THE DETERMINANTS THAT AFFECT THE FOREIGN DIRECT INVESTMENT IN CHINA

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We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is 17525 words.

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LIST OF ABBREVIATIONS

ARCH	Autoregressive Conditional Heteroscedasticity
BRIC	Brazil, Russia, India, China
BLUE	Best Linear Unbiased Estimator
CEEC	Central and East European Candidate
CJV	Contractual Joint Venture
CPI	Consumer Price Index
EG	Economic Growth
EJV	Equity Joint Venture
EXR	Exchange Rate
FDI	Foreign Direct Investment
FIEs	Foreign Invested Enterprises
GDP	Gross Domestic Product
GDPPC	Market Size
GMM	Generalized Method of Moments
IFR	Infrastructure

INF	Inflation
JB	Jarque-Bera
LCU	Local Currency Unit
LM	Lagrange Multiplier
M & A	Merger and Acquisition
MNE	Multinational Enterprise
OECD	The Organization for Economic Co-operation and Development
OIC	Organization of Islamic Cooperation
OLS	Ordinary Least Squares
R&D	Research & Development
RESET	Regression Equation Specification Error Test
RMB	Ren-min-bi
SEZs	Special Economic Zones
TRD	Trade Openness
USD	United States Dollar
VIF	Variance Inflation Factor

WFOE	Wholly Foreign Owned Enterprise
WTO	World Trade Organization

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PREFACE

This research has the title of "The determinants that affect the foreign direct investment in China". Then, this research is being done to explore the important determinants that will affect the China's FDI. The FDI is an investment from an individual or corporation to expand their business in another country. In December 1978, China had announced the 'open door' policy in order to attract more FDI to sustain the China's long-term economy growth. Hence, the FDI has become one of the key factors that boost the China's economy.

Since the FDI is playing an important role in facilitating the China's economy, the major objective of this research is to determine the important determinants that will affect the FDI in China. Through this research, the readers will have a better understanding on the determinants that will affect the FDI in China and the importance of the particular determinants on the FDI in China.

ABSTRACT

This paper attempts to assess the determinants that affect the FDI in China. It is known that the FDI is crucial for a country's economic growth as it may stimulate the host country's development and productivity. Besides, FDI will also bring in many benefits for the host country such as increasing the employment opportunities, stimulating the advancement of technology, improving the managerial skill and so on.

Furthermore, since its open door policy in 1978, FDI has played an important role in the country development. Due to its distinctive trade policy reformation in the past ten years, this would drive the motive of the researchers around the world to study the factors behind the success of China. Besides, as the FDI inflows of China started to fluctuate from year 2007 to 2018, these changes of high volatility have created an opportunity to carry out this research which is to examine the factors that will affect the China's FDI by using the annual data from year 1979 to 2018. Other than that, the Ordinary Least Squares (OLS) method is applied to investigate the relationship between the explanatory variables (trade openness, infrastructure, economic growth, inflation, exchange rate and market size) and the dependent variable (China FDI inflow).

Lastly, the empirical results show that the exchange rate, inflation, infrastructure and the market size are significant in affecting the China FDI. It is found that the exchange rate, inflation and the infrastructure are having a positive relationship with the FDI in China. On the other hand, the market size is having a negative relationship with the FDI in China. However, the remaining independent variables like the economic growth and the trade openness were found to be insignificant in impacting the FDI in China.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

Firstly, a brief introduction on the FDI will be provided in chapter one. The information included the definition, advantages, and challenges of FDI will be given. Other than that, since the country that chosen for this study is China, the research background about the FDI in China will also be discussed. Then, the problem statement on the FDI in China and the brief explanation on the chosen independent variables in this study will also be provided. Apart from that, this chapter also included the research objectives and research questions. Furthermore, the hypotheses of this study will also be discussed in this chapter as well as the significance of study.

1.1 Foreign Direct Investment

FDI is described as the direct investment from a local country's corporation to expand the businesses in a foreign country. It also means the foreign asset investment flows to the goods and services in host country. However, the foreign stock market investments are excluded (Antwi, Mills & Zhao, 2013). Then, FDI is important for a country as it is able to stimulate the host country's productivity and development. The managerial skill, sources of fund, employment opportunities, technology and the export will be brought into the host country through FDI. All these benefits will contribute to the economy of the country. Therefore, it is an essential component that affects the host country's economic growth (Awan, Khan and Zaman, 2011).

Besides, FDI's motivating force can be divided into five types which consist of the raw material seeker, market seeker, knowledge seeker, production efficiency seeker and lastly, the political seeker. Firstly, the raw material seeker is looking for the resources from the foreign nation because there are limited raw materials in their home country. Furthermore, the market seeker is more prefer to carry out their productions in the foreign countries and they are also willing to satisfy the needs of the host and foreign country (Moffett, Stonehill, & Eitheman, 2009).

Furthermore, the aim of the knowledge seeker is to gain exposure to the managerial expertise or new technology by operating in the foreign countries. In this case, by exposing to the managerial expertise or technology of the foreign countries and making improvement on these two aspects, they are able to increase their productivities and reduce their costs. In addition, both the production efficiency seeker and raw material seeker shares the same idea. Both of them favor to perform the production activities in a country that allows a lower cost of production with respect to having production in local country. Lastly, political seeker will tend to set up new operations or carry out acquisition activity on the existing companies in the countries with a lower level of political and economy risk (Moffett, Stonehill, & Eitheman, 2009).

1.1.1 Advantages of FDI

When it comes to the advantages of FDI, Aqeel and Nishat (2004) claimed that FDI brings benefits to the countries which are developed and under developing when the capital is being mobilized from the developed countries to developing countries. The situation is that some developing countries are facing the issue of capital shortage in which additional fund is required for their development process. Simultaneously, the investors in developed countries are seeking high return for their surplus of capital and these investors will plan to make investment to receive dividend as the return from their investment.

Therefore, both parties will gain advantages from this capital movement through FDI.

Moreover, FDI also provides training and managerial skill to the staff in order to enhance the local firm's management capacity (Emmanuel, 2014). According to Aga (2014), FDI made the transfer of managerial skills and technology become possible when the foreign firms are expanding new business operation in the host country. Under this situation, the unemployment rate in the host country will be cut down since the opportunities of job will increase and this may also lead to a higher productivity of home country (Edwin, 2014). Besides, export growth can be promoted by selling the products to the free trade partner in host country to enlarge the size of market (Pondicherry & Tan, 2017).

1.1.2 Challenges of FDI

Other than bringing the advantages, FDI also brings some disadvantages. For instance, the outflow of investment income can be a negative effect that brought by FDI. The foreign investors will gain dividends in return when they invested their capital in other country. In this case, after getting the return, they might bring the money back to their country, so this will cause a fund outflow from the host country. Apart from that, causing high import content is also another problem. The huge FDI inflow into the country can cause a rise in the imports of semi-finished products which will then result in a growth in the import bill. Other than that, FDI will also cause "crowding-out" effect. Some of the market leader firms will have greater market power when there are more investments from the foreign investors. In this case, the small and new companies will face difficulties in competing in the market (Wong & Jomo, 2005).

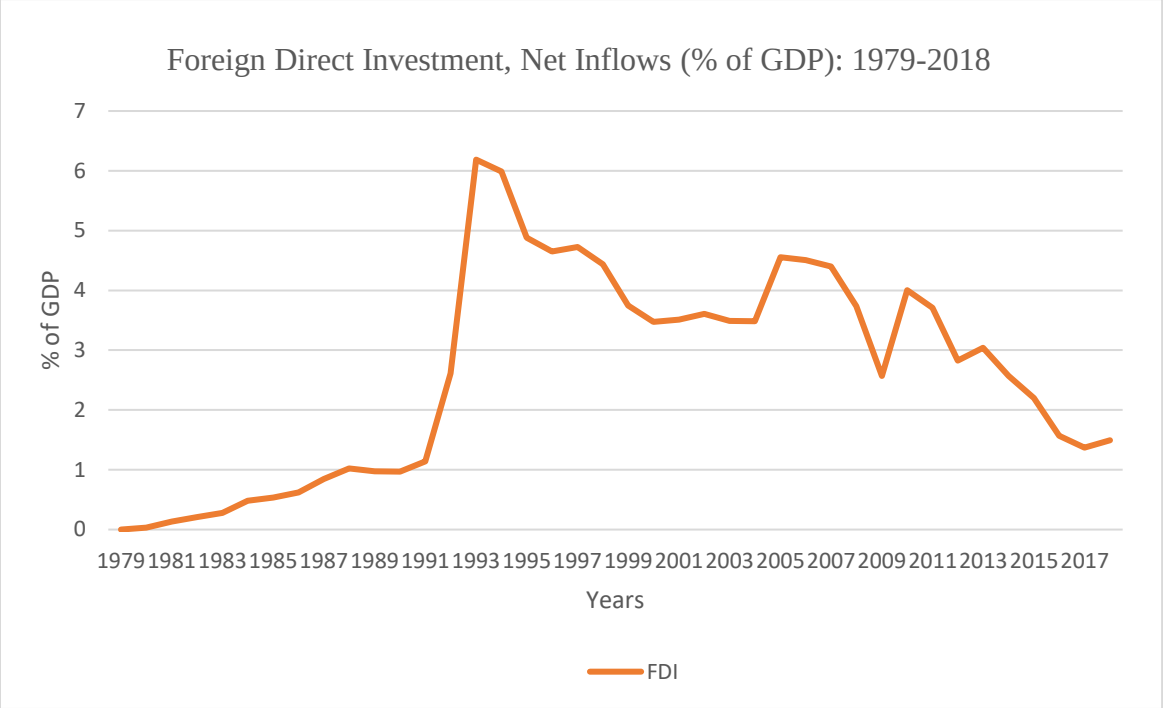
1.1.3 FDI in China

With respect to the background of China's FDI, the largest source of China's FDI inflow is mainly come from the Asian countries and primarily come from the round-trip of investment through Macao, Taiwan, and Hong Kong (Ali & Guo, 2005). China has a very uneven source of FDI which more than 90% of the global FDI are generated from the industrial countries. The main source is originated from Macao, Hong Kong, as well as other Asian countries. Equity joint venture (EJV), contractual joint venture (CJV) plus the wholly foreign owned enterprise (WFOE) are the primary kinds of FDI in China. Since the late 1970s, the most significant category of China's FDI is the CJV. When it comes to the late of 1980s, the key category of China's FDI has changed to the WFOE and EJV. Other than that, the WFOE has also rapidly increased in numbers during these recent years (Ali & Guo, 2005).

Hence, this study has selected China as the country of study due to its distinctive trade policy reformation in the past ten years. It would be very significant for the countries around the world to study on the factors that contributing to the success of China to becoming one of the giant economies in the world.

1.2 Research Background

Figure 1.1: Total FDI Inflows in China (% of GDP): Year 1979 – 2018



Source: The World Bank

FDI performs an essential part in contributing to the China's economic expansion for about 25 years. It has allowed China to build new industry branches and to provide a variety of goods and services for the Chinese consumers. Besides, new technology had been brought into many fields in China and it has created millions of employment opportunities either directly and indirectly by the foreign invested enterprises (FIEs). Furthermore, FDI is also considered as the major aspects in strengthening the international trade of China that has contributed to 50% of the gross domestic product (OECD, 2003).

Firstly, from the year 1979 to 1983, it is called the experiment stage. The Chinese government started off from an experimental approach (Dang, 2008). This is when FDI is introduced into China gradually. At the beginning, Chinese government has started

with establishing four special economic zones (SEZs) that aimed to absorb and utilize the FDI and this has enabled the foreign investors to have advantageous treatment for their business. Thus, China's FDI has a slight increase based on Figure 1.1.

Besides, from the year 1984 to 1991, it is called the growth stage. The Chinese government had taken a further step to open other fourteen coastal cities besides SEZs after getting amazed by the accomplishment of FDI in SEZs (Dang, 2008). These 14 cities got to enjoy more freedom in making economic decisions as compared to SEZs. Therefore, the China's FDI has an increment from 1.258 billion (USD) in year 1984 to 4.366 billion (USD) in year 1991.

In addition, from the year 1992 to 1993, it is called the peak stage as the FDI of China rose tremendously. In this stage, Shang Hai has been emerged as China's economic center including a new launch area in Pudong (Dang, 2008). The Chinese government has decided to evolve Shang Hai into an international hub for trade, economy and finance. Furthermore, China has planned to direct FDI into the country's inner regions that were less developed and industrialized. As a result, China's FDI has increased to 27.515 billion (USD) in year 1993 which is more than double of the amount in year 1992 which is 11.156 billion (USD) (The World bank, 2019).

Then, from the year 1994 to 2000, it is called the adjustment stage whereby the FDI of China had turn from a high growth rate to a stable rate. This also indicated that a new stage had arrived. In this stage, the Chinese government has started to manage FDI in accomplishing its objective for economic expansion (Dang, 2008). In this case, the FDI of China has reached to the peak in 1997 which is 45.439 billion (USD), but it then started to move downwards in the following two years (The World Bank, 2019).

Moreover, from year 2001 onwards, it is called the post WTO stage. China had finally become a member of World Trade Organization (WTO) officially after 15 years of negotiation (Dang, 2008). With the acceptance by WTO, China gets to enjoy the privileges as a WTO member and the China's FDI inflows has increased significantly

by having a larger and more predictable export market, more export-oriented FDI, higher investors' confidence on China's economy and market, and a protection for China's export from opposing measures. As a result, China's FDI started to rise moderately from 47.053 billion (USD) in year 2001 to 171.535 billion (USD) in year 2008 (The World Bank, 2019).

Furthermore, in year 2008, a financial crisis occurred and China was one of the countries that was being affected. As a result, China's FDI entered into a fluctuating trend until year 2014, but it still increased in overall from 171.535 billion (USD) in year 2008 to 290.928 billion (USD) in year 2013. After that, China's FDI started to drop gradually in year 2013 and was continue dropping to 166.084 billion (USD) in year 2017. However, China's FDI has increased to 203.492 billion (USD) in year 2018 (The World Bank, 2019).

Lastly, based on Figure 1.1, for the recent 10 years from 2009 to 2018, China's FDI in the percentage of GDP flows in a fluctuating trend, whereby China's FDI rose sharply from 2.57% in year 2009 to 4.00% in year 2010. After that, the China FDI's decreased marginally to 2.83% in year 2012 and it happened to increase to 3.04% in year 2013 before decreasing moderately to 1.37% in year 2017. However, in year 2018, China's FDI has increase back to 1.50%.

1.3 Problem Statement

Based on the Figure 1.1, the China's FDI has dropped continuously from the year 2013 to 2017, whereby the FDI in percentage of GDP has decreased from 3.040% to 1.368%. Therefore, it is crucial to conduct this research to look into the contributing factors of FDI by studying the determinants that will contribute to the FDI in China.

Besides, there are also other reasons to learn the FDI in China. First of all, from the perspective of the investors in foreign countries, it is favorable for them to put their investment in China. The evidence for this is that China has a second place in being as the FDI recipient in the world based on the World Investment report (2019). Then, starting from year 2000, China has kept on improving in different sectors like the technology sector and agriculture sector. The achievements of China in those sectors has made it to have an economic lead when comparing to other countries. Furthermore, China still has high potential to grow further in the future. Under these conditions, China is attracting the foreign investors to consider their investment decision in China.

Furthermore, it is also interesting to study the FDI in China as the country is promoting investment liberalization. As an example, in the year 2017 foreign investment catalogue of China, it has reduced the amount of administrative measures that limiting the foreign investment (Koty & Qian, 2017). Besides, the catalogue also included the national negative list that stated the industries which prohibited from foreign investment. Then, based on the World Investment report (2019), China has revised the negative list and continue to reduce the restrictions for the industries to involve in foreign investment. Therefore, since China is promoting investment liberalization, the FDI in China is interesting to be studied.

Other than that, China is having high influence on other countries by carrying out global development strategy. For instance, China has carried out the belt and road initiative, whereby it enables the China to access the new market and also connect the economy between the China and the Europe, Africa, and America. It is known that more than hundreds of countries have participated in this initiative. By having high influence on other countries, it is assumed that any changes in the FDI of China may cause a chain reaction, whereby the FDI of other countries will also be affected.

Most importantly, China is having a trade war with the United States in recent year. According to Guo, Lu, Sheng and Yu (2018), both of the countries keep on raising the tariffs to apply on the goods. This makes China's electronic and machinery product,

building products, and consumer goods, which are the main export products of China to suffer by paying more on the tariffs. The trade war between China and the United States actually causes a huge problem to China and it is not only the internal problem, but also the external. It affects a lot of foreign investors to think over whether is a good choice for them to invest in China. Therefore, it is also one of the reasons to learn the FDI in China.

Besides, the population of China is large. By comparing with other countries, the development of infrastructure becomes one of the advantages for China to attract more foreign investments. The reason for this is that large population associated with a high workforce in China. All the high way, roads, bridges are necessary for the employees in China and this will bring up the opportunities for the infrastructure investment in China.

Considering the many opportunities and attractiveness of China in the eyes of foreign investors, it is foreseen that China should continue to grow in FDI, despite a decrease recorded, as shown in Figure 1.1. Hence, there is an increasing need to understand the contributing factors to FDI in China.

Furthermore, in respect of the above, this study has identified six independent variables which are the trade openness, infrastructure, economic growth, inflation, exchange rate and the market size that may influence China's FDI. For the better understanding of the interested parties, a brief explanation of each explanatory variable will be given.

First of all, trade openness refers to the total import and export which normalized by GDP. It is used to measure the economic policy that either receives or rejects the transaction between each of the countries. For instance, when the government of a country had set high trade barrier policies which affect the country's trade openness, it will influence the country's competitiveness in the trade activity at international level. Such kind of policy will limit other countries from doing export and import activities with that country. According to Sazali, Bakar, Huey, and Ghazali (2018), trade

openness is positively affecting the FDI. The reason is because high trade barrier reduces the trade openness. For example, the situation of low trade openness will directly bring the problem of high production cost and low import quantity to the export-oriented company. Consequently, the export-oriented companies will face losses. In short, when there is a low rate of trade openness, the export-oriented company will face losses and this will reduce the intentions of the investors in foreign countries for investing into these companies, hence reducing the FDI into the country.

Other than that, the factor of infrastructure will also have impact on the FDI. Infrastructure is the basic material support to the society such as the railway road, sewage, bridge and so on. Besides, the country's infrastructure also maintains a valuable role in the aspect of the country economy and the social path, especially in affecting the FDI. A country with better quality of facilities is able to entice more FDI and stimulate the country's growth. Based on Rehman, Ilyas, Alam, and Akram (2011), it is revealed that transportation infrastructure along with other infrastructure which brings large economic profit to the country can lead to a higher FDI inflow.

Furthermore, economic growth is the total increment in the good and services made by certain country by comparing one time period with another time period. There are several factors in stimulating the development of economy of a particular country. For instance, there are the country's labor force, education and knowledge, capital goods as well as the technology advancement. According to Pearson, Nyonna, and Kim (2012), economic growth is affecting the FDI positively. This is because the country with strong economic growth performance will fascinate more foreign investors. Besides, performing good in the economic growth will make the investors to think that the country will have a higher potential to improve in the future. Then, this will increase the confidence and the willingness of the investors in foreign countries to make investment decision in the country.

Besides, inflation is a condition whereby the goods and services increase in price level for a time period in an economy (Bashir, Yousaf & Aslam, 2016). It is known that

inflation can happen in a country due to the economic factors like the money supply and the external factors like the political stability (Islam, Ghani, Mahyuddin & Manickam, 2017). Then, it is said that inflation will affect the FDI significantly. By having a low inflation rate, it means that the country is probably having a stable economy and this condition will allow the foreign investors to stand a higher chance to generate a high return from their investment. Then, when the rate of inflation is low, it also represents that the nominal interest rate is low and this can lead to a smaller amount of capital cost that needed to be invested by the foreign investors. Therefore, low rate of inflation can encourage the FDI in a country (Alshamsi, Hussin & Azam, 2015).

In addition, exchange rate is another consideration for the FDI of a country. When the currency in a host country loss in value, it will increase the FDI for that particular country. For the justification, it is because depreciation in the currency makes the share of the domestic firm become cheaper and this may attract the foreign firms to carry out merger and acquisition (M & A) on the domestic firms (Hara & Razafimahefa, 2005).

Moreover, market size is a critical factor that should be taken into consideration for the FDI of a country. Generally, for the countries which have large markets, the countries will usually associate with large inflows of FDI (Azam, 2010). The reason is because by investing into a firm that located in a country with a higher purchasing power and larger size of market, it allows the investors to gain a high return from their investment. Furthermore, according to Charkrabarti (2001), a larger size of market allows the country's resources to be utilized efficiently. At the same time, it can also provide the advantage of economies of scale.

In conclusion, to study the factors of China's FDI, six explanatory variables are selected for this study which are the trade openness, infrastructure, economic growth, inflation, exchange rate and the market size, covering the year of 1979 to 2018. The relationship between each of the explanatory variables and the FDI in China will be examined in this study.

1.4 Research Objectives

1.4.1 General Objective: To study the determinants that affect the foreign direct investment in China.

1.4.2 Specific Objectives:

i) To examine the relationship between the trade openness and the FDI in China.

ii) To examine the relationship between the infrastructure and the FDI in China.

iii) To examine the relationship between the economic growth and the FDI in China.

iv) To examine the relationship between the inflation and the FDI in China.

v) To examine the relationship between the exchange rate and the FDI in China.

vi) To examine the relationship between the market size and the FDI in China.

1.5 Research Questions

i) Is there any significant relationship between the trade openness and the FDI in China?

ii) Is there any significant relationship between the infrastructure and the FDI in China?

iii) Is there any significant relationship between the economic growth and the FDI in China?

iv) Is there any significant relationship between the inflation and the FDI in China?

v) Is there any significant relationship between the exchange rate and the FDI in China?

vi) Is there any significant relationship between the market size and the FDI in China?

1.6 Hypotheses of the Study

Six hypotheses are built to examine the relationship between the independent variables of trade openness, infrastructure, economic growth, inflation, exchange rate and market size and the FDI in China.

1.6.1 Trade Openness and FDI

H_0: There is no significant relationship between the trade openness and the FDI in China.

H_1: There is a significant relationship between the trade openness and the FDI in China.

1.6.2 Infrastructure and FDI

H_0: There is no significant relationship between the infrastructure and the FDI in China.

H_1: There is a significant relationship between the infrastructure and the FDI in China.

1.6.3 Economic Growth and FDI

H_0: There is no significant relationship between the economic growth and the FDI in China.

H_1: There is a significant relationship between the economic growth and the FDI in China.

1.6.4 Inflation and FDI

H_0: There is no significant relationship between the inflation and the FDI in China.

H_1: There is a significant relationship between the inflation and the FDI in China.

1.6.5 Exchange Rate and FDI

H_0: There is no significant relationship between the exchange rate and the FDI in China.

H_1: There is a significant relationship between the exchange rate and the FDI in China.

1.6.6 Market Size and FDI

H_0: There is no significant relationship between the market size and the FDI in China.

H_1: There is a significant relationship between the market size and the FDI in China.

1.7 Significance of Study

The substantial decline of FDI in China has described a significant role of FDI in a macroeconomic perspective. FDI represents a crucial position in the global economy, especially when the international ties are being strengthened by the globalization process in the recent years (Ballard, 2019). Moreover, as a large country, China has high potential by having low labour cost, huge size of market and high productivity level in economic terms. Thus, it is stated that changes of FDI from China may also have an impact on the growth worldwide, particularly in developing economies.

Firstly, the motive of the study is to recognize the elements that affecting the China's FDI. Then, the robust results from the research will help to identify the particular variable that has the utmost importance in affecting China's FDI. The variables included are the trade openness, infrastructure, economic growth, inflation, exchange rate and the market size. It has included many variables so that it can strengthen the previous findings and filling the possible gaps that done by other researchers. For instance, this research will make contribution to the literature by exploring the relationship between the FDI and macroeconomic variables and giving a clearer picture.

Secondly, in order to draw up a rational policy to attract FDI in China, the outcomes from the study could also provide a better knowledge on how spatial FDI factors have impacts on the success of FDI. In addition, this study will also help further in tackling the unemployment issue as well as improving the living standards of citizens by enhancing the country's FDI inflow.

Overall, the major objective of this study is to provide guidelines and reference purposes for the policymakers, or to those potential investors that wish to invest in China. This is considered crucial as the investors are always alert of uncertainty changes of FDI and it can ensure the business confidence about China's economic outlook continuously. Based on Ahmeti and Kukaj (2016), they stated that government must aim at attracting particular categories of FDI that are capable of generating spillover effects in the overall economy. Therefore, employing promotional resources is a must to attract a subset of FDIs flows, as well as grabbing the investors' attention. Furthermore, the policymakers could refer to the research findings and apply them into policy implementation decision, so that they can solve unfavorable changes of China's economy and help to stabilize them. Lastly, the determinants that influence China's FDI are pivotal in recent China's economy and their sector of economics, and more effort should be put in making it clear.

1.8 Conclusion

This research aims to examine the determinants that affect the FDI in China. The dependent variable is the FDI in China, and this research will study on six possible factors of FDI, which are the trade openness, infrastructure, economic growth, inflation, exchange rate and market size in China. Besides, the readers will have better knowledge on the factors that influence FDI in China through this research. This research is being done to allow the policy makers in China to develop effective and adequate policies to increase FDI in the future.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In chapter two, it discusses on the previous empirical studies by other researchers that are relevant to this topic and followed by the theoretical review. Then, it will also discuss the conceptual frameworks of the other studies and a proposed conceptual framework is being formed.

2.1 Review of Literature

2.1.1 Foreign Direct Investment

Based on the study of Ranjan and Agrawal (2011), they have carried out a panel data analysis on the 7 determinants of FDI inflow in BRIC countries, including 4 countries and 35 years of secondary data from year 1975 to 2009. The empirical result shows that GDP, inflation, labour cost, trade openness and infrastructure are significant, while the gross capital formation and labour cost are insignificant. Besides, the infrastructure index, GDP, and trade openness are positively related towards the FDI inflow. However, the gross capital formation, inflation, labour cost and work force are negatively related to the FDI inflow in BRIC countries.

Besides, based on the study of Janicki and Wunnava (2004), the researchers have conducted a research on the 4 determinants of FDI inflow of 14

European Union countries and 9 Central and East European Candidate (CEEC) for the year of 1997 using cross sectional data. The 4 independent variables that comprise the trade openness, market size, labour cost and country risks have significant positive impact on the FDI in European Union and Central and East European Candidate (CEEC) as reported in the empirical result.

Last but not least, Ang (2008) have studied the 6 determinants of FDI in Malaysia including a dummy variable to represent the Asian financial crisis in 1997-1998 with the time series data of 55 years, from year 1960 to 2005. However, the researchers only choose 5 independent variables to conduct in their final study. According to the empirical result, infrastructure development, annual growth rate of GDP and macroeconomic uncertainty shows significant and positive impact towards FDI inflow. However, real exchange rate and statutory corporate tax rate are significantly and negatively related towards the FDI inflow in Malaysia.

2.1.2 Trade Openness and Foreign Direct Investment

Nowadays, trade openness often seen as an imperative variable or indicator of FDI. Mostly, the past researches proved that openness of trade is significant for the country development, and often addressed it as the key determinant for industrialization. For instance, it is known that the good trade policies or liberalization will tend to favor the willingness of the foreign investors to invest their resources. Hence, several studies have shown that trade openness is playing an important part in the FDI of many countries.

First and foremost, the positive relationship between the trade openness and FDI growth has been witnessed within numerous empirical studies. Based on a comparative study of Asian countries by Donghui, Yasin, Zaman and Imran (2018), they found that a higher level openness of trade will enhance the

growth of FDI. This is because the trade openness is mainly contributing to the FDI inflows of national and international level subsequently during the short-run and long-run. Furthermore, this hypothesis is also supported by Dima (2016), which shows that trade openness is responsible for FDI development and it is driven by the dynamics of globalization in Romania. Besides, she also said that a statistical positive and formalized relationship is found between the trade openness, FDI, and globalization. This is because openness of trade can positively influence the FDI, and the level of FDI will subsequently influence the process of globalization in the Romanian economy. In addition to these two studies, Asghar (2016) also discovered that trade openness will influence the FDI positively because with an open trade, the FDI inflows of South Asian economies can be attracted and this is bringing sustainable development for the country. Moreover, Abdella, Naghavi and Fah (2018) also claimed that trade openness will positively affect the FDI in BRIC countries in a significant way. In this case, they explained that the investors choose to invest in BRIC countries due to the reasons of fair competition, easy movement and less interference of local government, which have becoming a competitive advantage in the international markets. Thus, it is clear that investors are prefer to engage in investment activities in the countries that have opened up globally.

However, there are also numerous studies stated that openness of trade does not play an important part in influencing the FDI. Firstly, the studies by Busse and Hefeker (2007) mentioned that there is no statistically significant of relationship between the FDI and openness of trade and this is considered as an unrealistic assumption. This is because FDI inflow are most likely to influence the volume of trade, if there are goods to be imported or exported.

Despite that, Cantah, Brafu-Insaidoo, Wiafe and Adams (2018) found out that trade openness has a negative consequence on FDI inflows of Sub-Saharan Africa. This is because the countries are having lack of implementation of

policy framework to a more open-economy, causing the countries to have a reduced FDI inflows. From the research, the countries were given advice on restructuring the cost of undertaking international trade activities, the tariffs and the amount of documentations involved to improve the FDI performance. Furthermore, based on the study by Wacker, Grosskurth and Lakemann (2016), it showed that the trade openness is negatively related with the FDI in South Asia countries like Bangladesh and Pakistan, although the results are not statistically significant. In addition, they also mentioned that the role of education and quality of skills labor are considered as the major factors that affecting FDI in terms of trade. For example, a lower educational and narrower skills base of workforce in South Asia countries like Bangladesh will tend to restraint the results on terms of trade, which eventually reducing the positive effect of FDI.

With respect to the findings above, it shows that openness of trade plays a critical part in impacting the FDI positively. However, accuracy of these results is still debatable and unconfirmed as some researchers were emphasizing no significant relationship or negative relationship between them. Therefore, further research and observations are needed for improving the research as well as the review of literature. In a nutshell, this study hypothesized that openness of trade will significantly influence China's FDI.

2.1.3 Infrastructure and Foreign Direct Investment

Infrastructure is the basic physical system or services which require a large investment. It is known that the development of the infrastructure will influence the country's FDI inflows. Therefore, the impact of infrastructure on FDI is also well-studied by the previous researchers.

According to the earlier research, the infrastructure is positively affecting the FDI (Wekesa, Wawire, & Kosimbei, 2016; Abu Bakar, Che Mat, & Harun, 2012; Khadaroo & Seetanah, 2009). These authors have disputed that the performance of the infrastructure is crucial for the country to fascinate the FDI, especially for some particular fields such as the transport infrastructure, communication infrastructure, and electrical and electronic infrastructure.

Meanwhile, in the research paper of Shah (2014), he has investigated 90 developing countries within the years 1980 to 2007 to examine the factors of FDI. He found that the infrastructure is affecting the FDI positively. Moreover, he has confirmed that the positive collision of the development in infrastructure is important to improve the connection between the transaction of investment in the developing countries and the nation. This is agreed by Ngangue (2016), whereby he mentioned that the developing countries are relying on the improvement in electrical and electronic infrastructure and communication infrastructure in order to have an FDI growth.

According to Rehman, Ilyas, Alam and Akram (2011) which studied about the Pakistan country, they claimed that the infrastructure and FDI are having a positive relationship. Moreover, they mentioned that the country which has underperformance in infrastructure will incur higher transaction cost and will has limited access to the markets, thus reducing the FDI in the country. This statement was supported by Barua, Naym, and Nessa (2017), which they have studied the relationship between the infrastructure and FDI by selecting 81 countries for the year 1995 to 2013. Their research found out that having poor infrastructure will attract less FDI for the countries, especially in terms of electricity and other utility facilities. The shortage of electricity infrastructure will lead to a high business operation cost and makes the country's economy become unattractive for the foreign investors.

While majority of the studies found that the infrastructure is positively affecting the FDI, but the opposite conclusions have also been found by other researchers. For instance, Abbas and Mosallamy (2016) stated that the infrastructure is negatively influencing the FDI. Since most of the infrastructure is developed in the industrialized country, it indicated that the country's investment in infrastructure mostly relies on the global investors. Yet, for some developing countries, the infrastructure investment only relies on the public sector, which does not affect the FDI of the countries much. Considering the above, this research hypothesized that a significant relationship is found between the infrastructure and FDI in China.

2.1.4 Economic Growth and Foreign Direct Investment

First of all, Ang (2008) stated that the growth of economy is impacting the FDI in Malaysia positively. When Malaysia's economy is developing at a higher growth rate, the FDI from the foreign investors will increase. Then, Elimam (2017) also stated that the economic growth is contributing to the FDI in Saudi Arabia in a positive way. He explained that a country which is having economic growth, business-friendly environment, and actively involving in international trade can have a maximum level of FDI.

Furthermore, the study of Ang and Elimam are supported by the findings of Iamsiraroj (2016). Iamsiraroj (2016) found that the economy growth is influencing the FDI inflows to the countries in North American and Western Europe positively. It is same with the hypothesis that she has proposed whereby she explained the positive relationship by stating that a high economic growth can provide an incentive for the multinational firm to put their investment in the country because growing economy will be associated with an increasing demand and also the higher chance to gain the competitive advantage through economies of scale. Furthermore, Sichei and Kinyondo

(2012) also stated that there is a positive relationship between the economic growth and FDI using the dynamic panel data framework. He explained that the FDI in the type of market seeking is found in many countries that are having higher real GDP growth potential because it can assure the foreign investors about the profitability of their investments.

However, some researchers also found that the growth of economy is influencing the FDI in a negative way. For instance, Buchanan, Le and Rishi (2012) realized that the economic growth is affecting the FDI negatively. The reason that they stated is that when an economic growth is experienced by a country, it will improve the standard of living and this will contribute to a higher business operating cost as a higher pay is required for the labor.

Last but not least, there are some findings which indicated that economic growth has no significant influence on the FDI. For instance, Kahai (2004) found that the GDP growth and the FDI are not related to each other. Besides, he has included some independent traditional variables and the independent non-traditional variables like economic freedom and level of corruption in the study. Hence, based on the different studies above, this research hypothesized that there is a significant relationship between the economic growth and FDI in China.

2.1.5 Inflation and Foreign Direct Investment

Inflation is a situation when the price of products on average is rising in an economy for a time period. Furthermore, for any increases or decreases in inflation, it will directly mirror the economic situation of a particular country and the movement of FDI will be affected. Therefore, the inflation is having a close relationship with the country's FDI.

According to the previous research, the inflation is negatively affecting the FDI (Workneh, 2014; Kok & Ersoy, 2009). The country's economy will be more stable by having a low rate of inflation, and this can lead to a higher return from the investment into the country. Hence, it will entice the multinational investors to put their investment in that particular country, but not others. The similar reason that causes the inflation and FDI to have a negative relationship was also provided by Tsen (2005). He found that a higher inflation rate can cause high fluctuations in the interest rate and this leads to a weaker country's currency and thus, affecting the return for the FDI. Therefore, the foreign investors need to take the country's currency into considerations before making any investment decisions. Moreover, Babajide and Lawal (2016) have targeted Nigeria within the year 1981 to 2014 to study the impact of inflation on FDI. Furthermore, they observed that the inflation and FDI are having a negative relationship. Hence, they concluded that a low inflation rate will result in more foreign investment and increase the FDI in the country.

However, there are different outcomes reached by other researchers. For instance, Erdogan and Unver (2015) have investigated the determinants of FDI among 88 countries for the year 1985 to 2011 and they revealed that the inflation is positively affecting the FDI. In addition, Khair-uz-Zaman, Hashim and Awan (2005) which studied the FDI in Pakistan have discovered that the inflation is positively affecting the FDI. This is consistent with the research by Hamood, Pandurengan, and Kalam (2015), which stated that the inflation and FDI are having positive relationship. In the view of the goods and services sector, the high inflation rate in the country will stimulate the price of the goods and services to become higher. Hence, the productivity of the country will increase, causing more investors from the foreign countries to put investment into the country. Lastly, it is hypothesized that the inflation and FDI in China are having a significant relationship.

2.1.6 Exchange Rate and Foreign Direct Investment

Firstly, Bilawal, Ibrahim, Abbas, Shuaib, Ahmed, Hussain and Fatima (2014) claimed that the exchange rate is positively affecting the FDI in Pakistan. He explained that Pakistan has attracted many foreign investors by having a variety type of natural resources and low labor cost at the same time. When the investors of foreign countries decide to put investment in Pakistan, the investment amount that they put are depending on the exchange rate. When the Pakistan is having high currency exchange rate, it brings the meaning that the foreign investors have to pay more money for their investment and this will result in a larger amount of the FDI.

However, Muhammad, Azu, and Oko (2018) and Ang (2008) claimed that the exchange rate is negatively impacting the inflow of FDI. According to the findings of Muhammad et al. (2018), the result shown that when the real exchange rate in Nigeria depreciates, the FDI inflow in Nigeria will increase. The reason is that the currency depreciation in Nigeria is able to engineer lower cost of production and this will entice a number of investors in the long run. The similar reason is given by Ang (2008), whereby he mentioned that a currency depreciation in Malaysia causes the foreign investors become wealthier with the same amount of money holding in hand and the cost of capital will become cheaper for them. They will be more willing to make their investment in a large scale in terms of the domestic currency.

Additionally, the result of Muhammad et al. (2018) and Ang (2008) is consistent with Shu-ping and Xiao-meng (2017). They realized that in the situation when the real exchange rate of RMB increases, it is able to bring negative outcome on the FDI in China. It explained that when the real exchange rate of RMB increases, it tends to bring negative effect to the exports of China like the exports of primary products and processed products and this will eventually cause the economic growth of China to decline. By

having a slower economic growth, it will reduce the interest of the investors of foreign countries to put their investments in China and this reduces the amount of FDI. Besides, in the study of Ramirez (2017), the result of error-correction model also reflects that when the growth of the real exchange rate of Chile rises by 10 percent during the current period, the inflow of the FDI will be reduced by a 0.6 percent for the following year. Lastly, this study hypothesized that there is a significant relationship between the exchange rate and FDI in China.

2.1.7 Market Size and Foreign Direct Investment

Nowadays, market size is considered a main factor that affects the foreign investors to carry out their investment decisions. It is not surprise that size of market is acknowledged as the main determinant for FDI in many researches. According to Mughal and Akram (2011), size of market represents a vital role in endorsing the rise of regionalization, as well as contributing a higher return for the investors and boosting the country's economic growth. Particularly, several past research papers support that market size as an essential determinant of FDI (Kok & Ersoy, 2009; Sichei & Kinyondo, 2012; Solomon, Islam, & Bakar, 2015).

First of all, majority of the studies support that market size will positively influence the FDI in a significant way. A research done by Rjoub, Aga, Alrub and Bein (2017) revealed that market size has significant positive effect on FDI in Sub-Saharan Africa because the investors have the intention of maximizing their investment returns as much as possible based on the large market size of the nation. Another research done by Nasir (2016) also indicated a positive sign between the market size and FDI in Malaysia, which supports the literature review from his study. This is because FDI is heavily determined by the market size as Malaysia government are taking proper

measures to enhance the market size and development by reducing taxation on the other side to promote FDI in Malaysia.

However, some researchers also found that size of market does not play an important role in influencing the FDI in different situations. For instance, Demirhan and Masca (2008) shows no observational evidence for the effect of market-size and FDI, which causes that both variables have no significant relationship. This is because the market size is referring to the populations size rather than the country's income and the foreign investors that willing to make profits are prefer to invest in growing economies, but not in a large economy. Then, according to a spatial panel analysis in China by Yong, Yew, Huang and Chin (2016), it implies that market size is negative and insignificant for the Eastern region. This causes the market size is no longer a determinant or notable factor of FDI inflow. This is due to the reason that the market size in eastern region is indifferent and it is mainly efficiency-seeking as compared to those in central and western region. Moreover, Hailu (2010) mentioned that size of market has insignificant effect on FDI inflow. The cause behind this situation is that the government was actively engaging in handling the economic activities by the foreign investors. Furthermore, it also mentioned that the foreign investors are restricted to participate in the economy activities since the stock markets are not liberalized enough in the country.

Based on these studies, many researchers have been strongly suggested that size of markets will positively impact the FDI. Furthermore, this is considered significant as a larger market size in a nation will have the competitive advantage on bringing up the FDI of the entire nation. Thus, most of the proxy indicators that used are GDP per capita and this remains a key determinant that increases incentives for those investors to involve in investment activities into host countries. Ultimately, this study proposes that the market size will significantly influence China's FDI.

2.2 Theoretical Review

2.2.1 Product Life-cycle Theory

Product life-cycle theory proposed that firms normally created the product to set up manufacturing facilities to start the production in foreign countries. Firms will participate in FDI at the maturity stage of the cycle that it had initially innovatively produced. This theory is emphasizing on the industrial goods production in manufacturing sectors as it is production-oriented. Over the different stages, the production moves from one country to another country. During the introductory level, the production occurs in the industrial countries. However, the production will then move to other industrial countries and the producers will start to proceed their investments in many industrial countries during the stage of growth. Next, during the maturity stage, the production and the investments in manufacturing facilities will then move to the developing countries. Hence, FDI inflows to other industrialized countries will happen during the growth stage of the cycle. Industrialized countries and developing countries are considered as countries that have big size of market as well as less trade barrier. Hence, this theory proposes market size and trade openness as the critical components of FDI (Vernon, 1966).

2.2.2 Eclectic Paradigm Theory

The eclectic paradigm theory proposed that a firm will not choose to export or form licensing arrangement with other firms in home country. Instead, the firm will choose to manufacture the product in a foreign country. According to Dunning (1980), if a firm has intention for FDI, the three conditions

such as internalization, ownership, and locational advantages must be satisfied first. The combination of those three conditions eventually be recognized as the ‘eclectic paradigm theory’. First of all, the advantages that arise from the ownership of intangible assets, such as enhanced technology, access to the resources and the competitive advantages over similar firms are called the “ownership advantages”. Besides, some foreign countries may have certain benefits like the availability of resources, market size, incentives from government, relative inflation levels, as well as other location variables. Thus, the accomplishment of extension by a firm either in local country or host country can be determined by the “locational advantages”. Finally, the “internalization advantages” are also very critical in the event where the multinational companies have to select the options whether to offer the expansion rights to other firms or to accomplish further expansion internally. Therefore, the ‘eclectic paradigm theory’ highlighted that the inflation levels, market size, access to raw materials, plus the incentives of government are the salient determinants of FDI (Dunning, 1980).

2.2.3 Internalization Theory (Ronald Coase, 1937)

The development and inspiration of the multinational enterprise (MNE) for achieving FDI was illustrated in the internalization theory (Denisia, 2010). MNE appears because of the imperfection market that causes a separation from perfect competition in the final product market (Hymer, 1976). Therefore, MNE will only enter to a foreign market that has some compensating advantages over the local firms which make their venture profitable (Abotsi, 2016). Besides, some internalization theorists propose that FDI is a firm-level strategy and it will only occur when the benefits of utilizing firm-specific advantage exceeded its expenditure of operation abroad (Hymer, 1976, Fina & Rugman, 1996). Therefore, the most important factor that will be considered by the firm to decide on FDI into a particular country is the exchange rate. Besides,

a strong regulatory and policy regime with appropriate institutions (infrastructure) of the country is also essential in attracting FDI inflow (Mwilima, 2003). Hence, the different treatment from the government and the exchange rate risk are the disadvantages for the foreign firms and also the local firms as it incurs as an additional cost (Eden & Miller, 2004). Furthermore, the adjustment cost also have to be taken into account by the MNE when the investment is made abroad.

2.3 Conceptual Framework

2.3.1 Relevant Conceptual Framework

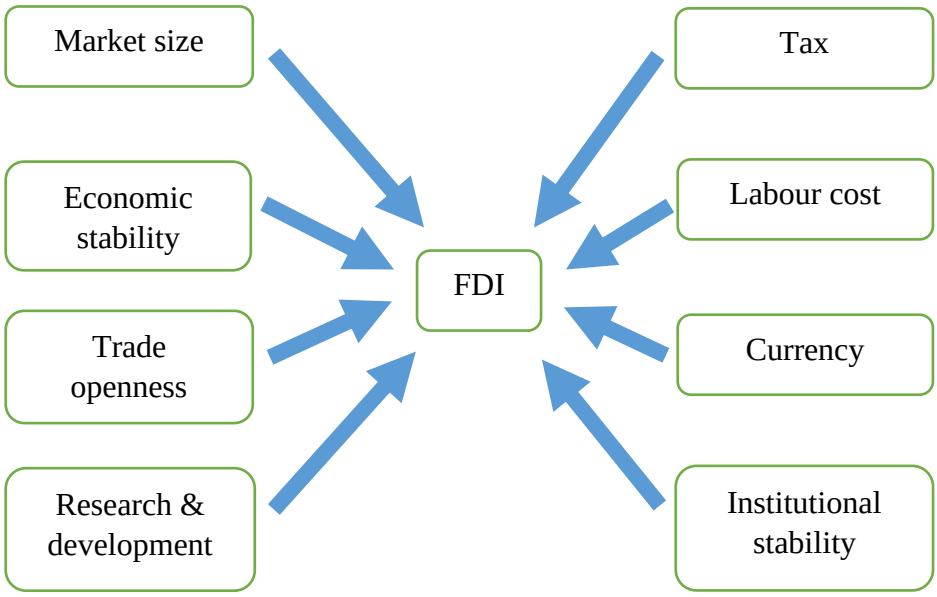
Figure 2.1 Determinants of FDI Inflows in Advanced Economies: Does the Quality of Economic Structures Matter? (21 OECD countries from year 2005 to 2014)

Source: Dellis, Sondermann & Vansteenkiste (2017)

Based on Figure 2.1, Dellis, Sondermann and Vansteenkiste (2017) reported the regression result from four different specifications which are the ordinary least square, random effect model, instrumental variable regression, and the system GMM. The study involved the analysis of the panel data for 21 OECD countries from year 2005 to 2014. FDI (country-specific natural logarithm of

the FDI inflows) is the research's dependent variable. Apart from that, the explanatory variables comprise market size (country-specific natural logarithm of nominal GDP), tax revenue (country-specific annual tax revenues in percent of GDP), trade openness (exports plus import in relation to the country's GDP), and the labour cost (country-specific unit labour cost). Then, the results show that market size is significantly and positively influencing the FDI inflow. Besides, the trade openness has a significant positive effect on FDI inflow. Moreover, the tax revenue and inflow of FDI have significant negative relationship. Lastly, the labour cost is positively impacting the inflow of FDI.

Figure 2.2 An Analysis of the Determinants of Foreign Direct Investments to OECD Countries. (36 countries from year 1995 to 2017)

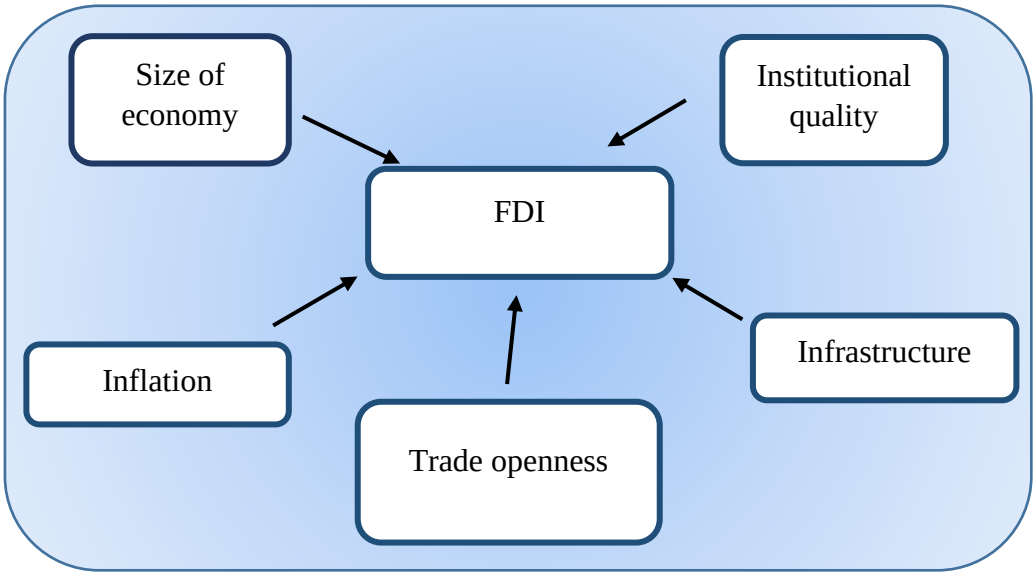


Source: Maengando & Von (2019)

Based on Maengando and Von (2019), the study involved 36 countries with the panel data analysis covering a 23 years long time period from 1995 to 2017. The regression result was obtained based on the e fixed effect linear regressions. First of all, FDI (FDI net inflows as a percent of GDP) is the

research's dependent variable. On the other hand, the market size (GDP per capita), economic stability (consumer price index), trade openness (ratio of total trade as a percentage of GDP), research and development (R&D expenditures), tax (corporate tax rate), labour cost (unit labor cost), institutional stability (corruption perception index) as well as the currency (local currency per US$) are the independent variables. According to the findings, the market size is positively influencing the FDI inflow. Then, the trade openness and the currency also have a significant positive influence on the FDI inflow. In contrast, the economic stability has significant negative effect on the FDI inflow. Lastly, the remaining independent variables such as the research and development, tax, labour cost as well as the stability of institutional have no effect towards the FDI inflow.

Figure 2.3 The Determinants of FDI in Organization of Islamic Cooperation (OIC) Countries from 1996 to 2013



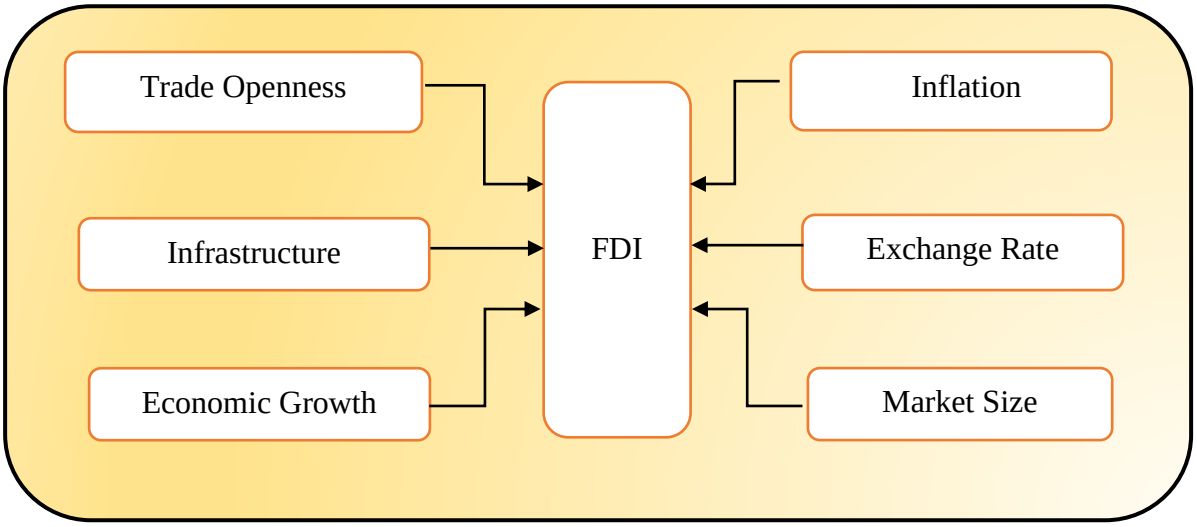
Source: Sajilan, Islam, Ali & Anwar (2019)

Based on Sajilan, Islam, Ali and Anwar (2019), this study involved 42 Organization of Islamic Cooperation (OIC) countries with the panel data

covering a 18 years period of time from 1996 to 2013. The estimated regression result was obtained from two approaches to achieve a uniform shift, which are the fixed effect and random effect estimator. The dependent variable is the FDI (FDI net inflows in US dollars). Besides, the independent variables are the size of economy (GDP per capita), inflation (CPI), trade openness (Import and Export as a percentage of GDP), infrastructure (Fixed telephone subscription) and the institutional quality. According to the results, the size of economy, infrastructure and the trade openness are significantly and positively impacting the FDI inflow of OIC countries. Furthermore, the institutional quality has a negative relationship with FDI inflow. Lastly, the inflation rate shown to be not robust as the result for the fixed effects model is insignificant while the results of the random effect proved to have a significant and negative relationship with FDI inflows.

2.4 Proposed Conceptual Framework

Figure 2.4 The Determinants That Affect the Foreign Direct Investment in China: From 1979 to 2018



Source: Developed for research

This is the conceptual framework of this study on the FDI of China, covering a 40 years period from 1979 to 2018. The dependent variable is the FDI (net inflow, percentage of GDP). Furthermore, the independent variables are the trade openness (Trade, percentage of GDP), infrastructure (Gross fixed capital formation, percentage of GDP), economic growth (GDP growth, annual percentage), inflation (GDP deflator, annual percentage), exchange rate (official exchange rate, LCU relative to US dollar) and the market size (GDP per capita, constant LCU).

First of all, the trade openness is a key part on the growth of FDI and it is estimated to be positively related with the FDI. Openness will simplify the inwards and outwards of the capital movement in the country, which is more favorable by the foreign investors as compared to a country with restricted trade policy (Keyou et al., 2009; Wafure et al., 2010; and Ranjan et al., 2011). Furthermore, in theory, the relationship between FDI, trade openness and economic growth are positively related which is supported by the endogenous growth theories and the neoclassical theories (Samuel, Gregory & Maurice, 2015).

Then, the infrastructure is estimated to be positively related with the FDI (Suleiman, Kaliappan & Ismail, 2015). A country with sufficient supply of infrastructure such as airports, water supply, internet, telephone will help the investors to cut down their expenditure of starting a business in that particular country. Besides, it will also maximize the gains of their investments. Hence, when the infrastructure of the country is more well equipped, the more likely that the FDI inflow will increase.

Besides, the economic growth is estimated to be positively related with the FDI (Kurtishi-Kastrati, 2013). Theoretically, when the growth of the country leads to a greater economy of scale, or when FDI is seeking for a consumer market, it will then increase the cost efficiency. Therefore, when the economic growth increases, the FDI will rise (Kurtishi-Kastrati, 2013).

Furthermore, the inflation is estimated to be negatively related with the FDI. It is because a high inflation will lead to a rise in the production expenditure and it will slow down the inflow of FDI (Suleiman, Kaliappan & Ismail, 2015). Besides, high inflation also indicates an unstable economic environment which will increase the investment expenditure and decrease the return of FDI (De Mello, 1997).

In addition, the exchange rate is expected to have a negative influence towards the FDI. It is because when the exchange rate appreciates, the investment expenditure will rise. Hence, it will limit the ability for the foreign country to invest profitably. Thus, it decreases the inflow of FDI (Suleiman, Kaliappan & Ismail, 2015).

Last but not least, the market size is estimated to be positively related with the FDI (Suleiman, Kaliappan & Ismail, 2015). Bigger market size in a country is more attractive to the investors than the countries with the smaller market size (Keyou et al.,2009; Wafure et al., 2010; and Ranjan et al., 2011). Thus, the country with a bigger market size will tend to have a higher FDI.

2.5 Conclusion

In summary, chapter two shows about the past theoretical frameworks and literatures that have been carried out by the other researchers to examine the factors that influence the FDI. Besides, the independent variables that have selected for this research like the trade openness, infrastructure, economic growth, inflation, exchange rate and the market size are assumed to be significantly related to the FDI. Overall, the methodologies that applied in this research will be further discussed in the following chapter to determine whether the hypothesis is stated truly or not. The table below summarizes the findings from the empirical studies and the expected sign of the respective independent variables on the dependent variable.

Table 2.1 Expected Sign of Independent Variables

Independent variable	Finding from previous studies		Expected sign
Trade openness	Positive	Asghar, A. (2016) Dima, S. (2016) Abdella, A. B., Naghavi, N., & Fah, B. C. Y. (2018) Donghui, Z., Yasin, G., Zaman, S., & Imran, M. (2018)	Positive
	Negative	Wacker, K. M., Grosskurth, P., & Lakemann, T. (2016) Cantah, G. W., Brafu-Insaidoo, G. W., Wiafe, E. A., & Adams, A. (2018)	
	No relationship	Busse, M., & Hefeker, C. (2007)	
Infrastructure	Positive	Khadaroo, J., & Seetanah, B. (2009) Rehman, C. A., Ilyas, M., Alam, H. M., & Akram, M. (2011)	Positive

		Abu Bakar, N., Che Mat, S. H., & Harun, M. (2012) Shah, M. H. (2014) Ngangue, N. (2016) Wekesa, C. T., Wawire, N. H., & Kosimbei, G. (2016) Barua, S., Naym, J., & Hazera-Tun-Nessa. (2017)	
	Negative	Abbas, S., & Mosallamy, D. (2016)	
Economic growth	Positive	Ang, J. B. (2008) Sichei, M.M., & Kinyondo, G. (2012) Iamsiraroj, S. (2016) Elimam, H. (2017)	Positive
	Negative	Buchanan, B. G., Le, Q. V., & Rishi, M. (2012)	
	No relationship	Kahai, S. K. (2004)	
Inflation	Positive	Khair-uz-Zaman, Hashim, S., & Awan, Z. (2005)	Negative

		Erdogan, M., & Unver, M. (2015) Hamood, M. A. S., Pandurengan, M. M., & Kalam, K. K. (2015)	
	Negative	Tsen, W. K. (2005) Kok, R. & Ersoy, B. A. (2009) Workneh, A. M. (2014) Babajide, A. A., & Lawal, A. I. (2016)	
Exchange rate	Positive	Bilawal, M., Ibrahim, M., Abbas, A., Shuaib, M., Ahmed, M., Hussain, I., & Fatima, T. (2014)	Negative
	Negative	Ang, J. B. (2008) Ramirez, M. D. (2017) Shu-ping, W., & Xiao-meng, W. (2017) Muhammad, S. D., Azu, N. P., & Oko, N. F. (2018)	
Market size	Positive	Kok, R., & Ersoy, A. B. (2009)	Positive

		Mughal, M. M., & Akram, M. (2011) Solomon, C., Islam, M, A. & Bakar, R. (2015) Nasir, A. (2016) Rjoub, H., Aga, M., Alrub, A. A., & Bein, M. (2017)	
	Negative	Yong, C. C., Yew, S. Y., Huang, X., & Chin, M. (2016)	
	No relationship	Demirhan, E., & Masca, M. (2008) Hailu, Z. A. (2010)	

CHAPTER 3: METHODOLOGY

3.0 Introduction

In the beginning of chapter three, it discusses the research design of the study. Then, it will be followed by the data description and the way of collecting data, the data processing and also the sources of data. After that, there is the development of the econometric model, definition of the variables and the measurements, econometric technique and the diagnostic checking.

3.1 Research Design

The research design of the study is the quantitative research. The relationship between the dependent variable (FDI) and each independent variable (trade openness, infrastructure, economic growth, inflation, exchange rate, market size) will be examined in an effort to find out the impacts of the independent variables on the China's FDI.

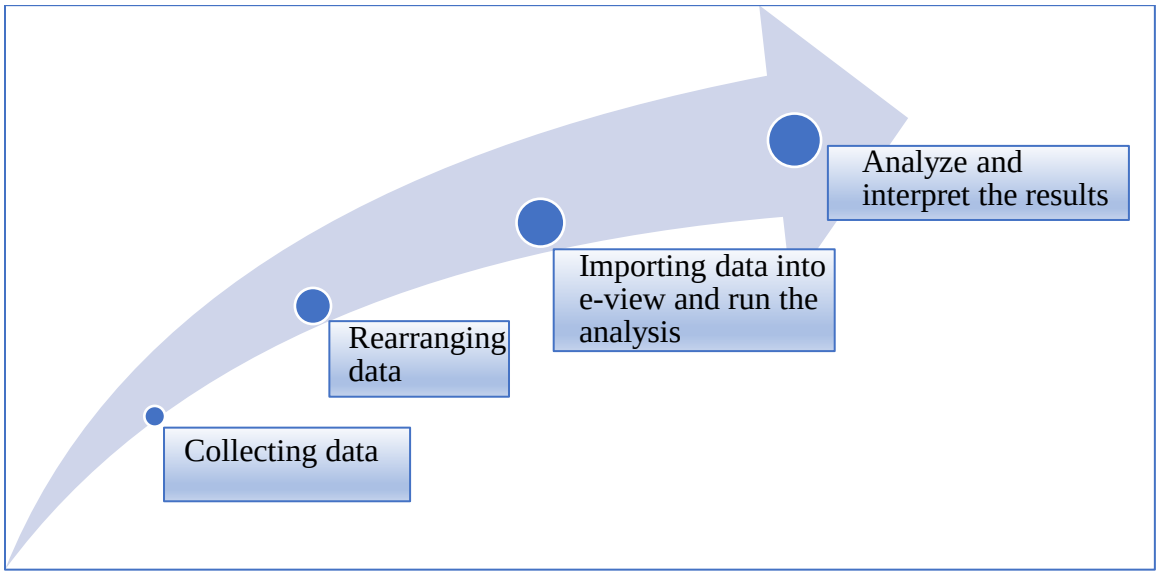
3.2 Data Description and Collection Method

This study focuses on analyzing the determinants of FDI in China. The dependent variable is the FDI inflow in China. The 6 independent variables that selected for this study are the trade openness, infrastructure, economic growth, inflation, exchange rate and the market size. Besides, the time series data is used by this study with the period of year 1979 to 2018. Furthermore, the secondary data are used for all the variables

which the data are obtained from the World Bank that are accurate and completely provided for these 40 years period.

3.3 Data Processing

Figure 3.1 Steps of Data Processing



For the data processing, at the beginning, it is to collect the data with the period of 40 years from the available sources which is the World Bank. Then, the collected data is rearranged orderly in an Excel file before the data is being imported into the E-views. After running the analysis using the E-views, the empirical results obtained will be analyzed and interpreted.

3.4 Sources of Data

The source and measurement of each variables used in this study are get out in the following table 3.1.

Table 3.1 Source and Measurement of Each Variables

Variables	Indicator name	Unit Measurement	Source of data
Foreign Direct Investment	FDI	Net inflow, Percentage of GDP (%)	The World Bank
Trade Openness	TRD	Trade, percentage of GDP (%)	The World Bank
Infrastructure	IFR	Gross fixed capital formation, percentage of GDP (%)	The World bank
Economic growth	EG	GDP growth, annual percentage (%)	The World Bank
Inflation	INF	GDP deflator, annual percentage, (%)	The World Bank
Exchange Rate	EXR	Official exchange rate, LCU relative to US dollar ($), period average	The World Bank
Market Size	GDPPC	GDP per capita, constant LCU	The World Bank

3.5 Econometric Model

Foreign direct investment = f (Trade openness, Infrastructure, Economic growth, Inflation, Exchange rate, Market Size)

FDI = f (TRD, IFR, EG, INF, EXR, GDPPC)

$$\widehat{FDI}_t = \beta_0 + \beta_1 TRD_t + \beta_2 IFR_t + \beta_3 EG_t + \beta_4 INF_t + \beta_5 EXR_t + \beta_6 GDPPC_t + \mu_t$$

Whereby,

$\widehat{FDI}_t$ = Foreign direct investment

TRD_t = Trade openness

IFR_t = Infrastructure

EG_t = Economic growth

INF_t = Inflation

EXR_t = Exchange rate

$GDPPC_t$ = Market size

μ_t = Error term

t = 1, 2, 3, 4, …, 40

The above econometric model assumes a linear functional form of regression as the distribution of the proxies errors (estimated by the residuals) appear to be symmetric or normal. Any significant outliers will affect the results of OLS regression in term of R-squared, adjusted R-squared, and the model specification which will be discussed further in section 4.3.

3.6 Variables and Measurement

i) Foreign Direct Investment (FDI)

The dependent variable of the research is the FDI. FDI is an investment that crossing border and targeting on lasting interest. Based on Adegboye, Ojo and Ogunrinola (2016), they have used the net inflow of FDI in the percentage of GDP in their studies as the proxy of FDI. Hence, it is also suitable to use the same proxy in this study for the FDI, whereby it will be the net inflow of FDI in the percentage of GDP. In addition, the source of this data is the World Bank. Apart from that, the data is collected for the year 1979 to 2018.

ii) Trade Openness (TRD)

Trade openness is the independent variable of this research. Trade openness brings the meaning of a measurement for the economic policy that either rejects or invites more trade activities with other countries. For this variable, the proxy that used is the trade in the percentage of GDP. It is applicable because the other researchers like Yousop, Ong, Ramdhan, Ahmad, Abdullah, Nasrul, Kamdari and Ong (2018), they have also used the same proxy in their studies. Furthermore, the World Bank is the source of this data and the data period is from year 1979 to 2018.

iii) Infrastructure (IFR)

Infrastructure is also one of the independent variables in this study, whereby it is a high-cost investment of the basic physical system in the business or nation. According to the research done by Workneh (2014), he has used the gross fixed capital formation in the percentage of GDP as the proxy of Infrastructure. Therefore, it is also suitable to use the gross fixed capital formation in the percentage of GDP as the proxy for the

infrastructure in this study. Then, the data for the period of the year 1979 to 2018 is obtained through the World Bank.

iv) Economic Growth (EG)

The economic growth is the next independent variable. It is usually a condition when the gross domestic product of a country is increasing. Then, the measurement of GDP growth in an annual percentage can be the proxy for economic growth (Yousop, Ong, Ramdhan, Ahmad, Abdullah, Nasrul, Kamdari & Ong, 2018). Hence, in order to measure the economic growth, the unit measurement of GDP growth in the annual percentage will be used in this study. Besides, the World Bank is providing this data, whereby the period of the collected data is from the year 1979 to 2018.

v) Inflation (INF)

In this study, the inflation is also one of the independent variables. Inflation is a condition when the goods and services is increasing in price level for a time period in an economy. The inflation will be measured by the GDP deflator in annual percentage in this study. It is suitable because the other researchers like Behname (2012) has also used the same proxy which is the GDP deflator in annual percentage as the proxy of inflation in his studies. Besides, the World Bank is the source of this data and the data period is from the year 1979 to 2018.

vi) Exchange Rate (EXR)

The upcoming independent variable for this research is the exchange rate. Then, it can be understood as the value of comparison between a particular country currency to other country's currency. The official exchange rate is the exchange rate decided by the legally sanctioned exchange market or the national authorities. In this study, the official exchange rate in local currency unit relative to the US dollar in the average period is used to measure the exchange rate. The measurement of the exchange rate in

this research is supported by Mohapatra (2014), who has also used the same measurement as the proxy of the exchange rate. Besides, the World Bank is providing this data with the period of year 1979 to 2018.

vii) Market size (GDPPC)

The last independent variable is the market size, whereby it is the amount of individual potential buyers in a certain segment of the market. In this research, the GDP per capita in the constant local currency unit will be used to represent the market size, in which it is consistent with the research done by Udo and Obiora (2006) that have also used the same proxy for the market size. Moreover, the World Bank is also providing this data. The data with the period of year 1979 to 2018 is obtained for this study.

3.7 Econometric Technique

The econometric technique that used is the OLS method which is suitable and applicable for this study. OLS method is used to estimate the unknown parameters in a linear regression model and it can also further provide estimation of the results for this research. Moreover, the F-test and t-test' results are crucial for examining the significance of the results from the study. F-test plays a role in examining the overall model validity and also in determining the existence of linear relationship between the independent variables and dependent variable (Surbhi, 2018). Besides, for the F-test, if the P-value is lesser than the significance level, it represents a better fitness for the model since the null-hypothesis is being rejected. On the other hands, t-test is a form of statistical hypothesis test and it was used to make the decision whether to reject the null hypothesis or not (Surbhi, 2018). For example, if P-value is lesser than the significance level, the null hypothesis will be rejected which implies that the data of variables are significant. Furthermore. this method also examines the correlation between the dependent variable in this study which is FDI in China and other

explanatory variables like economic growth, size of market, openness of trade, infrastructure, inflation and exchange rate. Hence, these estimators must remain BLUE which is (Best, Linear, Unbiased, and Estimator) and acquire the properties like unbiased, having minimum variance, consistent and be normally distributed.

3.8 Diagnostic Checking

3.8.1 Multicollinearity

Multicollinearity occurs when there is a very high intercorrelation among the independent variables (Statistic solution, 2018). If the multicollinearity problem is present in the regression model, it can lead to an invalid outcome for the relationship between the independent variables and making the result of the model to be unreliable.

In this study, the correlation matrix and variance inflation factors (VIF) will be used to identify the multicollinearity in the regression model. There will be a serious multicollinearity problem if the value shown in the correlation matrix is higher than +0.8 and lower than -0.8 (Accounting coach, 2018). Besides, VIF is used to measure the seriousness of the multicollinearity in the model by estimating the inflated value of the variance of a regression coefficient (Statistic how to, 2019). In addition, the VIF will have the value of more than 1 and the value of the VIF which in the decimal form will represent the percentage of variance that is inflated for each coefficient in the model. Generally, higher VIF value indicates a more unreliable regression result as the multicollinearity problem is getting more serious. If the value of VIF is exactly at 1, there is no correlation between the independent variables.

However, when the VIF value is above 10, it indicates that the independent variables are highly correlated. On the other hands, if the VIF value is between 1 and 10, it is considered as acceptable.

3.8.2 Heteroscedasticity

Heteroscedasticity is an econometric problem that characterized by unequal variance of the error terms. It is considered as an econometric problem because it violates the assumption of the OLS regression that considers that all the error terms that comes from a population should have a constant variance, which is known as homoscedasticity (Frost, 2018).

To identify whether the model contain the heteroscedasticity problem, the autoregressive conditional heteroscedasticity (ARCH) test will be applied in this study. According to Engle (1982), the ARCH test can be considered as a Lagrange multiplier (LM) test for the autoregressive conditional heteroscedasticity in the error terms. It is known that the test can be used to find out the heteroscedasticity problem in the time series data only. The null hypothesis (H_0) of the test is written as there is no heteroscedasticity problem, while the alternative hypothesis (H_1) of the test is that there is a heteroscedasticity problem. Then, the decision rule for the test is reject the H_0 if the test statistic is greater than the critical value, otherwise do not reject H_0. The test statistic value is then computed using $(n-p)\ R^2$. After that, the test statistic is then compared with the critical value after the critical value is computed using the formula of $X^2\alpha$, p. Other than that, if the p-value of the test is less than the significance level (α) at 1%, 5% or 10%, there will be a heteroscedasticity problem also. It is because using the p-value approach, H_0 will be rejected if the p-value is less than the significance level, otherwise do not reject.

3.8.3 Autocorrelation

Autocorrelation is referring to the serial autocorrelation which is a characteristic of data in which the interrelationship between the values of the common variables is based on the associated objects. The autocorrelation interrupt the inference on instance independence which controls most of the conventional models. When the data is obtained from the same sources instead of obtaining randomly, autocorrelation problem usually occurs unexpectedly. Then, autocorrelation can be separated into positive serial correlation as well as the negative serial correlation (Statistics Solutions, 2018).

In this study, Breusch-Godfrey serial correlation LM test will be used to detect the autocorrelation by testing for the autocorrelation in the errors in the regression model. The residuals in the model are being studied in the regression analysis and the test statistic is obtained from the residuals. The H_0 is $\rho 1= \rho 2=\ldots= \rho p = 0$ and the H_1 is stated as at least one ρ's is not zero. The decision rule is to reject H_0 if the test statistic is greater than the critical value, otherwise do not reject H_0. The test statistic value is then computed using $(n-p) R^2$. After calculating the test statistic, the critical value is also being computed using the formula of $X^2\alpha$, p. Then, the test statistic is compared with the critical value. The decision making is then being done according to the test statistic and critical value done before that. Besides, the H_0 is also being rejected if the p-value is smaller than the significance level at 0.01, 0.05 or 0.1 (Revolvy, 2018).

3.8.4 Normality Test

The normality test is used to determine whether the sample data has been drawn from a normally distributed population and to make sure there are best,

linear, unbiased and efficient (BLUE) OLS estimators. It is required to perform hypothesis tests to examine whether the observations follow a normal distribution. Based on the assumptions, parametric statistics can be used if the variables are normally distributed. Besides, the normality test normally has small statistical power which is the probability of detecting non-normal data unless the sample sizes are more than 100 (Neuberger, Wirth, & Reis, 2013).

In this study, Jarque–Bera Test (JB test) is used to test for the normality of the error term. Normally, it is applied on the data sets with large number as the normality tests of other kinds are not reliable when the sample size is big. Besides, it is also a goodness-of-fit test of whether the sample data have the skewness and kurtosis that are matching a normal distribution. Then, the formula for calculating the test statistic of JB test is $JB = n[\frac{s^2}{6} + \frac{k^2}{24}]$, where n is the sample size, s is the skewness and k is the kurtosis. The H_0 of JB test refers to the error terms are normally distributed, while the H_1 refers to the error terms are not normally distributed. The decision rule is that reject H_0 if the JB test statistic is greater than the critical value, otherwise do not reject H_0. Besides, the H_0 is rejected if the p-value is smaller than the significance level at 0.01, 0.05 or 0.1. According to Test (2019), using the p-value approach is always a good idea as if there is a big p-value from the test, it means that the error terms are in a normal distribution.

3.8.5 Stability Test

Ramsey Regression Equation Specification Error Test (RESET) is a general test for the model specification errors which is designed to detect the omitted significant variables, including the inappropriate variables as well as the inappropriate functional form. More specifically, it tests whether the exogenous variables can be explained by the non-linear combinations of

estimated values. Based on Babatunde, Oguntunde, Ogunmola, & Balogun (2014), they compared the power of the RESET test to the autocorrelation tests in detecting the errors of omitted variables in regression analysis. The final result showed that the RESET test is powerful in detecting the specification errors. Furthermore, for the hypothesis testing of the RESET test, the H_0 is stated as the model specification is correct and the H_1 is written as the model specification is incorrect. The decision rule is to reject the H_0 if the F test statistics ($F = \frac{(R^2_{unrestricted} - R^2_{Restricted})/(k_{unrestricted} - k_{restricted})}{(1-R^2_{unrestricted})/(n-k_{unrestricted})}$) is greater than the critical value ($F_{\alpha,2,n-3}$) at the significance level of 0.01, 0.05 or 0.1, otherwise do not reject H_0. Besides, by using p-value approach, the decision rule is to reject H_0 if p-value is less than the F test statistic at the significance level of 0.01, 0.05 or 0.1. This means that it can lead to an inaccurate result as the specification of model is wrong.

3.9 Conclusion

In short, chapter three have discussed about the methods in conducting the research. Then, the time series data are collected from the World Bank. Furthermore, the econometric technique that is used to run the econometric model is the OLS method. Next, there are several tests being conducted for diagnostic checking to examine the validity of the model. Lastly, the result of the diagnostic checking and OLS regression analysis will be further discussed in the chapter four.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

For this following chapter, it will identify whether the independent variables of trade openness, infrastructure, economic growth, inflation, exchange rate, and the market size have significant effect towards the dependent variable of FDI in China. Given that this study focuses on 1 country across time, which is a time series data, hence, OLS method is adopted. Then, it will study on the E-views results to identify the availability of the model. Furthermore, the result of the final model is shown and it will be interpreted. Furthermore, the econometric problems including the multicollinearity, heteroscedasticity, autocorrelation, normality of the error term and model specification will also be tested and interpreted.

4.1 The Final Econometric Model

Table 4.1: Result of OLS Regression

Variable	**Coefficient**	**P-value**
Trade openness (TRD)	-0.007433	0.6529
	(0.016376)	
Infrastructure (IFR)	0.160597***	0.0029
	(0.049980)	
Economic growth (EG)	0.016447	0.7675
	(0.055180)	
Inflation (INF)	0.072655**	0.0106
	(0.026797)	

Exchange rate (EXR)	0.622454***	0.0000
	(0.072129)	
Market size (GDPPC)	-0.000058***	0.0009
	(0.000016)	
R-squared	0.880957	
Adjusted R-squared	0.859313	
F-statistic	40.70199***	0.0000

Notes: *** indicates that the variables are significant at 0.01 significance level.

** indicates that the variables are significant at 0.05 significance level.

The number stated in the parenthesis is the standard error.

Source: Developed for research

4.1.1 Interpretation of Slope Coefficient

β_1 = -0.007433

There is a negative relationship between TRD and China's FDI net inflow in the model. If TRD decreased by one percentage point, the estimated China's FDI net inflow will increase by 0.007433 percentage point, holding others variable constant.

β_2 = 0.160597

There is a positive relationship between IFR and China's FDI net inflow in the model. If IFR increased by one percentage point, the estimated China's FDI net inflow will increase by 0.160597 percentage point, holding others variable constant.

β_3 = 0.016447

There is a positive relationship between EG and China's FDI net inflow in the model. If EG increased by one percentage point, the estimated China's FDI net inflow will increase by 0.016447 percentage point, holding others variable constant.

β_4 = 0.072655

There is a positive relationship between INF and China's FDI net inflow in the model. When INF increased by one percentage point, the estimated China's FDI net inflow will increase by 0.072655 percentage point, holding others variable constant.

β_5 = 0.622454

There is a positive relationship between EXR and China's FDI net inflow in the model. When EXR increased by 1RMB per US$, the estimated China's FDI net inflow will increase by 0.622454 percentage point, holding others variable constant.

β_6 = -0.000058

There is a negative relationship between GDPPC and China's FDI net inflow in the model. When GDPPC decreased by 1RMB, the estimated China's FDI net inflow will increase by 0.000058 percentage point, holding others variable constant.

4.1.2 R-Squared

Based on table 4.1, the model shows that the R-squared is quite high which amounted to 0.880957 which indicates that there is about 88.0957% of the variation in China's FDI net inflows can be explained by the total variation in TRD, IFR, EG, INF, EXR, and GDPPC.

Apart from that, the adjusted R-squared value is used to modify the R-squared value by taking into account the degree of freedom included in the model. Based on table 4.1, the adjusted R-squared of the model is 0.859313 which indicates that there is about 85.9313% of the variation in China's FDI net inflow can be explained by the total variation in TRD, IFR, EG, INF, EXR, and GDPPC after taking into account the degree of freedom.

The good fit of model is considered to be good enough as the R-squared of the model exceeded 0.7. Hence, the model can be used to estimate the estimated China's FDI net inflows. As a result, the results obtained will be reliable, unbiased, and consistent.

4.1.3 F-Test

The result of F-test is used to identify whether the model is significantly strong to predict the outcome. This can also prove that whether the independent variables are significantly affecting the dependent variable. Based on table 4.1, the model is significant since the p-value of F-statistic is equal to 0.000000 that is lesser than the significance level of 0.05. Therefore, there is sufficient evidence to reject H_0 and to make a conclusion that the model is significant.

4.1.4 T-Test

The independent variables will be considered to be significant to the dependent variables (FDI) if the p-value is smaller than the significance level of 0.05. On the other hand, if the p-value is larger than the 0.05 significance level, it will be considered as insignificant. Based on table 4.1, only EG and

TRD are insignificant at the significance level of 0.05 as their p-value is larger than the 0.05 significance level. On the contrary, the other independent variables such as EXR, GDPPC, IFR, and INF are significant at the significance level of 0.05 as their p-value is smaller than 0.05 significance level.

4.2 Diagnostic Checking

4.2.1 Multicollinearity

According to Investopedia (2018), multicollinearity occurs because there is a high intercorrelation among the independent variables. The results will be misleading if the multicollinearity problem exists in the model. Hence, it will affect the results on how effective is the independent variables to forecast the dependent variables in a model. Basically, the confidence intervals will be wider and the probability values will be less reliable for the independent variables due to the multicollinearity problem. Therefore, a statistical model that consist of multicollinearity may not be reliable.

Table 4.2: Correlation Matrix

	EG	EXR	GDPPC	IFR	INF	TRD
EG	1.000000	0.082015	-0.279297	0.024682	0.494574	0.200162
EXR	0.082015	1.000000	0.397011	0.517259	0.029208	0.760574
GDPPC	-0.279297	0.397011	1.000000	0.870430	-0.277014	0.572056
IFR	0.024682	0.517259	0.870430	1.000000	-0.136428	0.765409
INF	0.494574	0.029208	-0.277014	-0.136428	1.000000	0.008715
TRD	0.200162	0.760574	0.572056	0.765409	0.008715	1.000000

The existence of multicollinearity can be identified through the correlation matrix between the independent variables. If the value shows higher than +0.8 or lower than -0.8 for the coefficient of correlation, it shows a strong correlation between the independent variables. However, if the value shows between +0.2 and -0.2, then there will be only a weak correlation between the variables (Accounting coach, 2018). According to Investopedia (2018), the experts indicates that if the value exceed 0.8, then it is only considered as correlation significant and thus, the multicollinearity problem occurs among the independent variables. In conclusion, there is only a serious multicollinearity problem between the GDPPC and IFR which is 0.870430, whereby the pair wise correlation is greater than 0.80 as according to Table 4.2.

Table 4.3: Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
EXR	0.005203	19.02129	2.502034
EG	0.003045	26.60450	1.970673
GDPPC	2.56E-10	15.35454	6.774740
IFR	0.002498	298.5901	8.856899
INF	0.000718	2.965729	1.375922
TRD	0.000268	36.88378	4.832069
C	1.461799	132.0683	NA

The VIF is frequently applied by most of the researchers to determine the rate of multicollinearity. According to Statistic Solution (2018), the multicollinearity problem will only be considered as problematic if the value of VIF is higher than 10. Hence, it can conclude that the multicollinearity problem does not appear between the independent variables as all centered VIF are lesser than 10 based on Table 4.3.

4.2.2 Heteroscedasticity

The variances of error term should be the same across the observations based on the classical assumptions of ordinary regression model. If the variances of error term are not constant, there will be a heteroscedasticity problem. Heteroscedasticity is known as a situation that the variability of a variable is not equal with the range of a second variable's values that predicts it. If there is a heteroscedasticity problem, the inferences from the standard errors are likely to be misleading.

Table 4.4: ARCH test

F-statistic	0.227224	Prob. F(1,37)	0.6364
Obs*R-squared	0.238044	Prob. Chi-Square(1)	0.6256

H_0: There is no heteroscedasticity problem.
H_1: There is heteroscedasticity problem.

Significance level: $\alpha = 0.10$

Decision rule: Reject H_0 if p-value is less than the α. Otherwise, do not reject H_0.

P-value: 0.6256

Decision making: Do not reject H_0 since p-value (0.6256) is more than α (0.10).

Conclusion: There is no heteroscedasticity problem.

4.2.3 Autocorrelation

Autocorrelation is a feature of data showing the degree of similarity over time intervals between the same variable. It occurs when the error term now is correlated with the past error terms. The best way to detect autocorrelation is using the Breusch-Godfrey Serial Correlation LM test because it can detect the higher orders of autocorrelation.

Table 4.5: Breusch-Godfrey Serial Correlation LM Test

F-statistic	3.201783	Prob. F(2,31)	0.0544
Obs*R-squared	6.848080	Prob. Chi-Square(2)	0.0326

H_0: There is no autocorrelation problem.

H_1: There is autocorrelation problem.

Significance level: $\alpha = 0.01$

Decision rule: Reject H_0 if the P-value is less than the α. Otherwise, do not reject H_0.

P-value: 0.0326

Decision making: Do not reject H_0 since the P-value (0.0326) is more than α (0.01).

Conclusion: There is no autocorrelation problem.

4.2.4 Normality Test

To identify whether the error terms are in a normal distribution, normality test will be applied. The estimated model and the result of the hypothesis testing is biased and misleading when the error terms are not in a normal distribution. Furthermore, Jarque-Bera (JB) test can be used to test for the normality of the model. It is also a goodness-of-fit test of whether sample data have skewness and kurtosis that matching a normal distribution.

Table 4.6: Jarque-Bera Normality Test

Jarque-Bera	1.260164
Probabillity	0.532548

H_0: The error term is normally distributed.

H_1: The error term is not normally distributed.

Significance level: $\alpha = 0.10$

P-value: 0.532548

Decision rule: Reject H_0 if the P-value is less than the α. Otherwise, do not reject H_0.

Decision making: Do not reject H_0 since the P-value (0.532548) is more than α (0.10).

Conclusion: The error term is normally distributed.

4.2.5 Stability Test

Ramsey RESET test is a test for model specification errors which is designed to detect both omitted variables and inappropriate functional form. Besides, Ramsey RESET test is the most powerful test for detecting the specification errors.

Table 4.7: Ramsey RESET Test

	Value	df	Probability
t-statistic	0.997802	32	0.3259
F-statistic	0.995608	(1, 32)	0.3259
Likelihood ratio	1.225543	1	0.2683

H_0: The model specification is correct.

H_1: The model specification is incorrect.

Significance level: $\alpha = 0.10$

P-value: 0.3259

Decision Rule: Reject H_0 if P-value is less than α. Otherwise, do not reject H_0.

Decision Making: Do not reject H_0 since P-value (0.3259) is more than α (0.10).

Conclusion: The model specification is correct.

4.3 Conclusion

In this chapter, the result of OLS and all diagnostics checking are included. It is found out that the model does not have any econometric problem. Although the GDP per capita shows that it is highly correlated with the infrastructure at (0.870430) in correlation matrix, the result in VIF shows that a serious multicollinearity problem does not appear between the independent variables as all centered VIF are lesser than 10 and higher than 0.2.

Furthermore, the model is homoscedasticity and there is no autocorrelation problem. Besides, the error term is normally distributed and the model specification is also correct at the significance level of 0.10. Other than that, the good fit of model is considered to be good enough as the R-squared of the model exceeded 0.7.

The results from the functional form of OLS regression (that is linear-linear model) in 4.1 showed that the econometric model is suitable as the R-squared and adjusted R-squared are high which are 0.880957 and 0.859313. In addition, the researchers pass all the diagnostic checking especially for the stability test which indicate that the functional form of OLS regression are correct if linear-linear model is applied in this study. These indicated that there are no any significant outliers in the data set as the high R-squared and adjusted R-squared are obtained and all the diagnostic checking are passed.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

By referring back to the chapter 4, the relationships between the dependent variable (FDI) and each of the independent variables (Trade Openness, Infrastructure, Economic Growth, Inflation, Exchange Rate, and Market Size) are identified. Looking into chapter 5, the major findings of this research will be explained further. Besides, the implication of study will also be discussed followed by the limitation of this research. Moreover, this study also has some recommendations to be delivered to the future researchers.

5.1 Discussions of Major Findings

Table 5.1 Summary of the Findings for the Independent Variables

Independent variable	Expected sign	Regression result
Exchange rate	Negative	Positive
Inflation	Negative	Positive
Infrastructure	Positive	Positive
Market size	Positive	Negative
Economic growth	Positive	Insignificant
Trade openness	Positive	Insignificant

Source: Developed for the research

5.1.1 Exchange Rate

Based on the regression result, the exchange rate is positively and significantly influencing the FDI at the significance level of 0.05. This is inconsistent with the proposed theoretical framework in this study which initially stated there is a negative relationship between the exchange rate and the FDI in China.

The positive result found is similar to the findings of Baek and Okawa (2001), and Osinubi and Amaghionyeodiwe (2009). According to Baek and Okawa (2001), they stated that the export-oriented sectors like the chemical and electrical machinery sectors will experience an increment in FDI when the Asian currencies is depreciating against the dollar. The reason for this is that such depreciation will improve the competitive power of the goods and services that offered by the export-oriented sectors in the international trade and hence promoting the investments from the investors into the country that acting as the production country for the exports. Besides, Osinubi and Amaghionyeodiwe (2009) also realized that the exchange rate is having positive effect on the Nigeria's FDI, whereby a depreciation in the naira will increase the FDI of Nigeria. Furthermore, the positive sign between the exchange rate and the FDI is also supported by Takagi and Shi (2011). They mentioned that the FDI from Japan will be increased by the depreciation in the host country currencies.

5.1.2 Inflation

According to the regression result, the inflation is positively and significantly affecting the FDI in China at the significance level of 0.05. This indicates that the result is inconsistent with the proposed theoretical framework of this study which initially expected that there is a negative relationship between the inflation and the FDI in China. However, this result has been supported by

Malik and Malik (2013) and Ibrahim, Omar, and Ali (2017), which stated that the high inflation rate will attract more FDI. Furthermore, this has also been further discussed by Hamood, Pandurengan, and Kalam (2015), whereby they have concluded that the monetary policy decision which causes an increase in the country's inflation will direct link to the higher level of the FDI. It is explained that when a country is having inflation, the particular country will tend to print a lot of money and the country's citizens will then hold more cash and have higher purchasing power. Meanwhile, the company will also rise the price of the goods and increase its productivity to fulfill the market needs. By taking these actions, the company can earn a profit. Lastly, this sight of the economic situation will be seen as a signal to the investors in foreign countries to make an investment in those particular countries.

5.1.3 Infrastructure

This study shows that the infrastructure is positively and significantly affecting the FDI in China at the significance level of 0.05. In this case, the outcome is in the line with some of the researchers like Khadaroo and Seetanah (2009) and Abu Bakar, Che Mat, and Harun (2012), which claimed that the countries which have high growth in infrastructure will have its economy to be strengthen and the opportunity for the foreign investors to make more money will be increased. Moreover, the researchers have also specified that the development of the transportation and the electrical and electronics sector is an important factor in attracting more foreign investment. Besides, it is explained that the transportation sector which involves airlines, logistics and roads are crucial especially for the era of globalization nowadays. Apart from that, the electrical and electronic sectors that manufacture the products like the semiconductors have also become an important element which not only play the part in stimulating the country's development, but also to improve the foreign investment.

5.1.4 Market Size

Based on Artige and Nicolini (2010), market size is significant for the FDI inflows, where a large market will contain more potential investment opportunities. The findings of this study point out that the market size significantly influences China' FDI inflow and this is supporting the study by Rjoub, Aga, Alrub, and Bein (2017), and Nasir (2016). According to Zhang (2001), the host market size maintains a critical part in attracting the FDI from the market seekers because large size of market will help to realize economies of scale by offering a higher chance, leading to the proportions that the size of market will positively affect the FDI. Apart from that, Meidayati (2017) also stated that the market size occupies a position among the factors of FDI inflows. This is because a large market size will benefit the investors for developing a higher sales production of their products. Nevertheless, the findings of this study reported that the market size will influence the China's FDI inflow negatively, which is in conflict with the expected sign of this study and also the past empirical findings.

The negative or inverse relationship between the size of market and FDI inflow in this study are predominantly due to the measurement which is represented by the proxy (GDP/capita). A high population country such as China, will lead to a low GDP/capita value, given that population stands as the divisor in the proxy. As such, a negative relationship was established in this study where a lower value of GDP/capita that represents high population, and this will lead to higher FDI inflow. In this respect, high population is inferred as high market size, and thus, will attract higher FDI inflow into the nation, which supports the past empirical studies that showing positive effects between them.

According to Demirhan and Masca (2008) and Ali and Guo (2005), GDP or GDP per capita as a measurement for size of market is a robust FDI determinant

in the field of study of econometric. The study of Demirhan and Masca (2008) has also made a conclusion that GDP per capita is negatively related to the FDI, which is consistent with the findings of this study. Based on a research by Jablai and Shenai (2019), a negative and significant relationship appears between the size of markets and the FDI in Sub-Saharan country which implies that a smaller market would have much better opportunities and prospects for those resource-seeking type of investors to promote FDI growth. In addition, it is argued that a higher value of GDP per capita will signify a superior prospect for the host country's FDI, which supports the study of Kok and Ersoy (2009), and Sichei and Kinyondo (2012).

5.1.5 Economic Growth

Based on the regression result, there is no significant relationship between the economic growth and the FDI at the significance level of 0.05. This is inconsistent with the proposed theoretical framework of this study. Then, it is reaching the same result with the findings of Kahai (2004) and Akinlo (2004), whereby they also found that the growth of economy is not significantly affecting the FDI in their studies. In the study of Kahai (2004), she found that there are several qualitative factors that influencing the FDI like the corruption rate as well as the economic freedom, but she realized that the GDP growth has no significant impact on the FDI. Apart from that, based on Akinlo (2004), he stated that the economic growth might not induce much extractive FDI in Nigeria. The reason is that the large portion of shares of FDI that concentrated in the oil sector of Nigeria is disconnected from the economy. Therefore, the FDI is not being influenced by the economic growth.

5.1.6 Trade Openness

Trade openness is often considered as a key indicator that influences the economy of a particular country. With a country's good trade policy, this will attract the foreign investors and they will be willing to invest more of their resources. Hence, it was witnessed by many studies that the country with a high openness of trade will have more FDI. This is because trade openness will influence the FDI inward stock positively, and subsequently influence the globalization process of a particular country (Donghui, Yasin, Zaman & Imran, 2018). In addition, Abdella, Naghavi and Fah (2018) also mentioned that trade openness may positively influence the FDI because the countries have fair competition and less interference by the local government.

However, the regression result shows that trade openness is not playing a crucial part in influencing China's FDI at the significance level of 0.05. This also describes that trade openness may not affect the changes of FDI inflow to China. Based on Wacker, Grosskurth and Lakemann (2016), the insignificant relationship may be caused by the role of education and workforce skills of the country. This reason justifies that economies with a lower educated workforce would have insufficient skills base that will restrict for more product upgrading through FDI. Furthermore, with a lower quality of skills base that was acquired by an economy, the country will produce more homogenous products as well as less-skill intensive products. This will result in a lower market and pricing power that was possessed by the investors, which leading to a decline on terms of trade.

5.2 Implications of Study

5.2.1 Government

This study provides anticipation on the decision-making process for China government and this will benefit the government as they have the most vital role in the development process of FDI as well as in attracting the FDI capital. Firstly, the government can reduce trade protection against other countries and therefore enforces trade and investment liberalization. Besides, the cost of protection should be adjusted as it will alter the import and exports volume of the country. This is to ensure the competitiveness of China's market, so that there is no intervention into the resource allocation that will causes lower efficiency level. Furthermore, the quality of education can be improved to increase the country's attractiveness with respect to FDI, like improving the quality and access of specific programs into technical and vocational education system. As stated by Wacker, Grosskurth and Lakemann (2016), a higher educational level and broader skill base of workforce will attract large amount of foreign investment activities, which increases the terms of trade results. Hence, the quality of education system shall not be ignored as this may affect the future productivity levels. After reviewing the research, China government should play a role in reacting to any changes of the FDI by employing alternative policies to attract more foreign investments. Therefore, the government might get some ideas from this research to implement new policies and regulations that benefits the country to stimulate better economic growth, and the openness of market can be improved as well.

5.2.2 Domestic Firms

Based on the outcomes of this research, the domestic firms can upgrade their technological and managerial capabilities among the local businesses, as well as affording business-friendly treatments to both the indigenous firms and foreign investors. Domestic productivity level is considering an essential element for the investors in deciding whether to put their investment into the country or not. Hence, the firms should always focus on the changes in the domestic productivity levels that will offer better insight for investment purposes. Apart from that, it is said that a firm with higher productivity level will also attract the foreign investors to recognize them as suppliers, so that more spillovers and externalities will be generated to raise the country's FDI (Moran, Graham & Blomstrom, 2005). Furthermore, the domestic firms should always bear in mind about the sectors or activities that targeted by the foreign firms. In an effort to improve FDI inflows, the investment and location decision of the suppliers should be reconsidered as those factors may also depend on the multinational investors in the host economy. Based on the statement above, the domestic firms should always follow up what the investors demand inside the market, so that their need can be fulfilled for better profit maximization.

5.2.3 Investors

The investors are interested mainly in the company performance and the economy of the country, so that they are able to make the decision whether to invest or not. For the investors which interested to invest in China, they can study this research and exploit it as a reference when considering their investment decisions.

For instance, the investors are advised to invest when China's inflation rate is high. According to Hamood, Pandurengan, and Kalam (2015), they described that FDI tend to be attracted to the country with high inflation rate. By having a high inflation rate in the country, it will stimulate the price of good and services to become higher, followed by the increasing in the country productivity and hence attracting more FDI. Moreover, the investors are recommended to decide on investing in China when the infrastructure level of China is higher. The reason is that China is having more potential infrastructure project for foreign investors to invest their money as compared to other countries. Additionally, the high exchange rate is a good signal for the investor to invest in China's market. According to Xing (2004), appreciation of Yuan Ren-Min-Bi shows that China's product cost is having more comparative advantage and this stimulate China's FDI.

Under normal circumstance, large size of market will become a signal for the investors from other countries to invest into China, whereby the market size should be positively affecting the FDI. However, the GDP per Capita is the proxy of market size in this research. In the case of China which is a high population country, it will reduce the amount of GDP per Capita and enhance the FDI inflow, whereby its shows that the market size is negatively affecting the FDI. Under this circumstance, the investors are recommended to make investment in China since the high population is deduced as the large size of market and it will boost the amount of the FDI.

5.3 Limitations of Study

Throughout the study, the first limitation is that there is a limited amount of observations, whereby there is only 40 observations since the data gathered for all the variables from the World Bank is based on annual basis.

Other than that, the next limitation is that there is a limited number of independent variables for this study. Some other factors that will stimulate the FDI are not included in this study like the corruption rate. The reason for this is that there is inadequate data available because 40 years of data must be available for the variables to be chosen into this study. Therefore, this study can only select the independent variables based on the data availability.

5.4 Recommendations for Future Researchers

For the researchers in times to come, they may try to increase the number of observations in their studies by using the data based on the monthly basis or quarterly basis. By having a larger number of observations for their studies, the result that obtained in their studies will be more accurate.

Furthermore, the researchers can focus their research not only on one country, but also on other countries. This can reduce the years of data required by each variable in the study by studying more countries. Then, by reducing the years of data required for each variable, there will be more independent variables could be put into the study. In this instance, the researchers are encouraged to include more independent variables in their studies as this can make their study more comprehensive and different from other researchers.

5.5 Conclusion

The research objective is to understand the determinants that affects the China's FDI. Therefore, after carrying out this study, the results revealed that the inflation, infrastructure, and exchange rate are positively affecting the China's FDI. Then, this

research also found that the China's FDI will be negatively influenced by the market size. Other than that, the economic growth and the trade openness are insignificant in bringing impacts to the FDI in China.

Besides, the outcomes of this study are expected to provide benefits to the domestic firm, policy makers and also the investors. For instance, this study may provide some guidelines for the policymakers regarding the contributing factors of FDI in order to have an enhancement on FDI. Lastly, the weaknesses of this study are also mentioned at the end, whereby some recommendations are given to the future researchers for them to have an improved outcome in their future studies on this topic.

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APPENDICES

Appendix 1: The Final Econometric Model

Dependent Variable: FDI

Method: Least Squares

Date: 04/07/20 Time: 16:38

Sample: 1 40

Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	0.622454	0.072129	8.629701	0.0000
EG	0.016447	0.055180	0.298054	0.7675
GDPPC	-5.83E-05	1.60E-05	-3.647695	0.0009
IFR	0.160597	0.049980	3.213219	0.0029
INF	0.072655	0.026797	2.711336	0.0106
TRD	-0.007433	0.016376	-0.453891	0.6529
C	-5.950378	1.209049	-4.921538	0.0000

R-squared	0.880957	Mean dependent var	2.614749
Adjusted R-squared	0.859313	S.D. dependent var	1.773978
S.E. of regression	0.665387	Akaike info criterion	2.180733
Sum squared resid	14.61043	Schwarz criterion	2.476287
Log likelihood	-36.61467	Hannan-Quinn criter.	2.287596
F-statistic	40.70199	Durbin-Watson stat	1.253066
Prob(F-statistic)	0.000000		

Appendix 2: Correlation Matrix

	EG	EXR	GDPPC	IFR	INF	TRD
EG	1.000000	0.082015	-0.279297	0.024682	0.494574	0.200162
EXR	0.082015	1.000000	0.397011	0.517259	0.029208	0.760574
GDPPC	-0.279297	0.397011	1.000000	0.870430	-0.277014	0.572056
IFR	0.024682	0.517259	0.870430	1.000000	-0.136428	0.765409
INF	0.494574	0.029208	-0.277014	-0.136428	1.000000	0.008715
TRD	0.200162	0.760574	0.572056	0.765409	0.008715	1.000000

Appendix 3: Variance Inflation Factor

Variance Inflation Factors

Date: 04/07/20 Time: 16:41

Sample: 1 40

Included observations: 40

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
EXR	0.005203	19.02129	2.502034
EG	0.003045	26.60450	1.970673
GDPPC	2.56E-10	15.35454	6.774740
IFR	0.002498	298.5901	8.856899
INF	0.000718	2.965729	1.375922
TRD	0.000268	36.88378	4.832069
C	1.461799	132.0683	NA

Appendix 4: Heteroscedasticity (ARCH Test)

Heteroskedasticity Test: ARCH

F-statistic	0.227224	Prob. F(1,37)	0.6364
Obs*R-squared	0.238044	Prob. Chi-Square(1)	0.6256

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 04/07/20 Time: 16:42

Sample (adjusted): 2 40

Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.403341	0.118357	3.407844	0.0016
RESID^2(-1)	-0.078168	0.163985	-0.476680	0.6364

R-squared	0.006104	Mean dependent var	0.374058
Adjusted R-squared	-0.020758	S.D. dependent var	0.625319
S.E. of regression	0.631776	Akaike info criterion	1.969356
Sum squared resid	14.76820	Schwarz criterion	2.054667
Log likelihood	-36.40244	Hannan-Quinn criter.	1.999964
F-statistic	0.227224	Durbin-Watson stat	2.020137
Prob(F-statistic)	0.636393		

Appendix 5: Autocorrelation (Breusch-Godfrey Serial Correlation LM Test)

Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 2 lags

F-statistic	3.201783	Prob. F(2,31)	0.0544
Obs*R-squared	6.848080	Prob. Chi-Square(2)	0.0326

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 04/07/20 Time: 16:41

Sample: 1 40

Included observations: 40

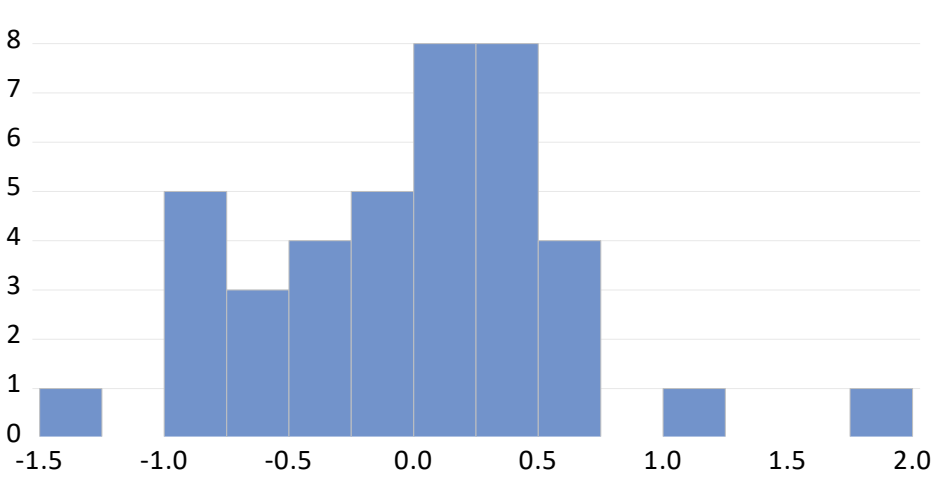
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	-0.026106	0.075235	-0.346993	0.7309
EG	-0.008579	0.053023	-0.161791	0.8725
GDPPC	-1.01E-06	1.50E-05	-0.066924	0.9471
IFR	-0.000409	0.047549	-0.008600	0.9932
INF	-0.000553	0.025643	-0.021584	0.9829
TRD	0.005125	0.017786	0.288143	0.7752
C	0.088395	1.157699	0.076354	0.9396
RESID(-1)	0.452741	0.179088	2.528043	0.0168
RESID(-2)	-0.158795	0.200593	-0.791625	0.4346

R-squared	0.171202	Mean dependent var	-1.73E-15
Adjusted R-squared	-0.042681	S.D. dependent var	0.612067
S.E. of regression	0.624993	Akaike info criterion	2.092954
Sum squared resid	12.10910	Schwarz criterion	2.472952
Log likelihood	-32.85909	Hannan-Quinn criter.	2.230350

F-statistic	0.800446	Durbin-Watson stat	1.936412
Prob(F-statistic)	0.606771		

Appendix 6: Normality test (Jarque-Bera Test)



Appendix 7: Stability test (Ramsey RESET Test)

Ramsey RESET Test

Equation: UNTITLED

Omitted Variables: Squares of fitted values

Specification: FDI EXR EG GDPPC IFR INF TRD C

	Value	df	Probability
t-statistic	0.997802	32	0.3259
F-statistic	0.995608	(1, 32)	0.3259
Likelihood ratio	1.225543	1	0.2683

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.440855	1	0.440855
Restricted SSR	14.61043	33	0.442740
Unrestricted SSR	14.16958	32	0.442799

LR test summary:

	Value
Restricted LogL	-36.61467
Unrestricted LogL	-36.00189

Unrestricted Test Equation:

Dependent Variable: FDI

Method: Least Squares

Date: 04/07/20 Time: 16:40

Sample: 1 40

Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.

EXR	0.484293	0.156128	3.101895	0.0040
EG	0.024654	0.055793	0.441884	0.6615
GDPPC	-3.88E-05	2.53E-05	-1.532643	0.1352
IFR	0.112878	0.069177	1.631727	0.1125
INF	0.048362	0.036207	1.335716	0.1911
TRD	-0.004184	0.016697	-0.250557	0.8038
C	-4.309254	2.041363	-2.110970	0.0427
FITTED^2	0.045618	0.045719	0.997802	0.3259

R-squared	0.884549	Mean dependent var	2.614749
Adjusted R-squared	0.859295	S.D. dependent var	1.773978
S.E. of regression	0.665432	Akaike info criterion	2.200095
Sum squared resid	14.16958	Schwarz criterion	2.537871
Log likelihood	-36.00189	Hannan-Quinn criter.	2.322224
F-statistic	35.02500	Durbin-Watson stat	1.367838
Prob(F-statistic)	0.000000		