INCOME INEQUALITY, DEMOCRACY AND RULE OF LAW: GREASE OR SAND OF THE CORRUPTION WHEEL?

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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 institutions of learning.

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

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List of Abbreviations

CPI   Corruption Perception Index

IE   Income Inequality

RGDPPC   Real GDP Per Capita

EF   Economic Freedom

DEMO   Democracy

UP   Urban Population

ROL   Rule of Law

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Abstract

Corruption is the main issue that wants to be eliminate by most of the countries in world. It can be defined as abuse of illegal power for personal gain or the misuse of political power to influence government policy for own benefits. In this study, our objective is to determine whether the income inequality will affect the level of corruption. Besides, we also want to study does rule of law will stimulate the corruption. Next, we want to investigate whether the combination of income inequality and democracy will affect the level of corruption. Further, we want to evaluate the impact of collaboration between income inequality and rule of law on the level of corruption. Lastly, we want to determine whether the different background of countries will affect the level of corruption. In this study, we will apply fixed effect model as a tool for estimation purposed. The data we collected is from 131 countries and the time period of this study is from 2005 to 2014. The result of the study shows that there is a positive relationship of corruption perception index (CPI) with the combination of income inequality and democracy. Furthermore, the relationship between CPI and the combination of income inequality and rule of law is positive.

CHAPTER 1: INTRODUCTION

1.1   Research Overview

Corruption is one of the cultural phenomena because it involves understanding of a society about the rules and constitution of a deviation (Melgar, Rossi & Smith, 2010). Corruption is a serious problem and social ethics has a significant impact on all societies (Leitao, 2016). However, it does not only depend on societies but also on personal values and moral views. According to the Oxford dictionary, corruption is widely spread throughout the world (worldwide issue) and does not have a precise definition, but generally, it means misuse of public power, dishonest or fraudulent conduct by powerful people, typically involving bribery, to benefit a private interest.

Lambsdorff (2002) finds that corruption is more harmful than alternative rent-seeking activities to welfare implications. The process of obtaining wealth, power or influence for private expansion illegally has been taking place worldwide at the expense of public welfare (Oni and Awe, 2012). Corruption is one of the constant problems of societies over the years and it affects the reliability of public institutions and its ambassadors to citizens and other countries (Ulman, 2014).

Corruption Perception Index (CPI) computed by Transparency International which is first launched in 1995 as the indicator of corruption. It has been widely credited for putting the issue of corruption on the international policy agenda. Countries or territories are being ranked based on the level of corruption of a country's public sector. A score of 0 will be given to a highly corrupted country and a 10 will be given to the least corrupted country. The 2014 Corruption Perception Index shows that Denmark and New Zealand have the lowest

corruption, with scores of 92 and 91 respectively, on the other hand, North Korea and Somalia rank equal-worst of 174 countries with a score of only eight.

Figure 1.1 The average Corruption Perception Index level in the World
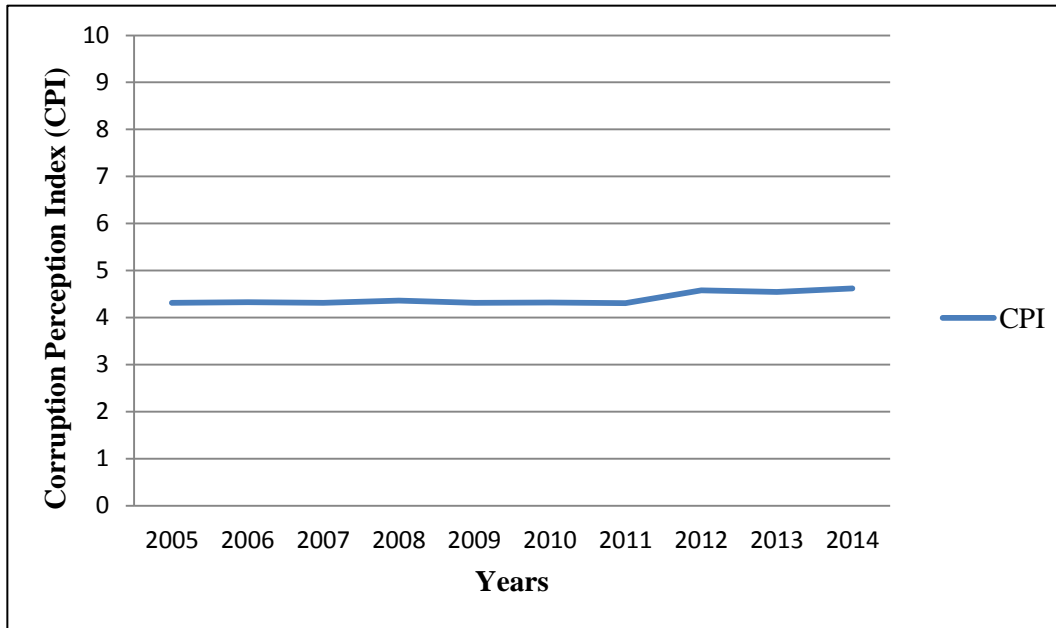
Source: Transparency International (2005-2014)

Figure 1.1 shows the average level of Corruption Perception Index (CPI) in the world. As the trend goes by years, we can see that the CPI scores does not go over the average too much. It stays within the boundaries of 4 to 5. This is due to the effort by all countries to tackle corruption as it is harmful to economy.

1.1.1 Positive Impact of Corruption

Some of the researchers from both economic sector and non-economic sector raised that corruption may improve the efficiency and serves as a "Wheel" of economic growth for developing countries

suffering from overregulated obstructive bureaucracies. They claimed that corruption can decrease black market trading, smuggling, and fully utilize the resources and maximize the welfare to the second-best level. Although corruption will improve distortion of government policy, it cannot fully solve the distortion. Therefore, we only can define the achievement at the second-best level.

Through paying bribes are able to lead the policy orientation to a more efficient direction when a government is lack of efficiency or having wrong decision making (Leff, 1964). The government of a developing country normally lack efficiency and is full of bureaucracy. This is due to a lack of pressure from democracy or lack of interaction with the business when determining the policy. The government does not realize that the value creation is through the economic matter or innovation and will not put more efforts on economic activities. When the economic growth is put off due to lack of efficiency of government, the firms will be benefited from paying bribes.

Firstly, the firms will be benefited from the decrease in the uncertainty and increase in the investment. An investment decision is made based on the uncertainty and risk, which is higher in a developing country, compared to a developed country. Lack of economic data to evaluate and the government's attitude to interact the market are the main uncertainty faced by the investor. If the firms and investor reduce the risk and uncertainty by paying the bribes to ensure the future gain will not be disturbed, the investment rate will increase and lead to the growth of the economics.

Secondly, increase in ability to compete and efficiency. Corruption will stimulate the growth of economic and serve as "lubricating oil" for the wheel of the trading in certain countries having a weak legal and regulatory framework (Bardhan, 1997). Furthermore, corruption also helps to minimize the cost of "Waiting" when the activities of bureaucracy are active in a country (Lui, 1985).

Corruption will also speed up the market's administrative practices development. Besides, the public officials who acquire incentives will create a development-friendly system for the economy. Therefore, corruption will benefit all economic involver and increase the efficiency of overregulated obstructive bureaucracies.

1.1.2 Negative Impact of Corruption

Corruption is not a new issue but it has continuously existed in the society. Many studies argued that corruption has negative impact on investment and economic development (Ertimi & Saeh, 2013). One of the downsides of corruption is the decrease of income level since it causes inefficiency due to the wasted resources use in the production. Besides, corruption causes reduction in investment. It also ruins democracy and ethics.

Numerous empirical studies stated that there is a negative relationship between corruption and economic growth (Le & Rishi, 2006; Paldam, 2002; Treisman 2002). This is because bribery activities may create uncertain environment and thus reduce investment and government spending on public project (Diaby & Sylwester, 2014).

Blackbum and Forgues (2010) revealed that corruption is always bad for economic development, but its effect is worse if the economy is open than if it is closed. However, corruption may be affected by both the development and trade openness of an economy. The effects of corruption and poverty are relatively permanent.

Leite and Weidmann (2001) obtained evidence showing that corruption lowers economic growth. Corruption is not only distorting the effectiveness of institution but it also impedes a country's economic growth (Mounts, 2010).

Another way that corruption may distort an economy is through investments. The Foreign Direct Investment in a country will reduce due to corruption. A researcher said that the investor from the US choose to invest their investment to less corrupted countries (Hines, 1995). A study conducted by Wei (1997) discovered that corruption in host country has a significantly negative effect on Foreign Direct Investment. This study shows that an increase in the level of corruption from that of Mexico to that of Singapore is equal to raising the tax rate by 20 percent.

1.1.3 Income Inequality: A Problem that the World Should Keep an Eye On

Income and wealth has been an interesting issue studied by economists. They are the important components used to understand how the economy works. Saha and Grounder (2013) states that high income countries are most likely to have lower corruption level compared to low income countries, but middle income countries are perceived to be more corrupt. The interesting part that researcher found is that even though there is increase in income level in the low income countries, there might be no reduction in the level of corruption. The significance of income level on the impact of corruption is still an interesting part in contemporary research. In the research of Assiotis (2012), he said that the higher the income level, the lower the corruption. However, there are more factors

that can affect corruption level. A high income country does not necessary means a lower level of corruption.

Mohammed, the Secretary General's Special Adviser on post in 2015 Development Planning of United Nations and Vice Chairs of the Global Agenda Council on Sustainable Development stated that inequality is a key challenge of the world today. The poor people in the world control less than 10% of its wealth. When there are only small portions of rich people controlling large portion of important resources and wealth, they can do many things that are harmful to the economy.

Inequality may lead to policies that will affect the growth of a country. Claessens and Perotti (2007) reveal that the government often came out with policies that will slow down the economic growth in order to reform the society. These policies are against growth-enhancing economic liberalization. To reduce the gap between the poor and rich, government have to make harsh decision whether to save the economy or the citizens.

1.1.4 Income Inequality Is an Important Factor to Affect Corruption

In general view of corruption, most of the people forget one important factor that will affect corruption, which is income inequality. In this study, income inequality is used as an explanatory variable for corruption. Based on Scot (1972), he said that if there is more balance in income distribution, the large middle class will grow in the nation. Scot (1972) concluded that if there is more balance in income distribution, the large middle class will also increase in the nation. This is because those in

middle class will expect the elites to be accountable, as a result, the level of corruption will be reduced (Husted, 1999). On the other hand, if the income distribution in one nation is more unequal, as a consequence, there will be less wealthy people existing in the nation. This will motivate and give the opportunity to the wealthy to involve in corruption because they will maintain and improve their level, privileges, status and interest as an individuals and firms through bribery and fraud (You and Khagram, 2004). Besides, the inequality in income distribution may also increase the temptation of making illegal profit (Paldam, 2002). For the people trapped in the middle income level will try to earn an illegal income to sustain their lives. As a result, corruption will persist in the nation (Shen and Williamson, 2005).

Based on the study of Samadi and Farahmandpour (2013), when the income inequality increased, the wealthy hold more resources (legal or illegal) to increase their influence in public sectors. Those with high income can pass through in political process through donation, bribery or legal lobbying. As a result, they can use their relation with politicians to influence the process of law decision and get their preferred interpretations of law. When the income inequality increases, the poor people will become poorer and this will force them to demand more complete redistribution by higher progressive taxation. This will increase the incentives of rich people to use their political and bureaucrat corruption to reduce the tax rate.

Besides, the increase in income inequality will reduce the real income and it cannot sustain the increasing needs. When the value of the materials and need for services increase, these new needs will create new accepted standard. If people cannot attain these new standard due to their income level is low, they will feel strip and unsatisfied. This will motivate these low income people to involve in corruption activities. For those people in high income level class, there always able to attain their present and future needs but people in low income level do not have many assets and their also face to great volume of unsatisfied needs for services and commodities which the prices of those commodities had increased due to

inflation. Some of the unemployed people do not have income, so these people cannot reach their needs and they will become poor. As a result, these much number of low income level people exclude from using public services, for examples hospital services and education services. This will lead to corruption because those poor people are trying to get their essential needs and this would be the target of bribery and administrative corruption.

Next, discrimination will create the social class gap and social inequality. In consequences, those people will try to involve in corruption to increase their income level. The people who are in middle class income level or low income level have the motives to monitor and counter the corruption of the rich and government. Because of the increased in income inequality and this will repress the capacities of middle – class and poor people to monitor the corruption of those powerful rich people and government.

1.2   Problem Statement

Recently, "corruption" has frequently appeared as the head title of the newspapers worldwide no matter in developed or non-developed countries. The problem of corruption in a country is generally believed to be able to weaken the public confidence towards government decision making and the reputation of the country. Corruption will affect the economic situation internally and externally. From internal aspect, if most of the residents lose confidence toward the government decision making, the policy participation rate will become relatively low and this will cause the policy to end up with a fail situation. On the other hand, from external aspect, the foreign direct investment may be affected since the reputation of the country will be damaged by the corruption phenomena, as

concluded by Wei, (1999). This problem will lead to a serious impact on the economy.

In the reality, corruption is everywhere. Most of the people will think that the corruption will only happen in the low income country. In fact, this is a massive problem in rich countries as well as the poor countries. There are few examples that can explain the corruption phenomena in the rich countries. For example, in the United States, some denounced that many government outsourcing contracts are won without an open bid process. It was found that more than half of the outsourcing contracts were not open to competition to the public. In essence, there are 21% of federal government contracts that were awarded on a non-bidding basis (Hightower, 2007).

On the other hand, in the United Kingdom, the weapons manufacturer, British Aerospace, was being investigated for bribing the Saudi government to purchase fighter planes, but in the end, the British government intervened with the investigation to citing national interests. This weapons manufacturer gave the Saudi prince a huge amount of "gift" as part of the British arms deal. This seemingly large figure is small compared to the contract. This shows us how corruption is possible when large sums are involved. (The Guardian, 2010)

Apart from the government, the international independent institutions, such as the World Bank also suffers from corruption, ironically while presenting themselves in the forefront of the war against corruption. The headlines were made after its recent president, Paul Wolfowitz, was forced to resign after the report that revealed his motive to move his partner to a new government position with an extremely high pay without review by the World Bank ethics committee. (The Guardian, 2007)

Therefore, from the example given, we can know that corruption has become a common phenomenon. There are different types of corruption. In the past, people have the perception that corruption will only happen in low income community as well as under developed and developing country. In fact, this is false and this problem has become a plague and an obstacle that impede global

economy to move further. Besides, the common interest of the commoners and the humanity problem is also effects by corruption problem.

As the Chinese proverb goes, tear the weed out by the roots. It means that to solve a problem, we need to identify the source of the problem and apply the right solution for it. Therefore, to solve the corruption problem in a country or community, determinants of the corruption are needed to solve this problem more efficiently and effectively. In addition, a correct combination of the various types of policies is needed to achieve the goal. In short, this research provides the information needed to fight corruption.

1.3   Research Objectives

1.3.1   General Objective

The main purpose of this study is to investigate the relationship between corruption and income level. This study provides a complete view on the importance of income inequality as an indicator affecting the level of corruption in 131 countries from year 2005 to 2014.

1.3.2 Specific Objectives

This study consists of 6 specific objectives:

(1) To examine the role of income inequality in determining the level of corruption.

(2) To construct a new method to represent income inequality.

(3) To study the effect of rule of law towards corruption.

(4) To investigate whether the combination of income inequality and democracy affect the corruption level.

(5) To evaluate the impact of collaboration between income inequality and rule of law on the level of corruption.

(6) To examine the intensity of income inequality in different background of countries (developed and non-developed) on the impact of corruption.

1.4 Research Question

The study has formed a few research questions as below:

(1) Does income inequality have a role in determining the level of corruption?

(2) Whether rule of law stimulate or hinder the corruption level?

(3) What does the combination of income inequality and democracy bring on the level of corruption?

(4) Does the collaboration of income inequality and rule of law affect the corruption level?

(5) Which background of countries (developed and non-developed) has
more effect of income inequality on level of corruption?

1.5 Hypothesis of the Study

The study also presents a few hypotheses. The hypotheses are:

(1) There is a positive relationship between corruption and income
inequality. This means that when the income inequality increases, the
level of corruption will increase.

(2) Rule of law will hinder the corruption level. The higher the rule of law,
the lower the corruption level.

(3) The negative effect of income inequality will have a greater outcome
compared to the positive effect that the democracy brings on corruption.
Therefore, the combination of income inequality and democracy will
have negative relationship with corruption.

(4) The level of corruption can be negatively affected by the combination
of income inequality and rule of law. The negative effect of rule of law
on the level of corruption will surpass the positive effect of income
inequality on level of corruption.

(5) Non-developed countries will have more effects as the increase in
income inequality will cause more corruption.

1.6   Significance of the Study

In the previous research that has been done by the other researchers, most of their research focused on specific countries. These researches could only get the results that are solely based on those specific countries but not the overall view of the world. Moreover, many researches used common determinants and omitted some key determinants that are quite important in determining the corruption level. In this study, one more determinant, the rule of law is included. This determinant is able to fill up the research gap of other studies and strengthen the evidence in those empirical researches. In today's world, income inequality is being seen as an important issue as it directly or indirectly causes a lot of problems which includes corruption. Furthermore, the researchers commonly believe that the rule of law will lower the corruption level in a country. With this study combining the research on income inequality and rule of law, we can conclude on how their joint effect towards the level of corruption in those countries. This study collected data for 131 countries and for 10 years' time period. This can help widen up the scope of research instead of just focus on one specific country. With these panel data, we can know how income inequality is currently affecting corruption in the world.

1.7   Chapter Layout

This study consists of 5 sections. Chapter 1 consists of an introduction of the research which includes the background of the study, problem statement, objectives, research question, hypotheses, and significance of the study. Next, chapter 2 presents the literature review about the determinants of corruption which shows the relationship of corruption and the control variables. Subsequently, chapter 3 discusses the proposed methodology of the study, theoretical framework, data collection, scope of study, and research design. Chapter 4 mainly focuses on

the data analysis which includes the interpretation of result and discussion of major findings of the study. Last but not least, chapter 5 involves a conclusion, policy implications, limitations and recommendations for future researchers.

CHAPTER 2: LITERATURE REVIEW

2.1   What Drives Corruption?

"What are the factors that drive corruption?" This is the question that has been a concern for recent studies on corruption. Studies are trying to determine the causes of corruption and what makes the corruption worst or better. There are a few factors that are commonly used in most of contemporary research which include real growth domestic product per capita, economic freedom, democracy and urban population.

According to research of Treisman (2000), those high income countries are less likely to have problem of corruption than those low income countries. The problem of corruption appears to be more active in low income countries than high income countries. In high income countries, some countervailing dynamic has been preventing the spread of corruption (Yilmaz, Antep, Akif & Ankara, 2011).

Economic freedom is connected to the government activity in the economy. When government is larger and they have more intervention in the economy, this causes higher chances for corruption to happen (Tanzi, 2014). Another case is that when government has lesser control on the amount or types of resources, there will be lesser opportunity for corruption to occur (Graedd & Mehlkop, 2002).

As in the research of Saha and Gounder (2013), they state that the democracy tends to reduce corruption. Democracy in a nation can be expressed in terms of the democratic values, the freedom of press, expression and association. All these factors can lead to greater monitoring system of those unlawful activities as the citizen of the nation can express their thought. With the existence of high

democracy in a nation, information has been provided for the citizen to evaluate themselves which will hold the politicians accountable through periodical election.

An urban area is a place with high population density and a lot of infrastructure or tall buildings. In urban area, educated population is higher than those in rural area. Treisman (2007) states that, a place with resident of higher income and educations will less likely to have high corruption. In the research of Cheung and Chan (2009), they found out that a person with higher education level will have higher life satisfaction. They will be satisfied of their current life condition easier as compare to those that have lower education level. Therefore, a country with higher percentage of urban population will have a lower corruption.

2.1.1 Income Inequality

In general, the sources of income are in the form of wages, salaries, interest received from certain investment, dividends from shares of stock, rental, and proceeds from selling goods and services. Income inequality refers to the extent to which income is distributed in an uneven manner among the society.

Income inequality is used as an explanatory variable for corruption. There is a positive relationship between corruption and income distribution as supported by the findings in the research of Paldam (2002). An imbalanced income distribution will increase the seduction to make illegal gains and thus give rise to the level of corruption. In the economy, corrupted activity such as rent seeking and bribery will spread. After some time, bribery will be seen as an acceptable culture.

Figure 2.1: Inequality and Corruption.
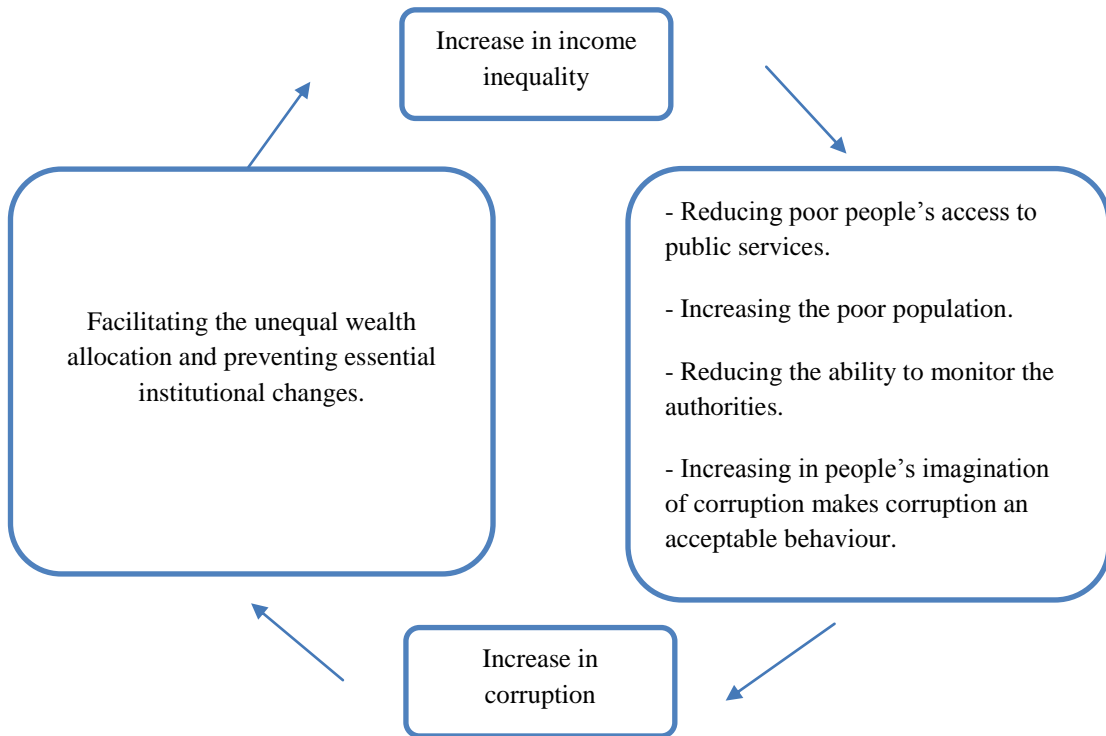
Source: Samadi, A. H. & Farahmandpour, B. (2013). The effect of income inequality on corruption in selected countries (1995-2007)

According to Samadi and Farahmandpourb (2013), there is a positive relationship between income inequality and corruption. When income inequality goes up, it makes corruption worse. The minority group of wealthy people in the countries with high level of income inequality tend to benefit themselves through bribery in order to strengthen their social status. They also have greater motivation and opportunities to use the illegal income to preserve their status.

Moreover, when income inequality increases, those from high social class will definitely find more resources to get more influence in public sector so that they can gain a step beyond the legislation and solve their lawsuit through political donation or bribery. Besides, they may use bribery to penetrate the legislation processes (You and Khagram, 2005).

When corruption spreads in a society, it makes the income distribution even more unfair. Based on one of the ideas presented by You and Khagram (2005), the wealthy people believe that corruption is a widely accepted ways to protect their social position. Hence, the corruption will grow in society accordingly. Moreover, when there is high inequality in wealth distribution, people tend to have the wrong assumption that rich people and government officials conduct bribery activity, so those from low social class will definitely work dishonestly. As more and more people from different social classes involved in corruption, the level of corruption will increase rapidly. As a result, corruption will be accepted in the society since a new accepted norm is created.

Based on a study conducted by Apergis et al. (2010), the real income of an individual will decline due to the higher income inequality. When price of the goods and services rise in society, this will lead to the creation of a new norm. For those who cannot reach the new norm due to low income, they will definitely feel unsatisfied. Therefore, they engage in illegal activities.

In addition, the corruption will spread over the economy in a country since people with low income level try their best to gain illegal income in order to sustain their lives (Shen and Williamson, 2005). Income inequality tends to cause social inequality and bigger social class gap. As a consequence, corruption activities might incur since those people cannot earn and increase their income level by legal ways (Helgson and Mickelson, 1995). This is further proven by McCarthy and Zald (1997). Those from middle social class and the low social class basically have the motivation to reveal the corruption from those from high social class groups and government. The former will be exploited to monitor the bribery activities of the rich due the high level of income inequality.

In short, the higher the inequality in the distribution of income, the higher will be the level of corruption in a country and vice versa.

2.1.2 Democracy

The democracy may have many benefits but the benefits are not entirely clear. Many researchers have argued that the democracy may positively affect the economic growth in different reason. This is because the democracy allows the people to do election and then dislodgement the leaders that involve in corruption activities. Based on North (1990), he argued that the authoritarian candidates will catch upon the societies. This phenomenon will be eliminating if they are selected by democratic institution. Bueno de Mesquita et al. (2001) also argued that an authoritarian candidate has few revise on their authority and this will encourage them to engage in corruption and bribe activities.

Lipset (1959, 1960) said that there is a symbiotic relationship between democracy and wealth exits. He said that democracy will most likely exist in the society with industrialized which the wealth is produced by middle class producers. So the middle class producers will maintain a strong stake in society that provides them enough freedom of the choice to give them the permission of creating more wealth. Huntington and Nelson (1976:23) said that political enrolment must be reduced or temporarily held down in order to improve the economic development. Another study, which can be found in literature on East Asia, generally said that authoritarian political power is better to avoid rent seeking (Haggard, 1990).

The democratic institutions can support the capacity of oversight agencies. These institutions have their own incentives to involve in eliminated the corruption. Besides, with the anti-corruption NGOs such as Transparency International, those institutions can further motivate engagement by building coordinating civic activities and awareness. Haque and Kneller (2007) said that the important role played by those institutions is to give the warning effect to the corruption and then provide evidence against evil person. Manion (2009) said that civil society groups

also played an important role in reporting illegal behavior directly to law enforcement. As a result, government is able to collect those evidence more cheaply, and this may reduce the monitoring cost.

On the other hand, Olson (1982) said that if special interest groups tend to overly influence the nation policy, this will help those people to get particularistic privileges that will increase the level of corruption. Furthermore, as the democratic country reflects, when there is more power represented in government, this will lead to political sclerosis and this will motivate them to involve in corruption activities. This is the opposite effect of democracy on corruption.

2.1.3 Rule of Law

Rule of Law is built based on the consensus and moral code that is shared among the community. It also includes a country's manner of contract enforcement, property right, the police bureaucracy, and the institution of the courts (Kaufmann et al., 2010).

Thus, violation to the rule of law brings certain consequences. One of the violations is corruption. Based on Transparency International, corruption occurs when illegal misuse of power happens for private purposes.

For further understanding, President of China and Communist Party Chief, Xi Jinping said that the most effective way to reduce corruption is to develop a powerful, reliable and transparent rule of law in the country. (The Economist, 2014)

Moreover, corruption is intrinsically related to rule of law. Corrupt officials are rational welfare maximizers. The possible impacts of corruption are being dismissed from job and serving in jail. Therefore, a well-structured legal system plays an important role to reduce corruption

level in a country. The level of corruption depends on the laws enforced. The perspective is that the more prominent the rule of law, the lower the corruption level is supported by Leff (1964) and Huntington (1968). Hence, countries with strict laws and efficient judicial systems tend to be less corrupted and vice versa.

Nowadays, rule of law is an important element for controlling corruption level. In other words, if the laws are implemented systematically, no one will be above the law system, not even the Prime Minister or the highest ruler of the country. This means that everyone is equal in front of the laws, regardless of social status, race, or background. As a consequence, the corruption level will definitely decrease since no individual is privileged to escape the jurisdiction system.

According to the study obtained by MacDonald and Majeed (2011), there is a significant relationship between the rule of law and corruption. This is further supported by Ali and Isse (2003), which suggested that corruption level depends on the rule of law. A well-structured set of laws acts as deterrent because of the fear of being punished either by loss of job or jail sentence or both.

Besides, Mendonca and Fonseca (2012), rule of law is an important variable to control the corruption level because rule of law is a powerful instrument in decreasing the corruption. Therefore, we included the rule of law as one of the independent variable to accomplish our objectives since corruption is closely related with the implementation of the law.

A more well-structured country with proper rule of law will have less corrupted officials. Thus, the effectiveness of the implementation of the law is a strong determinant of the corruption level in the country. According to the President of China and Communist Party Chief, Xi Jinping, the most effective way to combat corruption is to develop a powerful, reliable and transparent rule of law in a country. Besides, in order to calm the angry public, Mr. Xi has launched an anti-corruption campaign to put certain limitations to the officials so that the corruption level can be reduced (The Economist, 2014). One of the restrictions that can be imposed to the officials include requiring the company or the

administration of government involved in certain projects to present the report on the funds used for country's development. However, it does not ensure a corruption-free country because some officials can still find ways to commit bribery since reports can be faked.

2.2 What Makes Corruption?

One possible source of the corruption first appears is colonization. Evidence shows that there is a significant relationship between corruption and colonies where the colonies created institutions with low property rights. Based on the cased studied by Acemoglu, Johnson and Robinson (2001), it described a large amount of Western residents settled down in an area, institutions were built and only give beneficiary to their own residents and have the intention to cause these colonies suffer from high levels of corruption today. Hence, an assumption can be made whereby higher levels of corruption will occur when property rights are relatively low.

On the other hand, the failure of the power to implement public law results in corruption where the state policy can be affected by business interest (Rose-Ackerman 2004). Good governance is closely related to the transparency, accountability and procurement (Rose-Ackerman 2004). In some developing countries, bribes giving activities are high and this will lead to a higher cost of country development which could be one of the reasons these countries suffer from underdevelopment. Moreover, the countries which have weak government structures do not have enough power to control agencies corruption levels Therefore this weakness will lead to the independent bribes on private entities imposed by government agencies (Shleifer and Vishny 1993; Rose-Ackerman 2004).

Obviously corruption will only exist when one party can get profit from another party's outcome. This is likely to be seen in a country with inefficient

institutions, weak enforcement systems and unstable government structure. The quality of government is one of the best ways to fight corruption. The institution is "humanly devised constraints that structure political, economic and social interactions in which consist of both formal and informal rules" defined by North (1991). To create stable government, personnel needs to be developed and educated, which will enhance the stability and higher quality institutions. The government shall also operate in associate with the law and to operate effectively without getting any impact from external and internal factors that aim at changing decisions.

2.3   Evolution of Corruption

Corruption seems to manifest itself in all societies that pass certain degree of complexity. It dates back to the very first instances of organized human life and has been present ever since (Klitgaard, 1988). One of the oldest examples of corruption is more than 2300 years old. Chanakya, prime minister to the first Maurya Emperor Chandragupta, and the architect of his rise to power, analyzed the phenomena of corruption in his work (Boesche, 2003; Bardhan, 1997). In China, the penal code of the Qin Dynasty included corruption and put heavy penalties on people who offended their rules. Dante Alighieri placed bribers in the deepest part of hell. Shakespeare gave corruption a prominent role in some of his plays. The American Constitution explicitly mentions bribery and treason as the two crimes that could justify the impeachment of a U.S. president.

Bardhan (1997) found that although the requisite time series evidence in terms of hard data is absent, circumstantial evidence suggests that over the last 100 years or so corruption has generally declined with economic growth in richest countries. This is because the corrupt deal exposure is much more probable in more economically developed countries. Furthermore, to its clear impact on democracy, economic development improves the spread of literacy, education,

and depersonalizes economic relationship. Each of this should increase the likelihood that a misuse of public power will be discovered and eliminated (Treisman, 2000). So the policies that improve growth, if successfully implemented, are likely to reduce the corruption in the long run. Based on the study of Paldam (2002), he suggests that with the complex transition from a poor traditional country to a rich liberal democracy also comes a fast reduction in the level of corruption.

In the context of the post-communist countries of Central and Eastern Europe, the Baltics, the Commonwealth of Independent States as well as Mongolia corruption has been recognized as an integral part of the communist system (Sandholtz & Taagepera, 2005). However, despite 25 years of transition and continuous economic development many people perceive that corruption, instead of falling, has risen in those countries after the fall of communism. After the fall of communism, non-transparent privatization, stalled liberalization of price and commerce, and under developed legal and regulatory systems worsened the situation even further and have all come in for their share of sometimes well-deserved criticism. As a result, corruption in some of the countries that emerged from the former Soviet Union is perceived to be the heaviest in the world, imposing a heavy burden on their economies and slowing down their economy development.

In the face of the fall of the command economic system, the structure of informal personal connect between people did not cease to exist, nor did the distrustful attitude towards the state. With a change in the post-Soviet political regime after the subsequent progress of economic and social transformation initiated changes in the background and environment of corruption. Besides, privatization after the collapse of communism created new opportunity and incentive for corruption (Kaufmann & Siegelbaum, 1997; Stiglitz, 1999; Hoff, Stiglitz, 2004).

2.4   Research Gap

Based on the literature study, most of the research did include the income factor as an important determinant of corruption perception index (CPI). For instance, Assiotis, (2012), S. Saha, R. Gounder, (2013), J. Matti, (2015), Graeff, P., & Mehlkop, G. (2003) included income factors as one of the factor that determine the corruption level. Most of the study used the Granger Causality or POLS method to conduct the test and explain the relation between the income and the corruption. In reality, the income factor is hard to justify the corruption level solely of certain country. In this study, we conduct the interacting effect of income factor with democracy factor and rule of law to identify whether combination of these variables can affect the corruption level.

Based on the result conducted, it shows that the income inequality should be concerned and it is an important variable that cannot be omitted. Income inequality has an effect on corruption whereby a higher level of income inequality in a country, the higher the Corruption Perception Index when income inequality stands alone. However, when there is an interaction between the income inequality with other variables such as rule of law and democracy, the direction of impact on the corruption has a one hundred eighty-degree change which will reduce the corruption in a country. One of a good example to prove this is a country in North America, Canada. The income of top 1% of richest Canadian is 13 times higher than of the normal people. However, due to the Canadian has a democratic friendly environment, the Corruption Perception Index is relatively low compare to other country which face the same income inequality problem.

As conclusion, solve the problem of income inequality in a country can help to reduce the corruption but it is not enough to solve the whole corruption problem. In order to achieve a higher level of reduction in corruption, the administrative change is needed. In addition, these improvements are able to lead a country to become a better place, the common interest from personal income, democracy and improve economic growth by creating a business friendly environment which free from corruption problem.

CHAPTER 3: METHODOLOGY

3.1 Overview

To investigate the effect of income inequality on corruption level, we have used panel data for estimation. The panel data includes 131 countries from year 2005 to 2014 due to the limited data availability for income inequality. After combining all the 131 countries over 10 years, we have the confidence to increase the effectiveness in our estimation. Besides, this may also be able to reduce the multicollinearity problem that will occur in time series or cross-sectional regression (Baltagi, 2002).

The primary limitation of the cross-sectional analysis is that because the exposure and outcome are evaluated at same time, there is no evidence of a temporary relationship between exposure and outcome. If there is no longitudinal data, that is impossible to set up a true cause and effect relationship (Chen, et al., 2015). Therefore, we have decided to use panel analysis for the estimation. Besides, there are three different panel data models that can be used in this estimation, which are Pooled Ordinary Least Square (POLS), Fixed Effect Model (FEM) and Random Effect Model (REM). Last but not least, we have decided to use FEM as our model for estimation because POLS is harder to solve the omitted variable bias problem. Besides, Fixed Effect Model can reduce the probability that a relationship is increased because of omitted variables.

3.2   Empirical Model

The empirical model is constructed as below:

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 GINI_{it} + \beta_3 InEF_{it} + \beta_4 DEMO_{it} + \beta_5 UP_{it} + \mu_{1it}$$

(3.1)

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 IE_{it} + \beta_3 InEF_{it} + \beta_4 DEMO_{it} + \beta_5 UP_{it} + \mu_{2it}$$

(3.2)

i stands for ith cross sectional unit, t stands for tth time period and μ stands for error term. CPI represents Corruption Perception Index (Score), RGDPPC represents Real Gross Domestic Product Per Capita (Constant US$), EF represents Economic Freedom (Index), DEMO represents Democracy (Score), UP represents Urban Population (%) and IE represents Income Inequality (Skewness).

From the variables above, we have developed some hypotheses to examine the research objectives in our study. The hypotheses development is based on the relationship between independent variables and dependent variable. Do not reject the null hypothesis when there is relationship between the independent variable and dependent variable. On the other hand, reject null hypothesis when there is no relationship between the independent variable and dependent variable.

Firstly, we formulated a null hypothesis of β_2 less than or equal to 0 and an alternative hypothesis of β_2 more than 0, in order to examine whether income inequality is negatively related to corruption level. With the aim of achieving objective 1, we will refer to β_2 to examine the role of income inequality in determining the level of corruption.

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 IE_{it} + \beta_3 InROL_{it} + \beta_4 EF_{it} + \beta_5 DEMO_{it} +$$
$$\beta_6 UP_{it} + \mu_{3it} \qquad (3.3)$$

Based on this model, we want to do a test about whether the rule of law is positively related to corruption perception index (CPI) level. In order to do this test, we formulated a null hypothesis with β_3 less than or equal to zero and alternative hypothesis with more than zero. To achieve the objective three, we can refer to β_3 to test the effect and contribution of rule of law to corruption perception index.

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 IE_{it} + \beta_3 InEF_{it} + \beta_4 DEMO_{it} + \beta_5 UP_{it} +$$
$$\beta_7 IE_{it} * DEMO_{it} + \mu_{4it} \qquad (3.4)$$

Based on the model, we will test the negative relationship between the combination of income inequality and democracy on corruption. We derived a null hypothesis with β_5 less than or equal to zero and alternative hypothesis with β_5 more than zero. This study is to draw out the joint effect between income inequality and democracy on corruption level in order to capture the total effect of income inequality on corruption. The effect can be captured by the following formula:

$$\frac{d\ CPI}{d\ IE} = \beta_2 + \beta_4\ DEMO \qquad (3.5)$$

According to the calculation, we are able to know the joint effect between income inequality and democracy rather than looking at a single effect of income inequality. Therefore, this model indicates the effect of income inequality on corruption which depends on democracy.

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 IE_{it} + \beta_3 InEF_{it} + \beta_4 DEMO_{it} + \beta_5 UP_{it} +$$
$$\beta_6 InROL_{it} + \beta_8 IE_{it} * ROL_{it} + \mu_{5it} \tag{3.6}$$

With this model, we will test the positive relationship between the combination of income inequality with rule of law and corruption. We formulated a null hypothesis with β_5 more than or equal to zero and alternative hypothesis with β_5 less than zero. In order to achieve objective 5, we can refer to β_5 to investigate the relationship or impact of the joint effect between income inequality and rule of law towards corruption. To capture the total effect of the income inequality on corruption, we need to use the following formula:

$$\frac{d\ CPI}{d\ IE} = \beta_2 + \beta_5 ROL \tag{3.7}$$

Based on this calculation, we can know the effect of this joint between income inequality and rule of law rather than only look at a single effect of income inequality. Thus, this model shows the effect of income inequality on corruption which depends on the strength of rule of law.

Table 3.1 131 Sample Countries into 3 Different Development Categories

Developed Countries	Non-Developed Countries		
Australia	Albania	Guatemala	Pakistan
Austria	Angola	Guyana	Panama
Belgium	Argentina	Haiti	Paraguay
Canada	Armenia	Honduras	Peru
Cyprus	Azerbaijan	Hungary	Philippines
Czech Republic	Bahrain	India	Poland
Denmark	Bangladesh	Indonesia	Qatar
Estonia	Barbados	Iran	Romania
Finland	Belarus	Jamaica	Russia Federation
France	Benin	Jordan	Rwanda
Germany	Bolivia	Kazakhstan	Saudi Arabia
Iceland	Bosnia &	Kenya	Senegal
	Herzegovina		
Ireland	Botswana	Kuwait	Sierra Leone
		Kyrgyz Republic	
Israel	Brazil	Lao PDR	Slovak Republic
Italy	Bulgaria	Lebanon	South Africa
Japan	Burkina Faso	Lesotho	Sri Lanka
Latvia	Burundi	Madagascar	Swaziland
Lithuania	Cameroon	Malawi	Tajikistan
Luxembourg	Chile	Malaysia	Tanzania
Malta	China	Mali	Thailand
Netherlands	Colombia	Mauritius	Trinidad & Tobago
New Zealand	Costa Rica	Mexico	Tunisia
Norway	Cote d'lvoire	Moldova	Turkey
Portugal	Croatia	Mongolia	Turkmenistan
Singapore	Dominican	Morocco	Uganda
Slovenia	Republic	Mozambique	Ukraine
Korea Republic	Ecuador	Namibia	United Arab Emirates
Spain	Egypt, Arab	Nepal	Uruguay
Sweden	Republic	Nicaragua	Uzbekistan
Switzerland	El Salvador	Niger	Vietnam
United Kingdom	Ethiopia	Nigeria	Yemen, Republic
United States	Gabon	Oman	Zambia
	Georgia		Zimbabwe
	Ghana		
	Greece		

*Note: Countries are categories based on their development categories following

level of gross national income, World Bank standard

$$InCPI_{it} = \beta_0 + \beta_1 InRGDPPC_{it} + \beta_2 IE_{it} + \beta_3 InEF_{it} + \beta_4 DEMO_{it} + \beta_5 UP_{it} +$$

$$\beta_9 dumY + \mu_{6it} \qquad\qquad (3.8)$$

Based on this model, we want to do a test about whether the level of development of a country is positively related to corruption perception index (CPI) level. In order to identify this statement, we formulated model 5 which includes a dummy variable. The dummy variable helps us to differentiate the level of corruption of developed and non-developed country. To achieve the fifth objective, we can refer to β_9 which helps us to identify the relationship between the corruption and level of development of a country.

3.3 A Model of Corruption

In this research, we have developed a basic model that includes the relevant variables to estimate how these variables are affecting the corruption level. Based on Matti (2014), Assiotis (2012), Ali, Hodan (2003), Huntington (1968), Kaufmann, Mastruzzi (2010), Leff (1964), Macdonald, Majeed (2011), Mendonca, Fonseca (2012), The Economist (2014), Yilmaz, Akif (2011), Sarker, Khan & Mannan (2016), Samadi, Farahmandpour (2013), the independent variables that we use depend on the previous studies done by these researchers. The common variables that have been used in researches are real GDP per capita, economy freedom, democracy and urban population. These variables have been used as independent variables and the corruption perception index (CPI) has been used as dependent variable. The model of corruption is constructed in the simple way as below:

$$CPI = f(RGDPPC, EF, DEMO, UP) \qquad\qquad (3.9)$$

CPI is Corruption Perception Index; RGDPPC is Real Gross Domestic Product Per Capita; EF is Economy Freedom; DEMO is democracy and UP is Urban Population.

Independent variables in this model are real GDP per capita, Gini coefficient, economic freedom, democracy and urban population. Based on this study, real GDP per capita is one of the important factors that will directly affect the Corruption Perception Index (CPI). The expected relationship of real GDP per capita with CPI is positive. The increase in real GDP per capita will increase the scores of CPI. The higher the CPI, the lower the corruption. Based on the study of Rehman and Naveed (2007), real GDP per capita is one of the important variables that will affect the level of the corruption. Assiotis (2012) and Braun and Di Tella (2004) said that increase in the income level of a certain country will not necessarily reduce the corruption level in that country. Besides, Treisman (2000) said that economic development has negative relationship with corruption. This means that higher income per capita in a country is seen to be less corrupted compared to lower income per capita in a country. Blackburn, Bose and Haque (2005) said that there is negative and mutual relationship between economic development and corruption.

Moreover, income inequality is considered as a possible determinant for corruption. Income inequality refers to the distribution of income in a country where it reflects the links between decreasing and increasing CPI. The expected sign between income inequality and CPI is negatively related whereby the higher the income inequality, the lower the CPI in a country. This means that the higher the level of income inequality, the more corrupted the country. According to the study conducted by Smelser (1971), the occurrence of corruption cases will be more frequent for countries with high income inequality because of the perception of unfair state operation which eventually leads to the feelings of injustice.

Furthermore, economic freedom is considered as the basic determinants of corruption. The expected sign between economic freedom and CPI is positive. When economic freedom increases, the scores of CPI will increase as well. This means that increased economic freedom will lead to a decrease in corruption. In

the study of Graeff and Mehlkop (2003), it is concluded that when the economic freedom is higher in a particular country, it will have various formations and types of economic running in that country. There will be more competition in various industries. This competition will create an environment where people can engage into any economic activities as they want. This will reduce the corruption in a country. This competitive environment will create awareness to people that corruption will drag them into a trap of reducing their image which will lead to decrease in the opportunity of expanding their businesses. People will have the sense that something that does not belong to them cannot be stolen even using bribe. The consequence of getting caught bribing is higher than the returns when they obtain the projects or businesses (Shleifer & Vishny, 1993). According to the annual report of economic freedom of the world by Gwartney, Lawson and Hall (2016), in older times, there is less opportunity for people to engage in different types of economic activities. They tend to bribe in order to get a hand on those economic activities. However, due to the modern time when economic freedom is higher, corruption tends to be lower as fewer bribes are needed to enter into certain economic activities.

The level of democracy refers to the openness or political participation of citizens (Emerson, 2006) or the degree of free flow of information permitted in each country (Williamson & Shen, 2005). There is expected positive sign between democracy and CPI whereby the more democratic the country, the higher the CPI. In short, a democratic country will be less corrupted as compared to a non-democratic country. According to Lusztig (2006), democracy allows citizens to expel politician who hurts the economy because there is better monitoring by the government officials. This will lower the probability that a corruptor will avoid detection and punishment (Emerson, 2006).

Urban Population refers to the total population of an incorporated region. Urban population is calculated by the number of population which is estimated by the World Bank and the urban ratios given by the United Nations World Urbanization Prospects. The expected sign of the Urban Population and the Corruption Perception Index is positive. This indicates that the higher the number of Urban Population in a country, the higher the Corruption Perception Index

since the people will not corrupt. Based on the study by Terri Mashour and Lauren McDonell (2015), people who live in highly urbanized area have higher chance to improve their education level as they have better schooling experiences compared to the rural area. The person who receives higher education level will be more rational and well-behaved. Therefore, they will seek for the truth and know what they should and what they should not do. Therefore, corruption will be seen as an immoral action which educated people will avoid doing.

As adapted from World Justice Project (2017), the rule of law can be defined as the government and its officials and agents as well as individual and private's institutions which are accountable under the law. There is expected positive sign between CPI and ROL whereby the increase in ROL will increase the score of CPI. Based on Leff (1964) and Huntington (1968), the corruption is related to the rule of law. The study shows that the weaker rule of law will lead to higher level of corruption and lower score in CPI. In recent years, World Bank has considered rule of law as one of the important factors in controlling corruption activities.

The expected negative sign of income inequality will dominate the expected positive effect of democracy on CPI which has relatively smaller effect on CPI as compared to income inequality. If the country has the problem of income inequality, it is expected to lower the scores of CPI, even if it is a democratic country. In other words, the overall effect of the combination between income inequality and democracy is expected to have negative effect on CPI. Thus, the higher the combination of income inequality and democracy, the lower the score of CPI.

The expected negative sign of income inequality will not dominate the expected positive effect of Rule of Law on CPI which has relatively higher effect on CPI as compared to income inequality. This indicates that problem of income inequality does not increase the CPI if the rule of law in the country is high, as the scores of CPI will be higher. In other words, the overall effect of the combination between income inequality and rule of law is expected to have positive effect on

CPI. The higher the combination of income inequality and rule of law, the lower the score of CPI.

131 countries were categorised into developed countries and non-developed countries. According to the World Bank standard, the main classification is based on geographic region, income group, and the operational lending categories of the World Bank Group. The main purpose of this test is to examine the intensity of income inequality in different background of countries on the impact of corruption.

Developed countries are often less corrupted as compared to non-developed countries. This is because of the legislation and regulation, and the poverty condition of the country. In addition, if a country is poor, it is more likely that those businesses or individuals are willing to pay the government officials with side payments to make additional financial profits and to avoid taxes (Todd, 2014). According to the survey conducted by Transparency International, more than half of the citizens in countries like the Democratic Republic of the Ghana, Pakistan and Senegal have been asked to bribe at some point in their lives. The Corruption Perception Index rates in non-developed countries are very high (Kenny, 2014).

In short, the score of CPI will rise in developed countries while the score of CPI will remain the same in non-developed countries.

Table 3.2 Expected Sign and Explanation of Indicators

Indicators	Expected Sign	Explanation
RGDPPC	Positive sign (+)	The higher the RGDPPC, the higher the score of CPI.
IE	Negative sign (-)	The more the income inequality, the lower the scores of CPI.
EF	Positive sign (+)	When the economic freedom increases, the scores of CPI will increase.
DEMO	Positive sign (+)	The higher the democracy index, the higher the scores of CPI.
UP	Positive sign (+)	Increase in the population in urban area leads to increase in scores of CPI.
ROL	Positive sign (+)	The increase in ROL will increase the score of CPI.
IE•DEMO	Negative sign (-)	The higher the combination between income inequality and democracy, the lower the score of CPI.
IE•ROL	Positive sign (+)	The higher the combination between income inequality and rule of law, the higher the score of CPI.
dumY	Positive sign (+)	In developed countries, the score of CPI will rise while in non-developed countries, the score of CPI will remain constant.

*Notes: RGDPPC is real Gross Domestic Product Per Capita, IE is Income Inequality, EF is Economic Freedom, DEMO is democracy, UP is Urban Population, ROL is Rule of Law, IE•DEMO is combination between Income Inequality and Democracy, IE•ROL is combination between Income Inequality and Rule of Law, dumY is the dummy variable for developed and non-developed countries.

3.4 Sources of Data

The following table describes the summary of measurement and sources of each variable.

Table 3.3 Summary of Measurement and Sources for Each Variable

Variables	Measurement	Sources
CPI	Scores (0 high corrupt – 10 low corrupt)	Transparency International
Gini	Index	World Bank
RGDPPC	Constant US$	World Bank
IE	Skewness of RGDPPC	World Bank
ROL	Index	Worldwide Governance Indicator
EF	Index	Heritage
DEMO	Index	Freedom House
UP	Percentage of total population	World bank

*Notes: RGDPPC is real growth domestic product per capita, IE is income inequality, ROL is rule of law, EF is economic freedom, DEMO is democracy, UP is urban population.

Corruption Perception Index

- First, we collected the data of Corruption Perception Index (CPI) from the Transparency International, the global coalition against corruption. There are 4 steps for Transparency International to follow when they are constructing CPI:

i) Select data sources. The data sources that are used to construct CPI is from valid source which contains quantifies perceptions of corruption in the public sector, it used valid and reliable methodology, it is performed by a credible institution and allow for sufficient variation of scores to distinguish between countries.

ii)   Standardise data source. The score is scale at 0 to 10 where 0 equals to highest level of corruption while 10 represents lowest level of corruption.

iii)   Calculate the average. A minimum of 3 resources scores are calculated and take the average to represents the CPI scores of that country.

iv)   Report a measure of uncertainty. A standard error and confidence interval is associated with the score which capture the variation in the data sources.

Gini Index

- The Gini index is collected from World Bank. Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

Real Gross Domestic Product Per Capita

- According to World Bank, real GDP per capita is a measurement of total economic output that is produced by the country and divided by the number of citizen after adjusting to the inflation. This data is used to compare the standard of living between the countries.

Economic Freedom

- Economic freedom is measured based on 12 different factors, grouped into four broad categories. The groups are as follows:

Rule of Law
Government Size
Regulatory Efficiency
Open Markets

- The rule of law includes the factors of property rights, government integrity and judicial effectiveness. Besides, government size includes factors of government spending, tax burden and fiscal health. On the other hand, regulatory efficiency includes factors of business freedom, labour freedom and monetary freedom. Last but not least, open market includes freedom from trade, investment and financial. The score is derived by averaging these twelve economic freedoms and graded on a scale of 0 to 100 by the Heritage Foundation.

Democracy

- The democracy index is collected from Freedom House. Freedom House evaluates the state of freedom in 195 countries and 14 territories. They investigate based on 2 scores which are political rights and civil liberties with an index of 0 to 100 where 0 represents the least freedom and 100 represents the most freedom. Political rights have maximum index of 40 while civil liberties have 60 index maximum which add up to be the total index of 100.

Urban Population

- Based on the data collected from World Bank, the urban population is measured based on percentage (%) of people living in urban area or rural area.

Rule of Law

- Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society. It also includes a country's manner of contract enforcement, property right, the police bureaucracy, and the institution of the courts, as well as the likelihood of crime and violence. The higher the value measured by rule of law, the better the implementation of the rule of law.

3.4.1 Construction of Income Inequality Index

In the previous model, we used Gini coefficients to represent income inequality. However, due to the limited sources of data for Gini coefficients, we decided to use new method to increase the trustworthiness of our empirical results. We proposed a new method of using the skewness of GDPPC (Gross Domestic Product Per Capita) to represent income inequality. GDPPC is a measure of a country's economic output that accounts for population. It divides the country's gross domestic product by its population. It tells us about the standard of living in that country. We take the data of 10 years duration of GDPPC from 1996 to 2005 to get the number of first skewness to represent income inequality for the year 2005. Then, we continue to get income inequality for the year 2006 from the data of GDPPC from 1997 to 2006 to form the second skewness. The process continues until there are 10 skewness for the year 2005 to 2014. From the skew, we can know that when it is right skew, hat income inequality

problem is serious while left skew would mean that the income inequality problem is lowered.

Right skew / Positive skew

Figure 3.1 Skewness of Real GDP Per Capita

Right skew represents serious income inequality. The bottom line represents the income distribution of a country. When the skewness is to the right or known as the positive skew, it shows that the citizen with high income distribution are very little while there are large portion of citizen which have low income distribution. With this, we can conclude that when the skewness is positive skew, there is serious income inequality problem.
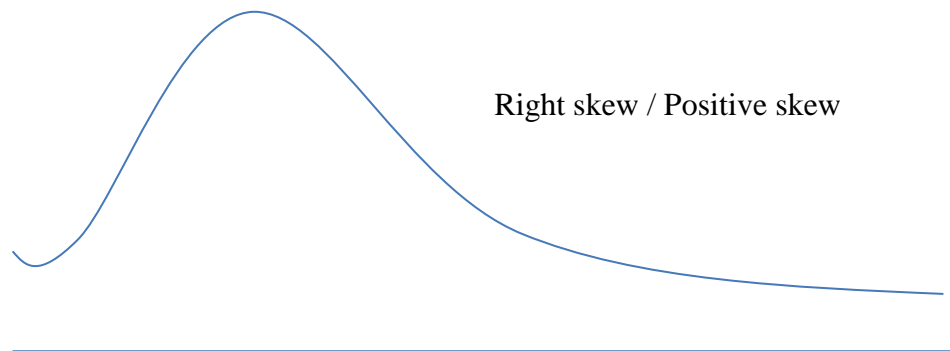
Left skew / Negative skew
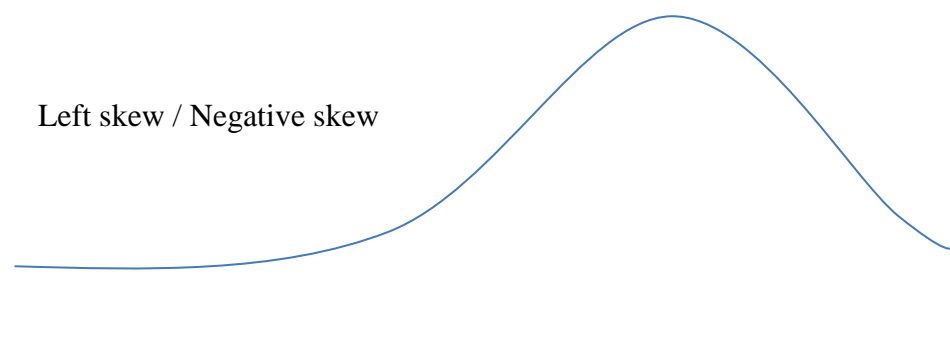
Figure 3.2 Skewness of Real GDP Per Capita

Left skew represents lesser income inequality problem. The bottom line represents the income distribution of a country. When the skewness is

to the left or known as the negative skew, this shows that the citizen with low income distribution is lesser compared to citizens with high income distribution in the country. There is a large portion of high income distribution citizen. With this, we can conclude that when the skewness is negative skew, the income inequality problem is lesser.

3.5   Model Estimation

3.5.1 Pooled OLS, Fixed Effect Model and Random Effect Model

There are data from 131 countries which were collected from the years 2005 to 2014. We used three types of method to test the model so that we can achieve our objectives. Pooled Ordinary Least Square (OLS), Fixed Effect Model (FEM), and Random Effect Model (REM) are used.

Pooled Ordinary Least Square (OLS):

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it} \tag{3.10}$$

Fixed Effect Model (FEM):

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_{it} \tag{3.11}$$

Random Effect Model (REM):

$$Y_{it} = \alpha + \beta X_{it} + [n_i + \mu_{it}] \qquad (3.12)$$

*where X includes RGDPPC, IE, EF, DEMO, UP; Y refers to CPI

First and foremost, in order to identify whether to use Pooled OLS, FEM or REM, we have to carry out two hypotheses testing which are Poolability hypothesis test and Breush-Pagan Lagrange Multiplier test. Poolibility hypothesis test is used to compare the goodness of fit between Pooled OLS and FEM in order to determine which model offers a better fit for the sample of data. In Poolibility hypothesis test, null hypothesis suggests that Pooled OLS is preferable while alternative hypothesis suggests that FEM is preferable. The formula of Poolibility hypothesis test is as below:

$$F = \frac{\left(R^2_{FEM} - R^2_{Pooled}\right) / \left(K_{FEM} - K_{Pooled}\right)}{\left(1 - R^2_{FEM}\right) / \left[n - \left(K_{FEM} + 1\right)\right]} \qquad (3.13)$$

Based on the results that we got, Poolibility hypothesis test rejects null hypothesis which means that Pooled OLS is not preferable. Alternative hypothesis is not rejected. Thus, FEM is preferable.

Furthermore, Breusch-Pagan Lagrange Multiplier test is used to test heteroscedasticity in a linear regression model and to determine whether Pooled OLS or Random Effect Model (REM) is preferable. Null hypothesis suggests that Pooled OLS is preferable whereas alternative hypothesis suggests that Random Effect Model (REM) is preferable. Thus, the formula of Breusch-Pagan Lagrange Multiplier is constructed as below:

$$LM = \frac{\left(\sum_{i=1}^{N} T_i\right)^2}{2\left[\sum_{i=1}^{N} T_i(T_i - 1)\right]} \left[\frac{\sum_{i=1}^{N}\left(\sum_{i=1}^{Ti} \hat{e}_{it}\right)^2}{\sum_{i=1}^{N} \sum_{i=1}^{Ti} \hat{e}_{it}^2} - 1\right] \sim C^2 (1) \qquad (3.14)$$

Based on the results, null hypothesis of Breusch-Pagan Lagrange Multiplier test has been rejected. Random Effect Model (REM) is preferable while Pooled OLS is not suitable in this research.

Pooled Ordinary Least Squared (POLS) model assumes that intercepts and slopes are constant across companies or countries. It is also time invariant which means that it has no time effect. There are 2 conditions that Pooled OLS model should be applied. First and foremost, if the panel data exhibits the same type of characteristics, there is no difference among them. Secondly, the independent variable is uncorrelated with the error term. For instance, the regressors are strictly exogenous and they do not depend on past, current and future value of the error term. The error term is independently and identically distributed with zero mean and constant variance. Therefore, it is also normally distributed and this causes the hypothesis testing result to be valid. Hence, the OLS estimation can be used. When all the conditions are met, the OLS estimator will indicate BLUE.

The easiest way to estimate this model is by OLS. However, the OLS estimation is likely to have specification problem. This model does not distinguish between the various observation in terms of effect and characteristics across periods. This is due to the assumption made about POLS model. When heterogeneity exists among the observations across periods, the estimated parameter values will become biased. This causes the standard deviation in the model to become inefficient as well as inconsistent. As a result, the hypothesis testing results is no longer valid (Gujarati & Porter, 2009).

Fixed Effect Model (FEM) and Random Effect Model (REM) have been applied in our research for estimation purpose. This is due to the different value in each intercept and constant slope in our regression. Furthermore, there is no time invariant in the model. To choose the best

method for estimation, we conducted Hausman Test. The formula derived as:

$$H = (\hat{\beta}_{RE} - \hat{\beta}_{FE})'[Var(\hat{\beta}_{RE}) - Var(\hat{\beta}_{FE})]^{-1}(\hat{\beta}_{RE} - \hat{\beta}_{FE}) \qquad (3.15)$$

We derived that the null hypothesis as Random Effect Model (REM) is preferable and alternative hypothesis as Fixed Effect Model (FEM) is preferable. Based on the result conducted, we found that the null hypothesis is rejected. Therefore, the Fixed Effect Model (FEM) is preferable. The data that we collected is in the form of cross-sectional and time-series. This indicates that each of the country has different background and characteristic. Therefore, Fixed Effect Model (FEM) is suitable for the estimation in this our research due to the intercept in Fixed Effect Model (FEM) is not constant. In short, there is different value of every intercept due to different countries data collected.

CHAPTER 4: RESULT AND DISCUSSION

4.1 Overview

The empirical discuss of the result in this study starts with the summary of descriptive statistic of data among 131 countries from years 2005 to 2014. The next part will follow by summary of result from the research.

Table 4.1 Descriptive Statistic for the Year 2005-2014

Variable	Obs	Mean	Min	Max	Standard Deviation
Corruption Perception Index (Scores)	131	4.4018	1.4000	9.7000	2.1196
Real Growth Domestic Product Per Capita (Constant US$)	131	15145.5100	205.0720	110001.1000	19961.5700
Income inequality (Skewness of RGDPPC)	131	0.3445	-2.2949	2.9849	0.6653
Rule Of Law (Scores)	131	95.0581	27.8946	137.1030	12.8531
Economic Freedom (Index)	131	61.9713	21.4000	89.4000	9.6190
Democracy (Index)	131	64.1618	1.0000	100.0000	27.3744
Urban Population (% of total population)	131	0.5828	0.0855	1.0000	0.2328

Table 4.1 report the descriptive statistic for 131 countries from years 2005 to 2014. The corruption Perception Index, CPI is in the form of scores from range of 0 to 10. Haiti with a lowest score of 1.4 is the most corrupt country while

Iceland with the highest scores of 9.7 which mean the cleanest country with less corruption. As for the income inequality, it is the skewness of RGDPPC representing income inequality. Guyana is the country with income inequality of 2.9849 is most serious whereas Lebanon has least income inequality problem with skewness of -2.2949. Moreover, rule of law will reduce corruption. Country with lowest rule of law is Zimbabwe with scores of 27.8946 and country with highest rule of law is Tajiskistan with 137.103 scores.

4.2 Baseline Result 1: Gini Coefficient as Proxy of Income Inequality

Most of the researchers such as Saha and Grounder (2013), Matti (2015), Graeff and Mehlkop (2003) and many more are using Gini coefficients to represent the income inequality. When using Gini coefficient, we obtain a positive coefficient and it is insignificant which means that the when Gini coefficient is higher, the CPI will be higher. This can be concluded as the higher the income inequality, the lower the corruption. This result is not the same as the result that we expected. This may be due to the small sample sizes which lead to invalid test statistic and misleading conclusion in our result. For the data of Gini coefficient, we only manage to collect 23 of them. This small sample size may lead us to misleading conclusion. Therefore, we constructed new method which is the skewness of real growth domestic product per capita to represent the income inequality.

The following table describes the summary of result for Gini using POLS, FEM and REM.

Table 4.2 Summary of Result

Gini

Variable	POLS	FEM	REM
LNRGDPPC	1.0885	**2.6715*****	3.2341***
	(0.1800)	**(0.3570)**	(0.2982)
LNEF	7.8833***	**-4.9117*****	-3.9145***
	(0.7583)	**(0.7107)**	(0.6666)
LNGINI	3.5653***	**1.1210**	0.5003
	(0.4087)	**(0.6174)**	(0.5409)
DEMO	2.9939***	**1.3840**	1.2368
	(0.0570)	**(0.0924)**	(0.0812)
UP	1.2179	**2.9396*****	1.2343
	(1.2712)	**(2.6316)**	(1.9905)
Adjusted R-squared	0.3185	0.9539	0.1650
F-statistic		643.3347***	
LM test	731.6394***		
Hauseman test			31.2375***

*Notes: RGDPPC is real growth domestic product per capita, EF is economic freedom, GINI is Gini Coefficient, DEMO is democracy, UP is urban population, LN is Natural Logarithm.

The following table describes the summary of result using POLS, FEM and REM.

Table 4.3 Summary of Results

Dependent Variable: CPI

Variables	Model 1			Model 2		
	POLS	FEM	REM	POLS	FEM	REM
LNRGDPPC	21.6896***	**10.8061***	14.3189***	20.6067***	**9.8167***	13.9831***
	(0.0075)	**(0.0332)**	(0.0167)	(0.0076)	**(0.0334)**	(0.0166)
IE	-4.6080***	**-2.8742***	-5.7863***	-4.4580***	**-2.6659***	-5.1646***
	(0.0090)	**(0.0050)**	(0.0045)	(0.0090)	**(0.0049)**	(0.0044)
LNEF	17.7055***	**2.6045***	6.1901***	15.9291***	**1.3682**	4.9519***
	(0.0549)	**(0.0721)**	(0.0651)	(0.0567)	**(0.0734)**	(0.0661)
LNDEMO	10.2755***	**-1.9575***	1.7996*	9.8156***	**-3.0565***	0.8813
	(0.0114)	**(0.0214)**	(0.0175)	(0.0114)	**(0.0217)**	(0.0176)
UP	-2.3713**	**1.3812**	-1.3207	-2.0605**	**1.2589**	-1.1132
	(0.0424)	**(0.2363)**	(0.1051)	(0.0422)	**(0.2339)**	(0.1042)
LNROL				4.4061***	**5.1487***	5.2705***
				(0.0465)	**(0.0336)**	(0.0321)
Adjusted R²	0.7814	0.9562	0.3567	0.78443	0.9571	0.3684
F-statistic		2242.7429***			2252.6440***	
BPLM Test	3446.9670***			3421.2120***		
Hausman Test			85.3115***			88.9594***

Note: *Significant at 0.10 significant level, ** Significant at 0.05 significant level, ***Significant at 0.01 significant level, the parenthesis is refer to robust standard error

Table 4.3 Summary of Results (Cont.)

Dependent Variable: CPI

Variables	Model 3			Model 4		
	POLS	FEM	REM	POLS	FEM	REM
LNRGDPPC	21.4090***	**10.4622*****	14.2453***	20.8143***	**9.6661*****	13.8620***
	(0.0076)	**(0.0335)**	(0.0167)	(0.0076)	**(0.0335)**	(0.0167)
IE	-0.7396	**-2.3633****	-3.9642***	-2.7715***	**-2.1910****	-3.3449***
	(0.0670)	**(0.0335)**	(0.0324)	(0.2751)	**(0.1363)**	(0.1348)
LNEF	17.6594***	**2.7374*****	6.3511***	15.8489***	**1.5590**	5.1321***
	(0.0550)	**(0.0722)**	(0.0651)	(0.0566)	**(0.0736)**	(0.0662)
LNDEMO	8.5503***	**-2.1371****	1.3308	9.8622***	**-2.7993*****	1.1179
	(0.0136)	**(0.0215)**	(0.0176)	(0.0113)	**(0.0218)**	(0.0176)
UP	-2.3700**	**1.2307**	-1.3685	-2.2091**	**1.2026**	-1.1246
	(0.0426)	**(0.2367)**	(0.1046)	(0.0422)	**(0.2336)**	(0.1044)
LNROL				2.7527***	**4.1113*****	3.7893***
				(0.0520)	**(0.0358)**	(0.0343)
IE*LNROL	0.1188	**1.9587***	3.1977***			
	(0.0163)	**(0.0081)**	(0.0079)			
IE*LNDEMO				206274***	**2.0960****	3.1763***
				(0.0605)	**(0.0299)**	(0.0296)
Adjusted R^2	0.7812	0.9563	0.3621	0.7854	0.9572	0.3712
F-statistic		2247.0064***			2250.6181***	
BPLM Test	3449.9830***			3439.7740***		
Hausman Test			81.9478***			83.1078***

Note: *Significant at 0.10 significant level, ** Significant at 0.05 significant
level, ***Significant at 0.01 significant level, the parenthesis is refer to robust
standard error

Table 4.3 Summary of Results (Cont.)

	Dependent Variable: CPI		
	Model 5		
Variables	POLS	FEM	REM
LNRGDPPC	15.3342***	**10.8047**	11.7082***
	(0.0078)	**(0.0333)**	(0.0176)
IE	-4.6728***	**-2.8629***	-6.1898***
	(0.0085)	**(0.0050)**	(0.0045)
LNEF	17.5133***	**2.6028***	6.2974***
	(0.0521)	**(0.0722)**	(0.0645)
LNDEMO	7.7508***	**-1.9591***	1.5660
	(0.0110)	**(0.0214)**	(0.0173)
UP	-1.3512	**1.3778**	-1.2782
	(0.0402)	**(0.2364)**	(0.0999)
DUMMY	12.6057***	**-0.25560***	3.9942***
	(0.0189)	(0.1012)	(0.0445)
Adjusted R^2	0.8050	0.9561	0.3812
F-statistic		2092.0737***	
BPLM Test	3229.2570***		
Hausman Test			93.7466

Note: *Significant at 0.10 significant level, ** Significant at 0.05 significant
level, ***Significant at 0.01 significant level, the parenthesis is refer to robust
standard error

*Notes: RGDPPC is real growth domestic product per capita, EF is economic
freedom, GINI is Gini Coefficient, DEMO is democracy, UP is urban population,
DUMMY is the dummy variable for developed and non-developed countries, LN
is Natural Logarithm.

4.3 Baseline Result 2: Skewness of GDP Per Capita as Proxy of Income Inequality

Based on the table 4.3, there are 3 different model estimation methods; we rely on specification test to choose the most appropriate estimation for our 5 models. The result of probability F-test suggested that the null of POLS preferred can be rejected, while result suggested that FEM is preferable. In a Breusch-Pagan LM test, the null of POLS preferred can be rejected while accept REM. In order to decide whether FEM or REM is preferable, we apply Hausman test. The result shows that FEM model is most appropriate for our model 1 to model 5.
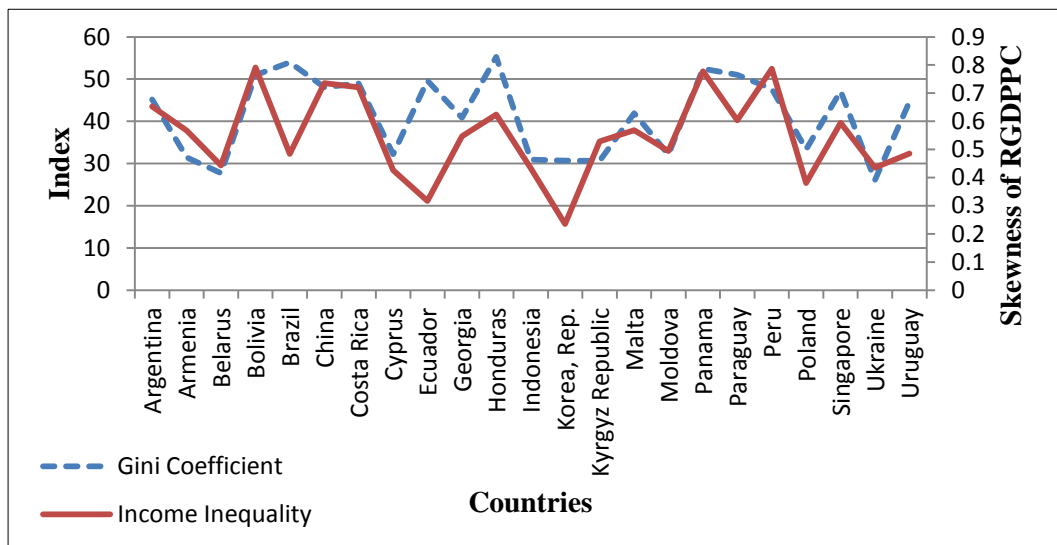
Figure 4.1 Income Inequality

Figure 4.1 shows that the 2 proxy used as income inequality is similar in terms of their trends. Since there is lack of data in Gini coefficient as a proxy of income inequality, we constructed new method to represent income inequality, which is the skewness of real growth domestic product. We used 23 countries of Gini coefficient as the base data. Based on figure 4.1, we can know that these 2 proxy is similar in terms of their values representing income inequality.

4.4   Does Income Inequality Matter?

In this research, what we focus on is the income inequality matter on the corruption issues. In model 1, we conduct the test to verify the significant of the Income Inequality and others variables. This model we included other control variable which are real gross domestic product per capita, economic freedom, democracy and urban population. Based on the result, we found that 96.09% variation of the CPI is explained by the variable listed above.

Furthermore, income inequality is statistically significant at 1% level. In short, the income inequality is significant to explain the variations of the corruption. Besides, the income inequality has negative effect to CPI which means that it will lead to more corrupt in a country. Therefore, as conclusion, the higher level of income inequality in a country, the higher level of corruption.

4.5   Does Rule of Law Matter?

In the result of model 2 table 4.3, in order to verify the significant of rule of law in our research, we included rule of law into the regression without considers the interacting effect. Based on the result, it shows that the coefficient for rule of law is positive and it is statistical significant at 1% of significance level (Probability Value equals to 0). This indicates that the country with a well structural rule of law will lower down the corruption. While a well structure and strong base of rule of law tend to lower corruption levels. Therefore, we further investigate the interacting effect of Income inequality and the democracy factor on corruption.

4.6 Is Income Inequality More Important in Democratic Countries?

In the result of model 3 table 4.3, we tested the interacting effect of income inequality and the democracy. Based on the result, we can see that the interaction of income inequality and democracy is statistically significant at 10% and both have positive coefficient.

Initially, based on objective 1, both income inequality and democracy have negative effect on CPI when they stand independently. After we combine these two variable together, we found that the there is a positive effect to the CPI (statistically significant at 10%). This indicate that a higher democracy level in a country which facing income inequality problem will help reduce the corruption problem. Democracy normally cannot be a main factor that stands independently to reduce the corruption. Refer to the real example, the India is one of the most democracy country in Asia region, but India is still suffering from serious corruption problem since the dependent from the colonization of Great Britain.

By using democracy as a tool to reduce the corruption problem, others supporting policy is needed to assist democracy in improving integrity level. From the model we compute above, we can see that improving democracy is a good move to reduce corruption in a country that both income inequality problem and corruption problem. This is because when the people have more power to determine their leaders, the government officials will behave and they will always stand themselves away from corruption to secure their job and position in the government.

4.7 Will Rule of Law Tackle the Problem of Income Inequality?

To achieve objective 4, the interaction of income inequality and rule of law are added to the model to capture the mutual effect towards the corruption level. Based on the result of table 4.3 model 4, the result shows positive relationship between income inequality and rule of law on the level of corruption. Based on the results obtained from objective 1 and 2, there is negative relationship between income inequality and the level of corruption, and positive relationship between the rule of law toward the corruption level. However, the negative effect of the income inequality will be eliminated by the positive effect of the rule of law. This means that the scores of CPI will definitely be higher in a more well-structured country with proper rule of law even though the distribution of income is unequal for that country. As the result shown, we can conclude that effect of rule of law is larger than the effect of income inequality. When a country has a high rule of law, even if the country suffers from income inequality problem, the problem will not be important. Rule of law will represent a warning for those people that wanted to take or give bribe. It will serve as a barrier for them. Therefore, the effect of rule of law will eliminate the effect of income inequality.

4.8 Is There Any Difference Between Developed Countries and Non-Developed Countries Towards CPI?

The following table shows the summary of statistic on different background of countries.

Table 4.4 Summary of Statistic on Different Background of Countries

Different Background of Countries	Mean	Min	Max
Developed:			
CPI	7.3292	3.9000	9.7000
IE	0.1802	-1.1928	1.8067
ROL	103.1325	90.3948	115.0690
Developing:			
CPI	3.6314	1.6000	7.8000
IE	0.4007	-2.2949	2.9849
ROL	93.6262	27.8946	137.1030
Underdeveloped:			
CPI	2.8784	1.4000	5.3000
IE	0.3865	-1.2643	2.0112
ROL	88.8643	39.1757	120.1923
Non-Developed:			
CPI	3.4561	1.4000	7.8000
IE	0.3974	-2.2949	2.9849
ROL	92.4930	27.8946	137.1030

*Notes: CPI is referring Corruption Perception Index, IE is referring to Income Inequality, ROL is refer to rule of law

Based on the table above, the result showing that the average developed countries is having a low corruption perception index (7.3292), Income Inequality (0.1802) and a well structure rule of law (103.1325) compare to those developing and underdeveloped countries. Other than that, because of the data of income

inequality and rule of law for developing and underdeveloped countries is similar, so we decided to combine it became non-developed countries for objective 5.

To examine the relationship of income inequality and different background of countries on the impact of corruption, 131 countries were first categorised into developed countries and non-developed countries. Refer to table 4.3 model 5, the result shows that different background of countries has negative insignificant relationship on the level of corruption. In other word, the score of CPI will drop in developed countries while the score of CPI will remain the same in non-developed countries. Due to the differences in the legislation and regulation, and the poverty condition of the country, CPI scores may be different. Our result shows that the coefficient is negative. This means that when the country is a developed country, CPI scores will decrease. This may due to citizen's standard of living in developed countries are high. Citizen of developed countries have higher power and income. In these countries, average voter has lesser impact compare to those high income voters. However, the coefficient is not significant. If we differentiated those countries into developed and non-developed, there is not much difference in their citizen income distribution. We will not able to test how income inequality will affect the corruption in a country.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.1 Conclusion

In conclusion, corruption is the heart of the world problem. It is one of the most serious problems where most of the countries are concerned about apart from growth, unemployment and poverty. When the income distribution in a country is highly unequal, problem arises as a small portion of rich people will control the large portion of a country's important resources. Corruption will be increasing and eventually, the rich will only get richer since they can easily get resources that they desire through bribe. On the other hand, the poor will start to take some shortcut or they will try to "cut in line" when they wish to get some resources through bribery. Both the poor and rich will bribe to try to get their hand on those unequally distributed resources and money. For example, Haiti has the lowest Corruption Perception Index score, which is 1.4 with an income inequality skewness of 0.7680; while New Zealand has a high score of 9.46 in Corruption Perception Index. This can be reflected by its country income inequality skewness, which is left skewed, meaning that, the income distribution is more equal and income inequality problem is lesser.

In the past literature, many studies did not include an important variable which is the rule of law. With proper rules or laws being implemented, it will act as a warning for those who wish to engage in bribery activities. They will think twice before they act because they need to bear the consequences if they get caught. Their opportunity cost will increase as well. A high degree of rule of law will decrease the level of corruption in a country. Those who take bribe are mostly politicians, people with high position in companies and people who have huge influence to the public. These people share a few similarities, for instance, they

have built themselves with images, positions, influences, and they usually act as decision makers. However, rule of law can be a gate to guard them. They will not take bribe easily as they are scared of being caught. If you have the money but you are not able to spend them, what is the point? While the positive effect of rule of law on corruption takes over the negative effect of income inequality, income inequality is not a problem anymore. For example, in countries like United Arab Emirates, Estonia and Qatar, although the problem of income inequality exists, their countries' rule of law is high. Therefore, corruptions level in these countries is relatively low.

Moreover, there are 5 findings in our studies as stated below:

(i)   Income inequality causes corruption

First of all, income inequality is significantly affecting the Corruption Perception Index, CPI and it has negative coefficient. In this finding, we know that corruption will move in line with income inequality. When income inequality is getting higher, CPI will decrease which denotes that the corruption level is increasing.

(ii)   Rule of Law causes corruption

Next, the rule of law is significantly affecting CPI and has positive coefficient. With this, we can conclude that with higher rule of law in a country, its CPI will increase, and simultaneously the corruption level is reducing. A high level of rule of law is a restriction for people to corrupt. Those who corrupt will receive relevant punishment and charges. Therefore, the opportunity cost of taking or giving bribe will increase and corruption level of that country will reduce.

(iii) Democratic Countries Will Overcome the Problem of Income Inequality

As we continue to third finding, we can see that our expected sign for democracy index towards CPI is positive. However, our results show negative coefficients. This may be due to the strength of democracy of groups with special interest who are affecting the policy decision of government that are lean to those people profits and interest. We continue to test the interaction of income inequality with democracy. The result came out to be positive and significant. When income inequality and democracy interacts with each other, their effect towards the corruption will start to change. People have the chance to make decision on behalf of the politicians that are controlling or managing the government. Those politicians will stop bribery action in order to stay clean and continue to be elected in the next election program. Corruption will then be lowered down.

(iv) With A Strict Rule of Law, Income Inequality Will No Longer be a Problem

For the fourth findings, we can conclude that the interaction of income inequality and rule of law is significant and has positive coefficient. In our first finding, income inequality alone has negative coefficients and rule of law alone has positive coefficients in our second finding. Despite the results of first and second findings, the positive effect of rule of law is higher than the negative effect of income inequality. When rule of law interacts with income inequality, they will have positive effect towards the CPI. Even though a country has income inequality problem, if the country's rule of law is high, the corruption level will still be decreasing.

(v) Differences in Developed Countries and Non-Developed Countries

Lastly, in the last finding, we divided our countries into developed and non-developed countries. We found out that the developed countries will cause the score of CPI to decrease. This is due to the developed countries are mostly lower income inequality compare with those non-developed countries. They will maintain a higher proportion of voters' position and can make a difference when there is election. Therefore, those politicians that are elected will introduce some policies that are profitable to those high income voters. Another cause is that these politicians that are elected will have a higher possibility to take bribe. This will make those special interest groups easier in obtaining licence or projects from government.

5.2   Policy Implication

The policy implementation in this research shows that the income inequality combines with rule of law and democracy will reduce the level of corruption. The result has shown that although the income inequality will increase the level of corruption, but after combining with high level of rule of law and democracy, it can effectively reduce the corruption. The country with high level of rule of law will protect their legal system and create a series of policy so that it cannot be easily influenced by those politicians who wish to gain benefits from their authorized power. As a consequence, the legalistic system in the country will become more independent and stronger to prevent corruption activities.

Besides, the country with high level of democracy will have certain rule to allow their media to report the corruption issues to the public and the government will also protect the journalists from being threatened by the politicians. Consequently, the media can perform their best to report corruption issues to the public. This may give a warning effect to politicians and they may think twice

before engaging themselves in bribery activities. On the other hand, the citizens also have the voting power on election to kick out the politicians that are involved in corruption activities.

For example, Norway is the most democratic country in the world. It has democracy index of 100 and it has better rule of law (103.99). This is the reason that leads Norway to become one of the least corrupted (8.99) countries in world. This is because Norway has a democracy institution that prevent the media to report the corruption issue to public and the government will also give protection to them. Besides, the rule of law in Norway is also better compared to other countries. In 2015, Norway has been rewarded as the world's best and fairest rule of law, according to a new global ranking by the world Justice Project (WJP). Thus, this may reduce the level of corruption because the politicians are scared to get caught.

Last but not least, the average rule of law in non-developed countries is 92.493. Therefore, we suggest that the rule of law in non-developed countries be strengthened. Furthermore, the democracy in non-developed countries also needs to be improved so that the media can safely report the corruption news to combat corruption.

5.3   Limitation and Recommendation

In this research, one of the limitations that we encounter is that the data available for Gini coefficient from the World Bank is limited. We managed to get the complete data of Gini coefficient from year 2004 to 2005 for 23 countries only. There are a lot of missing data between the years. We hope that government statistical agencies and World Bank country departments can disclose more information publicly to ease the research process. In order to overcome this limitation, we have discovered a new method to measure the income inequality.

We used the Real Gross Domestic Product per capita (RGDPPC) skewness to replace the Gini coefficient. Besides, Corruption Perception Index (CPI) which represents the level of corruption does not show the evidence of actual corruption. CPI is a perceived corruption that occurs among public politicians and government. It is determined by many expert assessments, and opinion surveys from reputable organization. Thus, we recommend the future researcher to collect data of actual corruption index to get more accurate results in their future studies.

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