ECONOMIC GROWTH:
DOES CORRUPTION MATTERS? EVIDENCE FROM 5 SOUTHEAST ASIA COUNTRIES

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AUGUST 2018

CHUA, LIM, LING, LOW & THAM	ECONOMIC GROWTH	BFN (HONS)	AUGUST 2018

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BY

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A research project submitted in partial fulfilment of the requirement for the degree of

BACHELOR OF FINANCE (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
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AUGUST 2018

DECLARATION

We hereby declare that:

(1) This undergraduate research project 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 research project 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 research project.

(4) The word count of this research report is 15,007.

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Date: 17th AUGUST 2018

ACKNOWLEDGEMENT

As a team of final year student, we are honoured to be given the priceless opportunity to conduct this research writing. Upon completing this write up, we would like to thank each and every individual who had provided us endless support, advices and encouragements during the whole process of the project. Without them, this research project would not have been able to accomplish on time.

First of all, we would like to take this opportunity to express our utmost gratitude to our final year project supervisor, Ms Hartini Binti Ab Aziz. We are thankful for her guidance throughout these two trimesters of project period. We feel grateful for her continuous support, recommendations, motivations and most importantly the patience towards us. Without her supporting us, we would not be able to continue our research smoothly.

Besides, we also appreciate some of the lecturers such as Dr Kenny Yiew Thian Hee, Dr Yii Kwang Jing and Dr Vikniswari Vija Kumaran. These are the lecturers whom we seek help for econometric matters. We sincerely thank them for all the patience guidance whenever we look for them regarding the econometric problems even though they are not teaching us.

Moreover, we would also like to thank Universiti Tunku Abdul Rahman for providing us accessible reading resources on the e-library. Without these sources, we would not have been able to have enough supporting journals for our research. Last but not least, we would also like thank our final year project coordinator, Mr Ahmad Harith Ashrofie Bin Hanafi for frequently updating us about the research requirements.

In a nutshell, we are also grateful for the team work amongst ourselves. A heartfelt appreciation to all of the members who contributes their time, efforts, and the hard word in this research project.

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LIST OF ABBERVIATIONS

ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag
BOP	Balance of Payment
CPI	Corruption Price Index
ESCAP	Economic and Social Commission for Asia and the Pacific
E-views	Electronic Views
FATF	Financial Action Task Force
FDI	Foreign Direct Investment
FEM	Fixed Effect Model
GDP	Gross Domestic Product
GLS	Generalized Least Square
IPS	Im-Pesaran-Shin
LR	Likelihood Ratio
LSDV	Least-Square Dummy Variable
MKTCAP	Market Capiltalization
NGO	Non-government Organization
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least square
P-A-C	Principal-agent-client
POLS	Pooled Ordinary Least Square
R&D	Research and Development
RCT	Rational Choice Theory
REM	Random Effect Model
TRADE	Trade Openness
USD	US Dollar
UNCAC	United Nations Convention against Corruption

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PREFACE

This research paper is conducted to fulfil one of the requirements to complete the Bachelor of Finance (Hons) programme which is required by the authority of Universiti Tunku Abdul Rahman. This research is completed and furnished by the past research papers done by other authors which then being quoted as reference. The title of this research project is "Economic Growth: Does Corruption Matters? Evidence from 5 Southeast Asia Countries".

The issue of corruption has been a globally concerned topic since decades ago. Corruption is one of the key indications to the economy growth for every country. As corruption is measure in the form of index, which is by scoring, the higher the index of a country, the cleaner the country is, the better the performance of economic.

This research aims to provide a clearer picture of how corruption will bring effects to the economic growth of the 5 Southeast Asia country.

ABSTRACT

The aim of this research is to examine how corruption will affect the economic growth of 5 Southeast Asia countries, Malaysia, Thailand, Philippines, Singapore and Indonesia. Besides corruption, we also further study into the factors which may also affect the economic growth of the countries which is the gross domestic product (GDP).

This research project consists of data from a sample of 5 developing Southeast Asia and perform it into panel data over the period of 1996-2015. On the other hand, we used the panel unit root test to test the stationarity of the variables. The significancy of the independent variables towards the dependent variable is also being tested in this research. Next, we also adopted the Fixed Effect Model to figure out the relationship between corruption and the economic growth. Based on our findings, corruption is found to be having significant negative relationship with the economic growth of the 5 Southeast Asia countries.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

First of all, the research background will be discussed by including the general ideas about economic growth in Southeast Asia, corruption, trade and Foreign Direct Investment (FDI). Corruption is the main independent variable in this research. Next, a few problems regarding economic growth and corruption in few countries in Southeast Asia which include Indonesia, Malaysia, Philippines, Thailand and Vietnam will be stated. Additionally, we will bring out few questions regarding this research as well. General objective and specific objectives of the research will be presented. We will explain the significance of the research. Furthermore, we will include structure of the research and lastly the conclusion of this chapter.

1.1 Research Background

1.1.1 Economic growth

Economic growth is viewed as one of the most essential components for every country. It is the improvement of the adequacy of a country to produce goods and services that takes into comparison from a period to another period. It is mainly driven by the improvements in productivity in the world, which is also named economic efficiency (“Economic Growth”, n.d.). Haller (2012) states that improving the size of national economies and the Gross Domestic Product (GDP) per capita, is the process of economic growth. Gross Domestic Product (GDP) is widely used to gauge economic growth traditionally as it is the best indicator to determine the economic

growth (“Economic Growth”, n.d.). This is because it considers all of the country’s economic production of products and services that produced by businesses for sales in the country (“Gross Domestic Product - GDP”, n.d.).

Despite the fact of the recent trend of the current account varies and the weakening in net inflow of Foreign Direct Investment (FDI) in some countries, economic growth in Southeast Asia is still projected to remain strong. The growth momentum of Southeast Asia is expected to be maintained within the average of 5.2% per year from 2018 to 2022 on private domestic spending along with the realization of planned infrastructure initiatives.

1.1.2 Corruption

The problem of corruption has been around for decades or even centuries and the attention on this topic has greatly increased worldwide recently. Corruption is defined as a dishonest act by those high position authorities, such as taking or giving inappropriate gifts, double dealing, under-the-table transactions, elections manipulation, funds diversion, money laundering, and so on (“Corruption”, n.d.). According to Andvig and Fjeldstad (2001), they state that corruption is a complicated and multifaceted phenomenon with various effects and factors because it contains many forms of functions in various circumstances. There are a few types of corruption act and scope of corruption which expands from personal to organization benefit and privilege, extensiveness of the abnormal behaviour that is the misemploy of power, and expropriation, unethical behaviour (Nye, 1967).

Among the five countries for this research, Indonesia, was once the most corrupted country. According to Indonesia Corruption Report (2017), bribery happened everywhere in Indonesia especially in public sector. For instance, public officials often look for ambiguous legislation to extort

bribes from businesses for registering a company, filing tax reports or obtaining permits or licenses. To be exact, 16-30% of Indonesians has paid a bribe for ID documents, voter's card or permit in year 2017 whereas 6-15% has paid a bribe for public school, public hospital and utilities ("Transparency International", 2017). Apart from public services, judicial system in Indonesia faced corruption problem as well. There were around 6-15% of Indonesians paid bribe to the courts in year 2017 ("Transparency International", 2017).

1.1.3 Trade Openness

Furthermore, a developing body for economic studies has been motivated by the role of trade. According to Barro and Sala-i-Martin (1997) and Rivera-Batiz and Romer (1991), trade openness has the ability to improve the development of economic growth by offering entries to products and services. Besides, allocation of resources can be attained. Next, it can enhance total factor output by technology and knowledge dissemination in the long run. Hence, those countries with more trade openness is expected to be outperformed compared with those countries who underperformed in trade openness. Based on the research by Keho (2017), trade with developed countries can bring benefit to developing countries. Therefore, trade openness brings essential impact in the economy which would affect the economic growth of the world as well.

1.1.4 Foreign Direct Investment (FDI)

The next variable that we are going to study is the Foreign Direct Investment (FDI). The main duty of FDI is to get access into advanced technologies in developing countries as it is the driver for economic growth. According to De Mello (1999), FDI may enhance the economic growth by the transfers of technology which lifted the human assets in host country

through organizational arrangements, labour training, skills acquisition and new management practices. Thus, there is a strong complementary effect between human capital and FDI. The interaction with the labour skills which is the human capital in the host country would strengthen the contribution of Foreign Direct Investment to economic growth (Samimi & Jenatabadi, 2014).

1.1.5 Market Capitalization

The development of capital is an essential segment of economic growth and development. (Kumar, 2014). It is presumed that capital collection with beneficial correlation and supplements to the capital stock could speed up growth rate. The stock market nowadays is a very important sectors for capital development and it could affect directly on the economy. It is significant which could mitigate an investor's risks and in the maturities transformation about the savings investment (Nissanke, Aryeetey, Hettige, & Steel, 1995). Montiel (1996) states that stock markets is significant to economic growth in terms of improving productivity by increasing the performance of financial intermediaries, the marginal productivity of capital and improving the rate of savings.

1.2 Problem Statement

Based on "People and Corruption: Asia Pacific", which included a survey of perception of people in Asia Pacific on corruption between July 2015 and January 2017 done by Transparency International, 40% of the respondents thought that the level of corruption had increased whereas only 22% thought that it had decreased, while the other 33% thought that the level of corruption still remained the same and the remaining 5% voted "don't know", showing a sign of lack of awareness on corruption issue among the people (Pring, 2017).

According to the survey, there is only 7% of the citizens across the Asia Pacific region who had paid a bribe stated that they had made reports to the authorities. The reason why the respondents refused to make report corruption was that they were afraid of the consequences. Secondly, they think that difference would not be made by lodging report (Pring, 2017).

Table 1.1: Corruption Perceptions Index 2016

		Score				
2016 Rank	**Country**	**2016**	**2015**	**2014**	**2013**	**2012**
7	Singapore	84	85	84	86	87
41	Brunei	58	N/A	N/A	60	55
55	Malaysia	49	50	52	50	49
90	Indonesia	37	36	34	32	32
101	Philippines	35	35	38	36	34
101	Thailand	35	38	38	35	37
113	Vietnam	33	31	31	31	31
123	Laos	30	25	25	26	21
136	Myanmar	28	22	21	21	15
156	Cambodia	21	21	21	20	22

(Source: "Corruption Perceptions Index", 2017)

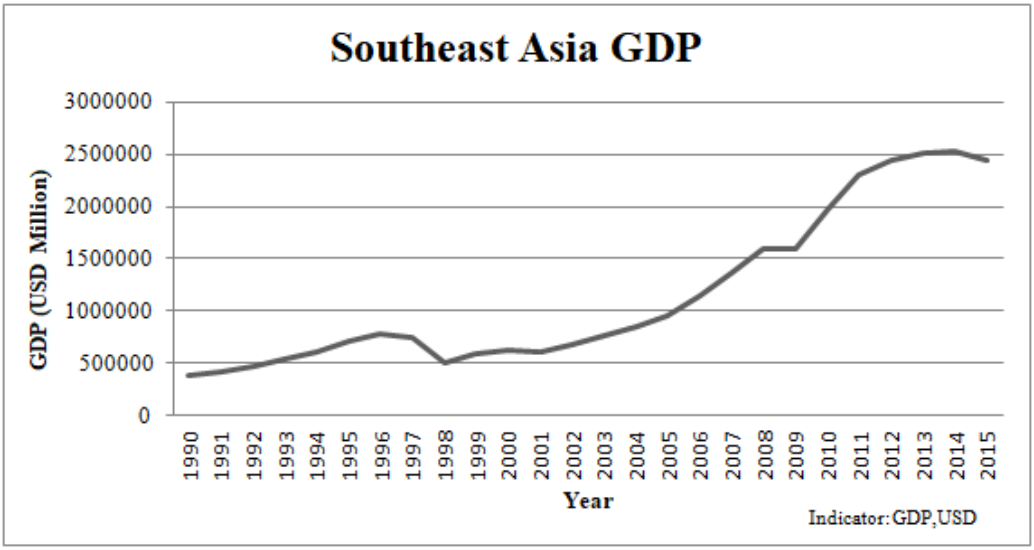
The Corruption Perceptions Index (CPI) researched by Transparency International shows the scores on how corrupted a country's public sector is in every year. The higher the index, the lower the level of corruption.

The table above shows the CPI of the ten countries in Southeast Asia. Corruption is always a problem for Southeast Asia countries. Based on the data collected, since year 1996, majority of the Southeast Asia countries have CPI below 40 out of 100. The only three countries with CPI higher than 40 are Singapore,

Brunei and Malaysia. Within the ten countries, Singapore was recorded as the least corrupted country with ranking of 156 among the world in 2016 ("Corruption Perceptions Index", 2017).

Corruption affects us all. It affects a country's economic growth as well as in Southeast Asia. Southeast Asia has experienced a significant economic growth for the past 20 years. Five years from now, Southeast Asia is expected to emerge as the global growth leader. According to Brown (2013), Southeast Asia would be the world's ninth-largest economy if it were to be a country.

Figure 1.1: Southeast Asia GDP from 1996 to 2015



(Source: "Economic and Social Commission for Asia and the Pacific Statistical Online", 2018)

Based on the Gross Domestic Product (GDP) data from Economic and Social Commission for Asia and the Pacific (ESCAP) which is shown above, Southeast Asia hit its lowest GDP of US$497,763 million, that is one year after the Asia's financial crisis in July 1997 causing the fall in GDP of Southeast Asia about 5.27% and 32.84% from 1996 to 1997 and from 1997 to 1998 respectively. Nevertheless, its GDP then recovered in 1999 and increased steadily to US$2,526,430 million in 2014. It dropped slightly to US$2,440,850 million in 2015.

In a nutshell, Southeast Asia has experienced a significant changes on economic growth in the past 20 years. Corruption hurts developing countries especially in Southeast Asia. It does affect economic growth but the growth in economy might not be fully explained by the increment in corruption level. There might be some other factors affecting the economic growth too. Therefore, it is important to figure out whether the problem of corruption contributes to economic growth of Southeast Asia countries with higher degree of influence. We believe this research is beneficial for the people and countries in Southeast Asia and it is worthwhile to study its impact on the economy growth in those countries.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this research is to determine the relationship between corruption and the economic growth of a country.

1.3.2 Specific objectives

i. To identify the effects of corruption on the economic growth of a country.
ii. To investigate the effects of trade openness on the economic growth of a country.
iii. To determine the effects of Foreign Direct Investment on the economic growth of a country.
iv. To distinguish the effects of market capitalization on the economic growth of a country.

1.4 Research Question

i. What is the effect of corruption on the economic growth of a country?
ii. How does trade openness affect the economic growth of a country?
iii. What is the relationship between Foreign Direct Investment and the economic growth of a country?
iv. Does market capitalization affects the economic growth of a country?

1.5 Hypotheses of the Research

Corruption

H_0: There is insignificant relationship between corruption and economic growth.

H_1: There is significant relationship between corruption and economic growth.

Foreign Direct Investment

H_0: There is insignificant relationship between Foreign Direct Investment and economic growth.

H_1: There is significant relationship between Foreign Direct Investment and economic growth.

Trade Openness

H_0: There is insignificant relationship between trade openness and economic growth.

H_1: There is significant relationship between trade openness and economic growth.

Market Capitalization

H_0: There is insignificant relationship between market capitalization and economic growth.

H_1: There is significant relationship between market capitalization and economic growth.

1.6 Significance of Research

The importance and contributions of this research will be discussed under this section. Brief description on the various significances of the study will be discussed as well.

Based on many of the previous research papers, researchers agree that corruption has been widely spread globally especially in the developing countries (Farooq, Shahbaz, Arouri & Teulon, 2013). Malaysia, Singapore, Thailand, Indonesia and Philippines are of those developing countries and these are the targets for this research. The impact of corruption on the economic growth varies in different countries and this statement is yet to be further discovered in this research for the 5 selected Southeast Asia countries.

Generally, people believe that the economic growth of a country could be improved by lowering the corruption level. For example, a researcher in Pakistan suggested the government to take action on the corruption so that it will improve the governance to ease up collecting tax which in turn contribute to a better economic growth (Farooq, Shahbaz, Arouri, & Teulon, 2013). However, this belief has been opposed by a previous research done in China proving that anti-corruption campaign depressed the economic growth of the country by lowering the investment growth (Wang, 2016). Therefore, this argument could trigger the future researchers and policy-makers to carry out an in depth investigation on the impact of combating the corruption towards the economic growth of the country.

High level of corruption will negatively affect the economic growth of a country by increasing its cost of doing business (Farooq, Shahbaz, Arouri & Teulon, 2013). An increase in the cost of business will tighten the cash flow of the business and the market supply will not match with the demand causing the relative price to increase, which will however cause inflation to happen. The purchasing power of the nation will be reduced due to the inflation; leading the people to spend less which will directly affect the Gross Domestic Product (GDP) of the country. The

contribution of this paper could assist the economists to analyse or predict the economic situation based on the corruption index.

In this research, we will adopt the panel data analysis. This analysis is widely used in many research papers. Panel data analysis allows researcher to increase the number of total observations which will increase the level of degree of freedom and the collinearity between the independent variables will be reduced as well. By using panel data analysis, it benefits the researchers by simplifying the computation and statistical inference (Hsiao, 2005).

Beside corruption, Foreign Direct Investment and trade openness, we added stock market capitalization as gap variable because by far this variable is rarely used as an independent variable to examine the relationship between corruption and economic growth problem. A study concludes that the raising stock market capitalization will induce economic growth in Africa. The researcher also urged the future generation to go for the research on the effect of stock market development on a country's economic growth (Jalloh, 2015).

This study may provide foreign investors the insights of the country's worthiness whether to make investment or not. Based on the available information, for example, investor may consider to take action on their investment decision by looking at the corruption perception index which reflects the corruption level of a country and they possibly could predict the country's future economic situation (Wilhem, 2002), together with other independent variables that will be studied through this research.

In a nutshell, it is crucial to find out whether corruption will positively or negatively affect the economic growth in the 5 Southeast Asia countries to allow the policy makers to implement different policies to mitigate the corruption level if corruption brings negative effect to economic growth; or to control the corruption level at its optimum point if corruption improve the economic growth.

1.7 Chapter Layout

In this research, Chapter 1 provides an overview of this research topic and the brief discussion on the corruption and economic growth. In Chapter 2, we will review the theoretical and empirical literature published recently. The economic framework used in this research, description of data and the data sources will be explained in Chapter 3. Later, in Chapter 4, we will discuss the results of the data using E-Views and analysed by Ordinary Least Square (OLS) multiple regression method. For Chapter 5, which is the conclusion, will provide the summary of this research, the policy implications, limitations and recommendations for future research.

1.8 Conclusion

In short, this chapter is generally a review about the background of this research area, problem statement, research objective, research question, significance of research and the research structure. All of these discussions are used to present the impacts of the corruption, trade and Foreign Direct Investment on economic growth in these five Southeast Asia countries which are Indonesia, Malaysia, Philippines, Thailand and Vietnam. The literature review regarding this research will be further stated in the following chapter.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In this chapter, we are going to discuss the relationships of each independent variable, which include the main independent variable - corruption, trade openness, Foreign Direct Investment and market capitalization with dependent variable, the economic growth according to the past researches. We will summarise the past researches to support this research under the empirical review part. Therefore, this chapter will provide a better understanding over the effect of corruption as well as other independent variables to the economic growth.

2.1 Review of the Literature

2.1.1 Economic Growth

Economic growth has a powerful conceptual grounding and quantified easily when there is an improvement of total output. In conjecturing economic growth, Ricardo (1819) and Solow (1956) gestate that an economy as a machine that manufacture economic production. Economy of a country can be improved as by using modern technology and the output or production could be increased with the increasing productivity and efficiency of the inputs transformation. Economic growth with the improvement in employment, population or aggregate output governs the argument due to the straightforwardness, despite the actuality that rises in all of these, it can be related with both enhancement and decrement in wealth and life quality.

Moreover, Lucas (1988) states that economic growth and economic development are distinct fields. For a personal company, increasing in sales and profits is an evaluation of market favourable outcome. However in an extreme condition, openly traded organizations that capitulate to the pressure to continuously improve their final earnings of last quarter always ignore the long-run strategic chances. Unfortunately, stimulating growth is frequently an unchallenging success to gain at the expense of longer-run goals and purposes. Actually, a lot of the conceptual tools might not be fulfilled to the economic development's mission.

North (1984) concludes the focus of neoclassical economics on short-term ideal resource allocation is not effectively matched to the dynamic, which is long-term orientation that explains the operation of economic development. Resident income can be improved along with the remarkable investments that started by the public sector. Other than these indicators, as the Overseas Development Institute highlights, small progress has been conducted on health results such as life expectancy, infant mortality, and morbidity rates and so on.

2.1.2 Corruption and Economic Growth

According to Hughes (2010), he proposes that corruption is always said to be the cause of the failure of Pacific countries or elsewhere to achieve their development goals. There is a number of problems found in the presence of corruption in the public sector and government. Those negative impacts might be the lack of accountability, low transparency, and a general failure to follow the law or "play by the rules".

Svensson (2005) states that corruption level will be lower in the richer countries and corruption varies across the countries. While there are some arguments brought up by the scholars of revisionist school, where they debated that corruption is efficiency-improving and it may help to eliminate

the capital forming problem and the inflexibility characteristic of administrative in the modernizing economies (Montinola & Jackman, 2002).

Few researches done by researchers concluded that corruption is positively influencing the economic growth (Huntington, 1968; Summers, 1988; Acemoglu & Verdier, 1998). A research done by Meon and Weill (2010) argue that the corruption can bring positive effect on the economic growth. Few researchers concluded that corruption can improve government agencies' efficiency and the transaction time may be lowered, and will positively affect a country's economic growth.

Besides, Colombatto (2003) claims that corruption might help to reduce or eliminate factors that slow down the economic development of the developing or authoritarian countries. From the research done by Paul (2010), corruption and economic growth is positively related to each other. Swaleheen (2011) also reports corruption brings significant and non-linear effect on the growth rate of real per capita income. A higher level of corruption might tend to lower the growth and affect the efficiency of public services.

In contrast, there are also researches show that economic growth of a country is negatively affected by corruption level. According to Tanzi and Davoodi (1997), corruption restrains the economic growth by weakening and slowing down the infrastructure competence. It also decreases the public investment which in return causes the growth of economy being lowered due to the lower productivity; corruption reduces the revenue of government and lead to a lower expenditure on the health and education and therefore slowing down the growth (Tanzi & Davoodi, 1997). It was proven by most of the researchers that corruption is negatively affecting a country's economic growth (Paul, 2010; Ugur & Dasgupta, 2011). Matthew and Idowu (2013) concludes that economic growth and corruption are negatively related to each other and it will increase the poverty and unemployment in that particular country.

2.1.3 Trade Openness and Economic Growth

Openness to trade is observed as to free trade where trade barriers is eliminated (Balanika, n.d.). The growth in both growing and advanced countries largely depends on the crucial tool which is openness to trade (Dar & Amirkhalkhali, 2003). Based on the research done by Idris, Yusop and Habibullah (2016), many countries started to open up their economics to achieve development and growth. Sun and Heshmati (2010) claims that openness to trade is closely associated with countries' economic due to liberalization and globalization.

In the research of Sun and Heshmati (2010), the responsibility of international trade in fostering the economic growth has been discussed and still discussing since decades ago. Apart from that, they also mention that countries which are more active internationally are usually more productive than those countries which only focus on their internal market locally. According to Singh (2010), trade liberalization is related to openness to trade and it is a basic requirement for economic growth. .

Apparently, most of the researchers agree that there is positive relationship between openness to trade and economic growth. Were (2015) said that trade generally is positively related with economic growth. Based on the research done by Kim and Lin (2009), openness to trade benefits the economy in long-run while it varies in accordance to the level of economic development. Openness to trade positively impact the performance of economic by easing the spill overs of technology result in generating greater efficiency in production, and increasing the competitiveness internationally with higher export revenue at the same time (Tekin, 2012).

Some researches oppose the positive impact of trade on the growth of economy. There is an evidence showing that openness to trade is against the economic growth in one recent research of the relationship in 34 African

countries for the period of year 1960 and 2003 (Vlastou, 2010). Trade openness impedes the economic growth in South Africa (Polat, 2015). Based on the research by Lawal, Nwanji, Asaleye and Ahmed (2016), by adopting the Autoregressive Distributed Lag (ARDL) methodology to Nigeria, they found that the openness to trade has a negative long-run effect to the economic growth.

Some researchers argue that trade has no significant relationship with economic growth. With the help of the neoclassical growth model by Solow (1957), it is proven that trade policies have no impact on economic growth. Referring to the research done by Keho (2017), the consent on whether a greater openness to trade will generates a greater economic growth, however does not appear. Regardless it is import or export, there is no causal relationship towards economic growth in Pakistan (Afzal & Hussain, 2010). No significant effects on the economic growth in least developed countries such as African countries (Were, 2015).

2.1.4 Foreign Direct Investment and Economic Growth

Foreign Direct Investment (FDI) as one of the sources of economic growth has been viewed as an essential factor which will directly and indirectly affecting economic growth (Almfraji & Almsafir, 2014). According to Melnyk, Kubatko and Pysarenko (2014), FDI is used by the developing countries in transferring technology and capital from other developing and especially developed countries.

Most of the researchers ended up with the conclusion of positive effect of FDI towards economic growth. According to Makki and Somwaru (2004), FDI brings good development on economic growth as FDI promotes domestic investment. The positive involvement with human capital, macroeconomic policies and institutional stability stimulate the effect of FDI on economic growth. The growth effects of FDI is positive by cross-

sectional data for 46 developing countries in a fixed effects model through cross-section analysis (Balasubramanyam et al., 1996). These authors state that economic growth in exporting-promoting countries will be influenced by FDI. Hence, trade openness is important for FDI to develop economic growth. Additionally, through improving exports, FDI brings positive impact on economic growth (Baliamoune-Luz, 2004).

However, there are some researchers that oppose the positive impact of FDI on economic growth. The argument arose in the negative effect which brought by the dependency theory on the development of economy in a country (Dutt, 1997). Brecher and Diaz-Alejandro (1977) are also supporting this theory as they clarify that FDI causes the negative impact on economic growth of the host county. This situation exists because FDI-financed companies send back overmuch gains to the parent company. Moreover, FDI brings negative effect towards economic growth because of the trade deficit which is caused by the increment of host country's import (Fry, 1999). This is due to the fact that high developed capital machinery and intermediate goods are needed as they are unavailable in host country (Rahman, 2008).

There are arguments for the insignificant relationship between FDI and economic growth too. Based on the research including panel of 51 lesser developed countries 1970 to 2002 by Sarkar (2007), he found that there is short term relationship between FDI and economic growth. Also, Borenstein (1998) states that the insignificance of the coefficient of FDI. This shows that FDI brings no impact on the economic growth of a country.

2.1.5 Market Capitalization and Economic Growth

A full-grown stock market shall be able to improve economic growth by increasing savings and reduced transaction costs (Dicle, 2010). There are more matured financial institutions in higher income countries, meaning that

a full-grown bond and equity market. The elevated income countries mostly experience more growth as credit usually better accessible in this economy.

According to a research on how stock market capitalization influences a country economic growth done by Jalloh (2015) using a cross-sectional data of 15 African countries with well performing stock markets during 2001 to 2012, the results show that the coefficient of stock market capitalization variable is positive and statistically significant. The estimates especially from the dynamic model disclosed the lifting stock market capitalization by a margin of 10.0% would encourage growth in income per capita by a margin of 5.4% in these countries. Besides, by using endogenous growth model, Levine (1991) assumes that stock market is able to stimulate economic growth by reducing liquidity and productivity risk. The reduction of both risks is likely to accelerate investment and thus, promotes the economic growth.

Ali, Francisco and Gilberto (2017) also state that an improvement in the capitalization of listed companies have a positive relationship with per capita income, thereby in economic development in Latin American. The panel data dynamic approximation indicates the significance of financial variables to economic and development growth. It is worth observing the slow impact of the listed companies' capitalization stimulates per capita GDP and then a higher influence of the depletion in the interest rate disparity increases per capita GDP.

However, based on the research by Singh (1997), he claims that financial markets development may probably change to be an impediment to economic growth as they cause volatility and later would also depress risk-averse investors from pledging investment projects. Arestis (2001) also stated that if the stock market development is at the expense of banking system development, then stock market development may limit economic growth.

2.2 Review of Relevant Theoretical Models

Today, the number of researches on corruption and economic growth has increased greatly. The theoretical and empirical literature on corruption has brought various debates over the last 30 years. According to Tanzi (1997), until 1997 currency crisis, some countries from Southeast Asia seemed to agree that corruption might promote growth. Two of the fast growing countries from Southeast Asia, which include Indonesia and Thailand were often said to be growing fast due to the high levels of corruption associated with a low degree of uncertainty. Some may argue that bribery is actually "speed money". It is a payment that speed up the bureaucratic process, or payment that "mediate" between political parties in order to complete an agreement (Ahmad, Ullah & Arfeen, 2012).

On the other hand, some researchers such as Krueger (1974), Shleifer and Vishny (1993) and Tanzi (1997) pointed out that corruption will harm economic growth. According to them, corruption can modify government intension. Resources originally for public objective might be diverted to private usage, thus causing a deadweight loss to society. When corruption occurred, for example when the government tries to create monopolies for private benefits, it is likely to bring bad effects to the market.

2.2.1 Principle-agent-client approach (P-A-C)

Principle-agent-client approach (P-A-C) proposed by Banfield (1975) shows an interaction scenario where corruption may occur. The three parties involved in this model are principle (the authority such as government, chief officer or manager), agent (people who contracted to work for the principle) and also third party who always seek to influence on the decision making of the agent by offering him benefit. The agency problem often arises from this P-A-C relation. The principal distributes his tasks to an agent when he faces a constraint of resources, for example, time. The agent in turn gets additional information compared to the principal. However, the principal might face monitoring problem as he cannot completely observe, control or evaluate how his agent did his tasks (Lambsdorff, 2006).

2.2.2 Rational Choice Theory (RCT)

Rational Choice Theory (RCT) provides a framework in modelling and understanding individual decisions which help to determine macro social, economic, and political trends. RCT believes that human are rational actors. They make decisions that maximize their own utility (Green & Shapiro, 1994).

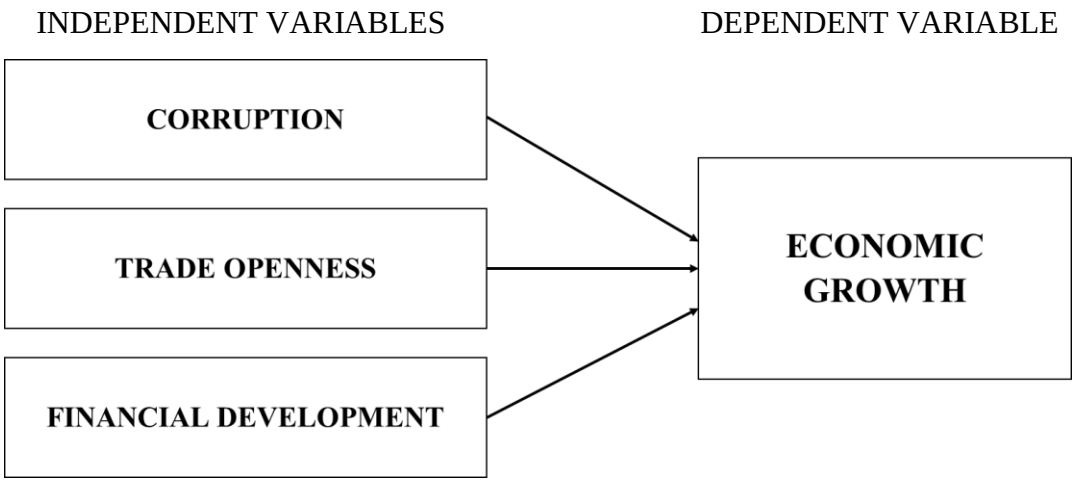
When people make decisions, under RCT, people use available information to consider all given options and the anticipated consequences associated, construct hierarchies on the expected utility received and select the option that gives the highest expected value. Klitgaard (1988) proposed that if the benefits of corruption after deducting the probability of being caught times its penalties are still greater than the benefits of not being caught, the individual will therefore rationally choose to corrupt.

2.2.3 Rent-seeking

Under rent-seeking approach, people are assumed to be selfish as they concerned to maximize their self-benefit by seeking "rent" in the public administration. The rent can be in the form of payment in fixed supply, legalized or systemic manifestation of greed or any interest made by nature or social structure. Once rents exist, the striving for rent is regarded as rent-seeking which is actually corruption (Jiang, 2017).

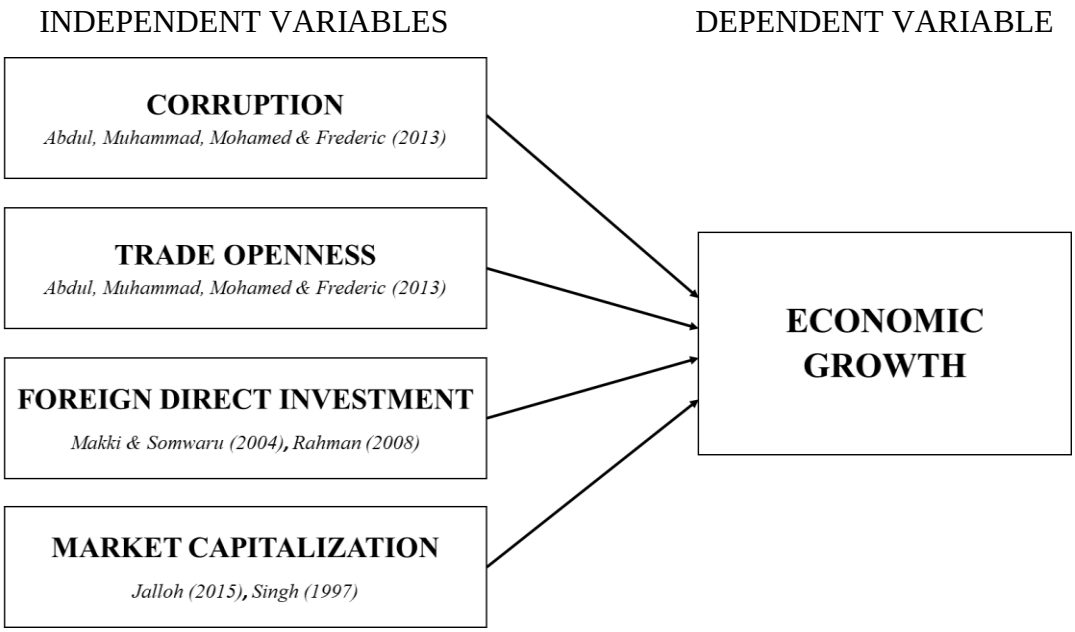
2.3 Proposed Theoretical/Conceptual Framework

Figure 2.1: Theoretical framework



Adopted from Abdul, Muhammad, Mohamed & Frederic (2013) "Does corruption impede economic growth in Pakistan?". According to the research, they studied the relationship between Corruption, Trade Openness and Financial Development with Economic Growth in Pakistan.

Figure 2.2: Proposed theoretical framework



In this research, we want to determine the relationship between Corruption, Foreign Direct Investment, Trade Openness and Market Capitalization with Economic Growth.

2.4 Hypotheses Development

Corruption

H_0: There is insignificant relationship between corruption and economic growth.
H_1: There is significant relationship between corruption and economic growth.

The relationship between corruption and economic growth will be examined. Rejecting null hypothesis means that there is significant relationship between the two variables.

Foreign Direct Investment (FDI)

H_0: There is insignificant relationship between FDI and economic growth.
H_1: There is significant relationship between FDI and economic growth.

The relationship between Foreign Direct Investment and economic growth will be examined. Rejecting null hypothesis means that there is significant relationship between the two variables.

Trade Openness

H_0: There is insignificant relationship between trade openness and economic growth.
H_1: There is significant relationship between trade openness and economic growth.

The relationship between trade openness and economic growth will be examined. Rejecting null hypothesis means that there is significant relationship between the two variables.

Market Capitalization

H_0: There is insignificant relationship between market capitalization and economic growth.
H_1: There is significant relationship between market capitalization and economic growth.

The relationship between market capitalization and economic growth will be examined. Rejecting null hypothesis means that there is significant relationship between the two variables.

2.5 Conclusion

We have summarised the past researches we found in this chapter: the past researches on the independent variables (corruption, Foreign Direct Investment, trade openness and market capitalization), dependent variable (economic growth) and their relationships. The researches we found revealed different perceptions and results and thus prompted our interest to have further research on this topic. In next chapter, we will discuss about the research methodologies.

CHAPTER 3: METHODOLOGY

3.0 Introduction

In this chapter, we will discuss about the methodology of this research. Under the theoretical framework, we will adopt a basic model that includes functional model and economic model from a selected journal. Besides that, the definitions of the independent variables will also be explained. Based on the extracted basic model from the selected journal, we will extend the basic model by adding two more independent variables and transform it to become this research model. Next, we will discuss on the econometric techniques used in this research such as panel data and Unit Root test. Moreover, the theoretical definition of model estimation which is Pooled Ordinary Least Square (POLS) estimation, Fixed Effect Model (FEM) and Random Effect Model (REM) also will be introduced in this section. Continue with the direction of the data and lastly, we will conclude the chapter with a summary.

3.1 Research Design

Having a clear and effective research design enables us to deliver the research questions soundly and understandable. In this research, quantitative approach will be applied. This research is to investigate the relationship between the economic growth and the independent variables which are corruption, trade openness, Foreign Direct Investment, and market capitalization. This research will mainly focused on the five selected Southeast Asia countries, which are, Malaysia, Thailand, Philippines, Singapore and Indonesia from year 1997 to year 2016.

3.2 Data Collection Methods

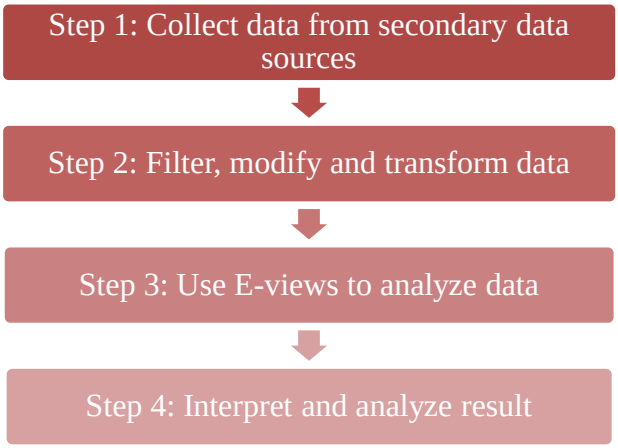
The research period is from 1997 to 2016, inclusive, related to the Gross Domestic Product (GDP) of the 5 Southeast Asia countries. The data are drawn from the World Development Indicator (World Bank) and Transparency International.

Table 3.1: Sources and Explanation of Data

VARIABLES	UNIT MEASUREMENT	SOURCES	DEFINITION
Economic Growth	GDP in US $	World Bank	The monetary value of all the finished goods and services produced within a country's borders in a specific time period.
Corruption Perceptions Index (CPI)	In Index	Transparency International	It scores countries on how corrupt their governments are believed to be.
Trade Openness (TRADE)	In percentage, % of GDP	World Bank	Refers to the outward or inward orientation of a given country's economy.
Foreign Direct Investment (FDI)	In percentage, net inflow % of GDP	World Bank	Investment made by a firm or individual in one country into business interests located in another country.
Market Capitalization (MKTCAP)	In percentage, % of GDP	World Bank	The total dollar market value of a company's outstanding shares.

3.3 Data Processing

Figure 3.1: Data Processing Cycle



We began this research with the collection of data from several secondary sources, which are the World Bank and Transparency International. After that, we will filter, modify and transform the data set based on this research's requirement and to make it suitable for us to do the empirical testing. Then we will use the data set to run the testing by using E-views 7. Final stage is to collect the results generated and interpret it to fulfil the purpose of this research.

3.4 Data Analysis

3.4.1 Basic Model

In this empirical analysis, we use simple regression model as the basic model that includes only two independent variables which are corruption and trade. The basic model is adopted from the journal of Farooq, Shahbaz, Arouri & Teulon (2013) "Does corruption impede economic growth in Pakistan?".

Functional model:

$$\boldsymbol{GDP = f(CPI, TRADE)} \quad \textbf{(1)}$$

Economic model:

$$\boldsymbol{GDP_{it} = \alpha + \beta_1 CPI_{it} + \beta_2 TRADE_{it} + \mu_{it}} \quad \textbf{(2)}$$

Where, GDP_{it} = Gross Domestic Product (US $)
CPI_{it} = Corruption Perceptions Index (Score)
$TRADE_{it}$ = Trade Openness (% per GDP)

3.4.2 Econometric model

Equation (2) shows the effect of corruption (CPI) and trade openness (% per GDP) on economic growth (GDP). However, we found that there are some other variables can affect economic growth in a country. There is possibility to have bias on the result in this research if we only consider the basic model which is obtained from the main journal. Thus, we decided to extend our model by adding two influential independent variables (Foreign Direct Investment and market capitalization) into the basic model as our empirical model. Hence, the extended model of this research can be specified as below:

Functional model:

$$\boldsymbol{GDP = f(CPI,\ TRADE,\ FDI,\ MKTCAP)} \quad \textbf{(4)}$$

Economic model:

$$GDP_{it} = \alpha + \beta_1 CPI_{it} + \beta_2 TRADE_{it} + \beta_3 FDI_{it} + \beta_4 MKTCAP_{it} + \mu_{it} \quad (5)$$

Where, GDP_{it} = Gross Domestic Product (US $)

CPI_{it} = Corruption Perceptions Index (Score)

$TRADE_{it}$ = Trade Openness (% per GDP)

FDI_{it} = Foreign Direct Investment (net inflow, % of GDP)

$MKTCAP_{it}$ = Market Capitalization of Listed Domestic Companies, net inflows (% of GDP)

This research investigates the relationship between the dependent variable (GDP) and four independent variables (CPI, TRADE, FDI, MKTCAP). The countries we choose in Southeast Asia include Indonesia, Philippines, Malaysia, Thailand and Singapore from yea 1997 to 2016. From Equation (4), α represents intercept and $\beta_{(1,2,3,4)}$ are slope of coefficient of the independent variables. μ represents uncorrelated error terms. We use panel data (*i*,*t*) which involving multi-dimensional data involving measurements over time in both basic model and extended model.

3.4.3 Discussion of Dependent Variable

In this research, GDP is taken as the dependent variable of our model. It is expressed in USD. Undoubtedly, GDP is a good indicator of economic growth, as GDP is able to display the actual monetary value of economy growth which the total value of goods and services produced in a country is estimated (Khan, 2014).It is crucial for policy makers to understand economic growth of a country by using GDP as the indicator due to the fact that GDP growth can bring significant influence on economic growth of a country itself. Through this research, we will figure out the variables that can significantly affect the GDP of a country.

3.4.4 Discussion of Independent Variables

This research makes an attempt to investigate the effect of the selected independent variables on the economy growth of the five selected countries in Southeast Asia from 1997 to 2016. There are four independent variables we include in the empirical model which are corruption (CPI), Foreign Direct Investment (FDI), trade openness and market capitalization. The independent variables which are the factors towards GDP growth are relatively important to prevent the problem of social-political instability (Aziz & Azmi, 2017). These independent variables had been chosen for our model due to the reasons which are shown below.

3.4.4.1 Corruption (CPI)

Recently, the problem of corruption has been widely spread in most developing countries in the world such as countries in Southeast Asia (Farooq, Shahbaz, Arouri & Teulon, 2013). According to research by World Bank, corruption is one of the greatest resistance to social and economic development by weakening the foundation of the institutions and distorting the role of law. Hence, we will take corruption as the main independent variable in the research to investigate to what extent of the impact of corruption level towards GDP of a country. We use Corruption Perceptions Index (CPI) as the measure of the level of corruption. A country's score can range from 0 to 100. A high score of the CPI indicates the low corruption level in a country.

3.4.4.2 Trade Openness (TRADE)

There is an increasing number of studies about the role of trade in improving the economic growth. This happens because of the liberalization and globalization of the world nowadays (Sun & Heshmati, 2010). For instance, lowering trade barriers can foster trade and yet improve economic growth of a country through reducing transaction costs. Nevertheless, there is argument which states that some forms of protectionism such as infant industry protection to develop certain industries can be beneficial for economic growth (Busse & Koniger, 2012). Therefore, it is crucial to study the effect of trade on economic growth as it helps policymakers to make appropriate decision on policies by considering the source of productivity growth regarding to trade openness. In this research, trade openness is expressed in percentage of GDP.

3.4.4.3 Foreign Direct Investment (FDI)

FDI, which is reported under the capital account of Balance of Payments (BOP) has been treated as a factor impacting economic growth straightforwardly and in a roundabout way within the past decades (Almfraji & Almsafir, 2014). It is characterized as a bundle of capital, administration, innovation and business which firm can conduct operation and offer goods and services in a foreign market (Farrell, 2008). According to Elboiashi (2015), although there are great increment in FDI inflow to developing countries, FDI still brings dubious impact towards economic growth. This research will be beneficial to the economy of a country as policy makers can take action accordingly when they know the effect of FDI towards economic growth. In this research, FDI is expressed in net inflow of percentage per GDP.

3.4.4.4 Market Capitalization (MKTCAP)

According to Arestis, Demetriades and Luintel (2001), the linkage between performance of stock market and economic growth is being explored more and more due to the fast-growing importance of stock markets around the world. Some researchers hold that a well-functioning stock market can bring positive impact on economic growth whereas some opposed that statement (Dokmen, Aysu & Bayramoglu, 2015). As one of the indicators of stock market performance, market capitalization, which is the total dollar market value of a company's outstanding shares ("Market Capitalization", n.d.), will be treated as the gap variable in our extended model. Data collected for this variable is the market capitalization of the listed companies in the 5 selected countries in Southeast Asia. In this research, we will explore and determine the impact of market capitalization on the economic growth.

3.5 Panel Data

Panel data is used in our study to determine the relationship between the independent variables - corruption, foreign direct investment, openness to trade and the dependent variable - economic growth in the time frame of 20 years from year 1996 to 2015 across 5 Southeast Asia countries which are Malaysia, Singapore, Indonesia, Philippines and Thailand. Panel data is chosen in our study due to the existence of the combination of both cross sectional and time series data. According to Hsiao (2007), panel data has been very popular in both developed and developing countries.

By using panel data, researchers could be benefited by having more accurate inference for the parameters of a model (Hsiao, 1995). Moreover, it also allows to detect and measure the effects which is unable to observe from purely time series

and cross sectional data. It also enables researchers to compute and study more complicated models (Gujarati & Porter, 2009). There are three types of model applied in panel data. They are the Pooled OLS model, fixed effect model and random effect model.

3.6 Econometric Techniques

Panel data set will be used to carry out testing in this research to examine the relationship between economic growth and the independent variables of the selected 5 Southeast Asian countries. It allows us to make accurate inference for the model's parameters, detect and measure the effects that are unable to observe purely from the time series and cross sectional data (Hsiao, 2007). Besides, panel data enables the researchers to compute and study more complicated models (Gujarati & Porter, 2009). Before we carry out the descriptive and inferential analysis, unit root test has to be carried out to ensure all the series are stationary. We will then overview the three types of regression model, which are, Pooled Ordinary Least Square (POLS), Fixed Effect Model (FEM) and Random Effect Model (REM).

3.6.1 Unit Root Test

A stationary time series shows a data over time that statistical properties remain constant – it would not be affected by a change in the time origin. If the time series data are non-stationary or cannot be changed to be stationary, the research using these data to obtain significant properties of these data will be pointless (Fielitz, 1971). Unit root test is a stationarity test that determines the existence of unit root in the variables, where H_0: Non-stationary, H_1: Stationary. In this research, although we are using panel data, we decided to do unit root test as the data we are using has large time period T relative to cross-sectional N. Panel unit root test is developed from time series unit root test. The major difference between the two tests is that the asymptotic behaviour of the time-series dimension T and the cross-sectional

dimension N should be studied. The unit root test we applied in this research includes Augmented Dickey-Fuller (ADF) test and Im-Pesaran-Shin (IPS) test.

3.6.1.1 Augmented Dickey-Fuller (ADF) test

Dickey and Fuller (1979) developed a procedure to test the existence of unit root in a variable or, equivalently, that the variable exhibits a random walk. The ADF test introduced by Dickey and Fuller (1981) is similar as the original Dickey-Fuller test. The only difference is that it is expended by including m lags of the dependent variable to solve the serial correlation in the disturbance term if there is any. Under ADF test, t-test statistic is computed and compare with critical-t values. If the t-test statistic is greater than the absolute critical-t value at level of significance that we chose, we reject H_0: $\sigma = 0$ and conclude that the series is stationary.

3.6.1.2 Im-Pesaran-Shin (IPS) Test

In IPS test (Im, Pesaran & Shin, 2002), instead of pooling the data, separate unit root tests for the N cross-section units were used. It combines the unit root hypothesis from the N unit root tests performed on the N cross-section units. Moreover, it assumes that the time-series dimension T is same for all variables. Therefore, balanced panel data should be used.

3.6.2 Pooled Ordinary Least Square (POLS) Regression

Based on Hill, Griffiths and Lim (2011), the definition of pooled model is when different individuals of data are pooled together without provision for individual differences which may probably lead to different coefficients. In Pooled OLS Model, the coefficients are assumed to be constant in all time period so that the heterogeneity problem could be avoided. This is because the result will become inconsistent, inefficient and biased if heterogeneity problems occur in the observations across the time period. It is vital to use the standard ordinary least square to estimate the pooled data as OLS assume homoscedasticity with no correlation between the individual effects across the time period.

3.6.3 Fixed Effect Model (FEM)

For all time-constant differences between the individuals, these are limited by the fixed-effects model. Thus, the fixed-effects model's estimated coefficients would not be biased due to the omitting time-invariant features (Nwakuya & Ijomah, 2017). Stock and Watson (2003) provide a perception, if the unobtrusive variables was same over time, dependent variable that having any changes must be due to affects other than the fixed features. Nwakuya and Ijomah (2017) say that one of the worries that has been raised about the fixed effect model is that it eliminates a lot of degree of freedom, so it would results in an unsteady estimates.

Moreover, side effect of the characteristics of this model is that it could not be worked to investigate time-invariant that caused by the dependent variable of a model. A significant presumption of the fixed effect is that those time-invariant features is distinctive to the individuals. Each entity or individual is not same, so the individual's error term and the constant which bring individual features could not be correlated with each other, or else fixed effect is not acceptable.

3.6.3.1 The Fixed Effect Least-Square Dummy Variable Model (LSDV)

Given Equation:

$$y_{it} = \alpha + \beta_1 \beta x_{1it} + \cdots + \beta_4 \beta x_{4it} + u_{it} \sim \text{IID } (0,\sigma_u^2) \quad (1.01)$$

Let presume that, *i* is country and *t* is observations. Fixed effects may vary in terms of the assumptions, intercepts and coefficient of the slope. Dummy variable launching is the simplest way of segregating every independent or time particular effect in a regression model. The dummy variable, D_{mi} would pick up individual effect where *m = n-1*. The intercepts are different for different countries, αi in a fixed effect model with dummy variables, but each individual intercept remain constant across time.

$$y_{it} = \alpha + \beta_1 \beta x_{1it} + \cdots + \beta_4 \beta x_{4it} + u_{it} \quad (1.02)$$

For example, we presume that there are six countries, N = 6 we have;

$$y_{it} = \alpha_0 + \alpha_1 D_{1i} + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \alpha_4 D_{4i} + \alpha_5 D_{5i} + \beta_1 \beta x_{1it} \ldots + \beta_4 \beta x_{4it} + u_{it} \quad (1.03)$$

Where the dummy variables are defined thus;

$D_{1i} = \{ {}^{1}0 \; {}^{i=1}\text{otherwise}$

$D_{2i} = \{ {}^{1}0 \; {}^{i=2}\text{otherwise}$

$D_{3i} = \{ {}^{1}0 \; {}^{i=3}\text{otherwise}$

$D_{4i} = \{ {}^{1}0 \; {}^{i=4}\text{otherwise}$

$D_{5i} = \{ {}^{1}0 \; {}^{i=5}\text{otherwise}$

Where intercepts are not same for vary time periods,α_t in a fixed effect model with dummy variables. Then, if the number of countries T = 20, the equation would be;

$$y_{it} = \alpha_0 + \alpha_1 D_{1t} + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \cdots + \alpha_{20} D_{20t} + \beta_1 \beta x_{1it} \ldots + \beta_4 \beta x_{4it} + u_{it} \quad (1.04)$$

The amount of interaction terms is number dummy variables and explanatory variables' number. Both intercept and slope would become different over individual and time in fixed effect model with dummy variables, many variables is needed for this.

3.6.3.2 Likelihood Ratio (LR) Test

Table 3.2: Various constellations in panel models and degrees of freedom.

Effects	Coefficients, β		
	Name	β	β_i
α	OLS	NT − K − 1	N(T − K) − 1
α_i	One-way	N(T − 1) − K	N(T − K − 1)
α_{it}	Two-way	N(T − 1) − T + 1 − K	N(T − K − 1) − T + 1

Table 3.2 is the summary of the diverse poolability hypotheses. Poolability tests permit testing all of them in the table. The identification, βit is abnormal when it depletes the existing degrees of freedom. The major interest is the test of the Pooled Ordinary Least Square model compare to the one-way model, and also compare to the two-way model or the test one-way versus two-way. These tests with alternatives in the, β_i are try for misspecification rather than tools for a specification search. We can also observe whether the components of β are constant, while others might depend on *i*.

For more information, Zellner (1962) shows that the likelihood ratio test for null hypothesis of poolability can be established on the *F* statistic. The likelihood ratio can be expressed as

$$\text{LR} = -2\log(1 + \frac{qF}{df_u})^{-\frac{NT}{2}} => \text{LR} = qF + O(n^{-1})$$

Under H_0 , LR is asymptotically distributed as a Chi-Square with q degrees of freedom.

3.6.3.3 Fixed Effects Within-Group Model

The proficiency of involving a dummy variable for each variable is practicable as the amount of individual, n is small. However there would be very numerous dummy variables if the amount of individual is substantial this would not run. To predict fixed effect with huge sample size, for the regression model below;

$$y_{it} = \alpha_i + \beta x_{it} + u_{it} \quad (1.05)$$

Then, balancing it over time gives;

$$\bar{y}_x = \alpha_i + \beta \ddot{x}_i + \bar{u}_i \quad (1.06)$$

Where $\bar{y}_x = T^{-1} \Sigma_i y_{it}$ and $\ddot{x}_i = T^{-1} \Sigma_i \ddot{x}_{it}$
Hence deducting equation (1.08) from (1.07) gives;

$$y_{it} - \bar{y}_x = \beta(x_{it} - \ddot{x}_i) + (u_{it} - \bar{u}_i) \quad (1.07)$$

This gives rise to the modified model

$$\ddot{y}_{it} = \ddot{u}_{it} + \beta \ddot{x}_{it} \quad (1.08)$$

Where; $\ddot{y}_{it} = y_{it} - \bar{y}_x$, $\ddot{u}_{it} = u_{it} - \bar{u}_i$. and $\ddot{x}_{it} = x_{it} - \ddot{x}_i$
After that, fixed effect within group estimator for β is;

$$(\Sigma_t^T \Sigma_i^N \ddot{x}_{it} (\ddot{x}_{it}))^{-1} \Sigma_t^T \Sigma_i^N (\ddot{x}_{it}) (\ddot{y}_{it}) \quad (1.09)$$

Visibly, equation (1.07) which subtracting the means cramped all of the activity in the regression within-group. Therefore, eliminating the main source of excluded variable prejudice that is the unobservable across-group differences.

3.6.4 Random Effect Model (REM)

In the Random Effect part, Nwakuya and Ijomah (2017) expressed that the individual-specific effect or dissimilarity across those individuals is the logic behind random effects model. In random effect, an individual's error term would not correlated with the predictors which authorize for time invariant variables to act a character as explanatory variables. By identifying the intercept parameters, α_i (in Equation 1.07) to group of a constant part that represents the mean of population ($\bar{\alpha}$) and a random individual distinction from the average of population, e_{it}. Then it is separated to $\alpha_i = \bar{a} + e_{it}$. The random individual differences, e_{it} named the random effects which are similar to the terms of random error. It is presumed that there are zero mean which are uncorrelated across entities. Moreover, they also are presumed to have sustained variance, σ_e^2, so that $E(e_i) = 0$, $cov(e_i\ e_j) = 0$ and $var(e_i) = \sigma_e^2$. If this is replaced in equation 1.07 above, then it would become;

$$y_{it} = \bar{\alpha} + e_{it} + \beta x_{it} + u_{it} \quad (1.10)$$

Restructuring to;

$$y_{it} = \bar{\alpha} + \beta x_{it} + v_{it} \quad (1.11)$$

Where v_{it} is the merged error term (e_{it}+u_{it}). Due to this merged error term, this model is usually named as error component model. The random effects permit the conception of the inferences beyond the trial used in the model. Furthermore, the random effects model is an incomplete pooling approach with the consequence of X_{1ij} and X_{2ij} being a weighted mean of the within and between-cluster variation. The more generalized random coefficient model and the random effects approach, which are broadly operated in analyses of panel data with huge *n* relative to *t*.

A major protest submit against the random effects model connect to the limiting presumption that independent variables of first level be uncorrelated with the term of random effects which is Cov(X_{ij}, u_{0j}) = 0. Since a variable of first level differs both within and between clusters, numerous declare that it an impractical presumption to fulfil, since undiscovered heterogeneity would nearly generally be correlated with the independent variables.

3.6.4.1 Hausman Test

Based on the research of Bell and Jones (2015), conducting the Hausman's test, it contrasts the Random Effects Model to the fixed effects models. Hausman specification test is suggested that could be used to the issue of perceiving endogenous regressors and also in order to test for the existence of the form of unfairness in the normal Random Effect Model as described in equation $Y_{ij} = \beta_0 + \beta_1 X_{1ij} + \beta_2 z_j + (U_j + e_{ij})$ (Hausman, 1978). Based on the research of Greene (2012) and Wooldridge (2002), this takes the comparison form between the Random Effect Model and the Fixed

Effect parameter estimates. This is completed via the difference between the vector of coefficient estimates in Wald test of Fixed Effect and Random Effect.

In addition, Greene (2012) declares that this test is commonly placed when a test for whether random effect could be utilized, or fixed effect estimation should be operated instead. A negative result in Hausman test indicated that the effect between the endogenous regressor is not importantly biasing within the effect in the equation $Y_{ij} = \beta_0 + \beta_1 X_{1ij} + \beta_2 z_j + (U_j + e_{ij})$. Fielding (2004) states that it is merely a diagnostic of one specific presumption behind the estimation system always associated with the Random Effects Model. Random Effect Model was proposed to explain the issue of heterogeneity biasness. With that, Hausman test is introduced to examine the issue of Fixed Effect Model against Random Effect Model.

3.7 Hypothesis Testing

3.7.1 Normality Test

Normality of error term is applying a set of data to measure how likely the data is normally distributed. Based on Gel and Gastwirth (2008), normality of error term can be tested by by Jarque-Bera test. Jarque-Bera test is proposed by Jarque and Bera (1987). Jarque-Bera test is one of the consistent assumptions for many statistical tests including t-test or F test. It is more preferable in testing the goodness-of-fit. The hypothesis has been set as:

H_0: The error term is normally distributed
H_1: The error term is not normally distributed

Decision Rule:

Reject H_0 if the probability value of Jarque-Bera test statistic is less than significance level. Otherwise, do not reject H_0.

Jarque-Bera (JB) formula:

$$JB = \frac{n-k}{6}[S^2 + \frac{1}{4}(K-3)^2]$$

Where,

n=Number of observation

k=Number of regressors

S=Sample of Skewness

K=Sample of Kurtosis

3.7.2. T-test

T-test is one of the inferential statistics tests. It tells the results of comparison between the means of two groups, whether they are statistically different from each other. The sample populations are assumed to have equivalent variances and have normal distribution. To distinguish whether the coefficient is "significantly different from zero" under two-tailed test, there are two mutually complementary approaches to determine whether to reject or not to reject the null hypothesis: confidence interval and test-of-significance (Gujarati & Porter, 2008). Confidence interval could be constructed based on the equation as below:

$$\hat{\beta}_i \pm t_{\alpha/2}\ se\ (\hat{\beta}_i) \qquad (6)$$

Where $\hat{\beta}_i$ = Estimator of independent variable

$t_{\alpha/2}$ = Critical t value at α/2 level of significance

se $(\hat{\beta}_i)$ = Estimated standard error of estimator

If the coefficient of an independent variable falls within the confidence interval, we will not reject the null hypothesis. We reject it only when the coefficient falls outside the interval. The coefficient of variable is said to be statistically significant if the null hypothesis is rejected, or else, it is not statistically significant.

Another alternative but complementary approach is the test-of-significance approach. It is a procedure by using sample results to verify the truth or falsity of the null hypothesis. Under this approach, t value is computed as below:

$$t = \frac{\widehat{\beta}i - \beta i}{se\ (\widehat{\beta}i)}$$

Where t = t value

$\hat{\beta}_i$ = Estimator of independent variable

β_i = Parameter

se ($\hat{\beta}_i$) = Estimated standard error of estimator

If the t value lies within the critical values, we will not reject the null hypothesis. We reject it only when it falls outside the critical values. On the other hand, by using p-value, we reject the null hypothesis when the p-value is smaller than the significant level (Gujarati & Porter, 2008).

With hypotheses stated below, t-test indicates the significant impact of each independent variable on the dependent variable.

H_0: $\beta = 0$ (The independent variable is significant to the dependent variable)

H_1: $\beta \neq 0$ (The independent variable is insignificant to the dependent variable)

3.7.3 F-test

The previous T-test tests the significance of the estimated partial regression coefficients individually. F-test can be used to measure the overall significance of a model, in other word, whether Y is linearly related to all the independent variables (Gujarati & Porter, 2008). It helps the researchers to determine whether a model included with independent variables provide a better fit to the data than a model without it. The F value can be computed as below:

$$F = \frac{R^2/2}{(1-R^2)/(n-k)}$$

Where F = F value

R^2 = Multiple coefficient of determination

n = Number of observation

k = Number of parameters

If the F value computed is greater than the critical value at a given significant level, we reject the null hypothesis and conclude that the overall model is statistically significant, or else we do not reject it. On the other hand, if the p-value of the observed F is smaller than the significant level, we will reject the null hypothesis (Gujarati & Porter, 2008).

The hypotheses of f-test are stated below:

H_0: $\beta_1 = \beta_2 = \beta_3 = \ldots = \beta_k = 0$ (The overall model is statistically insignificant)

H_1: At least one $\beta_i \neq 0$, where i = 1, 2, 3 … k (The overall model is statistically significant)

3.8 Descriptive Analysis

Descriptive analysis is the adoption of numerical and graphical methods to summarise, organise and analyse the raw data (Fisher & Marshall, 2009). This

research will use the simple statistical analysis to describe the variation of data and the central tendencies, by using the common interpreting tools, for example mean, median, mode and standard deviation (Loeb, Dynarskl, McFarland, Morrls, Reardon & Reber, 2017). A good descriptive analysis will able us to deliver a clear and good order descriptive information to the reader (Zikmund, 2003).

3.9 Conclusion

In summary, under this chapter, we have clarified this research design based upon the purpose of this research. Secondary data was used for this research. Apart from corruption and trade openness, we added two more independent variables to the extended model of this research, which is Foreign Direct Investment (FDI) and market capitalization. Although we are using panel data, we decided to do unit root test in order to test for stationary as the data we used has large time-series dimension T. We have introduced the panel unit root test in this chapter. Also, introductions of the panel data regression models are included in this chapter such as Pooled OLS model, Fixed Effect Model (FEM) and Random Effect Model (REM). A few tests will be carried out to determine which model is preferable for this research in next chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Throughout this research, we will be analysing, interpreting and reporting the result from previous methodology. The descriptive analysis of data from dependent variables and independent variables will be presented. We will explain and interpret Panel Unit Root test. Next, Pooled Ordinary Least Square (POLS) Model will be discussed and interpreted. Likelihood Ratio (LR) Test and Hausman Test will be included in Panel Model Comparison. Additionally, we will present the empirical result of final model through the interpretation of coefficient and the hypothesis testing on parameters which involved T-test and F-test. Lastly, the conclusion of this chapter will be stated.

4.1 Descriptive Analysis of data

Table 4.1: Descriptive Statistics

	GDP	CPI	TRADE	FDI	MKTCAP
Mean	57,000,000,000	45.75300	162.2404	5.431279	97.25075
Median	197,000,000,000	36.00000	126.9178	2.824515	79.38342
Maximum	932,000,000,000	94.00000	441.6038	26.52121	299.5737
Minimum	72,200,000,000	17.00000	37.38680	-2.589811	12.64619
Std. Dev	204,000,000,000	24.22773	114.8437	7.011074	70.60765
Skewness	1.984575	1.034364	1.051961	1.742537	0.956277
Kurtosis	6.700383	2.659236	2.807521	4.748960	3.130811
Observation	100	100	100	100	100

In this research, 100 observation with the time-series data will be collected from World Bank Data and Transparency National, for 5 Southeast Asia countries, Malaysia, Singapore, Indonesia, Philippines, and Thailand, from year 1997 to 2016.

Referring to table 4.1, the results shows that the average Gross Domestic Product (GDP) of the countries is US$ 257,000,000,000. The median of the GDP among the 5 countries is US$ 197,000,000,000. The result from the research had generate a high standard deviation of US$ 204,000,000,000 for the GDP of the countries. To support or explain further the large standard deviation, it might be due to the large data value collected for this research, but this will not be an issue towards this research. Next up is the skewness, which is 1.984575, the figure is more than zero, and therefore the GDP is skewed to the left. By looking at the Kurtosis figure of GDP, 6.700383, it shows that the GDP is very volatile as the positive figure is more than 3.

Second, the average reading of Corruption Price Index (CPI) is 45.75. The median of CPI is 36 and a standard deviation of 24.22773. CPI has a positive skewness value, 1.034364, which is more than zero and indicates that it is left-skewed. The corruption perceptions index is said to be less volatile in this research as the value showed is less than 3, which is 2.659236.

Followed by the recorded value for average and median of trade openness (TRADE) are 162.2404% and 126.9178% respectively. The standard deviation of TRADE is recorded at 114.8437% during the year from 1997 to 2016. In addition, TRADE is left-skewed since the skewness is more than zero, which is 1.051961. Data collected for trade openness is said to be less volatile as the Kurtosis value is 2.807521, which is less than 3.

Furthermore, the average of the Foreign Direct Investment (FDI) of the countries is 5.431279. The median of FDI is 2.824515, and has a standard deviation of 7.011074. Moreover, FDI has a positive value of skewness and is skewed to the left since the value of the skewness is more than zero, which is 1.742537. The volatility of FDI data collected is consider high as it is more than value of 3, which is 4.748960.

Lastly, Market Capitalization (MKTCAP) of listed domestic companies showed an average value of 97.25075 in this research. Median of MKTCAP is 79.38342 and a standard deviation of 70.60765. Again, the skewness value of MKTCAP is more than zero, which is 0.956277, therefore it is left-skewed. The data collected for market capitalization is said to be volatile as the Kurtosis is slightly more than 3, which is 3.130811.

4.2 Normality Test

H_0: The error term is normally distributed.

H_1: The error term is not normally distributed.

From the statements above, the null hypothesis states that the error term is normally distributed whereas the alternative hypothesis states that the error term is not normally distributed. According to the hypothesis testing, we have set our significance level which is the "α" at 1%, 5% and 10%. To decide whether the error term is normally distributed, we have to follow the decision rule whereby in order to reject the null hypothesis, the p-value have to be lesser than the significant level at 1%, 5% and 10%, otherwise do not reject the null hypothesis. After running the Jarque-Bera test, we observe the p-value at 0.45 which is more than our quoted significance levels.

Conclusion:

We do not the null hypothesis since the p-value is more than all three 1%, 5% and 10% significant level. As null hypothesis is not being rejected, we can conclude that the error term is normally distributed.

4.3 Panel Unit Root Test

Table 4.2: Unit Root test results

Test Statistic (p-value)		
	Augmented Dickey Fuller (ADF)	**Im–Pesaran–Shin (IPS)**
	Level	
Variables		
GDP	1.5180 (0.9989)	2.56817 (0.9949)
CPI	8.3284 (0.5968)	0.7413 (0.7707)
TRADE	9.1039 (0.5223)	0.2551 (0.6007)
FDI	26.3240 (0.0033)***	-2.8735 (0.0020)***
MKTCAP	26.1908 (0.0035)***	-2.3010 (0.0107)**
	First Difference	
Variables		
GDP	17.3617 (0.0667)*	-1.8182 (0.0345)**
CPI	33.3998 (0.0002)***	-3.8371 (0.0001)***
TRADE	36.9137 (0.0001)***	-4.2849 (0.0000)***
FDI	66.4259 (0.0000)***	-7.6472 (0.0000)***
MKTCAP	74.5043 (0.0000)***	-8.6554 (0.0000)***

(Note: ***, ** and * denotes significant at 1%, 5% and 10% significance level respectively. The figure in the parenthesis (…) denote as p-value)

Hypothesis

H_0: There is a unit root (Non-stationary)

H_1: There is no unit root (Stationary)

Decision Rule

Reject H_0 if p-value is less than the significant level. Otherwise, do not reject H_0.

Panel unit root test is conducted to examine the stationarity of variables. Based on the table which shown above, the results regarding to Augmented Dickey Fuller (ADF) and Im–Pesaran–Shin (IPS) unit root tests are unable to reject null hypothesis (H_0) of variables including Gross Domestic Product (GDP), Corruption (CPI) and Trade Openness (TRADE) at level form. This is because the p-value of these three variables are more than 1%, 5% or 10% level of significance. This situation shows that variable GDP, CPI and TRADE are not stationary and they contain unit root. However, on the other hand, variable FDI and MKTCAP are able to reject H_0 since their p-value are less than 5% or 10% at the significant level. Therefore, variable FDI and MKTCAP are stationary and do not contain any unit root at level form.

Nevertheless, when proceed to first difference form to conduct ADF and IPS test, all the variables are able to reject H_0 of unit root test at first difference. This is because the p-value of all variables are less than 10% of significant level. Hence, it illustrates that all variables are stationary and do not contain any unit root at first difference. This result shows that the entire estimation model are not spurious.

4.4 Pooled Ordinary Least Square (POLS)

4.4.1 Interpretation of Coefficient

Log (GDP) = 25.9561 + 0.03299CPI – 0.01235TRADE + 0.02833FDI + 0.004320MKTCAP (Eq 1)

$\widehat{\beta_0}$ = 25.9561

When Corruption Perception Index (CPI), trade openness (TRADE), Foreign Direct Investment (FDI) and market capitalization (MKTCAP) are equal to zero or constant in another words, the Gross Domestic Product (GDP) will be equal to 25.9561.

$\widehat{\beta_1}$ = 0.03299

For every one score increase in the CPI, on average, the GDP will increase by 3.299%, ceteris paribus.

$\widehat{\beta_2}$ = -0.012353

For every one percentage point increase in TRADE, on average, the GDP will decrease by 1.2353%, ceteris paribus.

$\widehat{\beta_3}$ = 0.028332

For every one percentage point increase in FDI, the GDP will increase by 2.8332%, ceteris paribus.

$\widehat{\beta_4}$ = 0.004320

For every one percentage point increase in MKTCAP, the GDP will increase by 0.4320%, ceteris paribus.

4.5 Panel Model Comparison

4.5.1 Likelihood Ratio (LR) Test

H_0: Pooled Ordinary Least Square (POLS) is preferable

H_1: Fixed Effect Model (FEM) is preferable

From the statements above, the null hypothesis recommends Pooled Ordinary Least Square (POLS) is preferable whereas the alternative hypothesis states that Fixed Effect Model (FEM) is preferable. According to the hypothesis testing, we have set the significance level which is the "α" at 1%, 5% and 10%. To decide which model is best suited, we have to follow the decision rule whereby in order to reject the null hypothesis, the p-value have to be lesser than the significant level at 1%, 5% and 10%, otherwise do not reject the null hypothesis. After running the Likelihood Ratio test, we observe the p-value at 0.000 which is lesser than the quoted significance levels.

Conclusion:

We reject the null hypothesis since the p-value is lesser than all three 1%, 5% and 10% significant level. As null hypothesis is being rejected, we can conclude that the Fixed Effect Model (FEM) is more preferable.

4.5.2 Hausman Test

H_0: Random Effect Model (REM) is preferable

H_1: Fixed Effect Model (FEM) is preferable

From the hypothesis statements above, we can see that the null hypothesis suggests that Random Effect Model (REM) is preferable while H_1 states that Fixed Effect Model (FEM). According to the hypothesis

testing, we set the significance level which is the "α" at 1%, 5% and 10%. To decide which model is best suited, we have to follow the decision rule whereby in order to reject the null hypothesis, the p-value have to be lesser than the significant level at 1%, 5% and 10%, otherwise do not reject the null hypothesis. After running the Hausman test, we observe the p-value at 0.000 which is lesser than the quoted significance levels.

Conclusion:
We reject the null hypothesis since the p-value is lesser than all three 1%, 5% and 10% significant level. As null hypothesis is being rejected, we can conclude that the Fixed Effect Model (FEM) is more preferable.

4.5.3 Results on Model Comparison

In this research, we used two testing which is the Hausman and Likelihood test to determine which of the three models is the most suitable model in this research is. Among the two models, they are the Pooled Ordinary Least Square (POLS) model, Random Effect Model (REM) and Fixed Effect Model (FEM). Likelihood Ratio test is carried out to choose in between POLS and FEM. Based on the result we have computed, the null hypothesis which is POLS is preferable is being rejected as the p-value(0.0000) is not more than the significant levels at 1%,5% and 10% respectively. On the other hand, Hausman test is used to determine whether REM or FEM is preferable. From the result, we can see that FEM is preferable because the null hypothesis is rejected as the p-value (0.0000) is smaller than the significant levels at 1%, 5% and 10% respectively.

Conclusion:
Fixed Effect Model (FEM) is the preferable and suitable model for this research. We will adopt it as the final model.

4.6 Empirical Result of Final Model (Fixed Effect Model)

4.6.1 Interpretation of Coefficient

Log (GDP) = 25.10886 + 0.039782CPI – 0.010484TRADE – 0.016257FDI + 0.009210MKTCAP (Eq 2)

$\widehat{\beta_0}$ = 25.10886

When corruption perception index (CPI), trade openness (TRADE), Foreign Direct Investment (FDI) and market capitalization (MKTCAP) are equal to zero or constant in another words, the Gross Domestic Product (GDP) will be equal to 25.10886.

$\widehat{\beta_1}$ = 0.039782

For every one score increase in the CPI, on average, the GDP will increase by 3.9782%, ceteris paribus.

$\widehat{\beta_2}$ = -0.010484

For every one percentage point increase in TRADE, on average, the GDP will decrease by 1.0484%, ceteris paribus.

$\widehat{\beta_3}$ = -0.01625

For every one percentage point increase in FDI, the GDP will decrease by 1.625%, ceteris paribus.

$\widehat{\beta_4}$ = 0.009210

For every one percentage point increase in MKTCAP, the GDP will increase by 0.9210%, ceteris paribus.

4.6.2 Hypothesis Testing

4.6.2.1 T-tests

Hypothesis

H_0: $\beta_i = 0$, where i = 1, 2, 3 or 4

H_1: $\beta_i \neq 0$, where i = 1, 2, 3 or 4

Decision Rule

Reject H_0 if p-value is less than significant level, $\alpha = 0.05$. Otherwise, do not reject H_0.

Table 4.3: Results of T-tests for Fixed Effect Model (FEM)

Parameters	**T-statistics**	**P-values**	**Decisions Making** *($\alpha = 0.05$)*
$\beta_1 = \beta_{CPI}$	4.1580	0.0001	Reject
$\beta_2 = \beta_{TRADE}$	-6.2294	0.0000	Reject
$\beta_3 = \beta_{FDI}$	-1.0096	0.3154	Do not reject
$\beta_4 = \beta_{MKTCAP}$	6.3766	0.0000	Reject

Based on E-views results, except for β_3, all the parameters have a p-value less than 5% level of significance. Thus, we reject the null hypothesis for β_1, β_2 and β_4 whereas the null hypothesis for β_3 is not rejected. In other words, there are sufficient evidences to conclude that β_1, β_2 and β_4 are significant meanwhile β_3 is insignificant to the dependent variable at 5% significant level.

4.6.2.2 F-test

Hypothesis

H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

H_1: At least one $\beta_i \neq 0$, where i = 1, 2, 3 or 4

Decision Rule

Reject H_0 if p-value is less than significant level, $\alpha = 0.05$. Otherwise, do not reject H_0.

Conclusion:

We reject the null hypothesis since the p-value of F-statistic (0.0000) is lesser than 5% significant level. There is sufficient evidence to conclude that the model is statistically significant.

4.7 Conclusion

Initially, the results of the descriptive statistics of all variables have been reviewed. The descriptive statistics include mean, median, standard deviation, Skewness and Kurtosis. In order to figure out whether the variables are stationary, we employed Panel Unit Root Test in this research. Augmented Dickey Fuller (ADF) and Im–Pesaran–Shin (IPS) unit root test were conducted in this research.

In Pooled Ordinary Least Square (POLS) estimation, each coefficient of the variables has been interpreted clearly. To determine whether Pooled Ordinary Least Square (POLS), Fixed Effect Model (FEM) or Random Effect Model (REM) is more suitable, we had applied Likelihood Ratio Test and Hausman Test for the panel model comparison.

Then, we explained the empirical result of the final model which is the fixed effect model. T-tests and F-test were being conducted to further study the

significance of each independent variable towards dependent variable and also the significance of overall model.

In a nutshell, we analysed, interpreted and reported all of the empirical results and findings in figure, diagram and in the form of table throughout this chapter. The summary of statistical analysis, implications, findings, limitations and future recommendation of this research will be further discussed in the next chapter.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

The main discussions in this chapter includes the summary of statistical analyses from previous chapter and also discussions of major findings throughout this whole research. Moreover, implications for policy makers will also be included in this chapter. Furthermore, we will discuss the limitations that we faced during the progress of the research. Lastly, recommendations for future research will be provided at the end of the chapter.

5.1 Summary of Statistical Analyses

The main objective of this research is to figure out whether Corruption (CPI) will affect a country's Economic Growth (GDP). Besides Corruption (CPI), Trade Openness (TRADE), Foreign Direct Investment (FDI) and Market Capitalization (MKTCAP) are also included in this research to investigate their relationships with economic growth.

Before testing for the relationships between the dependent and independent variables, unit root test was conducted in order to test the stationarity of the variables.

Table 5.1: Summary of Panel Unit Root Test

		Stationary Test	
		ADF	**IPS**
GDP	Level	×	×
	First Difference	✓	✓
CPI	Level	×	×
	First Difference	✓	✓
TRADE	Level	×	×
	First Difference	✓	✓
FDI	Level	✓	✓
	First Difference	✓	✓
MKTCAP	Level	✓	✓
	First Difference	✓	✓

According to the results of panel unit root test from Chapter 4, at 10% level of significance, GDP, CPI and TRADE are not stationary at level form. However, they were managed to transform into stationary at first difference form. On the other hand, FDI and MKTCAP are stationary at both level and first difference forms. In short, all the variables are stationary at first difference as they do not contain any unit root according to the tests. We can conclude that the statistical properties of the data remain constant over time. They should not be influenced by changes in time origin.

Since we are using panel data, Likelihood test and Hausman test were conducted in order for us to choose the best model among the three panel data model: Pooled Ordinary Least Square Model (POLS), Fixed Effect Model (FEM) and Random Effect Model (REM).

Table 5.2: Summary of panel model selection tests

Tests	**Results**
Likelihood Ratio Test	Fixed Effect Model is preferable
Hausman Test	Fixed Effect Model is preferable

Summarily, Fixed Effect Model (FEM) is preferable and was being adopted to examine the relationships of the dependent and independent variables in this research.

Table 5.3: Summary of statistical analysis in Fixed Effect Model

Independent Variables	**Relationship with Economic Growth (GDP)**	**Results**
Corruption Perceptions Index (Corruption)	Positive (Negative)	Significant
Trade Openness	Negative	Significant
Foreign Direct Investment	Negative	Insignificant
Market Capitalization	Positive	Significant

As shown in table 5.3, both Corruption Perception Index and market capitalization have positive relationships with economic growth whereas trade openness and Foreign Direct Investment (FDI) have negative relationships with economic growth. A positive relationship of CPI with economic growth indicates that corruption is negatively affecting the economic growth as the higher the CPI the lower the level of corruption. According to the T-tests conducted previously, CPI, trade openness and market capitalization are significant to economic growth at 5% significant level. On the other hand, FDI is insignificant to economic growth at 5% significance level. Overall, the model is still statistically significant according to the result of F-test. It means that the model provides a better fit to the data compared to a model that contains no independent variables.

5.2 Discussion of Major Findings

Table 5.4: Results and theoretical summary

Dependent Variable	Independent Variables	Significance Level	Results	Consistency
Economic Growth	CPI (Corruption)	5%	Positive (Negatively)	Paul (2010), Ugur and Dasgupta (2011)
			Significant	Matthew and Idowu, (2013)
Economic Growth	TRADE	5%	Negative	Lawal, Nwanji, Asaleye and Ahmed (2016)
			Significant	Kim and Lin (2009)
Economic Growth	FDI	5%	Negative	Dutt (1997)
			Insignificant	Borenstein (1998)
Economic Growth	MKTCAP	5%	Positive	Ali, Francisco and Gilberto (2017)
			Significant	Jalloh (2015)

Table 5.4 summarize the results from Chapter 4. From the table, it shows the Foreign Direct Investment (FDI) is insignificant towards Economic Growth (GDP). Whereas for Corruption (CPI), Trade Openness (TRADE) and Market Capitalization (MKTCAP) on the Gross Domestic Product of a country are significant.

5.2.1 Corruption (CPI)

Referring to the result obtained from Chapter 4, CPI is significantly positive towards economic growth. The corruption in this research is measured by the Corruption Perception Index (CPI), where a high index indicates a low corruption level in the country. Therefore, logically said, corruption is negatively related to economic growth of the country. The

relationship can be supported with the study done by Tanzi and Davoodi (1997), Paul (2010), Ugur and Dasgupta (2011). They concluded that economic growth may be restrained by corruption, by slowing down the infrastructure competence and lower down government's revenue.

Corruption is negatively related to the economic growth of a country, where it may raise the poverty level and unemployment rate in a country (Matthew & Idowu, 2013). Moreover, most researchers argued that corruption is significantly negative to economic growth. In short, the result clarifies the significant negative effect on economic growth, which means when the corruption perception index is high, it indicates that the corrupted level in the country is low, therefore it promotes the growth of a country's economy.

5.2.2 Trade Openness (TRADE)

From the research results, it shows that trade openness is significantly negative on a country's economic growth. The role of international trade in fostering the country's economic growth has been argued and still going on since decades ago (Sun & Heshmati, 2010).

The result is consistent with the support of research done by Lawal, Nwanji, Asaleye and Ahmed (2016), where they adopted Autoregressive Distributed Lag (ARDL) methodology to Nigeria and concluded that the openness to trade has a negative long-run effect to the economic growth. Therefore, the result is consistent with the support of past studies that the trade is negatively affecting the economic growth of a country.

5.2.3 Foreign Direct Investment (FDI)

FDI shows a negative relationship but insignificant result on economic growth. The negative relation towards economic growth can be supported by the past study done by Dutt (1997) and Brecher and Diaz-Alenjandro (1977). Moreover, Fry (1999) clarified that FDI is negatively affecting the economic growth due to the trade deficit problem arise from the increment of host country's import. The increment of import activity is due to the lack of highly developed capital machinery and intermediate goods in the host country.

Besides, a study by Borenstein (1998) also stated that FDI is insignificant towards a country's economic growth. With these supporting past studies, we can conclude that FDI has an insignificant negative effect on economic growth.

5.2.4 Market Capitalization (MKTCAP)

Significant positive relation between market capitalization and economic growth can be observed from our research result. Another cross-sectional research by Jalloh (2015) done for 15 African countries with well-performing stock markets during 2001 to 2012 concluded that the coefficient of stock market capitalization and economic growth is positive and statistically significant.

Besides, Levine and Zervos (1998) and Ali, Francisco and Gilberto (2017) also concluded that market capitalization has a positive influence on the economic growth of a country. The study was about the significant positive relation of a stock market liquidity and credits of bank towards the economic growth.

5.3 Implication of Study

Throughout this research, the relationship between GDP and the independent variables which include corruption, Foreign Direct Investment (FDI), trade openness and market capitalization were tightly inspected. Based on the result from this research, as the main independent variable in this research, the negative effects of corruption on the economic growth in these five Southeast Asia Countries should be held in great honor. In order to reduce the negative impact brought by corruption, there are few possible suggestions for policy maker for their decision making.

Anti-corruption policy initiatives should firstly discuss about corruption that distorts the incentives and the resources allocation which would be used for public investment, expenditures and so on, where detecting bad and important indirect consequences. Anti-corruption interventions that targeted at these channels should promote to people who is able to influence in order to contribute better incentives in the human capital which is for individual investment, transparency or responsibilities in public procurement and entertainment-associated incentives for public workers.

All the components of the different ways in which public resources are managed by governments. For instance, subsidies, such as public procurement of goods and services, tax exemptions, extra-budgetary funds under the control of politicians as well. Moreover, governments collect taxes from many aspects, raise fund from the capital market, accepting foreign support for expanding mechanisms to assign the resources to satisfy more needs of live. Therefore, from the conditions which are shown below, government should implement the way which are proportionately transparent and take action to ensure that resources would be fully utilized in the public benefits. The more transparent the process, the lesser the chance would cause misbehavior and misuse.

Collier (2007) provides convincing proof on the negative effect of unproductive systems in budget management. Residents of a country are able to

examine carefully every government's activities and a difference can be made by debating the worthiness of various public policies. In this aspect, news freedoms and literacy level could build in significant ways the circumstances for reformation.

Actually, there are still a lot of ways for government to reduce the corruption level, such as deploying modern and smart technology to create transparent public procurement systems, substituting regressive and twisting subsidies with aimed cash transfers, establishing international conventions and others methods. Hence, government play a very important role in a country to reduce the corruption and build a better society.

There are many factors that would influence a country's economic growth even to the world economy, the independent variables that we are using in this research is only some of them. Government of a country play a very significant role which need to judge and determine what issue would affect country's economy. As a policy maker of country, government requires making appropriate decision in changing and implementing policies to face the problems and reduce the negative effects. Therefore, every decision in policy which made by government would affect a country's economy condition, even indirectly affect the commercial relation with foreign country such as the export and import, foreign direct investment and so on. If the impact of the policy is significant, it would affect more country or even the global economic growth.

It is thus clear that policy is very important which would bring different level effect to a country. In short, our research could help the government to determine, estimate and observe those factors more accurately which would affect economic growth, thereby making appropriate choices to stabilize and improve the economy condition in a country.

For future researchers, this research could assist those who would like to conduct the research about this topic and sector more deeply and provides useful information and a series of data to make the entire research more complete. The findings and results also could utilize as a guidance, direction and idea for future

research, so that the future researchers could understand and know more about this sector.

5.4 Limitations of the Research

In the course of carrying out this research, we have encountered certain number of problems and shortcomings which have caused this research progress to slow down.

One of the problems we faced during the first stage of the research was about gathering the independent variables. There are a lot of variables that can affect the Gross Domestic Product (GDP). However, we have insufficient journals to support the independent variables which we wished to include in this research. Moreover, we could not find the complete data for some of the independent variables as well. We had to change the independent variables due to insufficient data. To solve this problem, we sincerely urge the future researches to first study thoroughly about the topic they wish to further explore before designing their research model.

Next problem is the country constraint. This research contains only 5 countries from the Southeast Asia, whereby it includes only, Malaysia, Singapore, Indonesia, Thailand and Philippines. The result of this research may not seem to be sufficiently represent the whole Southeast Asia as there are another few more countries out there we did not bring in to the research.

Since the topic of this research is to determine whether corruption is the driver of economic growth in these five Southeast Asia countries that cover for 20 years period, we have decided to adopt panel data because there is a combination of time series and cross sectional data. As we proceed, we found out the methods we used to do the testing were totally wrong due to the limited knowledge on panel data approach. Upon reflecting on this report, we suggest the future researchers to better adopt time series analysis. This is because panel data combines both time series and cross sectional data together thus making the results certainly not that

accurate due to the economic background for each country is slightly different. We have to make sure they are fairly compared in accordance to their similarity of economic background and development. Referring to this problem, we therefore chose the countries from the same region as they have similar economic development.

5.5 Recommendations for Future Research

In order to improve and enhance the model further, future researchers are recommended to insert any other significant or new variables to replace irrelevant variables. A suggestion would be to include a variable which represents the expenditures on Research and Development (R&D) or level of education. According to Barro and Sala-i-Martin (1997), high level of human capital can increase the possibility of the taking advantage of new technologies. The author clarifies that a country which has high level of corruption and low level of education at the same time will cause it to face barrier in engaging new technologies. Thus, it hurts a country's economic growth and productivity.

Based on the research by Gyimah (2002), it manifests that income inequality also brings impact to economic growth. It will be an interesting extension if comprising the relationship between income inequality and economic growth.

Undoubtedly, corruption has essential effects on investors and corporations. Therefore, future researchers are suggested to study in areas of international portfolio analysis and corporate decision making as well (Pankaj, Emre & Michael, 2017). Future researchers are recommended to focus clearly on short-term and long-term effect of corruption and intervene remedies or solution to fight with this issue.

Besides, future researchers can expand the size of study by including more countries and longer time period. This is because sample size always be the big problem that most of the researchers facing in conducting the research. In addition,

increasing sample size can improve representativeness. Hence, larger sample size is suggested to be used for the future research.

Lastly, future researchers can carry out more advanced test statistics to accurately define the long run and short run relationship. Also, in order to capture the possibility of impact from independent variables on dependent variable, future researchers are suggested to use a more complicated econometric model.

5.6 Conclusion

In conclusion, does corruption really matters on economic growth? Using 5 Southeast Asia countries with research period from year 1997 to 2016 as evidence, as shown in the summary of statistical analyses and discussion above, corruption is significant and has a negative impact towards economic growth of a country.

Summary results and discussion on other independent variables have also included in this chapter. Besides, we have provided some implications related to this research for policy makers. Lastly, limitations of research and recommendations have also been highlighted in this chapter for the improvement in future researches.

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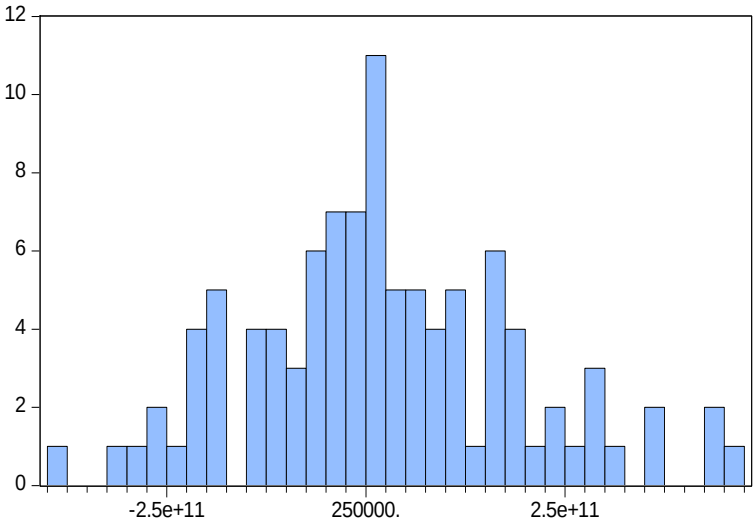
Appendix A

Normality Test: Jarque-Bera Test



Series: Standardized Residuals	
Sample 1997 2016	
Observations 100	
Mean	2.11e+10
Median	1.09e+10
Maximum	4.58e+11
Minimum	-3.91e+11
Std. Dev.	1.69e+11
Skewness	0.304600
Kurtosis	3.098582
Jarque-Bera	1.586845
Probability	0.452294

Appendix B

General Model (POLS)

Dependent Variable: LOG(GDP)
Method: Panel Least Squares
Date: 07/16/18 Time: 00:05
Sample: 1997 2016
Periods included: 20
Cross-sections included: 5
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	0.032993	0.008962	3.681392	0.0004
TRADE	-0.012353	0.001771	-6.977291	0.0000
FDI	0.028332	0.016388	1.728868	0.0871
MKTCAP	0.004320	0.001545	2.795917	0.0063
C	25.95615	0.164397	157.8867	0.0000

R-squared	0.392965	Mean dependent var	26.03548
Adjusted R-squared	0.367406	S.D. dependent var	0.667456
S.E. of regression	0.530867	Akaike info criterion	1.620095
Sum squared resid	26.77285	Schwarz criterion	1.750354
Log likelihood	-76.00477	Hannan-Quinn criter.	1.672813
F-statistic	15.37461	Durbin-Watson stat	0.465374
Prob(F-statistic)	0.000000		

Appendix C

FEM Model

Dependent Variable: LOG(GDP)
Method: Panel Least Squares
Date: 07/16/18 Time: 00:23
Sample: 1997 2016
Periods included: 20
Cross-sections included: 5
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	0.039782	0.009568	4.158005	0.0001
TRADE	-0.010484	0.001683	-6.229418	0.0000
FDI	-0.016257	0.016102	-1.009623	0.3154
MKTCAP	0.009210	0.001444	6.376625	0.0000
C	25.10886	0.495629	50.66060	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.688144	Mean dependent var	26.03548
Adjusted R-squared	0.660728	S.D. dependent var	0.667456
S.E. of regression	0.388774	Akaike info criterion	1.034051
Sum squared resid	13.75420	Schwarz criterion	1.268516
Log likelihood	-42.70255	Hannan-Quinn criter.	1.128943
F-statistic	25.10016	Durbin-Watson stat	1.132612
Prob(F-statistic)	0.000000		

Appendix D

REM Model

Dependent Variable: LOG(GDP)
Method: Panel EGLS (Cross-section random effects)
Date: 07/16/18 Time: 00:24
Sample: 1997 2016
Periods included: 20
Cross-sections included: 5
Total panel (balanced) observations: 100
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	0.032993	0.006563	5.026905	0.0000
TRADE	-0.012353	0.001297	-9.527422	0.0000
FDI	0.028332	0.012001	2.360752	0.0203
MKTCAP	0.004320	0.001132	3.817797	0.0002
C	25.95615	0.120394	215.5927	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	9.86E-07	0.0000
Idiosyncratic random	0.388774	1.0000

Weighted Statistics

R-squared	0.392965	Mean dependent var	26.03548
Adjusted R-squared	0.367406	S.D. dependent var	0.667456
S.E. of regression	0.530867	Sum squared resid	26.77285
F-statistic	15.37461	Durbin-Watson stat	0.465374
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.392965	Mean dependent var	26.03548
Sum squared resid	26.77285	Durbin-Watson stat	0.465374

Appendix E

Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	86.133519	4	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
CPI	0.039782	0.032993	0.000048	0.3295
TRADE	-0.010484	-0.012353	0.000001	0.0814
FDI	-0.016257	0.028332	0.000115	0.0000
MKTCAP	0.009210	0.004320	0.000001	0.0000

Cross-section random effects test equation:
Dependent Variable: LOG(GDP)
Method: Panel Least Squares
Date: 07/16/18 Time: 00:25
Sample: 1997 2016
Periods included: 20
Cross-sections included: 5
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.10886	0.495629	50.66060	0.0000
CPI	0.039782	0.009568	4.158005	0.0001
TRADE	-0.010484	0.001683	-6.229418	0.0000
FDI	-0.016257	0.016102	-1.009623	0.3154
MKTCAP	0.009210	0.001444	6.376625	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.688144	Mean dependent var	26.03548
Adjusted R-squared	0.660728	S.D. dependent var	0.667456
S.E. of regression	0.388774	Akaike info criterion	1.034051
Sum squared resid	13.75420	Schwarz criterion	1.268516
Log likelihood	-42.70255	Hannan-Quinn criter.	1.128943
F-statistic	25.10016	Durbin-Watson stat	1.132612
Prob(F-statistic)	0.000000		

Appendix F

Likelihood Ratio test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	21.533380	(4,91)	0.0000
Cross-section Chi-square	66.604429	4	0.0000

Cross-section fixed effects test equation:
Dependent Variable: LOG(GDP)
Method: Panel Least Squares
Date: 07/16/18 Time: 00:26
Sample: 1997 2016
Periods included: 20
Cross-sections included: 5
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	0.032993	0.008962	3.681392	0.0004
TRADE	-0.012353	0.001771	-6.977291	0.0000
FDI	0.028332	0.016388	1.728868	0.0871
MKTCAP	0.004320	0.001545	2.795917	0.0063
C	25.95615	0.164397	157.8867	0.0000

R-squared	0.392965	Mean dependent var	26.03548
Adjusted R-squared	0.367406	S.D. dependent var	0.667456
S.E. of regression	0.530867	Akaike info criterion	1.620095
Sum squared resid	26.77285	Schwarz criterion	1.750354
Log likelihood	-76.00477	Hannan-Quinn criter.	1.672813
F-statistic	15.37461	Durbin-Watson stat	0.465374
Prob(F-statistic)	0.000000		

Appendix G

GDP (Level)

Panel unit root test: Summary
Series: GDP
Date: 07/16/18 Time: 00:10
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	0.40768	0.6582	5	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	2.56817	0.9949	5	90
ADF - Fisher Chi-square	1.51797	0.9989	5	90
PP - Fisher Chi-square	0.48200	1.0000	5	95

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix H

GDP (1st diff)

Panel unit root test: Summary
Series: D(GDP)
Date: 07/16/18 Time: 00:14
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.83089	0.0336	5	85
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.81824	0.0345	5	85
ADF - Fisher Chi-square	17.3617	0.0667	5	85
PP - Fisher Chi-square	42.9041	0.0000	5	90

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix I

CPI (Level)

Panel unit root test: Summary
Series: CPI
Date: 07/16/18 Time: 00:15
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	1.35593	0.9124	5	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.74129	0.7707	5	90
ADF - Fisher Chi-square	8.32843	0.5968	5	90
PP - Fisher Chi-square	8.23031	0.6064	5	95

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix J

CPI (1st diff)

Panel unit root test: Summary
Series: D(CPI)
Date: 07/16/18 Time: 00:16
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.20255	0.0138	5	85
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.83706	0.0001	5	85
ADF - Fisher Chi-square	33.3998	0.0002	5	85
PP - Fisher Chi-square	81.1571	0.0000	5	90

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix K

TRADE (Level)

Panel unit root test: Summary
Series: TRADE
Date: 07/16/18 Time: 00:17
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.08362	0.4667	5	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.25512	0.6007	5	90
ADF - Fisher Chi-square	9.10393	0.5223	5	90
PP - Fisher Chi-square	15.0136	0.1316	5	95

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix L

TRADE (1st diff)

Panel unit root test: Summary
Series: D(TRADE)
Date: 07/16/18 Time: 00:18
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.66784	0.0477	5	85
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.28485	0.0000	5	85
ADF - Fisher Chi-square	36.9137	0.0001	5	85
PP - Fisher Chi-square	298.380	0.0000	5	90

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix M

FDI (Level)

Panel unit root test: Summary
Series: FDI
Date: 07/16/18 Time: 00:19
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.82952	0.0337	5	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.87346	0.0020	5	90
ADF - Fisher Chi-square	26.3240	0.0033	5	90
PP - Fisher Chi-square	51.7812	0.0000	5	95

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix N

FDI (1st diff)

Panel unit root test: Summary
Series: D(FDI)
Date: 07/16/18 Time: 00:19
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.84181	0.0000	5	85
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.64716	0.0000	5	85
ADF - Fisher Chi-square	65.4259	0.0000	5	85
PP - Fisher Chi-square	438.748	0.0000	5	90

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix O

MKTCAP (Level)

Panel unit root test: Summary
Series: MKTCAP
Date: 07/16/18 Time: 00:20
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.66286	0.0039	5	90
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.30101	0.0107	5	90
ADF - Fisher Chi-square	26.1908	0.0035	5	90
PP - Fisher Chi-square	150.770	0.0000	5	95

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix P

MKTCAP (1st diff)

Panel unit root test: Summary
Series: D(MKTCAP)
Date: 07/16/18 Time: 00:21
Sample: 1997 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.07563	0.0000	5	85
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-8.65544	0.0000	5	85
ADF - Fisher Chi-square	74.5043	0.0000	5	85
PP - Fisher Chi-square	398.067	0.0000	5	90

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Appendix Q

Descriptive Statistics (Individual sample)

	GDP	CPI	TRADE	FDI	MKTCAP
Mean	257,000,000,000	45.75300	162.2404	5.431279	97.25075
Median	197,000,000,000	36.00000	126.9178	2.824515	79.38342
Maximum	932,000,000,000	94.00000	441.6038	26.52121	299.5737
Minimum	72,200,000,000	17.00000	37.38680	-2.589811	12.64619
Std. Dev.	204,000,000,000	24.22773	114.8437	7.011074	70.60765
Skewness	1.984575	1.034364	1.051961	1.742537	0.956277
Kurtosis	6.700383	2.659236	2.807521	4.748960	3.130811
Observations	100	100	100	100	100