the financial development. Thus, it is suggested to use other variables as proxy for the financial development such as stock market capitalization (SMKC), stock market total value (SMTV) and stock market turnover (SMTO). Lastly, this study only utilizes the OLS method, other latest and more sophisticated method could be employed to enhance the robustness of the findings.

5.6   CONCLUSION

Finally, this study concludes that financial development promotes FDI inflows in Asian countries. Moreover, lower economic growth enhances the FDI inflows while higher inflation attracts more foreign investors into the host countries. On the other hand, the exchange rate and interest rate are not the determinants of FDI inflows in the 26 Asian countries from 2000 to 2015.

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. tsset code year
    panel variable: code, 1 to 26
    time variable: year, 2000 to 2015

. regress fdi x1lngdp x2inf x3lnexch x4int x5fd

Source		SS	df	MS		Number of obs =	408
						F(5, 402) =	38.33
Model		7833.5971	5	1566.71942		Prob > F =	0.0000
Residual		16432.9127	402	40.8778922		R-squared =	0.3228
						Adj R-squared =	0.3144
Total		24266.5098	407	59.6228742		Root MSE =	6.3936

Fdi		Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
x1lngdp		-1.456677	.2251071	-6.47	0.000	-1.899211	-1.014143
x2inf		.2143021	.0778971	2.75	0.006	.0611655	.3674388
x3lnexch		-.1234209	.1295968	-0.95	0.341	-.3781929	.1313511
x4int		.1405599	.0773918	1.82	0.070	-.0115833	.2927031
x5fd		.1376796	.0102809	13.39	0.000	.1174684	.1578907
_cons		30.74979	5.717277	5.38	0.000	19.51029	41.98928

. vif

Variable		VIF	1/VIF
x4int		3.04	0.328663
x1lngdp		2.39	0.418200
x5fd		1.98	0.506005
x3lnexch		1.47	0.678888
x2inf		1.45	0.691354
Mean VIF		2.07	

. xtreg fdi x1lngdp x2inf x3lnexch x4int x5fd, fe

Fixed-effects (within) regression   Number of obs   =   408
Group variable (i): code   Number of groups =   26

R-sq: within   = 0.0881   Obs per group: min =   14
       between = 0.0336   avg =   15.7
       overall = 0.0401   max =   16

                                       F(5,377)   =   7.29
corr(u_i, Xb)   = -0.3035   Prob > F   = 0.0000

fdi		Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
x1lngdp		.359351	.513003	0.70	0.484	-.6493546	1.368057

```
   x2inf      |  .2141691    .0641365     3.34    0.001      .088059     .3402792
  x3lnexch    | -.2913752    1.950436    -0.15    0.881    -4.126472    3.543721
    x4int     | -.2782739    .0928809    -3.00    0.003    -.4609034   -.0956444
    x5fd      |  .0318463    .0190046     1.68    0.095     -.005522    .0692145
   _cons      | -2.893277    13.76661    -0.21    0.834    -29.96223    24.17567
--------------+----------------------------------------------------------------------------
  sigma_u     | 6.5547743
  sigma_e     | 4.5269241
    rho       | .67706188   (fraction of variance due to u_i)
------------------------------------------------------------------------------------------
F test that all u_i=0:                      F(25, 377) =   17.00      Prob > F = 0.0000

. xttest3

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2   = sigma^2 for all i

chi2 (26)      =    1.3e+05
Prob>chi2      =    0.0000

. xtserial  fdi x1lngdp x2inf x3lnexch x4int x5fd

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
  F( 1,    25) =    11.076
    Prob > F   =    0.0027

. regress  fdi x1lngdp x2inf x3lnexch x4int x5fd, robust cluster (code)

Regression with robust standard errors          Number of obs =    408
                                                F( 5,   25)   =    2.45
                                                Prob > F      =  0.061
                                                R-squared     = 0.3228
Number of clusters (code) = 26                  Root MSE      = 6.3936


------------------------------------------------------------------------------------------
    Fdi       | Coef.     Robust  Std. Err.    t    P>|t|     [95% Conf.     Interval]
--------------+---------------------------------------------------------------------------
  x1lngdp     | -1.456677    .531753     -2.74    0.011    -2.551843    -.3615116
   x2inf      |  .2143021    .1182261     1.81    0.082     -.029189     .4577933
  x3lnexch    | -.1234209    .3012653    -0.41    0.686    -.7438884     .4970465
    x4int     |  .1405599    .1404546     1.00    0.327    -.1487118     .4298316
    x5fd      |  .1376796    .0510741     2.70    0.012     .0324905     .2428686
   _cons      |  30.74979    12.05566     2.55    0.017     5.920688     55.57889
------------------------------------------------------------------------------------------
```

APPENDIX B

Descriptive Statics

Variable	Mean	Minimum	Maximum	Standard Deviation	N
FDI (%)	5.03	-4.70	58.51	7.69	413
GDP (USD billion)	55,300	43.90	1,110,000	148,000	416
Inflation (%)	4.57	-18.11	38.60	4.87	413
Exchange Rate (LCU/USD)	1,190.27	0.27	21,697.57	3,815.55	416
Interest Rate (%)	10.86	1.14	51.90	7.15	413
Financial Development (%)	61.91	3.76	233.21	43.29	414

APPENDIX C

Correlation Analysis

	Y=FDI	X1=GDP	X2=CPI	X3=OER	X4=INT	X5=FD
FDI	1.0000					
GDP	-0.0509	1.0000				
CPI	0.0016	-0.2424	1.0000			
OER	-0.1151	0.0949	0.3004	1.0000		
INT	-0.0514	-0.6245	0.5321	0.3731	1.0000	
FD	0.3920	0.6192	-0.3736	-0.1527	-0.6374	1.0000