RELATIONSHIP BETWEEN FDI INFLOWS AND CORRUPTION IN 5 SELECTED ASEAN COUNTRIES

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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 16,320.

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller test
AGGLO	Agglomeration effects
AIC	Akaike information criterion
AR	Autoregressive
ASEAN	Association of Southeast Asian Nations
BRICS	Brazil, Russia, India, China and South Africa
CEEC	Central and Eastern European Countries
CPI	Corruption Perception Index
DEMOC	Democratic Institution
ECT	Error Correction Term
Eviews	Electronic views
FIA	Foreign Investment Agency
FCPA	Foreign Corrupt Practices Act
FDI	Foreign Direct Investment
FEM	Fixed Effect Model
GDP	Gross Domestic Product
GDPG	Growth rate of GDP
GDPPC	GDP per capita
ICRG	International Country Risk Guide
INF	Inflation rate

IPS	Im, Pesaran and Shin test
LAW	Quality of Institution
LLC	Levin, Lin and Chu test
logFDI	Log Foreign Direct Investment
logGDP	Log GDP per capita
MNB	Multinational Bank
MNC	Multi National Company
OECD	Organization for Economic Co-operation and Development
OLI	Ownership, Location and the Internationalization
OLS	Ordinary Least Square
OPEN	Degree of Openness
OPN	Trade Openness
PERC	Property and Environment Research Center
Pesaran CD	Pesaran cross sectional dependence test
POLCON	Political Constraint Index
POLT	Political Stability
POPG	Growth rate of Population
PP	Phillips-Perron test
REM	Random Effect Model
RISK	Political Risk
SC	Schwarz Criterion
SCH	Secondary School Enrollment
SIZE	Market Size

SOE	State-owned Enterprise
TNC	Transnational Corporations
UPOPG	Growth rate of Urban Population
VAR	Panel Vector Autoregressive
WDI	World Development Indicators
WTO	World Trade Organization

ABSTRACT

Corruption has recently emerged as one of the factor that affects the foreign direct investment (FDI) in the host country. Mainly, there are two theories on how corruption affects the FDI, which are grabbing hand theory indicates that corruption produced uncertainties and deterred foreign investors from entering the host country and helping hand theory indicates that corruption helps to reduce the red tape in the host country and increase the FDI in host country. This study investigated the impact of corruption on the FDI inflows in 5 selected ASEAN countries from 2001 till 2013. Applying the fixed effects model (FEM), it is found that grabbing hand theory existed in these ASEAN countries. Besides that, political stability and GDP per capita also significantly affected the FDI inflows into the countries but not trade openness. Moreover, panel Granger causality test is carried out to examined the Granger causality relationship between FDI and others independent variables. It is found that GDP per capita granger causes the FDI, vice versa. These governments should revises and enact effective anti-corruption act, establish resilient and independent anti-corruption organizations, cooperation between countries to eliminate corruption and attract more FDI inflows.

CHAPTER 1: RESEARCH OVERVIEW

1.0 INTRODUCTION

FDI is important in providing host country' economies with capital, transferring of technology, upgrading their management skills and corporate governance which then increase labor productivity and speed up economic growth (Blomstrom & Kokko, 1996). However, Blomstrom and Kokko (1996) stated that the effect of foreign Multinational Corporations (MNCs) to host country economies is different across industry and countries. Thus, the characteristics of the industry and policy environment in host country are important factors in affecting the FDI net benefits. Masron and Abdullah (2010) investigated the relationship of institutional quality on FDI inflows into ASEAN from 1996 to 2008, institutional quality is claimed to be important factor in attracting FDI. According to Durham (2004), corruption has included as one of the facilitating input.

Table 1.1: FDI Inflows of ASEAN Countries from 2001 to 2010 (US$ millions)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Brunei Darussalam	11	21	37	20	19	10	62	1	3	90
Cambodia	37	9	20	32	129	156	271	241	174	349
Indonesia	-221	1,297	383	204	883	1,354	1,108	3,398	1,380	5,904
Lao PDR	3	3	3	8	7	11	100	48	57	135
Malaysia	80	0	251	980	721	462	3,780	1,646	-270	526
Myanmar	67	25	24	9	38	71	94	103	68	172
Philippines	199	87	175	71	13	-43	6	140	-5	-8
Singapore	420	765	657	707	984	1,048	1,168	660	2,108	3,377
Thailand	1,711	1,408	1,060	689	1,101	4,627	2,489	508	1,326	434
Viet Nam	241	200	100	243	165	182	546	2,705	429	1,301
ASEAN TOTAL	2,548	3,815	2,712	2,963	4,060	7,876	9,626	9,449	5,271	12,279

Source: ASEANstats

Selected 5 countries are Indonesia, Malaysia, Singapore, Thailand and Vietnam.

Table 1.2: Percentage FDI inflows over total ASEAN FDI inflows of selected countries for

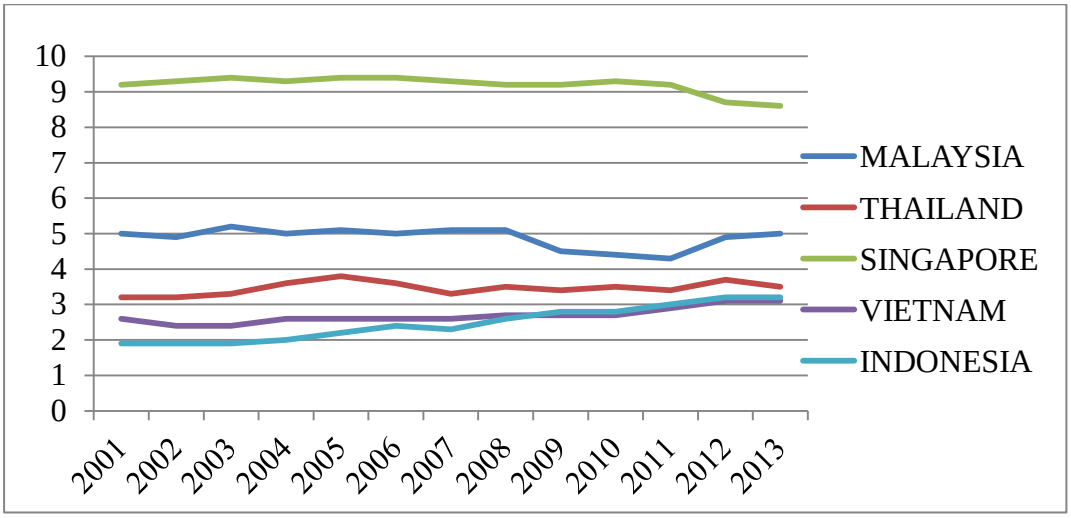
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Percentage FDI inflows	86%	96%	90%	95%	95%	97%	94%	94%	94%	94%

Corruption is a threat to economic stability, democracy and development (United Nations, 2010). Corruption was defined as the abuse of public power for positive gain which became a well-known issue all over the world (Petrou & Thanos, 2013). Examples of corruption included bribe, fraud, extortion, nepotism, misuse of public assets and property for private use (Myint, 2000). Corruption rise to become a popular issue due to a series of high corrupted cases happened in industrialized countries, high increment of corruption cost around the world and changes of politic and economic faced by many countries (Lawal, 2007). Many research have been carried out to examine the impact of corruption on FDI. The later played an important role in economic growth. Thus, corruption may indirectly affect economic growth through FDI. Gray and Kaufman (1998) did a survey of 150 high level officials' respondents from 60 third world countries on corruption and respondents think that corruption in public sector is the main obstacles for economic development.

Although corruption is a common issue in developing countries, the corruption level varying across countries (Hellman, Jones, Kaufmana & Schankerman, 2000). Most of the studies concerning the issue can be divided into two major views. First is 'grabbing-hand' theory of corruption which claims that corruption will increase costs of business activities (Shleifer & Vishny, 1992; Shleifer & Vishny, 1993; and Javorcik & Wei, 2009). The second view argued that corruption is a 'helping-hand' in the host country economies. Corruption help to trade facilitates transaction through bribery, drive up procedures and encourage FDI (Egger & Winner, 2005). Levy (2007) found that transactions are mainly stimulated by

corruption which gives peoples incentives to engage in productive activities. This also supported by Jiang and Nie (2014), which stated that more corruption resulted in better performance of firms by circumventing unproductive laws.

Figure 1.1: CPI of the Five Selected ASEAN Countries



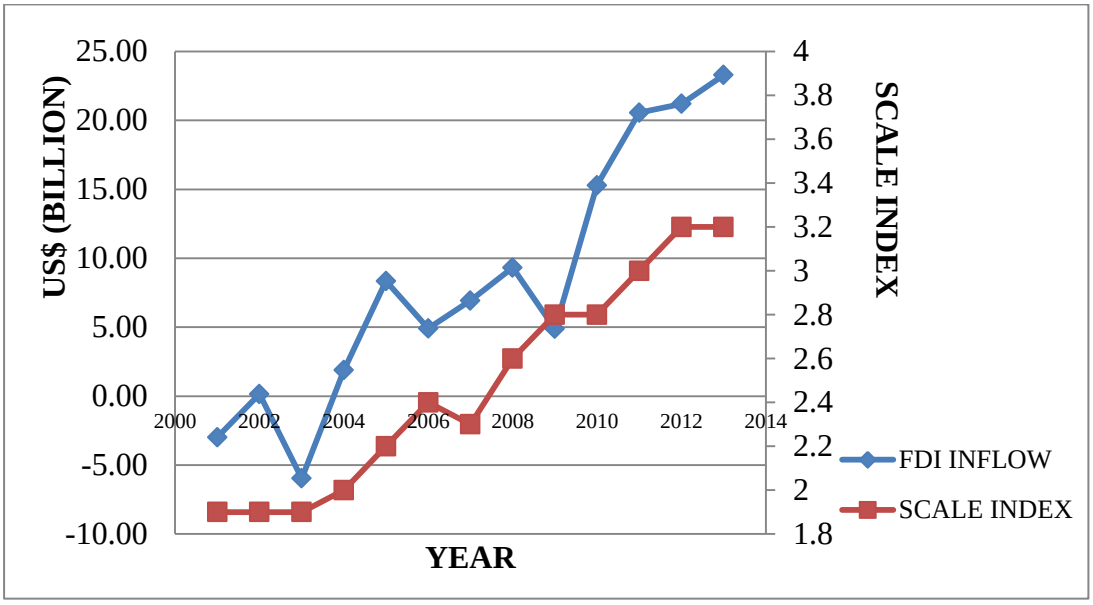
Source: Corruption Perception Indicator, Transparency International

Corruption required highest level of attention from all the countries especially Asia and Pacific region (Myint, 2000). From year 1952 to 2012, ASEAN region is the largest recipient of FDI in Asia Pacific. Corruption will not only be the threat for ASEAN's collective goals, it may potentially lead to greater problem for each member state and citizens in the future (Transparency International, 2014). Based on the Figure 1.1, only Singapore has a low level of corruption. The high corruption level of other countries is due to most of the public institutions of ASEAN countries were lacked of transparency and accountability which they did not have efficient anti-corruption laws.

1.1 RESEARCH BACKGROUND

1.1.1 FDI INFLOWS AND CORRUPTION IN INDONESIA

Figure 1.2: FDI Inflows and CPI in Indonesia



Source: World Development Indicators, the World Bank & Transparency International

Figure 1.2 shows that the overall FDI inflows of Indonesia have increased from year 2001 to 2013. The largest surge of FDI inflows was in year 2010 where it reached US$15 billion. The lowest FDI inflows of Indonesia from year 2000 and 2013 are during year 2001 and 2003 where the FDI inflows is at negative figures which are -US$2.98 billion and -US$5.97 billion respectively. The FDI inflows is low for that few years in Indonesia mainly due to the damaged caused by the 97-98 crisis that befallen Indonesia. The tarnished perception of the investment climate caused massive net FDI outflows and haunted the country for several years (Otsuka, Thomsen & Goldstein, 2011).

Furthermore, with the continuous efforts from the government, the FDI inflows of Indonesia began to increases by the years and it started to attract

more than US$10 billion in 2010. This increase in FDI is made possible due to the reforms efforts of Indonesia's government that provides a stable macroeconomics and political environment. Indonesia also started to focus more on short-run project to attract more FDI inflow into the country. According to Otsuka et al. (2011), "FDI inflows were biased towards relatively small projects aiming at quick profits, rather than at larger and riskier projects with long gestation periods such as in infrastructure and in the mining sector where large investment needs persist". The high inflows obtained by Indonesia are at year 2013 where it able to attract US$23.29 billion of FDI was due to the enormous effort made by the government from past years.

The Government of Indonesia first started to liberalize their capital account regime when they introduced the Foreign Investment Law No 1/1967 during year 1967. The government later adopted a free-floating foreign exchange system in 1970 which was followed by further liberalization of the financial sector in 1980s (Khaliq & Noy, 2007). This liberalization of financial sector has made Indonesia to be an attractive location for Foreign Direct Investment. The availability of vast, highly diversified natural resources, a huge potential domestic market, a competitive and productive labor force, and a market-oriented economic policy, amongst other factors, has attracted Foreign Direct Investment (FDI) inflows to Indonesia (Rajenthran, 2002).

Indonesia's early industrial and investment policies were inward-looking and aimed at import-substitution development, financed through a strong balance-of-payments and fiscal position due to high commodity prices (Otsuka et al., 2011). Import-substitution development is not a sustainable and efficient method to finance a country and also to improve a country's GDP. The FDI of Indonesia is concentrated in petroleum sector such as oil and natural in the 1980's and it only started to concentrate its FDI into manufacturing sector and become more export-oriented after the mid 1980's. This directly encourages more FDI into Indonesia thus boosting its FDI inflows and GDP growth. However, Indonesia has been an outlier within the region, with lower inflows of FDI than other countries,

especially in manufacturing, and with lower inflows than could be expected from its size and other country characteristics (Lipsey & Sjöholm, 2011).

The figure also shows the Corruption Perception Index of Indonesia from year 2001 to 2013. From the figure, the corruption index of Indonesia is considered very high as their ranks never reach below 88. Besides, Indonesia's corruption index did not reach above 3.3 thus it shows that the corruption of the country is high. All available data and country reports indicate that corruption remains widespread, permeating all levels of society (Martini, 2012).

Indonesia is faced with corruption since ancient times. Periods such as before the European colonization's, Dutch colonial period and even after nationalistic independency, the country is faced with corruption problem. Corruption became even worse after General Suharto become the President taking over Sukarno in 1966 as he distributed the state resources just like the ancient Javanese rulers by giving it to his family members and also to people close to him.

According to Martini (2012), the police sector is assessed by both citizens and business as one of the most corrupt sectors in the country in year 2012. The author then provide evidence by citing Global Corruption Barometer (2010-2011) where it said that "52% of Indonesians perceive the police as extremely corrupt, and 11% of those who have had contact with the police in 2009 have reported paying bribes". This will truly cause a major corruption problem in the country as the majority of law enforcers are involved in taking bribes. This is also one of the contributing factors of why the CPI index of Indonesia to be always low from year 2001 to 2013.

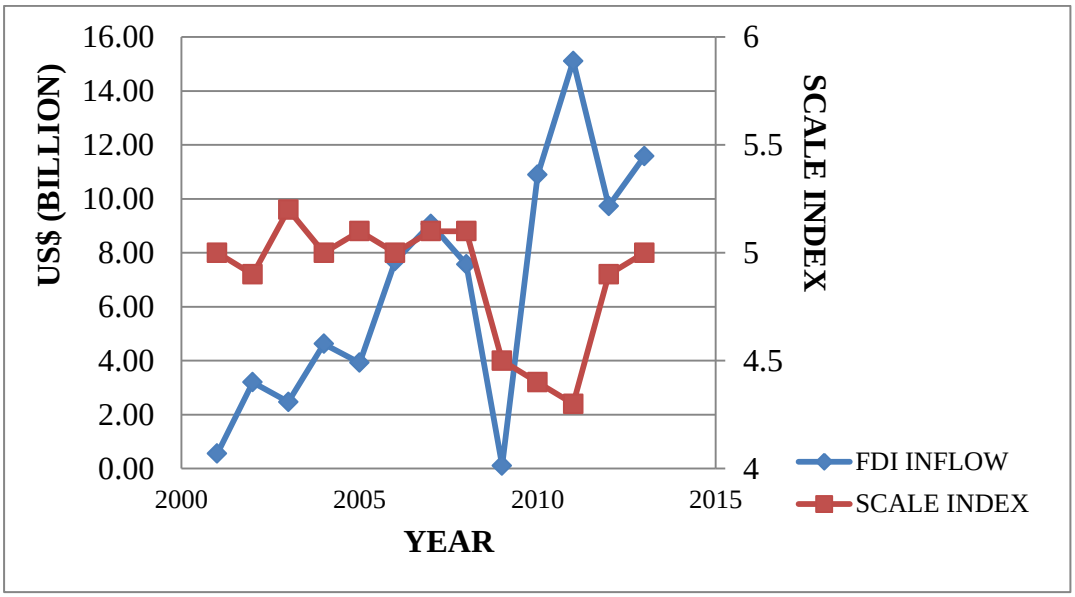
Martini (2012) stated that "Parliament and political parties are also perceived as highly corrupt". He also said that almost "52% of Indonesians surveyed considered both Parliament and political parties as extremely corrupt" showing how serious corrupted are the parliament and political parties. This indirectly caused the CPI index to remains low in Indonesia as corrupted parliament and political parties will not try to reduce the

corruptions level of Indonesia and cut off their sources of income by doing so.

Lastly, Figure 1.2 shows that the relationship between CPI and FDI inflows in Indonesia to be positive for most of the years. This is proven in the figure as an increase in CPI index will also shows an increase in FDI inflows as well. This means that, when Indonesia is less corrupt, the higher FDI inflows it can attract. However, there are a few years that show a negative relationship between CPI and FDI inflows where an increase in CPI is followed by a decrease in FDI inflows, vice versa. This scenario happened in year 2006, 2007 and 2009.

1.1.2 FDI INFLOWS AND CORRUPTION IN MALAYSIA

Figure 1.3: FDI Inflows and CPI in Malaysia



Source: World Development Indicators, the World Bank & Transparency International

One of the key drivers underlying strong growth performance experienced by Malaysia is foreign direct investment (Ang, 2008). Malaysia, Thailand and Philippines are the most famous destination for FDI in the ASEAN

countries (Ismail & Yussof, 2003). Inward FDI is crucial for most of the countries. Thus, in order to attract inward FDI, it is essential to examine the determinants of FDI in modeling a macroeconomic policy (Tang, Yip & Ozturk, 2014).

There are some determinants of FDI such as financial development, infrastructure development, trade openness and real exchange rate. From the perspective of microeconomics, political stability and risk will be considered by foreign investors to decide to invest in certain location (Moosa, 2002; Dunning, 1993). Political risk is political activities that might have an inverse impact on operations of companies. Dunning (1998), Moosa (2002) and Wafo (1998) stated that one of the sources of political risk is corruption which classified under the social instability. Transparency International reported that Malaysia is able to maintain its CPI index on average in 2001 to 2008 however there is negative relationship between FDI and CPI index. Corruption gives negative impact on inward FDI in Malaysia (Aw & Tang, 2009; Barassi & Zhou, 2012).

According to World Development Indicators (WDI), Malaysia's foreign direct investment net inflow had rose drastically from year 2001 to 2008. The drastic changed in net inflow are mainly due to two reasons which are FDI inflows in Malaysia had been increasingly switched into highly value added services sector which are the financial services and shared services operations and increasing competitors for FDI in state from new developing market economies such as PR China, Vietnam, India mainly due to relatively low labor cost and bigger market size (Economic Development Annual Report, 2009).

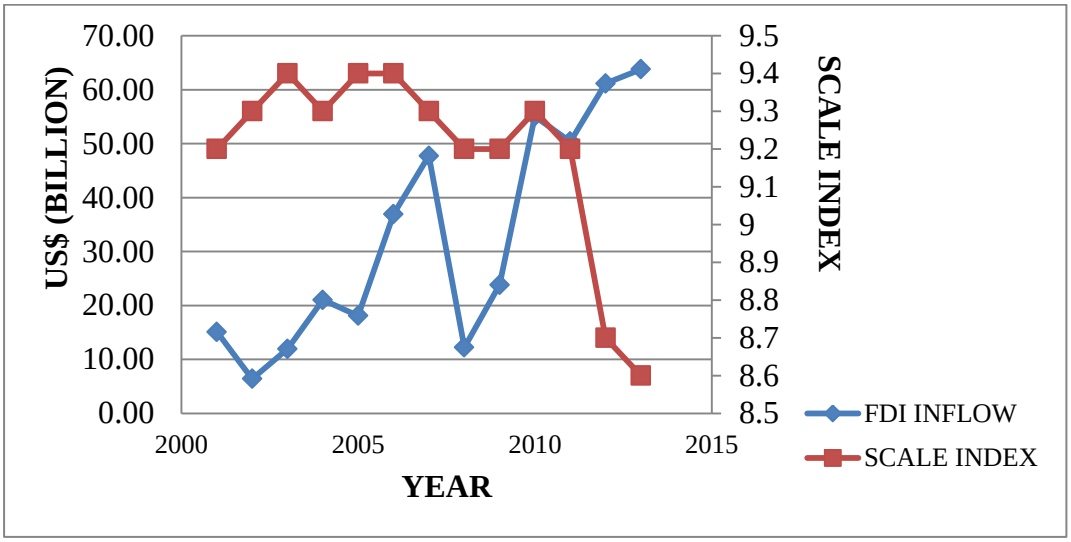
From 2001 to 2006, the Figure 1.3 shows that CPI index and FDI inflows have a negative relationship. The FDI inflows had increased from US$0.55 billion to US$7.69 billion while CPI had fluctuated in between 2001 to 2006. The CPI index during year 2009 to 2011 had dropped from 5.1 to 4.3 which indicate there corruption in Malaysia had increased while FDI inflows had increased dramatically from US$0.11 billion to US$15.11 billion.

However, during 2007 to 2009 the CPI index and FDI inflows have a positive relationship. The CPI index increased from 5 to 5.1 and FDI inflows also had increased to US$9.07 billion during 2007. The FDI had dropped dramatically from 2007 to 2009 due to global financial crisis. Economic Development Annual Report (2009) announced that global financial crisis lead to huge amount of outflow of short-term portfolio, decreased in bank financing, currency had been weaken and slowing FDI. Aw and Tang (2009) said that higher corruption would encourage more inward FDI in short run. An increase in corruption will increase FDI however at diminishing rate as corruption increases (Kolstad & Wiig, 2013). Furthermore, there is also found positive relationship between FDI and corruption during 2013. More freedom in corruption shows the capability to build confidence among foreign investors increase and turn out to be a main destination for FDI inflows (Alemu, 2012).

Aw and Tang (2009) found that the levels of corruption are significant determinants of inward FDI in Malaysia in long run. Corruption have negative impact on inward FDI which can be explained by Taksoz's (2006) study that corruption reduce inflow FDI but with separated corruption variable into its subcomponents. Smarzynska and Wei (2002) found that corruption impacts negatively inward FDI as well as shifts from ownership to joint ventures.

1.1.3 FDI INFLOWS AND CORRUPTION IN SINGAPORE

Figure 1.4: FDI Inflows and CPI in Singapore



Source: World Development Indicators, the World Bank & Transparency International

Singapore, smallest country in ASEAN in terms of size and has very little of natural resources, it is a neighbor of Malaysia located at the south of Malay Peninsula. With little natural resources, Singapore depends much on foreign direct investment to generate jobs for its residents and drive economic growth (Jayawickrama & Thangavelu, 2005). Singapore has effective strategy in maintaining the country's corruption at very low level, as a result, large flow of FDI into the country. Singapore able to maintain high level of economic growth and became one of the Four Asian Tigers together along with Taiwan, South Korea and Hong Kong and becoming developed country.

From 2001 till 2003, the CPI increase to 9.4 from 9.2 while the FDI inflows were increased to US$11.94 billion. In 2004, the CPI index dropped by 0.1 to 9.3 but the FDI still increases to US$21.03 billion. When the CPI improves to 9.4 in 2005, the FDI showed a decline to US$18.09 billion. Lastly, when the CPI began to reduce in 2007, the FDI

still experienced an increasing trend and began to drop in year 2008, year after the CPI drop. Figure 1.4 showed that the FDI inflows and corruption index moved at the same direction but different pace as FDI following the movement of CPI from 2001 till 2008. This can be explained by foreign investor taking past information into consideration when deciding the investment location, thus it is reasonable that the FDI following the movement of CPI and corruption has negative impact on FDI inflows as higher CPI will improve the FDI inflows. Barassi and Zhou (2012) used the independent variables in the previous period (t-1) in their model to explain the effect of corruption on FDI in time (t). Alemu (2012) mentioned that it is important to use the lagged independent variables such as corruption as these variables have delayed effect on FDI and ensure "the future does not cause the present".

However, after 2008, the figure that FDI and corruption moved at the same pace and direction until 2011 as when the CPI increased, the FDI increased and when the CPI decreased, the FDI decreased as well. After 2011, the CPI and FDI moved at opposite direction as the CPI showed decreasing trend but the FDI showed increasing trend. This showed that the delayed effect of corruption on FDI does not exist or the way of foreign investor's consideration has changed. Additionally, the effect of corruption on the country has changed as well from negative impact to positive impact after 2011 because the CPI and FDI inflows move in opposite direction.

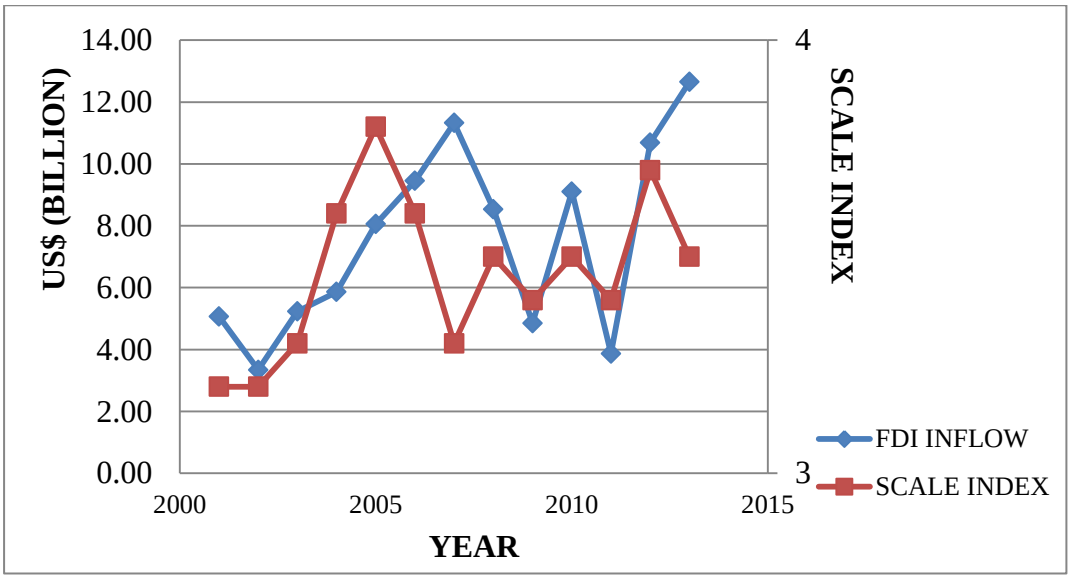
Most of the existing researches are focused on how corruption affects FDI inflows. For example, Alemu (2012) investigated the issues of corruption on FDI inflows in 16 Asian countries which included Singapore and he found that a corruption level increase by 1 percent will result in decrease in FDI inflows as much as 9.1 percentage points. Thus, it shows that corruption does negatively affect FDI inflows. Yet, the figure showed that after 2011, corruption increase leads to FDI increase. Al-sadiq (2009) stated that corruption should be treated as endogenous variable instead of explanatory variable because it can be affected by economic and non-economic variables. In addition, during the period of 2001-2008, it can be assumed that is the corruption following the footstep of FDI as FDI

increase lead to corruption decrease and FDI decrease lead to corruption reduce.

This phenomenon can also be explained by the fact that corruption is not the only determinants that affect FDI. Hoang (2012) found that market size, degree of openness, infrastructure, human capital and labor productivity are the main determinants in attracting FDI in ASEAN countries. Level of development such as infrastructure and human capital outweighs the negative effect of corruption.

1.1.4 FDI INFLOWS AND CORRUPTION IN THAILAND

Figure 1.5: FDI Inflows and CPI in Thailand



Source: World Development Indicators, the World Bank & Transparency International

Figure 1.5 shows the FDI inflows and CPI in Thailand from 2001 to 2013. From 2002 to 2005, the FDI inflows and CPI are moving in the same direction which means that when corruption decrease, FDI inflows will increase. It indicates that there is a negative relationship between corruption and FDI inflows. However, there is exceptional years from

2005 to 2008 and year 2013, where corruption increase, FDI inflows increase. This situation has subverted the results or concept that both variables should have negative relationship.

In 2013, the FDI inflows has climb to its climax which the investment goes up to US$13 billion. It has increased by approximately 21% compare to 2012, reported by The Nation in 2014. The reason behind this is most likely caused by a rise in mergers and acquisitions published by the United Nations Economic and Social Commission for Asia and the Pacific in their report of "Asia-Pacific Trade and Investment Report 2014". In addition, Puapan (2014) stated that manufacturing sector has become the largest share of FDI inflows in Thailand with Japanese companies owned the largest investors in Thailand with 55% in 2012.

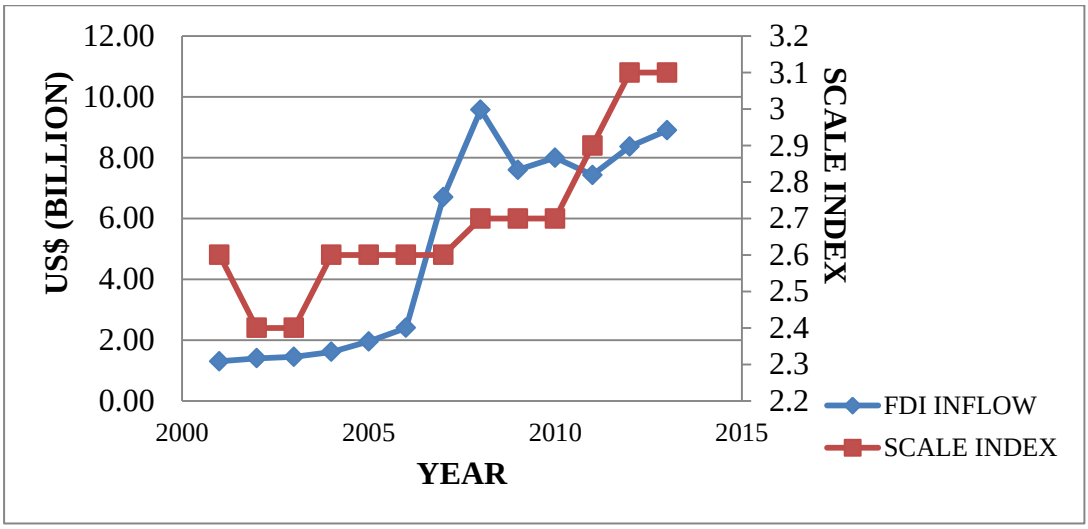
The World Bank Group Report (2014) has announced that Thailand is continuing to rank among the top 30 economics worldwide on the ease of doing business. In the same report, Thailand is also the second among emerging economics of East Asia. According to economic freedom index in 2014, Thailand has FDI inflows of $8.6 billion in 2012. These information and facts have shown why Thailand is emerging as a strong magnet for FDI. At the same time, it is also because Thailand's government has launched a business-friendly environment for foreigners. There is no doubt that Thailand has recorded a high FDI inflows figure during this decade and one of the main sources is actually coming from their neighbor country, Singapore which they pump the investment funds in the finance, petroleum and real estate sectors (The Business Times, 2014). However, The Business Times also mentioned that the worries occurred in the investors are the inconsistency and instability of FDI policies, bureaucracy procedures, corruption, flagrant disregard for intellectual property rights and lack of reliable credit. Since then, the Thailand government has implements a lot of indications and the problems mentioned above have been reduced. Undeniably, the investment is more transparent and accountable compare to the previous indications applied.

All these facts and evidences that influenced FDI inflows in Thailand cannot be ignored. However, it is possible that the FDI inflows are actually mostly or partially affected by corruption directly or indirectly? According to Investment Climax Statement published by Embassy of US in Thailand, the statement wrote that the party of interest will make used of another 'word' instead of giving bribes, they are doing in such way that charging finders' fees or consultants' fees for those startup firms who willing to do business in the country. Moreover, they will alliance together with the low salaries group servants as a middle person to help businessman to provide illegal inducements and eventually it encourage officials to accept this.

Rajenthran (2014) reported in The Business Times said that there are some institution problems such as terrorists attacks, wide outbreak of SARS and bird flu as well as sectarian tension in southern Thailand will actually discourage the inflows of FDI. Like the case of a political protest group against the Thailand government in 2008 held by a large demonstration, this event has surely scared off the potential investors to invest in Thailand. This is proven by Ullah and Inaba (2014) saying that it brings negative effect to the future FDI inflows if there are nonstop conflicts among or between the political parties.

1.1.5 FDI INFLOWS AND CORRUPTION IN VIETNAM

Figure 1.6: FDI Inflows and CPI in Vietnam



Source: World Development Indicators, the World Bank & Transparency International

FDI is very important to Vietnam economy. 13.3% of GDP was contributed by FDI companies, 35% by industrial output, 23% by export and 25% by budget revenues (Doanh, 2002). Vietnam has undergone economic boom and increasing cultures values during the period of year 2000 to 2006. Throughout the period, Vietnam economy was expanding fast with low inflation. This was showed by a steady increase in FDI inflows due to attractive investment environment as the government allowed foreign investors to invest in some industries that previously monopolized by government.

In year 2007, net inflows of Vietnam reached a peak. At the same year, Vietnam entered WTO with the support of US that enhanced the economic growth in Vietnam (VO & Nguyen, 2012). According to Foreign Investment Agency (FIA), FDI played an important role in Vietnam because there were more than two hundred thousand jobs in 2008 created and 1.4 million people were hired. In year 2009, FDI inflows declined due

to the global crisis which caused the stock bubble burst in Vietnam (Vuong, 2014).

Figure 1.6 showed that the CPI of Vietnam is between 2.3 to 2.9 from year 2001 to 2013 which indicated relatively high level of corruption. The indicator ranged from 1 to 10 which 10 refer to the cleanest and 1 refers to highly corrupted. In fact, Vietnam FDI inflows during this period increased from about US$1 billion to about US$8 billion. From the trend, it seems like corruption is not the only factor that has impact on FDI inflows and the relationship between FDI inflows and corruption cannot be clearly seen. Productivity elements that will affect the economic growth included advanced technologies, management practices, and research development are not enough to explain the relationship between FDI inflows and economic growth, in fact, some human and non-human factor should be included **(**Borensztein, Gregorio & Lee, 1998; Balasubramanyam, Salisu & Sapsford, 1996). Nguyen and Nguyen (2007) stated that there are high level of education and quality of labor force in Vietnam. However, Thai (2005) stated that Vietnam's FDI inflows have a limited impact on GDP in short run; one of the reasons may be the high rate of corruption.

In Vietnam, corruption has been a national issue. According to Provincial Competitiveness Index Report conducted by Vietnam Chamber of Commerce and Industry, there was only small amount of foreign investors willing to expand their investments in Vietnam. In 2014, there was a case of offering $800,000 bribe to Vietnamese official by Japan Transportation Consultant to obtain official development assistance project in Vietnam. Many foreign firms would offer bribes to Vietnamese officials to get the contract of projects. Although the figure did not show much relationship between corruption and FDI inflows, corruption did affect the attractiveness of FDI in Vietnam if the problem continues to exist in the country (Mai, 2014). However, the degree of effect on FDI inflows is hard to be determined. This is probably because corruption not only happened in land and real estate management, but also found in education and other sectors as well (Duc, 2014).

Vietnam has taken many actions in combating corruption every year but still the corruption level is very high. According to the latest survey done by Property and Environment Research Center (PERC) on 2000 expatriate business executives, corruption is widespread over Vietnam community. When a country is corrupted in every level, foreign investors may think that offering bribes is the easiest way to get investment projects. Hence, corruption may somehow facilitate the Vietnam's FDI inflows in certain level.

Moreover, PERC report also stated that one of the reasons that cause corruption in Vietnam is caused by public sector bigger than private sector. Corruption happens more often in public sectors because of lower average salary. From the research done by Nguyen and Mathijs (2012), the result showed that corruption has different effects on private firms and state-owned enterprises (SOEs) among 900 firms across 24 provinces in Vietnam.

1.2 PROBLEM STATEMENT

FDI has taken up a big portion of economy in developing countries. Globalization creates opportunity for firms to make foreign investment and most of the countries are actively putting efforts in attracting FDI inflows to their country to stimulate economic growth (Castro & Nunes, 2013). Meanwhile, corruption had reduced the benefits of globalization and FDI belongs to one major source of benefits (Shang, 2001). Hence, globalization had made controlling corruption an important issue for a country. Corruption level of host country is one of the factors that determining the location of FDI and investors will take into account when making decision. It is important especially in ASEAN countries which FDI played an important role. Besides, based on the two theories of grabbing hand and helping hand proposed earlier, they are opposed to each other and yet most of the researchers have proven the accountability of both theories. Thus, corruption has different effects on different countries based on theory.

ASEAN includes Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Cambodia, Laos, Myanmar and Vietnam with attractive investment opportunities. It is mainly due to its dynamic market structure that made up of ten economies with different development stages and diversified landscapes (Tonby, Ng & Mancini, 2014). Among these five countries, only Singapore is a developed country, others are developing countries. The effects of corruption on selected countries are ambiguous as shown by the graphs of each country from year 2001 to year 2013 in research background. Every graph showed that corruption and FDI had both positive and negative relationship during the selected period. None of the country showed consistent relationship but the corruption level of all selected countries did not fluctuate much during the selected period. This is less likely for same level of corruption to have opposite effects on FDI throughout the period. Hence, this study may assume that either positive or negative relationship appeared between corruption and FDI in 5 selected ASEAN countries. Other than Singapore, other four countries have high corruption level of approximately 4 out of 10 of index scale and yet, they still can achieve high level of FDI inflows. This probably indicates that corruption does not have fixed effect on a country or the helping hand and grabbing hand theory may exist on the same country based on different economic conditions or corruption would has different effects depends on political structure of a country. The graphs in research background have insufficient information as it is possible that other factors are affecting the countries' FDI.

Corruption has been a crucial issue in ASEAN. There are two main reasons for this statement. First, the corruption cases in ASEAN countries have been increasing and collapsed the stability of politic and economic growth in certain countries which then affected economic performance of ASEAN as a whole (Pertiwi, 2011). Second, the fugitives that been caught for corruption in a country often fled to ASEAN countries and change the issue to transnational crime that belongs to ASEAN responsibility (Pertiwi, 2011). However, this study will only focus on 5 countries of ASEAN which are Indonesia, Malaysia, Singapore, Thailand and Vietnam because Singapore have 52 percent which more than half of total FDI in ASEAN, second place taken by Thailand with 13 percent, followed

by Indonesia with 11 percent, Malaysia with 10 percent and Vietnam with 8 percent (ASEAN Briefing, 2014).

1.3 RESEARCH QUESTIONS

i. To what extend can corruption affect FDI inflows in 5 selected ASEAN countries?
ii. How corruption affect FDI inflows in this 5 selected ASEAN countries?
iii. What are the others important factors that will affect FDI inflows?

1.4 RESEARCH OBJECTIVES

1.4.1 OBJECTIVE OF THE STUDY

The general objective of this study is to examine on the relationship between FDI inflows and corruption in 5 selected ASEAN countries from year 2001 to 2013. While the specific objectives are:

i. To determine the impact of corruption on FDI inflows in 5 selected ASEAN countries, Malaysia, Singapore, Thailand, Vietnam, and Indonesia.
ii. To establish causal effect of corruption on FDI inflows between these 5 selected ASEAN countries.

1.5 SIGNIFICANCE OF STUDY

This study studies the role of corruption in attracting FDI in 5 selected ASEAN countries (Indonesia, Malaysia, Singapore, Thailand, and Vietnam). There is relationship between corruption and FDI in these countries however throughout the period the relationship had changed. Thus, to find out whether host country's corruption is playing a part in attracting FDI inflows positively, negatively or not significant in attracting FDI by using panel data analysis.

Moreover, this study expand the model of FDI determinants in ASEAN countries by adding other important variables that affect FDI such as GDP per capita, degree of openness, and political stability.

Lastly, it is able to provide better insights to government about how corruption affects economic performance of the country and changes the view of government on corruption issue.

CHAPTER 2: LITERATURE REVIEW

2.0 INTRODUCTION

In the globalization era, FDI become an important contributor to economic growth through several ways. It impact host country through several ways, for example technology, institutional and linkage of industries. Such as in Kim and Han (2014), FDI spurred Korea local economic activities through creating extra job opportunities to local peoples. Gui-Diby (2014), Feeny, Iamsiraroj and Mc Gillivray (2014) found that FDI led to economic growth in African region and Pacific Island Countries. Besides that, FDI also help to improve the host country technological process, Liu and Wang (2003) found that FDI inflows to China are not only in terms of capital, but also the technology transfer as it increases the total factor productivity of the country. Dang (2013) also found that FDI speed up the process of domestic institutional reform and improve host country institutional quality. Barrios, Görg and Strobl (2005) found that FDI initially incites the local firms to exit the market but eventually had positive externalities on local industry by nurturing the start-up of new firms.

The existing literature on the effect of corruption on FDI inflows has not reached a common result, as well as the other controlled variables such as GDP per capita, trade openness, and political stability. The character of these variables as well as the relationship between explanatory variables and explained variable from the past studies are present in this chapter.

2.1 REVIEW OF THE LITERATURE

2.1.1 CORRUPTION

According to 'helping hand' theory, corruption act as lubricant when a country has strict economic regulation especially in developing countries (Lui, 1983; Beck & Maher, 1986; Bjorvatn & Soreide, 2005). By offering bribe to host country, MNEs can avoid the firm rules and complicated process to get the investment projects easily. From this point of view, corruption may encourage the FDI inflows.

On the other hand, the 'grabbing hand' theory stated that corruption will harm FDI by raising the transaction cost and reduced the incentives of making investment (Shleifer & Vishny, 1993; Mauro, 1995). Corruption would also reduce the positive spillover from the investments return (Haugli, 2012). This is further supported by a survey carried out by Kaufmann (1997) resulted that the cost of investing in high corrupted host country was 20% higher than investing in less corrupted one. Among both views, most of the researchers are agreed to 'grabbing hand' theory.

According to World Bank report (1999), more than 85 percent of multinational enterprises involved in corruption when dealing with public sectors. Furthermore, the MNEs subsidiaries are the main bribes suppliers around the world (Transparency International, 2006).

Based on the study of Zhou (2007), the result showed that corruption has a negative impact on both FDI inflows and FDI stocks. FDI inflows representing short term decision while FDI stocks representing the long term decision. The effect of corruption on both short and long term decision is not exactly the same. Zhou (2012) uses parametric and non-parametric studies, the parametric study showed that high corruption would restricted FDI while non-parametric study showed that the effect of corruption on FDI vary with the host country location. High corruption

level restricted FDI stocks for lower quartiles countries while it has no effect on top quintiles countries. The negative relationship between corruption and FDI inflows are also confirmed by Fredriksson, List and Millimet (2003) using state-panel data which suggested that high corruption would reduce capital inflow in US.

Delgado, McCloud and Kumbhakar (2014) found the relationship between corruption, FDI and economic growth. The study proved an average positive significant relationship between FDI and economic growth which means that FDI have positive effect on economic growth for about 57 percent of 60 non-OECD countries. The evidence strongly suggested that corruption reduce economic growth mainly through FDI.

Although some studies claimed that corruption would increase operating cost and negatively influence the FDI, others showed that it may has some positive effect. This was supported by the Cazurra (2008) which stated that impact of corruption on FDI depends on the characteristics of economic system of the host country. Corruption may compensate transition economies that have not formed appropriate market institution which means that corruption will still raise the cost but the additional cost and uncertainty of corruption may compensated by the benefits of bypassing regulations.

In addition, corruption affected FDI differently at different corruption level. Petrou and Thanos (2014) are focusing on the corruption effect on multinational banks (MNBs). When corruption is at moderate level associated with high uncertainty, the investment decision may be more conservative to protect the MNBs; when the corruption is at high level associated with low uncertainty, the investment may be more aggressive to gain capacity for potential rewards. This indicated that both grabbing hand and helping hand view are supported at different level of corruption and it affected the decision of MNB's manager in allocating resources.

2.1.2 GDP PER CAPITA

GDP per capita is selected as one of the controlled variables in this research because GDP per capita is considered as one of the factors that attract FDI inflows the most. According to Chien and Linh (2013), "GDP per capita is one of the most significant determinants in attracting FDI inflow during the phase of 2000-2010." As this study focuses on the timeline of year 2001 to 2013, the statement made Chien and Linh helps to strengthen the decision of taking GDP per capita as one of the control variables in this research. Moreover, GDP per capita is important in attracting FDI inflows because its measure the well-being of a particular country. This means that, if a country's GDP per capita is high, this will attracts more FDI inflows into the country as it directly shows that the country is performing well. Investor will surely invest into developing country that is performing well as they can obtain they profits faster compare to country that are not performing well.

Market size is generally measured by GDP, per capita income or size of the middle class (Sahoo, 2006). To represent the market size, gross domestic product is used (Hoang, 2012). Many other studies also used GDP as the proxy to measure market size. Mughal and Akram (2011) stated that "Gross domestic product current US$ is used as proxy for market size (MS) and expect positive impact of market size on FDI". Besides, Artige and Nicolini (2005) stated that market size measured by GDP or GDP per capita, market size seems to be the most robust FDI determinant supporting the horizontal model. Vijayakumar, et al. (2010) also pointed out that market size is generally measured by Gross Domestic Product (GDP), GDP per capita income and size of the middle class population.

Many studies has included market size in their research as the determinant of FDI and some of them even considered that market size is a dominant determinant of FDI inflows (Demirhan & Masca, 2008; Karimi, Yusop & Law, 2010; Anyanwu, 1998). Azam (2010) stated that "Market size of the host country, which also represents the host country's economic conditions

and the potential demand for their output as well, is an important element in FDI decision-makings".

Market size is considered as one of the determinant in the traditional or classical model of FDI. The classical model for determinants of FDI begins from the earlier research work of Dunning (1973, 1981) which provide a comprehensive analysis based on ownership, location and the internationalization (OLI) paradigm (Vijayakumar, Sridharan & Rao, 2010). Location in the Eclectic Paradigm of Dunning or OLI paradigm of Dunning has three specific advantages that are the economic benefits, political advantages and social advantages (Dunning, 1973). According to Denisia (2010), the economic benefits consist of quantitative and qualitative factors of production, costs of transport, telecommunications, and market size. This shows that market size is used in the theoretical model of Eclectic Paradigm of Dunning. Stoian (2009) stated that "As part of location advantages, market size variables are consistent with Dunning's (1993) typology of FDI motivations". This further strengthen that market size is used in the OLI paradigm model of Dunning.

Using market size as determinant, this study is concerned that market size will have a positive relationship with FDI inflows into the host country. This means that this study expect that the bigger the market size, the larger the FDI inflows into that particular host country. This is because market seeking investors are attracted by high levels of GDP of the host country (Stoian, 2009). For instance, Mughal and Akram (2011) pointed out that "market size as the most dominating positive impact factor to attract FDI inflows in long run and there by confirming other studies that market size tends to enhance FDI inflows into any country, whereas no influence of market size on FDI inflows in short run can be found". Besides that, many other previous studies also shows that market size with the proxy of GDP shows a significant result or a positive relationships with the FDI inflows into the host country (See: Azam, 2010 on Armenia, Kyrgyz Republic and Turkmenistan; Artige & Nicolini, 2005 on three European regions; Demirhan & Masca, 2008; Hoang, 2012; Vijayakumar et al., 2010; Mottaleb, 2007; Sahoo, 2006).

Market size and FDI inflows also has a negative relationship. Previous studies have shown that market size with the proxy of GDP shows an insignificant result with the FDI inflows into the host country. For instance, Jaumotte (2004) stated that although the growth of domestic market size has a positive and significant effect on FDI, domestic market size itself is insignificant. Cuyvers, Plasmans, Soeng and Bulcke (2008) pointed out that the market size of Cambodia and/or home country's market size do not influence FDI inflows. This proves that market size does not affect the FDI inflows of all country and Cambodia is one of those countries. Holland and Pain (1998), pointed out that "The observed pattern of investments does not simply reflect market size". This means that the both of them concluded that market size have a negative relationship with FDI inflows.

2.1.3 POLITICAL STABILITY

Political stability is a crucial determinant of FDI inflows. Kinyanjui and Murshed (2014) stated that governance variable have significant relationship to FDI in Malaysia as a well-established institutions reflect the participation of government in allocation of resources. They further explained that the country will be more attractive to foreign investors with a guaranteed political stability. It can be proven by FDI flows hugely into manufacturing sector due to the diversify economy. While in the case of Kenya, it shows democracy brings significant effect to FDI inflows in the short and long run. It seems to be an important factor to FDI inflows where Kenya targets on the structural adjustment programs in order to achieve sound macroeconomic management and market efficiency. Tintin (2013) mentioned that institutional factor is a must to be included in determining the FDI inflows in CEEC. In deep, the transformation process in the whole world is actually generated by the institution reforms, open market policies and globalization growth. Shahzad et al. (2012) stated that political stability is the key to promote smooth economic growth and development process. Using Pakistan as their study country, they found out that the political

stability is in a diminishing trend since year 2008, and thus it lead to FDI inflows to decline as well.

Previous researches have always omitted political stability as one of the independent or controlled variables to boost the FDI inflows. However, some researches could have proved that political stability does matter in FDI inflows. It actually goes two ways that it might affect the FDI inflows positively or negatively. One of the variables used to be in the empirical model is the index of internal conflict, which is the same as political stability/violence. The measurement includes the events of terrorism, civil war, coup threat, and civil disorder. Ullah and Inaba (2014) interested in this variable because they think that the politician will frighten the actual and potential investors if there is nonstop conflict among or between political parties and civilians. Subsequently, it will bring a negative effect to the future FDI inflows.

Plummer and Cheong (2009) claim that MNCs investment decisions might be varies on the changes in political and institutional environment. They point out that a high degree of political risk will be a threat and it discourages FDI. Therefore, FDI inflows and institutional quality are correlated to each other in way that high quality institution will reduce political instability and guarantee smooth setup for investors. Thus, their study has included three indicators which are law and order index, corruption index and index of internal conflict (in other word, political stability/violence) in order to capture the role of institution quality.

"Investment environment can be improved by political stability, developed institutions and legal system" (Castro & Nunes, 2013). To create a better condition for investment, especially foreign can be done when a stable political and economic environment, an efficient rule of law, and sound infrastructures are running well within a country (Castro & Nunes, 2013). Barro (1991) mentioned that "political instability creates an uncertain economic environment, which has a negative impact in long-term planning, and thus, reduces economic growth and investment opportunities".

Nigh (1985), Edwards (1990), Magnus and Fosu (2008) have indicated that political instability has a significant negative effect on FDI inflows. Also, Hess (2004) concludes that political instability is more important than democracy in making decision of investment locations. Whereas Castro and Nunes (2013) show and prove the previous findings of the coefficient of political stability is similar as theirs, where countries with high political stability tend to attract more FDI inflows due to decrease in uncertainty.

Kudina and Pitelis (2014) have used the Political Constraint Index (POLCON) which produced by Henisz in 2000 to measure the quality of the political environment. They also say that policy outcomes are served as a tool of political structure to measure the quality of the political environment within a country. In addition, they claim that the greater the index, the greater is the political stability of the country. Brouthers (2013) argued that these proxies have limitations and it is lack of evidence to prove the significance of the comparative political stability as a factor of FDI inflows since the result of POLCON is positively related to FDI inflows but there is an insignificant coefficient.

Tintin (2013) has analyzed on six Central and Eastern European Countries (CEEC) that the economic freedoms index, the state fragility index, the political rights index and the civil liberties index will bring vary but significant effects on FDI inflows from different investor countries. These institutional factors are one of the main determinants of FDI inflows.

Political stability may bring both positive and negative relationship to FDI inflows whereby most of the studies found that this variable does matter and it is significantly affect the FDI inflows. This statement is proved by Kim (2010) that high political rights index and democracy index mean high political stability and thus it boost FDI inflows. On the contrast, Lucas (1990) critiqued that politically instability countries attract more capital flows which lead to the higher possibility of better performance of FDI.

2.1.4 TRADE OPENNESS

Trade openness is an important as it is included country exports and imports. Balasubramanyam et al. (2006) highlighted that trade openness is crucial in developing countries in order to obtaining the growth impact of FDI. Also, trade openness is crucial as a vehicle for the effects of new technology knowledge on production and innovative of the countries which known as technological spillover. Belloumi (2014) stated that Tunisia needs partner that provides technology which would improve their own stock of knowledge. In theory, trade openness could give impact on FDI inflows either in positive or negative way. For instance, Liargovas and Skandalis (2011) state that number of Latin American countries attracted more FDI flows with the implementation of free trade agreements (FTAs). Also, trade openness effect FDI inflows vary based on the motivation they have involved in the FDI activities (Dunning, 1993; Markusen & Maskus, 2002). Markusen and Maskus (2002) found that openness higher have small effect on market seeking investments in the developing economies. Other than that, trade openness improves its competitions which increases the efficiencies, improvement of the products, technological change and reduce cost of production through raising the profits.

Openness of trade is found as one of the major variable that affecting the FDI. Alemu (2012) argued that a host country degree of openness is assumed to be one of the mandatory variables to attract FDI. FDI is important to most of the countries. It has grown two times as trade over the last decade (Meyer, 2003).

According to Aqeel and Nishat (2005), the competition for inward FDI has increased which due to the existing integration process in world economy and liberalization of economic in developing countries, restrictions and controls as well as operation of foreign firms had been substituted by selective policies which targeted at FDI inflows. Liberalization of the economic refers to the trade openness and it is use to explaining the FDI flows in a country. Trade openness usually are measured in sum of exports

and imports in percentage of GDP and it is expected to be positive (Sadig, 2009). Balasubramanyam et al. (1996) found that trade openness is crucial to obtain the growth capability which would affect FDI. They even argued that the more exposed the economies are more possible to attract more of FDI and promote more efficient consumption compared to closed economies.

Al-Sadig (2009), Dirmihan and Masca, (2008), Cevis and Camurdan (2007) found that the effect of the trade openness on FDI inflows is positive and statistically significant. Ang (2008) found that trade openness increased by one percentage point would increase FDI inflows at 1.094 to 1.323 percentage point. Marial and Ngie (2009) also found that one percentage point increase in openness would lead to FDI increased approximately 7.6 percentage point. In addition, Omanwa (2013) found that openness rise by 1 unit will increase FDI by 0.543 unit. There are positive relationship between FDI and trade openness, however the figure are relatively different. It is important to a country either to accept or reject foreign direct investment. Mundell (1957) demonstrate that FDI and exports are substitute for each other. However, subsequent theoretical developments show that it is possible to have either substitute or complement relationship between FDI and trade which depends on nature of the investment (Goh, Wong & Tham, 2013). Lee (2009) proposed that trade and FDI significant for convergence mainly in productivity movement over the countries. To be more specific, trade had ascertained that long run manufacturing productivity convergence. Instead of increase in openness would attract FDI, other aspect of investment such as political or economic environment will increase FDI (Sekkat, Marie-Ange & Veganzones-Varoudakis, 2007). Thus, it will increase the degree of openness in an economy where increase FDI can actually increase technical efficiencies (Nourzad, 2008). Previous studies show that FDI inflows and trade openness are statistically significant in some of the countries, Liargovas and Skandalis (2012) on 36 developing economies such as Latin America, Asia, Africa Commonwealth of Independent States and European,

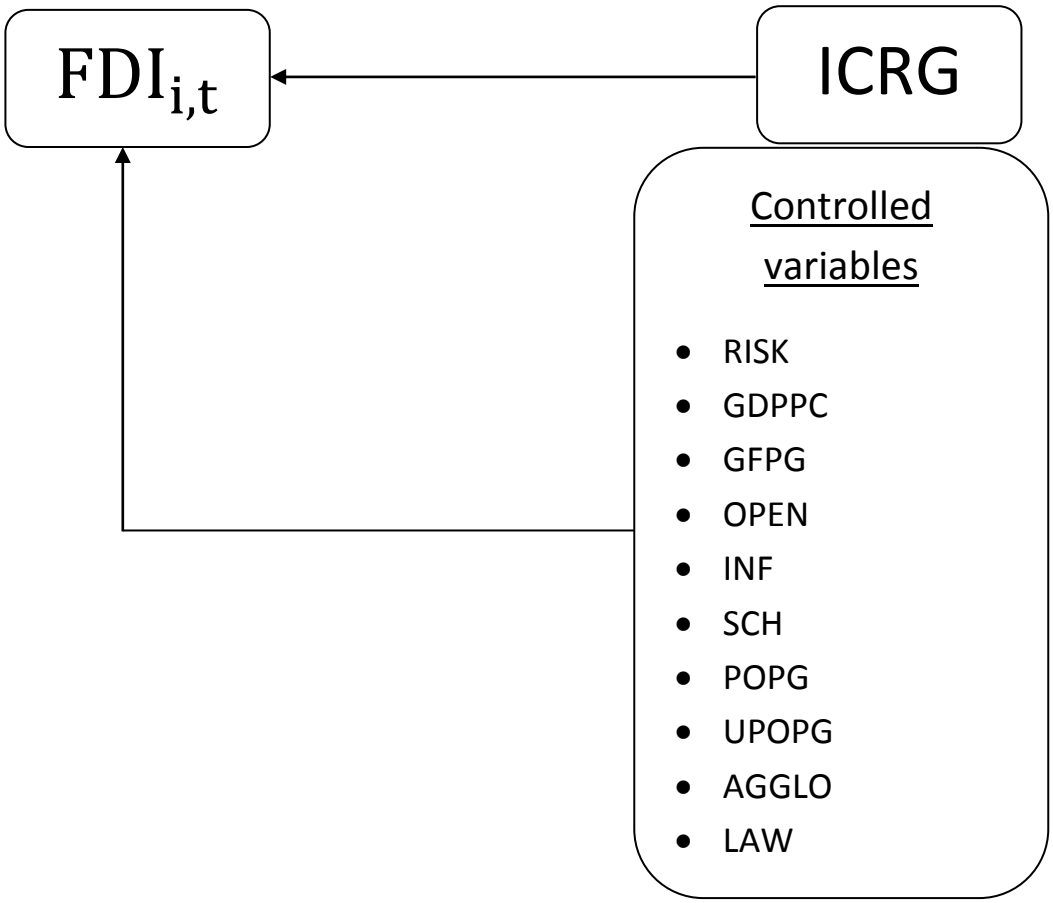
Babatunde (2011) on two sub Saharan Africa countries, and Javed, Sher, Awan & Ashfaq (2012) on 4 South Asian countries.

On the other hand, Kolstad and Villanger (2008) found that there is insignificant between trade openness and FDI inflows due to the sensitivity of some of the factors such as labor cost, trade barriers, exchange rate and tax which have positive and negative effects of FDI. Certain multinational firms involved in export-oriented investment may choose a more open economy with trade security which have high transaction cost related to exporting (Asiedu, 2002). Farrell, Gaston and Sturm (2004) concluded in their study, the result cannot be determine between exports and Japan FDI where exports and FDI more to be complement instead of substitute. Indeed, some of the previous study also shows that FDI and trade openness have negative relationship in certain countries, such as Vijayakumar et al. (2010) trade openness is an insignificant determinants to FDI inflows in Brazil, Russia, India, China and South Africa (BRICS) countries, Kha and Hye (2014) on Pakistan.

Trade openness does able to bring both positive and negative relationship to FDI inflows. However, most of the researchers find that there are positive relationship between trade openness and FDI. Thus, import and export of goods is a crucial determinant of FDI inflows

2.2 REVIEW OF RELEVANT THEORETICAL MODELS

Figure 2.1: Theoretical Model



Source: Al-Sadig, A. (2009). The effects of corruption on FDI inflows. Cato Journal, 29(2).

$$\text{Log (FDI per capita)}_{i,t} = \beta_0 + \beta_1 \text{ICRG}_{i,t-1} + \beta_2 \text{RISK}_{i,t-1} + \beta_3 \text{Log(GDPPC)}_{i,t-1} + \beta_4 \text{GDPC}_{i,t-1} + \beta_5 \text{OPEN}_{i,t-1} + \beta_6 \text{INF}_{i,t-1} + \beta_7 \text{SCH}_{i,t-1} + \beta_8 \text{POPG}_{i,t-1} + \beta_9 \text{UPOPG}_{i,t-1} + \beta_{10} \text{AGGLO}_{i,t-1} + \beta_{11} \text{LAW}_{i,t-1} + \beta_{12} \text{DEMOC}_{i,t-1} + \eta_i + \varepsilon_{i,t}$$

The chart above (Figure 2.1) shows the theoretical model studied by Al-Sadig (2009) to examine the effects of corruption on FDI inflows after controlled the other variables of FDI location by using an econometric method based on panel data from 117 host countries from 1984 to 2004. This study is to determine the effect of controls variable such as GDP per capita, growth rate of GDP, growth rate of population, degree of openness, economic stability, quality of human

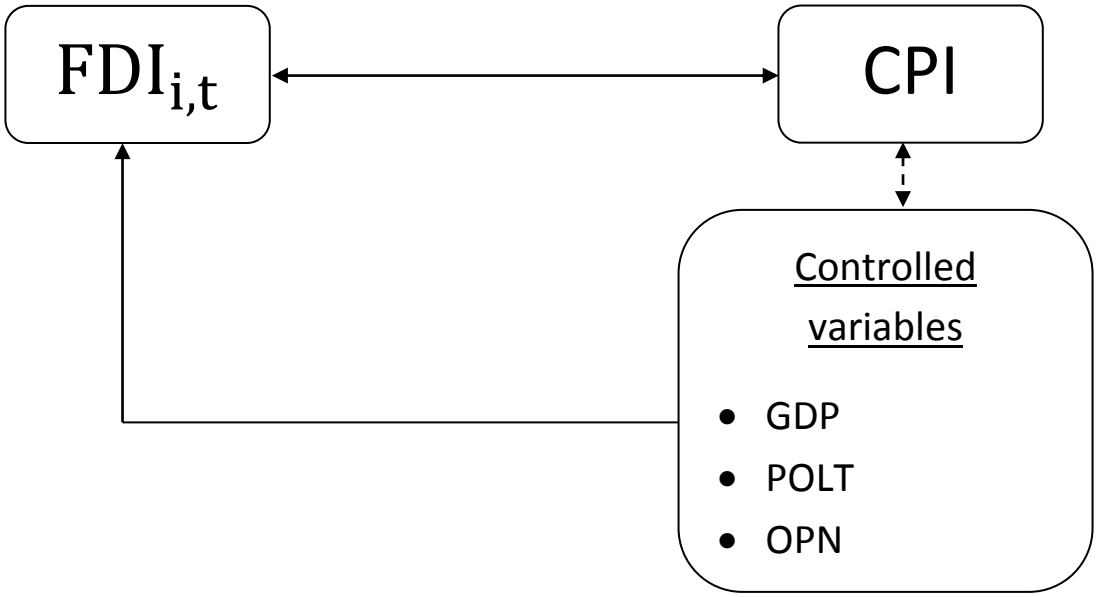
capital, social stability and political environment, degree of urbanization, FDI stocks, quality of institution, and democratic institutions toward FDI inflows.

From the model of Al-Sadig (2009), the dependent variable is FDI inflows while the independents variables are International Country Risk Guide (ICRG) corruption index, GDP per capita (GDPPC), growth rate of GDP (GDPG), growth rate of population (POPG), degree of openness (OPEN), inflation rate (INF), host country's secondary school enrolment (SCH), political risk (RISK), growth rate of urban population (UPOPG), agglomeration effects (AGGLO), quality of institution (LAW) and democratic institution (DEMOC).

From the research of Al-Sadig (2009), the control variables are positively affect FDI inflows however, the growth rate of population ($\mathrm{POPG}_{i,t-1}$) has a negative relationship towards FDI. In order to control for host country size and potential of the market, the author used GDP per capita ($\mathrm{GDPPC}_{i,t-1}$), growth rate of GDP ($\mathrm{GDPC}_{i,t-1}$). The degree of openness ($\mathrm{OPEN}_{i,t-1}$) is measured by sum of exports and imports over GDP and economic stability controlled by inflation rate ($\mathrm{INF}_{i,t-1}$). Also, quality of human capital is measured by the secondary school enrolment ($\mathrm{SCH}_{i,t-1}$) whereas social stability and political environment controlled by political risk ($\mathrm{RISK}_{i,t-1}$). In addition, the growth rate of urbanization used as proxy of urbanization. In addition, agglomerate effects ($\mathrm{AGGLO}_{i,t-1}$) the existing FDI stocks over GDP in host country as well as quality of institution ($\mathrm{LAW}_{i,t-1}$) and democratic institution ($\mathrm{DEMOC}_{i,t-1}$).

2.3 PROPOSED THEORETICAL/ CONCEPTUAL FRAMEWORK

Figure 2.2: Researcher's Model



Adapted from: Al-Sadig, A. (2009). The effects of corruption on FDI inflows. Cato Journal, 29(2).

Based on the model from Al-Sadig (2009), this study has remodelled the model from (Figure 2.2):

$$FDI_{i,t} = \beta_0 + \beta_1 CPI_{i,t} + \beta_2 GDP_{i,t} + \beta_3 POLT_{i,t} + \beta_4 OPN_{i,t} + \varepsilon_{i,t}$$

This study is going to be focusing on several important determinants of FDI inflows which include corruption (CPI) as the main determinant and others as controlled variables include GDP per capita (GDP), political stability (POLT), and trade openness (OPN). This study is an econometric method based on panel data from 5 selected ASEAN countries (Indonesia, Malaysia, Singapore, Thailand, and Vietnam) from 2001 to 2013. The FDI is the dependent variable of this model which represents FDI inflows.

The independent variable CPI is the indicator for corruption which measured by corruption perception index in the Transparency International. According to Hakkala, Norback and Svaleryd (2008), they use CPI as a measurement of corruption for robustness and the results show that countries will receive lower

investments if the countries contain high level of corruption. Helmy (2013) expected that CPI is to be positively related with FDI inflows as the index assigns scores to countries ranging from 10 (highly clean) to 0 (highly corrupt). Thus, a country with higher score index of CPI tends to have a higher inflows of FDI.

The controlled variable GDP is the indicator for GDP in term of population which measured by GDP per capita that use the data from World Development Indicator. Theoretically, higher GDP per capita indicate higher FDI inflows. Castro and Nunes (2013) use the same measurement as this study which is absolute GDP and the empirical evidence show it is consistent with the hypothesis that FDI inflows are positively related to the market size.

The controlled variable POLT is the indicator for political stability which measured by percentile rank that retrieved from Worldwide Governance Indicators. Theoretically, high degree of political stability will tend to increase the inflows of FDI. Kim (2010) concluded that high political rights index and democracy index indicate high political stability and thus it tend to increase FDI inflows (positive relationship).

The controlled variable OPN is the indicator for trade openness which measured by total export plus total import in percentage of GDP. Asiedu (2006), Drabek and Payne (2001), Sadig (2009), Onyeiwu (2003) agreed that trade openness will positively affects FDI inflows. Castro and Nunes (2013) have empirical evidence that trade openness is statistically significant to the FDI inflows. They also mentioned that the markets with high degree of trade openness are more likely to attract foreign companies.

This study also tend to find out does FDI inflows affect corruption and the relationship between corruption and other controlled variables (GDP per capita, political stability, trade openness). As for the relationship between corruption and other controlled variables (GDP per capita, political stability, trade openness), Ata and arvas (2011) concluded that economic development, inflation and economic freedom is significant determinants of corruption and Serra (2006) suggest economic freedom is used as an indicator of political stability. Moreover, Dong and Torgler (2013) found from previous studies that economic openness is negatively correlated to the levels of corruption (Ades & Di Tella, 1996 & 1999).

Treisman (2000) and Gerring and Thacker (2005) holds that there is negative relationship between trade openness and corruption.

2.4 HYPOTHESIS DEVELOPMENT

Hypothesis 1: Corruption will have negative relationship with FDI inflows in 5 selected ASEAN countries.

Hypothesis 2: GDP per capita will have positive relationship with FDI inflows.

Hypothesis 3: Trade openness will have positive relationship with FDI inflows.

Hypothesis 4: Political stability will have positive relationship with FDI inflows.

Hypothesis 5: There is causality running from corruption to FDI inflows.

Hypothesis 6: There is causality running from GDP per capita to FDI inflows.

Hypothesis 7: There is causality running from trade openness to FDI inflows.

Hypothesis 8: There is causality running from political stability to FDI inflows.

Hypothesis 9: There is causality running from FDI inflows to corruption.

Hypothesis 10: There is causality running from FDI inflows to GDP per capita.

Hypothesis 11: There is causality running from FDI inflows to trade openness.

Hypothesis 12: There is causality running from FDI inflows to political stability.

CHAPTER 3: METHODOLOGY

3.0 INTRODUCTION

Panel data is used in this study because of its advantages over pure time series data and pure cross sectional data. Benefit of using this method is has a better capture in dynamics of change and suitable to study complicated relationship. It also can measure the effects that cannot be measured by pure cross sectional and time series data at the same time it contain more degree of freedom and less multicollinearity. The study model is used to determine the two main effect of corruption on FDI. Besides, all the testing approaches will be discussed in this chapter.

The corruption data is retrieved from Transparency International while other control variables data are retrieved from World Bank. Both sources are committed to their accountability and being used in most of the related studies thus the data are reliable. The main objective is to investigate the relationship between level of corruption and FDI inflows, other variables such as trade openness, political stability and GDP per capita are acted as control variables.

3.1 DATA DESCRIPTION

Transparency International measured corruption level using CPI. CPI is a composite index which consists of a combination of survey and corruption assessments collected by different trustable institutions. It is the most commonly used corruption indicator. CPI is comprised by analyze bribes reported, court cases because it was unlikely to have empirical data. Moreover, each data source

will be reviewed on methodology in detail to make sure each of them meet the quality standards. The data set consists of 5 ASEAN countries, from year 2001 to 2013, providing 63 panel observations, unbalance panel due to missing data in FDI. The proxy used for all variables are CPI for corruption level, sum of exports and imports in percentage of GDP, percentile rank for political stability and GDP per capita for market size. CPI ranked from 0-10 where 10 indicate very clean while political stability ranked from 0-100 which 100 indicate very stable.

3.2 ECONOMETRIC MODEL

Proposed model for estimation in this study:

$$LFDI_{it} = \beta_0 + \beta_1 CPI_{it} + \beta_3 LOPN_{it} + \beta_4 POLT_{it} + \beta_5 LGDP_{it} + \mu_{it}$$

Where subscript *t* represent the year and *i* represent the country respectively. FDI represents the FDI inflow per capita, CPI represents the Corruption Perception Index, OPN is the trade openness of the country, and POLT is the political stability and GDP for the market size. FDI, OPN, and GDP are in logarithm form due to several reasons. First, ease of interpretation on the parameters of the variables. Other is reducing the variations value of variables across the time; ensure the residuals are normally distributed.

3.3 ECONOMETRIC METHOD

This study used panel data model to analyze the relationship of corruption and FDI inflows for 5 selected ASEAN countries. Besides that, it also finds out the causal direction between corruption and FDI inflows in these countries using panel Granger causality.

3.3.1 PANEL DATA ANALYSIS

Panel data analysis was chosen to measure the impact of corruption on the FDI inflows together with other determinants in these five ASEAN countries. This method was chosen due to their advantages compared to cross-section and time series analysis. Alemu (2012) states that panel data method able to capture the individual unobserved heterogeneity and obtained unbiased results. Moreover, Hsiao's study and Baltagi's study (as cited in Ranjan & Agrawal, 2011) argued that panel data suggest individual heterogeneity and provide huge number of observations, degrees of freedom is high and capture the dynamic of adjustment of the model. Panel unit root test is carried out to determine the stationary of variables to avoid spurious result. There are three methods available in panel data model which are common constant model, fixed effects model (FEM), and random effects model (REM). Hausman specification test helps to determine either Random Effects Model or Fixed Effects Model is suitable for this study. Lastly, F-test helps to determine whether Fixed Effects Model or Common Constant Model more appropriate.

3.3.1.1 PANEL UNIT ROOT TEST

Panel unit root test is implemented in this study to examine the variables in the series are either stationary or non-stationary ($H_1 = stationary$). There are multiple series of unit root tests that implement in panel data structure which generated as a multiple series with the existence of cross-sectional rather than single series. Levin, Lin and Chu (2002) "consider panel data as a mean of generating a more powerful unit root test". Stationery series will have strong influence on its properties and behavior. There are some tests for panel unit root which are Fisher-type test by using ADF and PP test (Breitung, 2000; Levin et al., 2002; Choi, 2001; Im et al., 2003). However, these tests can be categorized into 2 types where the first type is

used to estimate regression with lagged difference terms including Fisher-ADF test, Im, Pesaran and Shin test (IPS), Levin, Lin and Chu test (LLC) as well as Breitung test. On the other hand, the second type is used to estimate regression with kernel weighting which are Levin, Lin and Chu test, Hadri test and Fisher-PP test. LLC and IPS is used for this study.

3.3.1.1.1 LLC TEST

Levin et al. (2002) "evaluate hypothesis in individual time series where one of the assumptions of LLC test are in autoregressive (AR) coefficients dynamics do not consists heterogeneity for panel series which allow either individual effects or linear trend and time effects and error term structure is assumed to be contain homogeneous of first autoregressive model which indicates that series integrated at first order I(I) are cointegrated."

LLC test is based on ADF regression:

$$\Delta Y_{i,t} = \alpha_{it-1} + \beta_{0i} + \beta_{1i}t + \varepsilon_{it}$$

Where:

$$i = 1,2,3, \dots, N \ \& \ t = 1,2,3, \dots, T$$

Based on the series, the individual effect (β_{0i}) and time trend ($\beta_{1i}t$) are incorporated. Lagged dependent variable and restricted to be homogeneous in every units are crucial source of heterogeneity in the deterministic components. In addition, according to Levin, Lin and Chu (2002), the error process (ε_{it}) is assumed distribute independently across individual and follow stationary invertible ARMA process for each of the individual at:

$$\varepsilon_{it} = \sum_{j=1}^{\infty} \theta_{ij}\varepsilon_{it-j} + \varepsilon$$

3.3.1.1.2 IPS TEST

IPS is chosen based on procedure of Dickey-Fuller to test heterogeneity. Im, Pesaran and Shin (2003) recommended a simple unit root testing procedure based on unit root statistic for panel. It allows heterogeneity of dynamics, residual serial correlation, and error variances among the groups. A simple unit root test combines the information from cross-sectional as well as time series dimension.

IPS applied likelihood framework which based on the average Dickey-Fuller T-bars test across every group in the panel instead of pooling it when error term of dissimilar serial correlation patterns across cross-sectional units is serially correlated as well as N and T are big enough. A linear trend for each of the cross section units and substituteε_{it}, then will get $\Delta Y_{it} = \alpha_i + \beta_i y_{i,t-1} + \varepsilon_{it}$

Where $i = 1,2,3, \ldots, N$ and $t = 1,2,3, \ldots, T$

3.3.1.2 COMMON CONSTANT MODEL

This method is also known as pooled OLS method which assumes that all cross section share same constant or common constant for all countries. Vijayakumar, Perumal and Rao (2010) discussed that this method is suitable if assumption that the data set is priori homogeneous. The regression model will be as follow:

$LFDI_{i,t} = \beta_0 + \beta_1 CPI_{i,t} + \beta_3 LOPN_{i,t} + \beta_4 POLT_{i,t} + \beta_5 LGDP_{i,t} + \mu_{i,t}$

Where the error term, $\mu_{i,t}$, assumed varies across both country and time. However the countries' unobservable individual effects are not captured in this regression model. According to Bevan and Danbolt's study (as cited in Tiwari & Mutascu, 2011), these effects can affect the estimation of parameters.

3.3.1.3 FIXED EFFECTS MODEL (FEM)

This method assumed all cross section have different constant where every country have their own specific effect. This method insert dummy variable for every country and capture the heterogeneity effects for every country, thus it is also named as Least Squares Dummy Variables estimators. Fixed effects model assumed that there is correlation between unobservable individual effects and FDI determinants. The regression model will be as follow:

$$LFDI_{i,t} = \beta_0 + \beta_1 CPI_{i,t} + \beta_3 LOPN_{i,t} + \beta_4 POLT_{i,t} + \beta_5 LGDP_{i,t} + \alpha_i + \mu_{i,t}$$

Where α_i captures the individual specific effect and $\mu_{i,t}$ represent the remaining error term that are not explained. Vijayakumar, Perumal and Rao (2010) suggest that if there is balance panel, Fixed Effects Model should be applied in the test.

3.3.1.4 RANDOM EFFECTS MODEL (REM)

This method assumed each country has different error term but same across time. The intercept for this model across different country are same, they have common intercept. Instead of using dummy variable to capture the individual specific effects, it is using the error term. Thus, this model consists of error term which dealings the unsystematic deviation of every country's intercept from the common intercept. Besides that, this model assumes that the correlation between unobservable individual effects and FDI determinants does not exist. The regression model will be as follow:

$$LFDI_{i,t} = \beta_0 + \beta_1 CPI_{i,t} + \beta_3 LOPN_{i,t} + \beta_4 POLT_{i,t} + \beta_5 LGDP_{i,t} + \lambda_i + \mu_{i,t}$$

Where λ_i represents the variation of the constant for each country, that varies across country but constant across time and $\mu_{i,t}$, error term that varies across both country and time. Vijayakumar, Perumal and Rao (2010) argued about the disadvantages and advantages of this approach compared

to Fixed Effects Model. The main disadvantage of this method is if the unobservable individual effects are correlated with the FDI determinants will lead to biased and inconsistent estimators. The advantages for this method are fewer estimators compared to the FEM and able for independent variable that share same value for all the observations from same group.

3.3.1.5 HAUSMAN SPECIFICATION TEST

This test helps to determine whether there is a correlation between unobservable individual effects and FDI determinants and select the method that is suitable. The null hypothesis for this test is the unobservable individual effects are uncorrelated with FDI determinants, which if null hypothesis is not rejected, REM better than FEM. However, if the null hypothesis is rejected, FEM is better.

3.3.1.6 F-TEST

F-test needs to apply to determine whether there is common constant or different constant for each country, hence decide Fixed Effects Model (different constant) or Common constant OLS method should be used. Null hypothesis suggests that Common Constant Model is more appropriate as all constant are the same, otherwise Fixed Effects Model are better.

3.3.2 PANEL GRANGER CAUSALITY

Panel vector autoregressive model or VAR model is chosen to ascertain the relationship between corruption and FDI inflows. The main reason for

using this method is it exploits cross-sectional variations and individual time series and takes the country specific fixed effect into consideration to avoid biases that associated with cross-sectional regressions (Pradhan, Arvin, Norman, & Bele, 2014). Panel VAR model is built to identify the flow of the relationship between FDI inflows and corruption along with other control variables.

To ascertain the causal relationship between FDI inflows and other variables which are corruption, trade openness, political stability, and GDP per capita in the 5 selected ASEAN countries, this study starts with the following regression equation:

$$\Delta LFDI_{it} = \eta_{1j} + \sum_{k=1}^{P_1} \alpha_{1\,ik} \Delta LFDI_{it-k} + \sum_{k=1}^{P_2} \beta_{1\,ik} \Delta CPI_{it-k} + \sum_{k=1}^{P_3} \delta_{1\,ik} \Delta LOPN_{it-k} + \sum_{k=1}^{P_4} \mu_{1\,ik} \Delta POLT_{it-k} + \sum_{k=1}^{P_5} \lambda_{1\,ik} \Delta LGDP_{it-k} + \varepsilon_{1it}$$

$$\Delta CPI_{it} = \eta_{2j} + \sum_{k=1}^{P_1} \alpha_{2\,ik} \Delta LFDI_{it-k} + \sum_{k=1}^{P_2} \beta_{2\,ik} \Delta CPI_{it-k} + \sum_{k=1}^{P_3} \delta_{2\,ik} \Delta LOPN_{it-k} + \sum_{k=1}^{P_4} \mu_{2\,ik} \Delta POLT_{it-k} + \sum_{k=1}^{P_5} \lambda_{2\,ik} \Delta LGDP_{it-k} + \varepsilon_{2it}$$

$$\Delta LOPN_{it} = \eta_{3j} + \sum_{k=1}^{P_1} \alpha_{3\,ik} \Delta LFDI_{it-k} + \sum_{k=1}^{P_2} \beta_{3\,ik} \Delta CPI_{it-k} + \sum_{k=1}^{P_3} \delta_{3\,ik} \Delta LOPN_{it-k} + \sum_{k=1}^{P_4} \mu_{3\,ik} \Delta POLT_{it-k} + \sum_{k=1}^{P_5} \lambda_{3\,ik} \Delta LGDP_{it-k} + \varepsilon_{3it}$$

$$\Delta POLT_{it} = \eta_{4j} + \sum_{k=1}^{P_1} \alpha_{4\,ik} \Delta LFDI_{it-k} + \sum_{k=1}^{P_2} \beta_{4\,ik} \Delta CPI_{it-k} + \sum_{k=1}^{P_3} \delta_{4\,ik} \Delta LOPN_{it-k} + \sum_{k=1}^{P_4} \mu_{4\,ik} \Delta POLT_{it-k} + \sum_{k=1}^{P_5} \lambda_{4\,ik} \Delta LGDP_{it-k} + \varepsilon_{4it}$$

$$\Delta LGDP_{it} = \eta_{5j} + \sum_{k=1}^{P_1} \alpha_{5\,ik} \Delta LFDI_{it-k} + \sum_{k=1}^{P_2} \beta_{5\,ik} \Delta CPI_{it-k} + \sum_{k=1}^{P_3} \delta_{5\,ik} \Delta LOPN_{it-k} + \sum_{k=1}^{P_4} \mu_{5\,ik} \Delta POLT_{it-k} + \sum_{k=1}^{P_5} \lambda_{5\,ik} \Delta LGDP_{it-k} + + \varepsilon_{5it}$$

Where Δ is the first difference of the variables, P_a: a for 1, 2, …, 5; *i* represent each of the country in the panel, *i* = 1, 2, …, N; *t* represent the year in panel, *t* = 1, 2, …, T; ε_{1it} represent random error term that

normally distributed with a finite heterogeneous variance and zero mean value.

The first differenced variables represent the short run dynamics between the short run variables and causal relationship is determined by the significance of the lagged variables.

CHAPTER 4: DATA ANALYSIS

4.0 INTRODUCTION

In this chapter, the results are discussed into two main parts which are panel data analysis and panel Granger causality. In panel data analysis, the impact of corruption and other independent variables on FDI inflows are discovered. While in panel Granger causality, the short run dynamic Granger causality relationships between the variables are revealed. Further details are discussed in the following subsections.

4.1 PANEL DATA ANALYSIS

Firstly, the stationary of the variables is determined through panel unit root test. Then, the suitable panel method is use in the model. Hausman's test is used to decide whether FEM or REM is more suitable. After that, F-test is used to decide whether common constant model or FEM is more suitable.

4.1.1 PANEL UNIT ROOT TEST

To avoid spurious result, the order of integration for each variable is determined through LLC and IPS unit root test. However, both test result showed contrary result to each other. Kunst, Nell, and Zimmermann (2011) states that Monte Carlo simulations found that IPS test performed better than LLC test in small sample. As this study only consist of 63

observations and this considered as small sample in panel data analysis. Therefore, IPS result is used in this study. Null hypothesis assumed the series or variable is unit root (non-stationary). The panel unit root test result of both test showed in the table 4.1, in level form and first difference form. In the level form, all variables are non-stationary and reject null hypothesis in first difference form which suggest that all variables are I(1) or first integration of order.

Table 4.1: Summary of IPS unit root test result

	Test statistic (p-value)
	IPS
a. Level form	
LFDI	-0.58214 (0.2802)
CPI	1.73513 (0.9586)
LOPN	-0.27653 (0.3911)
POLT	-0.67576 (0.2496)
LGDP	1.52123 (0.9359)
b. First difference form	
LFDI	-5.09528 (0.0000)**
CPI	-4.53471 (0.0000)**
LOPN	-5.10990 (0.0000)**
POLT	-6.54616 (0.0000)**
LGDP	-4.30090 (0.0000)**

*significant at 0.10 significance level

**significant at 0.05 significance level

4.1.2 Fixed Effects Model

Hausman test result is showed in table 4.2. It rejected the null hypothesis and concludes that FEM is more appropriate to explain the impact. Besides that, the F-test result support FEM model is more appropriate. Thus, FEM

method is used to estimate the model and followed with summary of several diagnostic checking in table 4.3.

Table 4.2: Hausman's Test and F-Test value

Hausman Test (p-value)	18.57 (0.0010)**
F-test (p-value)	6.36 (0.0003)**

*significant at 0.10 significance level

**significant at 0.05 significance level

Table 4.3: Summary of Diagnostic Checking

Hypothesis Testing	P-value
Cross sectional dependence test	0.3776
Autocorrelation test	0.1358
Heteroskesdaticity test	0.0000 **

*significant at 0.10 significance level

**significant at 0.05 significance level

Pesaran CD test showed that this model's cross sectional is not dependence which cross sectional dependence may lead to bias in test result. Following is the Wooldridge autocorrelation test and it showed that there is no autocorrelation in the model. Lastly, the Modified Wald test which showed that the model has heteroskesdaticity.

4.1.3 PROBLEM SOLVING

The White robust standard error is used to correct the heteroskedasticity in the model. Kezdi (2003) found that applied White robust standard error performs well as the robust estimators are not biased as the time increase. As applied of robust standard error changes the standard error of the estimators and provide accurate p value and more accurate result in

hypothesis testing. Therefore, in the presence of heteroskedasticity, robust standard error has more trustworthy result. The result of the robust estimators showed at the table 4.4.

Table 4.4: Model with White Robust Standard Error

Dependent variable: LFDI		
FEM		
Independent variables	Estimated coefficients	t-ratio (probabilities)
Constant	-5.773065	-2.50 (0.067)*
CPI	0.222433	3.54 (0.024)**
LOPN	0.4650568	0.72 (0.510)
LGDP	1.521694	7.04 (0.002)**
POLT	0.0086379	2.17 (0.095)*
R-squared	0.5067	
F-statistic	105.30	
Prob (F-stat)	0.0003**	

*significant at 0.10 significance level

**significant at 0.05 significance level

4.1.4 INTERPRETATION OF RESULT

From the FEM results, Corruption Perception Index (CPI) and GDP Per Capita (LGDP) are statistically significant at 5% significance level. The other two estimated coefficients which are Political Stability (POLT) and Constant (cons) are statistically significant at 10% significance level. Trade Openness (LOPN) is insignificant at 10% significance level.

FDI per capita, on average will increase by 22.24% for each additional point of CPI ceteris paribus. As the CPI is measure by the scale of 1-100 and 1-10, the higher the score had given to a country basically means that

the particular country is less corrupted. This means that FDI in a country will increase if the country is less corrupted, ceteris paribus.

If the GDP per capita increases by 1%, on average, the FDI increases by 1.52% ceteris paribus. This interpretation for GDP per capita shows that FDI and GDP per capita have positive relationships with one another. As GDP per capita is used to measure the market size of the 5 selected ASEAN countries (Indonesia, Malaysia, Singapore, Thailand, and Vietnam), this also means that a larger market size will increases the FDI. Besides that FDI per capita, on average will increase by 0.0086% for each additional point of percentile rank for political stability, ceteris paribus. The higher the score had given to a country basically means that the particular country is more political stable. This means that FDI in a country will increase if the country is more stable in political, ceteris paribus.

4.2 PANEL GRANGER CAUSALITY

Panel Granger causality test examine the flow of the causal relationship between the variables in the selected ASEAN countries during 2001 till 2013. Panel VAR model is executed to check for the causality direction. Details the test will be further elaborated in the following subsections.

Panel VAR model is used to determine the causal relationship between the variables. Firstly, correct lag length need to be chosen by choosing the lowest Schwarz criterion (SC) which is lag length one, table 4.5 showed the SC value for different lag length. Secondly, different panel VAR model with different dependent variables are performed with lag length one lagged variables.

Lastly, the short run causal relationship between the variables is examined using the t-statistic with null hypothesis that there is no Granger causality between the variables. It showed that there is bidirectional Granger causality between GDP per capita and FDI inflows in these 5 selected ASEAN countries. There are no

Granger causality between CPI and FDI inflows, trade openness and FDI inflows, and between political stability and FDI inflows. Table 4.6 and Figure 4.1 showed the result of Granger causality between these variables.

Table 4.5: Lag length selection with SC value

Lag length	SC
0	12.06426
1	-0.167120
2	0.881747
3	2.100286
4	2.603231

Table 4.6: Summary of the Granger causality between variables

Granger Causality	t-statistic (p-value)	Result
CPI to FDI	-1.237773 (0.2227)	There is no Granger causality exists between CPI and FDI.
FDI to CPI	0.908909 (0.3686)	
LOPN to FDI	0.867522 (0.3906)	There is no Granger causality exist between trade openness and FDI
FDI to LOPN	0.618797 (0.5394)	
POLT to FDI	-0.011145 (0.9912)	There is no Granger causality exists between political stability and FDI.
FDI to POLT	-0.502190 (0.6182)	
LGDP to FDI	-3.092377 (0.0035)**	There is bidirectional Granger causality between GDP per capita and FDI.
FDI to LGDP	1.879312 (0.0672)*	

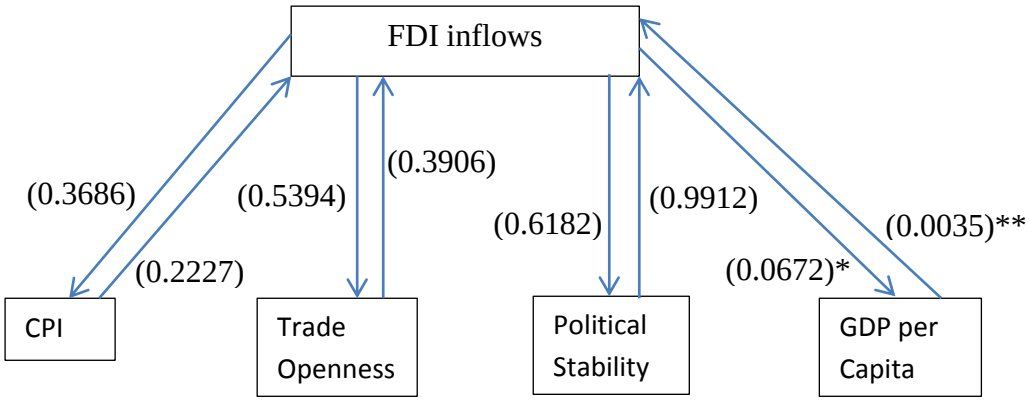
*significant at 0.10 significance level

**significant at 0.05 significance level

Figure 4.1: Summary of Granger causality test (p-value)

*significant at 0.10 significance level

**significant at 0.05 significance level



CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 INTRODUCTION

This section focused on evaluation of findings and discussion on the relationship of FDI inflows with all the independent variables in 5 selected ASEAN countries. Besides, this study would like to highlight some of the limitations arise and at the same time provided some recommendations for future research and implication of this study.

5.1 DECISION FOR HYPOTHESES OF THE STUDY

	Hypothesis of the Study	Decision
1.	Corruption will have negative relationship with FDI inflows in ASEAN.	Supported
2.	Market size (GDP per capita) will have positive relationship with FDI inflows.	Supported
3.	Trade openness will have positive relationship with FDI inflows.	Not supported
4.	Political stability will have positive relationship with FDI inflows.	Supported
5.	There is causality running from corruption to FDI inflows.	Not supported
6.	There is causality running from market size (GDP per capita) to FDI inflows.	Supported

7.	There is causality running from trade openness to FDI inflows.	Not supported
8.	There is causality running from political stability to FDI inflows.	Not supported
9.	There is causality running from FDI inflows to corruption.	Not supported
10.	There is causality running from FDI inflows to market size (GDP per capita).	Supported
11.	There is causality running from FDI inflows to trade openness.	Not supported
12.	There is causality running from FDI inflows to political stability.	Not supported

5.2 DISCUSSIONS OF MAJOR FINDINGS

5.2.1 CORRUPTION

The result showed that CPI and FDI inflows in ASEAN have positive relationship which means that corruption and FDI have negative relationship. This relationship supported the 'grabbing hand' theory proposed earlier as well as the estimation model equation of this study. This result is consistent with the research of Shleifer and Vishny (1993), Mauro (1995), Haugli (2012), Zhou (2012) and Kaufman (1997). These researchers had found negative (positive) relationship between corruption (CPI) and FDI inflows. From their research results, corruption will increase the economic costs of doing business in the sense that investors may have to pay every agency involved in foreign investment including officials, relevant ministry of industry, ministry of finance, central bank, bureau of state property and so on.

However, although Zhou (2007) found positive relationship between the two variables, he found that the positive effect of corruption on FDI is less significant after year 1999. Moreover, he got the negative relationship after he included the location of selection process into the test. This ambiguous result may cause by income differentials due to different profits investors can earned in different countries. If assumed investors can get great profits from investing in certain countries, the negative effects of corruption which is higher cost may be offset by the benefits brought by corruption which is market power. This also proved that corruption is not the only factor affecting investment decision as corruption may be less significant when other factors like political stability, trade openness and GDP per capita of a country have been taking into account. Petrou and Thanos (2014) stated that relationship changed with different level of corruption, hence the negative relationship between FDI inflows and corruption should not hold if a country undergoes different corruption level at a certain period. The period used in this study showed a steady range of corruption level for all the countries selected. Thus, the declining trends of FDI inflows in five selected countries of ASEAN can be explained by increased in corruption level.

On the other hand, the negative relationship between corruption and FDI is against the 'helping hand' theory. This study's results opposed Petrou and Thanos (2014), Egger and Winner (2005), Levy (2007), and Jiang and Nie (2014). The common opinion among all these studies is they all agreed that corruption can facilitates FDI in different ways based on different research area carried out by them on the effects bring by corruption. The good effects brought by corruption on FDI included profit sharing among government official from foreign investment at the same time being a lubricant for countries that have rigid over-centralized and honest bureaucracy. When a country have a rigid policy, it would be hard for investors to access the resources of that country. Thus, corruption provided an easy path for them to access more resources and leads to higher generation of outcome that finally contribute to FDI of that country.

Besides, positive effects of corruption may also due to the high level of corruption in the particular county where the bribing system is more organized which in turn reduced the uncertainty of corruption. This indicates that most of the corruption incurred in high corrupted countries would bring to an outcome because the 'rules of game' are known by those investors. These points are compatible with the theory discussed in the research of King (2003) which stated that predictable corruption would create stable business environment for investors. When corruption is predictable with low uncertainty, especially at high corrupted countries, corruption will become an incentive for most of the investors in making investment decision.

Although four of the selected countries in ASEAN have high corruption level except Singapore, all of them have high FDI inflow level, so reducing corruption level may not induced much of FDI inflows. Anyway, it does not means that combating corruption is not important, it is important for the development of social and political development of a country despite the economic development. Among all ASEAN countries, Singapore did the best job. It does not only tighten the laws but also increased the salary of every level of agency to decrease the incentives in receiving bribes. Other countries of ASEAN also put effort in combating corruption but the result was barely improved because implementation has always been the hardest part regardless how good is the policy.

Lastly, the result from Granger causality test showed that there is no causality running from corruption to FDI inflows and FDI inflows to corruption as well. This result is opposed by studies' results carried out by Craigwell (2011) and Larrain and Tavares (2004). Craigwell (2011) found that in developing countries, high corruption level can restricts FDI inflows and high level of FDI inflows level can restrict corruption as well. However, bidirectional, unidirectional and insignificant relationship occurred when the author used linear and non-linear panel method to test the same model. Larrain and Tavares (2004) have various results on this issue, they found bidirectional causality between FDI and corruption but one market showed FDI Granger caused corruption. Since most of the

researchers did not study the Granger causality relationship among corruption and FDI, the results can hardly use in comparison and need further investigation.

Due the data availability of selected 5 ASEAN countries, the study can only obtain 13 years corruption index (CPI), thus, long run relationship between FDI inflows and corruption could not be tested in this study. Since the study has proven the significant positive relationship of CPI on FDI inflows or negative relationship of corruption on FDI inflows, the long run relationship should be examined in the future study.

5.2.2 GDP PER CAPITA

The result concluded that FDI is positively significant to the estimated coefficient of GDP per capita at 5% significance level. This means that the FDI of the 5 selected ASEAN countries (Malaysia, Singapore, Indonesia, Thailand and Vietnam) in this research are positively affected by the GDP per capita. Hoang (2012) stated that "The domestic market size has a positive effect statistically significant for FDI flows into ASEAN" which supported our research results. The result of this research is similar to the conclusion made by Vijayakumar, et al., (2010), Demirhanand Masca (2008), Anyanwu (2012), Jaumotte (2004) and many more.

GDP per capita has positive relationships with FDI because investor will be attracted by the large market of the host country. Foreign investors may be attracted by the size of the market that can enable them to take advantage of sales in the host country (Hoang, 2012). A larger market will enable investor to earn more in that country by investing into it. Therefore, it is empirically proven that market size which measured by GDP per capita has a significant effect towards FDI inflow in a host country. Moreover, a high GDP per capita in the host country also shows that the citizen of the host country is able to spend money to buy goods and

services as their standard of living is higher. This will directly attracts more FDI into the host country.

Wald test and FEM test which used to obtain the result of causality effect between FDI inflows and GDP per capita showed that two variables have a bi-directional causality effects. In another words, market size measured by GDP per capita has a causal effect to FDI inflow and vice versa. Therefore, an increase in GDP per capita will cause FDI inflow to increase and the increase of FDI inflow will also cause the GDP per capita to increase.

The causality result obtained is not surprising as many of the past studies obtain the similar result with this research (see: Chien & Linh, 2013; Hansen & Rand, 2004; Soumaré & Tchana, 2011; Asghar, Nasreen & Rehman, 2011; Otchere, Soumaré & Yourougou, 2011). However, some researches obtained result that FDI and GDP per capita has a unidirectional causal relationships (see: Altine r& Sandalcilar, 2013; Faruku, Asare, Yakubu & Shehu, 2011).

GDP per capita is able to affect FDI positively mainly because of the effect of GDP per capita on economy growth. According to Chien and Linh (2013), "GDP per capita is one of the most significant determinants in attracting FDI inflow during the phase of 2000-2010." As GDP per capita increases the economic growth of a country and signals that the country's productivity is increasing, it will definitely attract FDI into the country. GDP per capita is also used to analyze a country's performance thus attracting FDI into country as investor will not invest into a country with a poor economic performance.

On the other hand, FDI will increase GDP per capita because, with the help from FDI, transfer of capital and technology is gained from overseas. This gain of technology and capital will surely increases the economic growth of the host country thus increases GDP per capita as well. So, FDI and market size measured by GDP per capita has strong bi-directional causal relationships with one another.

5.2.3 POLITICAL STABILITY

The finding shows that there is positive significant relationship between political stability and FDI inflows which means that higher political stability will lead to higher FDI inflows. The result is consistent with the finding in Shahzad et al. (2012) which stated that a significant relationship between political stability and FDI inflows is matter in term of macroeconomic activity and business environment within a country whereby it can increase the chances of attracting more FDI inflows into a country. Foreign investors will hesitate to put capital investment in a country if the business environment is not conducive and unfavourable. In addition, it will affect a country's economic growth if there is political instability. In Pakistan, they have a political instability system and unstable government where this will give adverse effect on FDI inflows and simultaneously lead to discourage of international investment. Shahzad et al. (2012) mentioned that political stability is necessary to boost a country's economic growth. For example case in Pakistan from year 2008 onward there is a declining trend in political stability which leads to reducing FDI inflows.

According to Brada, Kutan and Yigit (2005), the evaluation of political future of the host country is needed because it will affect the FDI decision and investors' confidence level as very naturally investors are focusing on the future returns. Basically, the investor faces 2 principal risks that come from political instability in the host country. First is the local instability or civil war or neighbourhood country's conflict. These will lead to reduce in domestic sales and exports, or disrupt in productions or damage and destroy in facilities. Thus, subsequently it will cause reduction in the profitability of operating in the original country. Second is the effect on value of the original country's currency if there is political instability. As a result, it harms the future profits of the investment as well as declines the value of the assets invested. Furthermore, the foreign exchange market is

affected by political instability where it causes the value of the host country's currency to reduce and exchange rate to fluctuate more.

On the other hand, researchers that oppose the study result included Kudina and Pitelis (2014) saying that political stability unable to provide a significant coefficient although it is positive and therefore they argued that there would be reluctant to prove the importance of the political stability as a determinant of FDI inflows. Besides, Frey and Scneider (1979) has stated that the effect of political stability may be varies depends on the changes of regime, government intervention, property rights regulation, and also red tape whereby these determinants may affect the decision process of potential investors before bring in their capital.

5.2.4 TRADE OPENNESS

Trade openness has a positive insignificant relationship with FDI inflows. The result can be supported by Kolstad and Villanger (2008) who shows that service sector of FDI is market seeking and not affected by trade openness of host country which lead to insignificant of trade as putting demand for services into a host country need a physical presence when there is exists of difficulty in trade. Vijayakumar et al., (2010) found that trade openness is positive insignificant in which BRICS countries will need to involve themselves in liberalisation events and the path of economic reform. While Kandiero and Wadhanwan (2003) discuss on trade openness and measurement problems in which related to trade openness whereby revealed openness (ratio of imports and exports of GDP) is not a good measurement when cross-border activities involved.

In contrast, the result in this study is found to be opposed by Balasubramanyam et al., (1996) who found that trade openness as a crucial determinant for FDI and have a positive effect. This shows that more open economy would attract more FDI and encourage more utilization compared to closed economy. In addition, Omanwa (2013) further support

that the impact of trade openness is depends on types of investments such that market seeking investments which are less open would bring positive and significant impact on FDI. A market seeking investment may be made to combine markets where higher degree openness able to bring the positive effect to FDI inflows. Foreign firms would establish subsidiaries in host country when they want to serve a domestic country but it is difficult to import the goods into the market.

For Granger causality test, the result shows that there are insignificant Granger causality from FDI inflows to trade openness or trade openness to FDI inflows which indicates that FDI inflows does not cause trade openness, vice versa. The result can be supported by Belloumi (2014) and Hisarciklilar et al., (2006). Their results showed there is no Granger causality from trade openness to FDI or FDI to trade openness. On the other hand, Aizenman and Noy (2006) found that there is causality from FDI to trade. Sharma and Kaur (2013) found that China have a bidirectional Granger causality from FDI to trade as well as trade to FDI. Moreover, Shaikh (2010) found that there is unidirectional relationship between FDI and import which indicates that the country openness is an important determinant in attracting FDI inflows. Aizenman and Noy (2006) also had further support that a financial crisis such as banking or currency crisis might affect level the openness, which in general would affect financial openness of the countries.

5.3 CONCLUSION

This study is focusing on examining the relationship between FDI inflows and corruption in 5 selected ASEAN countries namely Indonesia, Malaysia, Singapore, Thailand, and Vietnam. Besides, this study has also included 3 others as controlled variables namely GDP per capita, political stability, and trade openness. To carry on this study, Fixed Effect Model (FEM) and panel Granger causality have used to estimate the relationship of the model. Firstly, FDI inflows and GDP per capita are logged in order to estimate FEM and the result shows that

Corruption Perception Index (CPI) and Log GDP per capita (logGDP) are significant at 5% significance level whereas political stability (POLT) is significant at 10% significance level. At the same time, the model arise heteroskedasticity which later been solved by using White robust standard error.

Secondly, panel Granger causality is used to determine the causal effect between the variables in the ASEAN countries during 2001 to 2013. To carry on this process, two tests are used included panel unit root test which used to determine the stationary of the variables, and panel VAR model which used to check for the causality direction. Panel unit root test is to avoid spurious regression result through application of LLC and IPS unit root test. IPS test result is used in this study due to small sample size and the result showed all variables are non-stationary at the level form but stationary at first difference form. Next, Panel VAR model is run to determine the causal relationship between the variables. The processes include choosing the lowest AIC and using F-statistic to examine the short run causal relationship between the variables. Results showed that bi-directional relationship exist between FDI inflows and GDP per capita, which means FDI inflows has Granger caused GDP per capita in these ASEAN countries, vice versa. For the significance of independent variables, corruption was found to have negative impact on FDI inflows in 5 selected ASEAN countries. This relationship supported the 'grabbing hand' theory as well as the estimation model equation. Corruption will increase the investment cost because of the bribe foreign firms need to pay to every agency related in order to access the country resources. Next, the GDP per capita is found to have positive relationship on FDI inflows in 5 selected ASEAN countries. The discussion suggests that FDI inflows will directly flow into host country when there is a high GDP per capita in the host country where the citizen of the host country has a high living standard. This will directly attracts more FDI into the host country and subsequently get more and more transfer of capital and technology from oversea. Political stability also proved to have positively significant relationship with FDI inflows at 10 percent significance level. It is one of the important factors that affecting investment decision in terms of good business environment which is favorable for investors. However, trade openness has insignificant relationship with FDI inflows whereby

theoretically it should have positive significant relationship with FDI inflows as suggested earlier.

5.4 POLICY RECOMMENDATION

In this study, it showed that corruption did significantly decrease the FDI inflows to the host country in the way of deterring MNCs from entering the ASEAN countries. In order to attract more FDI from foreign companies, there are few possible suggestions for the governments to implement which are revises and enact effective anti-corruption legislation, establish resilient and independent anti-corruption organizations, cooperation between countries to eliminate corruption.

Moreover, stable politic and high GDP per capita are other important factors that attract FDI inflows. As non-stable political environment will result in more uncertainties and more risk to invest in the host country and deter foreign investors entering the economy. Thus, strong and effective leadership in the government is required to shape stable political environment. The leaders must respond well to crises to show their ability and improve their faith in peoples. Besides that, peoples must have the chance to voice out their opinion and interact with governments freely so that government can respond to their issues. Lastly, larger market size indicated by high GDP per capita showed that entering the market will help to improve their sales and profit. Thus, governments should concentrate in developing a strong expansionary fiscal policy such as cutting taxes to increase disposable income and boost consumer spending.

5.5 LIMITATIONS

First, the sample of this study is too small as this panel model only consists 13 years from 2001 until 2013 and 5 countries (Malaysia, Thailand, Indonesia, Singapore, and Vietnam) which result in total 63 observations with two missing

observations in the FDI inflows due to negative observations that cannot be used after applying logarithm of FDI inflows. The larger the sample, the result provided will be much convincing because it covers more observations.

Secondly, the data is analyzed in aggregate level using total FDI inflows. It does not investigate the effect of corruption between different industries or sectors of FDI in the country. As corruption may have different impacts on different industries such as if the industry is new in the country, the market is still starve, corruption would makes the foreign company to capture the whole market and gain monopoly profit. But not in the saturated industry as the cost of corruption already outweigh the benefit.

Lastly, this study only investigate the host country corruption level, the home country corruption level is not taken into account. Host country corruption may have different effects on the FDI inflows from different home countries with different level of corruption. For example, higher corruption level in host country than the home country may have effect on the decision of investment but not in the opposite way. As MNCs from home country with high corruption level already equipped with the knowledge to deal with it, thus less corrupt host country will not affect the investment decision of these MNCs. The limitations are acknowledged for it does not detract from the significance of findings but merely provide platforms for future research.

5.6 RECOMMENDATIONS FOR FUTURE RESEARCH

To have clearer view of the corruption impact on the FDI, future research can include more countries and longer time period to expand the sample size of the study as smaller sample size may be the root of heteroskedasticity in the model. Moreover, to have a closer look on the impact of corruption, the impacts of corruption on FDI inflows in disaggregate level must be examined to have a better analysis on how corruption react with the industries that have different sensitivity towards corruption. Last but not least, to examine the sensitivity of FDI from

different home country towards corruption in host country, home country corruption level should take into account in the future research.

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Appendix 1:

1.1 Panel Unit Root Test at Level Form

1.1.1 FDI Inflow

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: LFDI
Date: 04/07/15 Time: 23:15
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.45461	0.0729	5	56
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.58214	0.2802	5	56
ADF - Fisher Chi-square	13.7236	0.1860	5	56
PP - Fisher Chi-square	19.6262	0.0330	5	57

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

1.1.2 CPI

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: CPI
Date: 04/01/15 Time: 22:27
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0
Newey-West bandwidth selection using 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*	0.86735	0.8071	5	60
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.73513	0.9586	5	60
ADF - Fisher Chi-square	5.96026	0.8186	5	60
PP - Fisher Chi-square	6.70877	0.7526	5	60

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

1.1.3 Trade Openness

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: LOPN
Date: 04/01/15 Time: 22:28
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0
Newey-West bandwidth selection using 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*	-1.76466	0.0388	5	60
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.27653	0.3911	5	60
ADF - Fisher Chi-square	10.6659	0.3841	5	60
PP - Fisher Chi-square	12.1065	0.2780	5	60

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

1.1.4 Political Stability

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: POLT
Date: 04/01/15 Time: 22:31
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.89298	0.0292	5	58
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.67576	0.2496	5	58
ADF - Fisher Chi-square	15.4827	0.1154	5	58
PP - Fisher Chi-square	26.3578	0.0033	5	60

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

1.1.5 GDP

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: LGDP
Date: 04/01/15 Time: 22:30
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0
Newey-West bandwidth selection using 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*	-1.52447	0.0637	5	60
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.52123	0.9359	5	60
ADF - Fisher Chi-square	3.14651	0.9778	5	60
PP - Fisher Chi-square	6.86742	0.7379	5	60

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

1.2 Panel Unit Root Test at First Difference form

1.2.1 FDI inflow

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: D(LFDI)
Date: 04/07/15 Time: 23:19
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.43502	0.0000	5	50
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.09528	0.0000	5	50
ADF - Fisher Chi-square	43.2288	0.0000	5	50
PP - Fisher Chi-square	82.8165	0.0000	5	52

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

1.2.2 CPI

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: D(CPI)
Date: 04/01/15 Time: 22:27
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.28814	0.0000	5	52
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.53471	0.0000	5	52
ADF - Fisher Chi-square	37.2303	0.0001	5	52
PP - Fisher Chi-square	44.4767	0.0000	5	55

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

1.2.3 Trade openness

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: D(LOPN)
Date: 04/01/15 Time: 22:29
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.85740	0.0000	5	53
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.10990	0.0000	5	53
ADF - Fisher Chi-square	41.0881	0.0000	5	53
PP - Fisher Chi-square	54.4450	0.0000	5	55

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

1.2.4 Political stability

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: D(POLT)
Date: 04/01/15 Time: 22:32
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.35611	0.0000	5	54
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.54616	0.0000	5	54
ADF - Fisher Chi-square	50.1717	0.0000	5	54
PP - Fisher Chi-square	56.7594	0.0000	5	55

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

1.2.5 GDP

Null hypothesis: Panel data has unit root
Alt hypothesis: Panel data has not unit root

Panel unit root test: Summary
Series: D(LGDP)
Date: 04/01/15 Time: 22:30
Sample: 2001 2013
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.30489	0.0000	5	52
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.30090	0.0000	5	52
ADF - Fisher Chi-square	35.6314	0.0001	5	52
PP - Fisher Chi-square	42.5426	0.0000	5	55

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

Appendix 2:

Fixed Effect Model & F-test

Fixed-effects (within) regression — Number of obs = 63
Group variable: **Countrycode** — Number of groups = 5

R-sq: within = 0.5067 — Obs per group: min = 11
between = 0.9676 — avg = 12.6
overall = 0.8456 — max = 13

F(4, 54) = 13.87
corr(u_i, Xb) = −0.9693 — Prob > F = 0.0000

LFDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
CPI	.222433	.1566832	1.42	0.161	−.091698	.536564
LOPN	.4650568	.9028589	0.52	0.609	−1.345066	2.27518
LGDP	1.521694	.2484202	6.13	0.000	1.023642	2.019747
POLT	.0086379	.0042952	2.01	0.049	.0000265	.0172492
_cons	−5.773065	2.101811	−2.75	0.008	−9.986943	−1.559188
sigma_u	.94794096					
sigma_e	.31494694					
rho	.90058809	(fraction of variance due to u_i)				

F test that all u_i=0: F(4, 54) = 6.36 — Prob > F = 0.0003

Appendix 3:

Random Effect Model

Random-effects GLS regression — Number of obs = 63
Group variable: Countrycode — Number of groups = 5

R-sq: within = 0.4886 — Obs per group: min = 11
between = 0.9631 — avg = 12.6
overall = 0.8504 — max = 13

Wald chi2(4) = 329.66
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0000

LFDI	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CPI	.0060733	.0802549	0.08	0.940	-.1512234	.1633701
LOPN	.4742545	.3691345	1.28	0.199	-.2492358	1.197745
LGDP	1.033758	.2526666	4.09	0.000	.5385406	1.528976
POLT	.0070758	.0036305	1.95	0.051	-.0000398	.0141914
_cons	-2.938527	.9477246	-3.10	0.002	-4.796033	-1.081021
sigma_u	0					
sigma_e	.31494694					
rho	0	(fraction of variance due to u_i)				

Appendix 4:

Hausman test

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CPI	.222433	.0060733	.2163597	.1648763
LOPN	.4650568	.4742545	-.0091977	.9900689
LGDP	1.521694	1.033758	.4879364	.1438256
POLT	.0086379	.0070758	.0015621	.0034769

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 18.57
Prob>chi2 = 0.0010

Appendix 5:

Diagnostic Checking

5.1 Pesaran CD test: Cross sectional dependence test

Null hypothesis: Cross sectional is not dependence
Alt Hypothesis: Cross sectional is dependence

Pesaran's test of cross sectional independence = 0.882, Pr = 0.3776

Average absolute value of the off-diagonal elements = 0.245

5.2 Wooldridge test: Autocorrelation test

Null Hypothesis: There is no serial correlation
Alt Hypothesis: There is serial correlation

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 4) = 3.473
Prob > F = 0.1358

5.3 Modified Wald Test: Heteroskesdaticity test

Null hypothesis: Residuals are homoscedatic
Alt hypothesis: Residuals are heteroscedastic

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

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

chi2 (5)  =      73.70
Prob>chi2 =     0.0000
```

Appendix 6:

6.1 White robust standard error

```
Fixed-effects (within) regression               Number of obs      =        63
Group variable: Countrycode                     Number of groups   =         5

R-sq:  within  = 0.5067                         Obs per group: min =        11
       between = 0.9676                                        avg =      12.6
       overall = 0.8456                                        max =        13

                                                F(4,4)             =    105.30
corr(u_i, Xb)  = -0.9693                        Prob > F           =    0.0003

                                    (Std. Err. adjusted for 5 clusters in Countrycode)
------------------------------------------------------------------------------
             |               Robust
        LFDI |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CPI |    .222433   .0629034     3.54   0.024     .0477853    .3970808
        LOPN |   .4650568   .6436629     0.72   0.510    -1.322038    2.252152
        LGDP |   1.521694   .2162568     7.04   0.002     .9212694     2.12212
        POLT |   .0086379   .0039752     2.17   0.095    -.0023991    .0196749
       _cons |  -5.773065   2.312873    -2.50   0.067    -12.19463    .6485007
-------------+----------------------------------------------------------------
     sigma_u |  .94794096
     sigma_e |  .31494694
         rho |  .90058809   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Appendix 7:

Panel VAR model

Lag Selection: lowest SC (lag length 1)

VAR Lag Order Selection Criteria
Endogenous variables: LFDI CPI LOPN LGDP POLT
Exogenous variables: C
Date: 04/06/15 Time: 18:50
Sample: 2001 2013
Included observations: 42

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-244.0053	NA	0.097106	11.85739	12.06426	11.93322
1	59.57455	520.4225*	1.70e-07*	-1.408312	-0.167120*	-0.953366*
2	84.26923	36.45405	1.82e-07	-1.393773	0.881747	-0.559705
3	105.4008	26.16286	2.51e-07	-1.209561	2.100286	0.003629
4	141.5598	36.15902	1.98e-07	-1.740943*	2.603231	-0.148631

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Appendix 8:

8.1Fixed effect model to determine causality

8.1.1 Corruption, Trade openness, GDP and Political Stability to FDI inflow

Null hypothesis: There is no causality running from corruption, trade openness, GDP and political stability to FDI inflow
Alt hypothesis: There is causality running from corruption, trade openness, GDP and political stability to FDI inflow

Dependent Variable: D(LFDI)
Method: Panel Least Squares
Date: 04/06/15 Time: 18:46
Sample (adjusted): 2003 2013
Periods included: 11
Cross-sections included: 5
Total panel (unbalanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.381506	0.105774	3.606818	0.0008
D(LFDI(-1))	-0.178667	0.141890	-1.259190	0.2149
D(CPI(-1))	-0.347337	0.280615	-1.237773	0.2227
D(LOPN(-1))	1.454197	1.676265	0.867522	0.3906
D(LGDP(-1))	-6.582971	2.128774	-3.092377	0.0035
D(POLT(-1))	-9.80E-05	0.008794	-0.011145	0.9912

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.365132	Mean dependent var	0.058980
Adjusted R-squared	0.229089	S.D. dependent var	0.428058
S.E. of regression	0.375842	Akaike info criterion	1.051744
Sum squared resid	5.932796	Schwarz criterion	1.426984
Log likelihood	-17.34535	Hannan-Quinn criter.	1.195602
F-statistic	2.683946	Durbin-Watson stat	2.423363
Prob(F-statistic)	0.014650		

8.1.2 FDI inflow to Corruption

Null hypothesis: There is no causality running from FDI inflow to corruption.
Alt hypothesis: There is causality running from FDI inflow to corruption.

Dependent Variable: D(CPI)
Method: Panel Least Squares
Date: 04/06/15 Time: 18:47
Sample (adjusted): 2003 2013
Periods included: 11
Cross-sections included: 5
Total panel (unbalanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.087696	0.056795	1.544084	0.1301
D(LFDI(-1))	0.069248	0.076188	0.908909	0.3686
D(CPI(-1))	-0.104553	0.150675	-0.693897	0.4916
D(LOPN(-1))	1.337402	0.900067	1.485892	0.1448
D(LGDP(-1))	-1.433615	1.143040	-1.254212	0.2167
D(POLT(-1))	-0.002841	0.004722	-0.601539	0.5507

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.170589	Mean dependent var	0.026923
Adjusted R-squared	-0.007142	S.D. dependent var	0.201091
S.E. of regression	0.201807	Akaike info criterion	-0.191965
Sum squared resid	1.710501	Schwarz criterion	0.183274
Log likelihood	14.99109	Hannan-Quinn criter.	-0.048107
F-statistic	0.959816	Durbin-Watson stat	2.126164
Prob(F-statistic)	0.485919		

8.1.3 FDI inflow to Trade openness

Null hypothesis: There is no causality running from FDI inflow to trade openness.
Alt hypothesis: There is causality running from FDI inflow to trade openness.

Dependent Variable: D(LOPN)
Method: Panel Least Squares
Date: 04/06/15 Time: 18:47
Sample (adjusted): 2003 2013
Periods included: 11
Cross-sections included: 5
Total panel (unbalanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003283	0.009516	0.345021	0.7318
D(LFDI(-1))	0.007899	0.012766	0.618797	0.5394
D(CPI(-1))	-0.026372	0.025246	-1.044588	0.3022
D(LOPN(-1))	-0.284019	0.150811	-1.883276	0.0666
D(LGDP(-1))	-0.047233	0.191523	-0.246619	0.8064
D(POLT(-1))	-0.000900	0.000791	-1.137756	0.2617

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.219701	Mean dependent var	0.000671
Adjusted R-squared	0.052494	S.D. dependent var	0.034738
S.E. of regression	0.033814	Akaike info criterion	-3.764845
Sum squared resid	0.048022	Schwarz criterion	-3.389606
Log likelihood	107.8860	Hannan-Quinn criter.	-3.620987
F-statistic	1.313948	Durbin-Watson stat	2.100043
Prob(F-statistic)	0.258824		

8.1.4 FDI inflow to Political Stability

Null hypothesis: There is no causality running from FDI inflow to political stability.
Alt hypothesis: There is causality running from FDI inflow to political stability.

Dependent Variable: D(POLT)
Method: Panel Least Squares
Date: 04/06/15 Time: 18:49
Sample (adjusted): 2003 2013
Periods included: 11
Cross-sections included: 5
Total panel (unbalanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.909082	1.716983	-0.529465	0.5993
D(LFDI(-1))	-1.156669	2.303252	-0.502190	0.6182
D(CPI(-1))	-1.538771	4.555115	-0.337812	0.7372
D(LOPN(-1))	19.17047	27.21020	0.704532	0.4850
D(LGDP(-1))	6.271962	34.55561	0.181503	0.8568
D(POLT(-1))	-0.157685	0.142757	-1.104567	0.2756

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.193590	Mean dependent var	-0.669231
Adjusted R-squared	0.020788	S.D. dependent var	6.165322
S.E. of regression	6.100903	Akaike info criterion	6.625792
Sum squared resid	1563.283	Schwarz criterion	7.001031
Log likelihood	-162.2706	Hannan-Quinn criter.	6.769650
F-statistic	1.120299	Durbin-Watson stat	1.701266
Prob(F-statistic)	0.370159		

8.1.5 FDI inflow to GDP

Null hypothesis: There is no causality running from FDI inflow to GDP.
Alt hypothesis: There is causality running from FDI inflow to GDP.

Dependent Variable: D(LGDP)
Method: Panel Least Squares
Date: 04/06/15 Time: 18:48
Sample (adjusted): 2003 2013
Periods included: 11
Cross-sections included: 5
Total panel (unbalanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.054512	0.009078	6.004941	0.0000
D(LFDI(-1))	0.022885	0.012178	1.879312	0.0672
D(CPI(-1))	-0.031210	0.024083	-1.295919	0.2021
D(LOPN(-1))	-0.146184	0.143864	-1.016128	0.3154
D(LGDP(-1))	-0.237237	0.182700	-1.298509	0.2012
D(POLT(-1))	-0.000980	0.000755	-1.298232	0.2013

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.199883	Mean dependent var	0.044377
Adjusted R-squared	0.028429	S.D. dependent var	0.032725
S.E. of regression	0.032256	Akaike info criterion	-3.859171
Sum squared resid	0.043699	Schwarz criterion	-3.483932
Log likelihood	110.3385	Hannan-Quinn criter.	-3.715314
F-statistic	1.165811	Durbin-Watson stat	1.977816
Prob(F-statistic)	0.341167		