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THE QUALITY OF INSTITUTIONS, MACROECONOMICS, FOREIGN DIRECT INVESTMENT AND ITS INFLUENCE ON CORRUPTION IN 5 SELECTED ASEAN COUNTRIES

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Abstract: **This study discusses the influence of institutional quality, macroeconomics, and foreign direct investment on the corruption index in 5 selected ASEAN countries. Corruption can be linked to activities of abuse of power aimed at gaining personal gain. Meanwhile, macroeconomic determinants are related to the investment relationship between countries, people and growing economic activities. This study aims to identify the level of corruption on the quality of institutions, macroeconomics and foreign direct investment in ASEAN countries, examine the impact of corruption on the quality of institutions, macroeconomics and foreign direct investment in ASEAN countries and examine proposals to curb rampant corruption in the quality of institutions, macroeconomics and foreign direct investment in ASEAN countries. This study involved the collection of secondary data of a quantitative and qualitative nature. Quantitative data of the study variables were from 2001 to 2017 for five selected ASEAN Countries. These data were analyzed using panel data, pooled regression, fixed effect model, random effect model, redundant variables test and Hausman test. Meanwhile, a systematic review test was implemented to analyze the qualitative secondary data. The results show that an increase in the level of macroeconomic determinants also increases the level of corruption index in a particular country. The findings of the study show that the FDI, OPE and CG positively influence the CPI of selected ASEAN countries. However, the GDP variable was found to have a negative influence on the CPI of selected ASEAN countries. The corruption index values showed that Indonesia recorded the highest value while Singapore recorded the lowest value compared to other ASEAN countries. Corruption can be reduced through specific actions and strict laws such as stepping up enforcement of laws and penalties, restricting the entry of foreign labor and reducing import taxes and quotas on goods and services.**

Keywords: **Corruption, Macroeconomics, ASEAN countries.**

1. INTRODUCTION

The main purpose of this study is to identify the quality of institutions, macroeconomics, foreign direct investment and its influence on corruption in 5 selected ASEAN countries. ASEAN is an acronym for the Association of Southeast Asian Nations, which means the Organization of Nations in Southeast Asia. ASEAN initially only had five countries and now it has grown to 10 countries including Indonesia, Malaysia, Singapore, Thailand, the Philippines, Brunei Darussalam, Vietnam, Myanmar, Laos and Cambodia. In addition, ASEAN is an international organization that has such a large territory. If measured as a whole, it covers or reaches 1.7 million square miles or around 4.5 million square kilometers and now reaches 625 million people, 8.8 percent of the world's population according to statistics in 2015. ASEAN was formed for the benefit of the countries in it whether in the economy , social, cultural and others (Pratama, 2016).

ASEAN was established on August 8, 1967 by five leaders represented by foreign ministers from five countries namely Malaysia, Indonesia, the Philippines, Singapore and Thailand in Bangkok. The document that was signed was known as the Bangkok Declaration but it has now been changed to the ASEAN Declaration. So through the agreement, ASEAN was officially established (Simanjuntak and Samsudin 2018).

The ASEAN organization continued to grow and then ASEAN was joined by several countries continuously, namely the country of Brunei Darussalam on January 8, 1984, Vietnam on July 28, 1995, Laos and Myanmar on July 23, 1997 and Cambodia on April 30, 1999. Each country in the ASEAN organization can be categorized based on income level. The countries can be classified into several levels in terms of national income, which are countries with high, medium and low national income. National income in each country is different due to different economic levels.

Meanwhile, corruption is a threat to economic stability, democracy and development (United Nations, 2010). Petrou and Thanos (2014), define corruption as the abuse of public power in a positive way which is a well-known issue around the world. Examples of corruption include bribery, fraud, extortion, nepotism, misuse of public assets and property for personal use (Myint, 2000). Most research has been conducted to examine the impact of corruption on the quality of institutions, macroeconomics and foreign direct investment which then plays an important role in economic growth. Therefore, corruption can indirectly affect economic growth through the quality of institutions, macroeconomics and foreign direct investment.

Although corruption is a common issue in developing countries, the level of corruption varies across countries (Kaufman and Schankerman, 2000). Most studies on this problem can be divided into two main views. First is the grabbing-hand corruption theory which claims that corruption increases the cost of business activities (Shleifer and Vishny, 1992; Shleifer and Vishny, 1993; and Javorcik and Wei, 2009). The second view argues that corruption is a helping-hand in the host country's economy. Corruption helps in trade and facilitates transactions, and encourages the movement of macroeconomic determinants (Egger and Pemenang, 2005). Levy (2007), found that the main transactions stimulated by bribery give incentives to people to engage in productive activities. This is also supported by Jiang and Nie (2014), who state that more corruption results in better firm performance by avoiding unproductive laws.

Corruption requires a high level of attention from all countries, especially the Asia and Asia Pacific Regions (Myint, 2000). From 1952 to 2012, the ASEAN region was the largest recipient of FDI in the Asia Pacific. Corruption is not only a threat to ASEAN's collective goals, it has the potential to lead to greater problems for each member country and people in the future (Transparency International, 2014).

In detail when studying the economic situation of each country, Singapore shows a very good economic level. Meanwhile, Singapore is a country that shows high-income economic growth. The International Monetary Fund (2012), proves that Singapore's GDP (Gross Domestic Product) ranks highest in ASEAN, showing a GDP per capita of USD 55,979.76 in 2013.

If studied from an economic point of view, Malaysia is now known as a developing country and even practices an open country-oriented market. Malaysia plays a very important role in the market world but its role is diminishing in economic generation. Meanwhile, the Malaysian economy which continues to be resilient is supported by favorable financial conditions and supportive macroeconomic policies and the private sector also plays an important role as the main driver of Malaysia's economic growth. Malaysia is also classified as a country that shows moderate income economic growth. Accordingly, the GDP per capita for Malaysia in 2013 was USD 10,538.03. Malaysia is developed with various effective efforts by the leaders and all the people in Malaysia in order to be a country that shows high-income economic growth in 2020.

Next, Indonesia is the largest country in the world and is said to be the fourth country with the largest population of 237,641.32 million. Indonesia practices a republican parliament and its president is directly elected. Although at the end of the 1990s the Indonesian economy experienced a level of decline due to the financial crisis in Asia, now the economy has been able to recover. Indonesia derives its income from its own natural resources such as crude oil, natural gas, tin, copper, and gold. Accordingly, the country is the second largest exporter of natural gas in the world but now it is a net importer of crude oil. Indonesia is a country that shows moderate economic growth compared to Malaysia, in fact, Indonesia is still experiencing major problems related to poverty and unemployment. GDP per capita for Indonesia in 2013 was USD 3,643.87.

Thailand is a country that has never been colonized by a foreign government. Export growth in Thailand was sluggish in 2012 due to the decline in Thailand's competitiveness. In relation to that, the country's economy only grew by 0.9 percent in 2014, which is due to political factors that have received chaos and have continued to impact on the decline in domestic demand. However, Thailand's economy is expected to grow up to 3.5 percent in 2020 due to several factors, namely lower oil prices, increased tourism revenue and higher public spending. GDP per capita for Thailand in 2013 was USD 5,778.98.

After the Second World War, the Philippines was the most developed country in the Southeast Asian region, but now it has lagged behind other countries due to weaknesses in terms of weak economic growth, rampant corruption and neo-colonial influences. However, the economic level of the Philippines has changed to moderate in terms of income. The Philippines is a country famous for its hill rice farming. In 2013, the GDP per capita for the Philippines was USD 2,765.09.

Widespread corruption has had a negative impact on the economic development and growth of ASEAN countries. This study analyzes the factors that respond to corruption in the ASEAN member countries.

2. LITERETURE REVIEW

Theory

Corruption

According to the theory of helping hand corruption acts as a lubricant when countries have strict economic rules especially in developing countries (Lui, 1983; Beck and Maher, 1986; Bjorvatn and Soreide, 2005). By offering a bribe to host the country, it can avoid strict rules and complex processes for easy investment projects. From this point of view, corruption can encourage FDI inflows. On the other hand, the grabbing hand theory states that corruption will harm FDI by increasing transaction costs and reducing investment incentives (Shleifer and Vishny, 1993; Mauro, 1995). Corruption will also reduce the positive spillover of investment returns. This is also supported by a study conducted by Kaufmann (1997), suggesting that corruption investment costs are high at 20%. Between the two views, most researchers agree on the theory of hand grabbing.

FDI

According to the definition of the IMF and the OECD (2010), FDI reflects the goal of securing a permanent interest by a resident entity of one economy, which is a direct investor in a company resident in another economy such as a direct investment company. Direct investment involves both initial transactions that establish the relationship between the investor and the company and all subsequent capital transactions between them and the joint venture, both incorporated and unincorporated. It should be noted that capital transactions that do not result in any settlement, such as the exchange of shares between affiliated companies, also need to be recorded in the Balance of Payments.

GDP per capita

GDP per capita was chosen as one of the variables controlled in this study because GDP per capita is considered one of the factors that drives FDI. According to Chien and Linh (2013), GDP per capita was one of the most important determinants of attracting FDI inflows during phases 2000 to 2010. This study focuses on the 2001 to 2013 timelines, which statement made by Chien and Linh helped to strengthen the decision. taking per capita GDP as one of the variables in this study. In addition, GDP per capita is important in attracting FDI inflows as it is important for a country's well-being.

Trade Openness

Trade openness is important as it includes exports and imports of the country. Balasubramanyam (2006), emphasized that open trade is important in the country to obtain the impact of FDI growth. Trade openness is important as a vehicle for new and emerging technologies of production technology knowledge from countries known as technology overflows. In theory, trade openness can affect FDI inflows either positively or negatively.

Corporate Governance

Corporate governance is the process and rules by which a company is managed on behalf of shareholders and stakeholders. The board of directors is primarily responsible for applying and maintaining the governance of the company. Governance basically involves balancing the interests of the company, such as shareholders, senior management executives, customers,

suppliers, financiers, government, and society. Governance is the system of rules, practices, and processes by which a firm is directed and controlled.

Previous Studies

There are some past studies that have been made about corruption and macroeconomic determinants across countries. Previous studies have shown that corruption can affect the macroeconomic determinants of certain countries. According to Ulman and Bujanca (2014), based on the group of countries in The Global Competitiveness Report 2013-2014, 106 countries were selected as an analysis sample to prove the efficiency of macroeconomic determinants based on the level of corruption. These countries are then grouped into three levels of economic development which are factor driven, economic efficiency and economy driven by innovation. It has been found that developed economies are seen as less charitable compared to developing countries and less developed countries. In addition, high corruption, resulting in threats in the level of investment, productivity and economic growth.

Theoretically, the relationship between corruption and macroeconomic determinants can be explained by the sanding-the-wheels hypothesis and the greasing-the-wheels hypothesis. Delgado (2014), proves that it really confirms that the free flow of resources can help in stabilizing the optimal level of economic growth and the sanding-the-wheels hypothesis claims that corruption is one of the determinants that can be proven otherwise. When a country allows its resources to move freely, they can achieve an optimal combination of output by doing so. With regard to FDI growth, a multiplier effect on economic growth can be generated when there is a high FDI inflow that is either positive or negative. It can also be neutral. However, the effect does not include bribery as a mediator. For some countries that prove to have a significant positive relationship between FDI and national growth, the mediating effect of corruption can weaken national growth even with high FDI inflows. Based on the hypothesis above, developing countries with high corruption effects may not be able to absorb the positive impact of FDI such as expertise and new technology transfer. Similarly, sectors heavily dependent on FDI may be unproductive due to corruption. Foreign workers are less likely to work in domestic firms due to issues of corruption, bureaucratic regulations and lower acceptance. As a result, the impact of FDI on national growth is weakening due to the spread of technology and less expertise from multinational companies.

Additionally, corruption takes many forms including practices such as bribery, extortion, fraud, and embezzlement. However, for the purposes of this study, corruption is broadly defined as activities that affect the operating costs of investment in the host country. According to Wheeler and Mody (1992), with strict regulations and an inefficient bureaucracy, corruption can increase the efficiency of the bureaucracy by speeding up the decision process. Regulatory framework, bureaucratic resistance, judicial transparency and level of corruption in the host country were found to be insignificant in their analysis of US Data firms. However, argue that the reason why they failed to find a significant relationship between corruption and macroeconomic determinants is that corruption was not explicitly included in their model. They combine corruption with 12 other indicators to form a single regressor (RISK), but some of these indicators may be less significant for macroeconomic determinants.

Furthermore, more and more writers are involved in researching the economic phenomenon of corruption and its impact on macroeconomic determinants. There is an active debate about the relationship between corruption levels and macroeconomic determinants. Both directions of causation are plausible. On the one hand corruption feeds rent, which produces inefficient economic policies, corruption also often functions as a tax on factor accumulation and investment and which hinders economic development. On the other hand, high national income can lead to willingness to fight corruption. The corruption development trap may lock some countries into a bad equilibrium with high corruption growth rates while others may converge with a good equilibrium of low corruption growth.

Svensson (2005), found that a broad theoretical background on the economic causes of corruption and its effects. However, empirical tests on the effects of corruption and macroeconomic determinants have been done later due to the difficulty in measuring corruption. With the measurement of corruption and the increase in the number of databases, it became possible to analyze the economic effects of corruption, which led to the construction of literature on this topic. The majority in this field of study has focused on the relationship between corruption and macroeconomic determinants such as economic growth rate, GDP per capita, total foreign direct investment, inflation, and international trade.

In addition, Ahmad (2008), revealed that corruption causes economic development and GDP per capita to be affected. Based on the results of an analysis conducted in 68 countries, Mauro (1995), found that corruption has a negative impact not only

on economic development but also on investment and the structure of official institutions. In addition, Aidt (2008), argues that corruption has a negative impact on economic development in countries with high institutional quality, while corruption has no impact on economic growth in countries with low institutional quality. In their study conducted in Nigeria, Aliyu and Elijah (2008), found that corruption negatively affects economic development, human capital development, and total employment. Dridi (2013), investigated the effects of corruption on macroeconomic determinants such as political instability, inflation, public spending, and trade openness using data from 82 countries for the period between 1980 and 2002. The findings of the study revealed that corruption affects growth through low human capital and political instability.

This study also tends to find out whether macroeconomic determinants affect corruption and the relationship between corruption and other controlled variables such as FDI, GDP per capita, trade openness and governance. Ata and Arvas (2011), concluded that economic development, inflation and economic freedom are the determining factors of corruption and economic freedom is used as an indicator of political stability. In addition, they also proved from previous studies that economic openness is closely related to the level of corruption. They argue that there is a negative relationship between trade openness and corruption.

Huang (2012), stated that in his research on 10 ASEAN countries (China, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand and Vietnam) from 1995 to 2010 showed that the effect of corruption on macroeconomic determinants is positive, indicating that corruption causes an increase in economic growth. Rock and Bonnett (2004), show that corruption in the new large industrialized ASEAN economies (ie China, Indonesia, Korea, Thailand and Japan) significantly promotes economic growth. They found a positive effect of corruption on GDP growth in large East Asian countries. One explanation may be that a strong centralized government can limit the negative effects of corruption compared to a decentralized corrupt bureaucracy.

Next, previous literature assesses governance to be one of the main determinants of corruption. For example, firms in countries with high corruption will have poor governance while countries with a lack of good governance will have high corruption (Rose-Ackerman 1999; Hellman et al. 2000; Wu 2005). Wu (2005), examines the relationship between governance and corruption using country-level data, and finds that countries with effective corporate boards that reflect the interests of shareholders and actively prevent corruption experience low accounting irregularities. Wu (2009), argued that good governance can reduce corruption based on firms in 12 Asian countries from the end of 1998 to the middle of 2000 from the WBES data set. Similarly Ramdani and Witteloostuijn (2012) used firm-level data from the WBES for 2002-2005, and showed that governance has a strong association with corruption at the firm level. Hanousek (2017), revealed that the negative impact of corruption on firm efficiency varies with governance structure.

Governance is characterized by the structure and process of how a company is directed and controlled. It regulates the relationship between shareholders, BoD, management, and other stakeholders to ensure that a company achieves its goals. More importantly, governance is characterized by a system that provides control mechanisms between these various bodies and participants. However, governance does not stand alone it is part of the political and economic system where laws, and regulations are imposed. The Organization for Economic Co-operation and Development (OECD) declares in its governance framework that the governance framework should promote a transparent and efficient market, in line with the rule of law and clearly state the division of responsibilities between different supervisory, regulatory and enforcement authorities.

Wu (2007), argues that governance is one of the important factors that determine the level of corruption and shows that governance can have a profound effect on the effectiveness of global anti-corruption campaigns. Governance determines the division of rights and responsibilities among the different participants in the corporation, such as the board, managers, shareholders and other stakeholders, and states the rules and procedures for making corporate business decisions. The results of such studies have suggested that private firms are caught in the process when they take advantage of administrative corruption, engage in public procurement kickbacks and state capture that has to pay for the economic implications of corruption.

In addition, good governance can lead to a reduction in corruption by addressing the agent base problem and the coordination game problem. Good governance principles such as accountability and transparency can not only improve the firm's operational performance, but can also reduce the level of corruption by imposing more constraints on corrupt officials and those receiving bribes from the private sector.

Colombatto (2003), concluded that in some developing countries, corruption has a positive effect on macroeconomic determinants. Li and Wu (2010), argue that in countries with higher trust, corruption is less harmful to macroeconomic determinants. There are claims on both sides about the use or waste of bribes. Studies that claim that corruption is harmful to economic growth tend to focus on the negative implications of corruption for efficiency. However, other studies support that corruption brightens the wheels of business and trade and thus, facilitates economic growth and investment.

In conclusion, the literature on corruption suggests that there is a significant positive relationship between corruption and macroeconomic determinants. However, as a result, some studies have shown that corruption has a negative impact on macroeconomic determinants and other studies argue that it is macroeconomic determinants or conditions that have caused corruption to occur.

3. METHODOLOGY AND MODEL SPECIFICATION

Quantitative study

This study uses secondary data to find out the relationship between the independent variable and the dependent variable. As a study sample, five ASEAN countries were selected to be studied, namely Malaysia, Singapore, Thailand, the Philippines and Indonesia. Data for all the variables were obtained from 2001 to 2017 for each country. All data on the variables of the study were obtained from the World Bank, the International Monetary Fund (IMF) and Transparency International. In this study to obtain significant results, the collected data was applied in EViews Software (Econometric Views) by using the panel test method.

This section explains about the tests selected to conduct the study by using the existing data to identify the relationship between the dependent variable and the independent variable, which is either a positive or negative relationship. This study includes panel data, so tests related to panel data need to be used to conduct this study. This is the case, Stationary Test (Panel Unit Root Test), Pooled OLS, Fixed Effect Model, Random Effect Model, Redundant Variables Test, Hausman Test and meta analysis are used.

Design of the Study Model

$$CPI_y = \beta_0 + \beta_1 \ln FDI_y + \beta_2 \ln GDP_y + \beta_3 \ln OPE_y + \beta_4 \ln CG_y + €_y$$

SYMBOL	MEANING of SYMBOL
CPI_y	Corruption perception index
$\ln FDI_y$	Foreign direct investment
$\ln GDP_y$	GDP per capita
$\ln OPE_y$	Trade openness
$\ln CG_y$	Corporate governance
ln	Logarithm
y	Year
β_0 β_1 β_2 β_3 β_4	The coefficient value of the independent variable
€	Terms of Error Estimated and Considered as Zero

Qualitative study

Meta analysis

Ferrer (1998), states that meta-analysis is a set of techniques used to combine the results of several different reports into one report to make a more accurate estimate. Meta-analysis is a statistical procedure for combining data from multiple studies. When study effects or effect sizes are consistent from one study to the next, meta-analysis can be used to identify these general effects. When effects vary from one study to the next, meta-analysis can be used to identify reasons for variation.

This meta-analysis method is a study that uses secondary data, which is data from the results of previous studies. This study can be referred to as an ex post facto study in the form of a survey and literature analysis of the studies that have been conducted. The meta-analysis method has allowed us to synthesize the empirical evidence reported in the original study and to verify whether the synthesized evidence can be considered as a reliable measure of the relationship between corruption and the social conditions of a country's society.

Meta-analysis is a great way to simplify the complexity of research. A single research team can only produce so much data in a given time. But meta-analysis gives access to possibly more data than a team can produce in a lifetime, and allows them to access it in a useful way. Martyn (2008), found that meta-analysis also ensures that there is no unnecessary repetition of research and allows researchers to pool resources and compare methods. As papers can often take several months to be physically published, recording in the computer immediately and ensuring that other researchers are always aware of the latest work and the results in the field are always updated. In this study, meta analysis will be done through a systematic review study, to find out which macroeconomic variables are most effective on corruption and vice versa.

4. RESULTS AND ANALYSIS

Panel Unit Root Test for 5 selected ASEAN countries

Result and analysis ADF *1ST DIFF*					
variables					
Country	CPI	LFDI	LGDP	LOPE	LCG
MALAYSIA	-3.017598*	-5.606950***	-5.581209***	-2.367448*	-3.976167**
	(0.1646)	(0.0024)	(0.0025)	(0.3786)	(0.0350)
SINGAPURA	-3.405217**	-5.820266***	-5.924907***	-5.909337***	-2.975935*
	(0.0883)	(0.0021)	(0.0018)	(0.0015)	(0.1697)
THAILAND	-4.842102***	-3.317165*	-5.326561***	-4.676719**	-2.951340*
	(0.0083)	(0.1109)	(0.0044)	(0.0109)	(0.1779)
FILIPINA	-7.689647***	-5.038418***	-5.379660***	-2.813691*	-6.036373***
	(0.0003)	(0.0060)	(0.0035)	(0.2142)	(0.0012)
INDONESIA	-4.009129**	-6.812575***	-6.778476***	-5.222628***	-3.349680*
	(0.0380)	(0.0004)	(0.0004)	(0.0052)	(0.1058)

shows the Augmented Dickey Fuller (ADF) test at the first level (1st differentiation) for corruption (CPI) as the dependent variable (Y). While foreign direct investment (LFDI), GDP per capita (LGDP), trade openness (LOPE) and governance (LCG) are used as independent variables (X). It was found that at the first stage (1st differentiation) all study variables for 5 ASEAN countries are stationary because they show significant values.

Pooled Regression ASEAN countries

VARIABLES	COEFFICIENT VALUE	PROBABILITY	t-STATISTICS	PROBABILITY
LFDI	0.632435	0.198100	3.192501	0.0020
LGDP	-0.180236	0.271826	-0.663057	0.5092
LOPE	2.418129	0.298174	8.109788	0.0000
LCG	0.257363	0.118786	2.166611	0.0332
C	-20.97838	5.283857	-3.970278	0.0002

$$\mathbf{LnCPI_y = -20.97838 + 0.6324351lnFDI_y - 0.180236lnLGDP_y + 2.418129lnOPE_y + 0.257363InCG_y + \epsilon_y}$$

When substituting the data values found from 2001 to 2017 for all dependent variables and independent variables in the equation above, it was found that the independent variables that are FDI, OPE and CG have a positive relationship with the dependent variable that is CPI where when the value of the three independent variables increases, the level of corruption will increase. A one percent increase in FDI causes an increase in CPI by 0.6 percent while a one percent increase in OPE causes an increase in CPI by 2 percent and a one percent increase in CG causes an increase in CPI by 0.3 percent. Next, the results of the equation above show that the independent variable that is GDP has a negative relationship with CPI where when the value of GDP increases then the level of corruption also decreases. A one percent increase in GDP causes a decrease in CPI of 0.19 percent.

Based on Table 4.2, the results of the method show that the independent variable which is the rate of foreign direct investment, FDI (0.0020), openness, OPE (0.0000) and governance, CG (0.0332) is significant because the probability value (p-value) for the three variables are less than 5 percent (0.05). While the independent variable GDP per capita, GDP (0.5092) is significant but at a probability value of 10% (0.10).

Fixed Effect Model

VARIABLES	COEFFICIENT VALUE	PROBABILITY	t-STATISTICS	PROBABILITY
LFDI	0.082456	0.121289	0.679835	0.4987
LGDP	0.002310	0.143560	0.016088	0.9872
LOPE	-0.384046	0.381651	-1.006277	0.3175
LCG	-0.277295	0.077412	-3.582086	0.0006
C	4.307641	4.061612	1.060574	0.2922

When substituting the data values found from 2001 to 2017 for all dependent variables and independent variables in the equation above, it was found that the independent variables that are FDI and GDP have a positive relationship with the dependent variable that is CPI where when the value both independent variables increase then the level of corruption will increase. A one percent increase in FDI causes an increase in CPI by 0.08 percent while a one percent increase in GDP causes an increase in CPI by 0.002 percent. Next, the results of the equation above show that the independent variables that are OPE and CG have a negative relationship with the CPI where when the value of OPE and CG increases then the level of corruption also decreases. A one percent increase in OPE causes a decrease in CPI by 0.3 percent while a one percent increase in CG causes a decrease in CPI by 0.28 percent.

Based on Table 4.3, the results of the method show that the independent variables which are the rate of foreign direct investment, FDI (0.4987), openness, OPE (0.3175) and governance, CG (0.0006) are significant because the probability value (p-value) for the three variables are less than 5% (0.05). While the independent variable GDP per capita, GDP (0.9872) is significant but at 10% (0.10).

Random Effect Model

VARIABLES	COEFFICIENT VALUE	PROBABILITY	t-STATISTICS	PROBABILITY
LFDI	0.632435	0.082953	7.624043	0.0000
LGDP	-0.180236	0.113825	-1.583453	0.1173
LOPE	2.418129	0.124858	19.36706	0.0000
LCG	0.257363	0.049741	5.174106	0.0000
C	-20.97838	2.212569	-9.481458	0.0000

When substituting the data values found from 2001 to 2017 for all dependent variables and independent variables in the equation above, it was found that the independent variables that are FDI, OPE and CG have a positive relationship with the dependent variable that is CPI where when the value of the three independent variables increases, the level of corruption will increase. A one percent increase in FDI causes an increase in CPI by 0.6 percent while a one percent increase in OPE causes an increase in CPI by 2 percent and a one percent increase in CG causes an increase in CPI by 0.26 percent. Next, the results of the equation above show that the independent variable that is GDP has a negative relationship with CPI where when the value of GDP increases then the level of corruption also decreases. A one percent increase in GDP causes a decrease in CPI of 0.18 percent.

Based on Table 4.4, the results of the method show that the independent variable which is the rate of foreign direct investment, FDI (0.0000), openness, OPE (0.0000) and governance, CG (0.0000) is significant because the probability value (p-value) for the three variables are less than 5% (0.05). While the independent variable GDP per capita, GDP (0.1173) is significant but at a probability value of 10% (0.10).

Redundant Variables Test

TEST	STATISTICS	d.f	PROBABILITY
CROSS-SECTION F	95.061356	(4,76)	0.0000
CROSS-SECTION CHI-SQUARE	152.345291	4	0.0000

(Null Hypotheses) H_0: The FE model is appropriate

(Alternative Hypotheses) H_1: The RE model is appropriate

Hausman Test

TEST	CHI-SQ. STATISTIC	CHI-SQ. D.F	PROBABILITY
CROSS-SECTION RANDOM	380.245425	4	0.0000

(Null Hypotheses) H_0: The RE model is appropriate

(Alternative Hypotheses) H_1: The FE model is appropriate

5. CONCLUSION

This study was conducted to identify the factors that cause the widespread practice of corruption and the relationship between them. Corruption is said to be one of the factors that cause the downfall by weakening the legitimacy and structure of the government, reducing productivity, hindering development, marginalizing the poor, creating social unrest and ultimately leading to the destruction of a country. Therefore, several factors such as the rate of foreign direct investment, GDP per capita, trade openness and governance are used to analyze the extent to which these factors have an impact on the symptoms of corruption and can formulate recommendations to overcome it.

The record of the highest level of corruption is in Indonesia while the lowest is in Singapore compared to other ASEAN countries. This is due to several factors used in this study, namely the rate of foreign direct investment, GDP per capita, trade openness and governance. This study was conducted to identify where the level of corruption is positively or negatively affected by these factors. Furthermore, six types of tests were conducted to test this relationship, namely stationarity test, central regression test, fixed effect test, random effect test, redundant variable test and Hausman test. Based on the results of the study, the independent variables that are FDI, OPE and CG have a positive relationship with the CPI, which means that when FDI, OPE and CG increase, the level of corruption also increases. Next, GDP has a negative relationship with CPI, which means that when GDP increases, the level of corruption decreases.

Furthermore, trade openness is different in each country. Leblang (1996) and Tures (2003), have found a positive correlation between economic and political freedom. The freedom of these two factors has a direct impact on economic growth in a country and can reduce conflict and increase peace in a country by reducing the level of corruption. A lot of government intervention will erode economic freedom and will most likely cause high levels of corruption. This being the case, the economy of a country should not be blocked and it is necessary to open a wide door in order to curb the symptoms of corruption that worry all parties.

From the results of the quantitative study, the effect on the symptoms of corruption by each of the following factors for the five ASEAN countries has the same trend. But there is a difference in terms of rate and value respectively. In conclusion, foreign direct investment, trade openness and governance have a positive relationship with the level of corruption while GDP per capita has a negative relationship with the level of corruption. This being the case, overall macroeconomic determinants are an effective instrument to curb the symptoms of corruption in ASEAN countries. From the results of a qualitative study (systematic review) the macroeconomic determinants of corruption in conclusion support the findings of the empirical study and show that governance factors are the most effective on corruption.

This research focuses on the symptoms of corruption in ASEAN countries. This study uses quantitative secondary data to obtain data information regarding the independent variables which are foreign direct investment (FDI), GDP per capita, trade openness and governance and the dependent variable which is the corruption perception index. The analysis of this study includes panel data from 2001 to 2017. The results of the study show that macroeconomic determinants such as foreign direct investment (FDI), GDP per capita, trade openness and governance influence the symptoms of corruption. This study also successfully increased understanding and knowledge about the factors of corruption in macroeconomic determinants in ASEAN countries.

Furthermore, macroeconomic determinants are one of the best instruments in this study to explain the level of corruption in ASEAN countries. This is so because, there is motivation from a previous study studied by Castro and Nunes (2013), finding that the level of corruption in ASEAN countries is one of the factors that determine the location of macroeconomic determinants and investors will take into account when making decisions to invest . It is especially important in ASEAN countries because macroeconomic determinants play an important role.

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